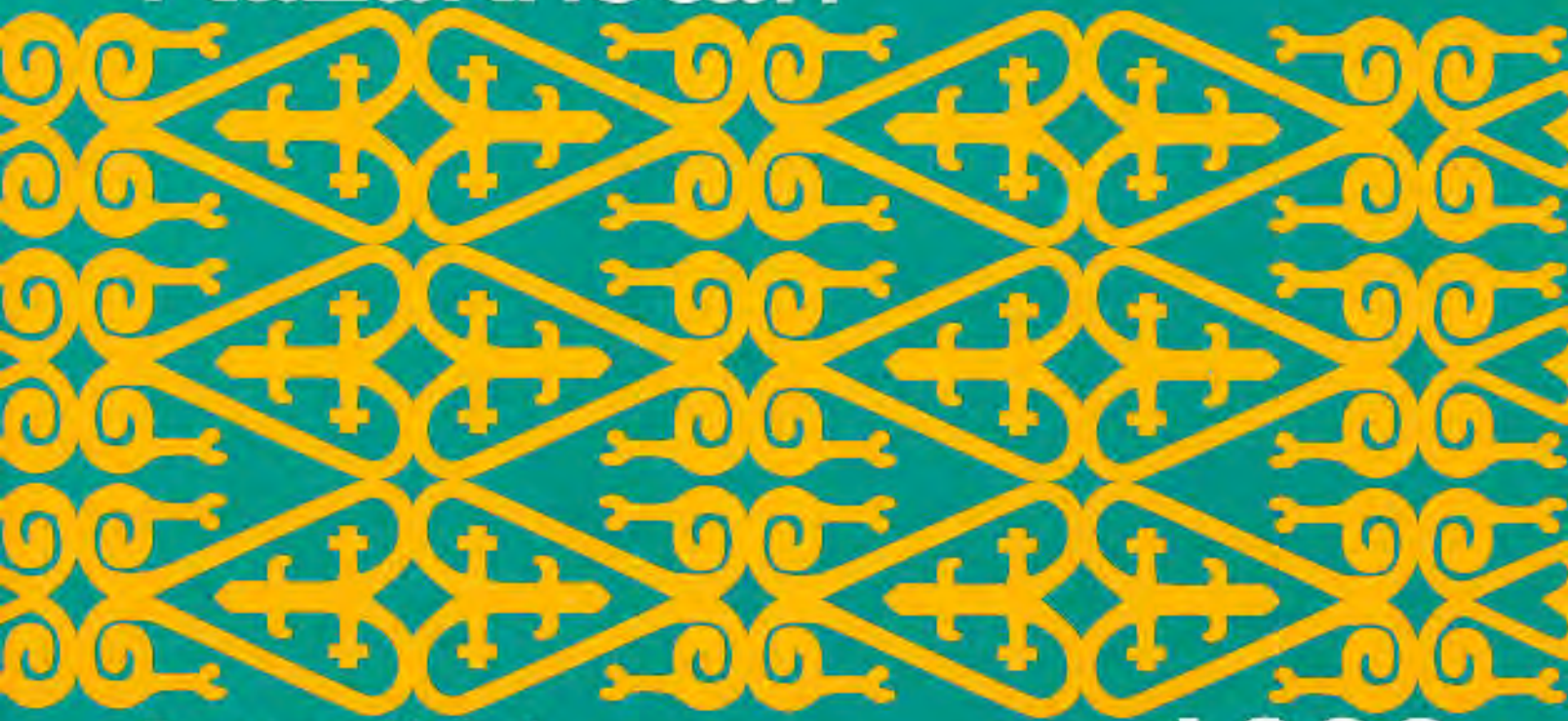
Kazakhstan



Demographic and Health Survey

1999

Academy of Preventive Medicine of Kazakhstan

MEASURE *DHS+*
Macro International Inc.

World Summit for Children Indicators: Kazakhstan 1999

		Value
BASIC INDICATORS		
Childhood mortality	Infant mortality rate	61.9 per 1,000
	Under-five mortality rate	71.4 per 1,000
Maternal mortality	Maternal mortality ratio	62.5 per 100,000[1]
Childhood undernutrition	Percent stunted (of children under 5 years)	9.7
	Percent wasted (of children under 5 years)	1.8
	Percent underweight (of children under 5 years)	4.2
Clean water supply	Percent of households within 15 minutes of a safe water supply[2]	83.6
Sanitary excreta disposal	Percent of households with flush toilets	47.2
Basic education	Percent of women 15-49 with completed primary education	99.3
	Percent of men 15-49 with completed primary education	99.1
	Percent of girls 6-12 attending school	81.4
	Percent of boys 6-12 attending school	80.3
	Percent of women 15-49 who are literate	99.8
Children in especially difficult situations	Percent of children who are orphans (both parents dead)	0.2
	Percent of children who do not live with their natural mother	6.2
	Percent of children who live in single adult households	5.9
SUPPORTING INDICATORS		
Women's Health		
Birth spacing	Percent of births within 24 months of a previous birth[3]	32.3
Safe motherhood	Percent of births with medical prenatal care	94.4
	Percent of births with prenatal care in first trimester	46.8
	Percent of births with medical assistance at delivery	99.0
	Percent of births in a medical facility	98.0
	Percent of births at high risk	38.7
Family planning	Contraceptive prevalence rate (any method, married women)	66.1
	Percent of currently married women with an unmet demand for family planning	8.7
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	6.0
Nutrition		
Maternal nutrition	Percent of mothers with low BMI	7.4
Low birth weight	Percent of births at low birth weight (of those reporting numeric weight)	7.3
Breastfeeding	Percent of children under 4 months who are exclusively breastfed	46.6
Child Health		
Measles vaccination	Percent of children 12-23 months with measles vaccination	86.5
Fully vaccinated	Percent of children 12-23 months fully vaccinated	80.5
Diarrhea control	Percent of children with diarrhea in preceding 2 weeks who received oral rehydration therapy	32.0
Acute respiratory infection	Percent of children with acute respiratory infection in preceding 2 weeks who were seen by medical personnel	48.0

[1] Data from the Agency on Health
[2] Piped, well, and bottled water
[3] First births are excluded.

Kazakhstan Demographic and Health Survey 1999

Academy of Preventive Medicine
Almaty, Kazakhstan

Macro International Inc.
Calverton, Maryland USA

November 2000

Academy of Preventive Medicine

Macro International Inc.

The report summarizes the findings of the 1999 Kazakhstan Demographic and Health Survey (1999 KDHS), which was conducted by the Academy of Preventive Medicine of Kazakhstan. Macro International Inc. provided technical assistance. Funding was provided by the U.S. Agency for International Development (USAID).

The KDHS is part of the worldwide Demographic and Health Surveys (DHS) program, which is designed to collect data on fertility, family planning, and maternal and child health. Additional information on the Kazakhstan survey may be obtained from the Academy of Preventive Medicine of Kazakhstan (telephone: 73272-427855 ; fax: 73272-429203; e-mail: nutrit@nursat.kz). Additional information about the DHS program may be obtained by writing to DHS, Macro International Inc., 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, USA (telephone 301-572-0200; fax 301-572-0999; e-mail: reports@macroint.com).

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FOREWORD

With great pleasure I would like to introduce the main findings of the second Kazakhstan Demographic and Health Survey (1999 KDHS). The survey was implemented by the Academy of Preventive Medicine of Kazakhstan through an agreement with Macro International Inc. under the auspices of the MEASURE *DHS+* project supported by the U.S. Agency for International Development (USAID).

In addition to presenting the main findings from the 1999 KDHS on maternal and child health and nutrition, this report highlights the major changes that are taking place in Kazakhstan's demographic and health situation since the previous KDHS survey, which was conducted in 1995. Also, during the 1999 KDHS, information on knowledge and attitudes toward HIV/AIDS and sexually transmitted infections as well as data on men's reproductive behavior were collected. It is expected that the findings in this report will raise important programmatic issues for policy-makers in the areas of population, health, and nutrition in Kazakhstan.

I would like to take this opportunity to thank the USAID Regional Office for Central Asia for its support of the survey. This report is the result of more than half a year of preparatory work, four months of data collection, data entry and processing, and about nine months of analysis of the results and report writing. I am grateful to Dr. Jeremiah Sullivan of Macro International Inc. who had a large part at the inception of the project and in the finalization of the main survey report. Also, my sincere thanks go to other American colleagues: Dr. Almaz Sharman, Mr. Albert Themme, Mr. Mamadou Thiam, Dr. Kia Weinstein, Ms. Holly Seyhan, Ms. Kristi Fair, Ms. Sunita Kishor, Dr. Sidney Moore, and Ms. Celia Khan for their assistance in overall survey design and implementation, data processing, analysis of the results, report writing, and production.

This report is the result of a joint effort by a number of organizations and individuals in Kazakhstan who contributed immensely towards the success of the survey. The list of organizations who participated in the survey includes: Kazakhstan State Medical University, Karaganda State Medical Academy, South Kazakhstan State Medical Academy, International Kazakh-Turkish University, National Research Center for Maternal and Child Health, National Research Center for Pediatrics and Pediatric Surgery, National Institute of Nutrition, National Research Center on Tuberculosis, School of Public Health, National Medical College, and Zhezkazgan Department of Health. I would like to express my appreciation to all the professionals from these organizations who were involved in the survey implementation and coordination.

I would like to thank the KDHS senior technical staff: Mr. Bedel Sarbayev, Adyl Katarbayev and Alexander Izmukhambetov and other staff members of the Academy of Preventive Medicine for their devotion and sincere efforts in accomplishing the planned activities on time. I am grateful to all 1999 KDHS staff, whose names are listed in Appendix D, for their great contribution in making this survey a success.

Toregeldy Sharmanov, MD, PhD
President,
Academy of Preventive Medicine

SUMMARY OF FINDINGS

The 1999 Kazakhstan Demographic and Health Survey (KDHS) is a nationally representative survey of 4,800 women age 15-49 and 1,440 men age 15-59. This survey is the second of its kind to be carried out in Kazakhstan. It was implemented by the Academy of Preventive Medicine of Kazakhstan, with funding provided by the U.S. Agency for International Development through the MEASURE *DHS*+ program. Fieldwork for the KDHS was conducted from July to September 1999.

The purpose of the survey is to provide current data on women's reproductive histories, knowledge and use of methods of contraception, breastfeeding practices and nutrition, vaccination coverage, and episodes of diseases among their children under the age of five. The survey also provides comparable data for analysis of trends in fertility, reproductive health, child health, and nutrition. In the 1999 KDHS, information on knowledge and attitudes toward HIV/AIDS and sexually transmitted infection, as well as data on men's reproductive behavior were collected. The survey included measurement of hemoglobin levels in the blood to assess the prevalence of anemia, and measurements of height and weight to assess nutritional status. The components of the survey related to the anemia testing and anthropometric assessment were funded by the UNICEF Area Office for Central Asia and Kazakhstan (UNICEF/CARK).

FERTILITY DECLINE

The 1999 KDHS results demonstrate that fertility in the Republic of Kazakhstan has declined rapidly over the last decade. At current fertility levels, a Kazakhstan woman will give birth to 2.1 children during her reproductive period, a decline of 18 percent from the 1995 KDHS when the Total Fertility Rate (TFR) was 2.5 children per woman, and of 29 percent since the 1989 Census when the TFR was 2.9 children per woman.

Fertility has fallen in almost every age group and the decline has been exhibited by both ethnic Kazakh women and ethnic Russian women. The TFR among ethnic Kazakh women dropped from 3.6 to 2.5 over the past decade, a decline of one child per woman. Among ethnic Russians, the TFR fell from 2.2 to 1.4 over the decade, a decline of not quite one child per woman, but resulting in a TFR below replacement level.

Like the 1995 survey, the 1999 KDHS results show that the TFR is higher among rural women (2.7 children per woman) than among urban women (1.5 children per woman). The TFR is lowest in Almaty City (1.0 children per woman), intermediate for the Central and North regions (1.6 and 1.7 children per woman, respectively) and highest in the South and West regions (2.9 and 2.3, respectively). Women with a primary or secondary education give birth to an average of 2.4 children, compared with 1.5 children for women with higher education.

Overall, about one-third of births (32 percent) in Kazakhstan were born within 24 months of the previous birth. The median birth interval length is 35 months, up from 32 months in the 1995 KDHS.

While the age at which women begin childbearing has changed little over time, women currently age 20-24 are less likely to have begun childbearing than women who were age 20-24 at the time of the 1995 KDHS. The 1995 KDHS found that 44 percent of women who were 20-24 had not yet had a birth, while 54 percent of 20-24 year-olds surveyed in 1999 had not yet given birth.

A large proportion of currently married women in Kazakhstan (55 percent) said that they don't want to have any more children. Less than one-third of women (30 percent) want to have a child, and 43 percent of these would like to wait two or more years before

having that child. Thus, the vast majority of women want either to delay their next birth or to limit childbearing altogether. These are women who are potentially in need of some method of family planning.

The 1999 KDHS also collected information on men's fertility preferences. Sixty-six percent of men either wanted no more children or their spouse was sterilized or infecund, while about one-third (32 percent) wanted another child.

CONTRACEPTION AND ABORTION

More than half (53 percent) of currently married women in Kazakhstan use a modern method of contraception, up from 46 percent in 1995. Significant increases in contraceptive use have occurred among the older cohorts. Among women 35 to 39 there has been an increase in the use of modern contraceptive methods from 55 to 63 percent; 47 to 58 percent among women 40 to 44; and 22 to 40 percent among married women age 45 to 49. This indicates that modern methods are being adopted by women in older cohorts in order to limit births.

The IUD is by far the most widely used method of modern contraception. Among married women there has been a slight increase in users from 40 percent in 1995 to 42 percent. After the IUD, the condom is the next most widely used modern method. Since 1995 there has been no significant increase in overall condom use, but among married women age 25 to 29 use has increased from 3.4 to 7.3 percent. A significantly larger proportion of this cohort reports use of condoms than other cohorts. Approximately 3 percent of currently married women report that they have been sterilized. As in 1995, 13 percent state that they are using a traditional method.

The most significant changes in contraceptive use have occurred among unmarried, sexually active women. Currently 56 percent report using a modern method, as opposed to 39 percent in 1995. Use of the pill has doubled (from 5 to 10 percent) as has use of the IUD (14 to 26 percent). Condom use, however, appears to have remained constant in the last 5 years (approximately 19 percent). Use of traditional methods has decreased. Currently 13 percent of all sexually active unmarried women report using a traditional method, down from 19 percent five years previously.

Fifty-five percent of men in Kazakhstan are currently using a method of contraception; almost half (48 percent) of all men surveyed use a modern method. Among men who use a modern method, 54 percent report using the IUD, the most common method among all age groups, and 37 percent reported use of a condom. Condom use is concentrated among younger men (for example, 35 percent of 20 to 24 year olds versus 17 percent of 40 to 44 year olds).

The Total Abortion Rate (TAR) in Kazakhstan has declined from 1.8 abortions per woman for the period 1992-1995 to 1.4 abortions per woman for the period 1996-1999 (a decline of almost 25 percent over an interval of four years). The abortion rates have fallen substantially in every age group in the broad age range from 20 to 40 where the practice of induced abortion is concentrated. Not all ethnic groups however have exhibited a change in rates. The TAR among Kazakhs appears to have remained stable at 1.1, while the TAR among Russians has declined by 36 percent from 2.7 to 1.7.

Like the 1995 survey, the 1999 KDHS showed substantial regional variations in the rate of induced abortion. In the high-fertility South and West regions, the TAR is lowest (1.1 abortions per woman). In the Central and East regions where fertility levels are intermediate, abortion rates are also intermediate (1.2 and 1.6, respectively), while in the relatively low fertility areas of Almaty City and the North region, abortion rates are highest (1.8 and 2.0, respectively).

MATERNAL AND CHILD HEALTH

In Kazakhstan, the levels of antenatal care services and delivery assistance remain high. Ninety-four percent of mothers received antenatal care from professional health providers. For 76 percent of births in the five years preceding the survey, mothers received antenatal care from a doctor, 3 percent from a doctor's assistant, and 15 percent from a nurse or trained midwife. Mothers are more apt to receive care by a doctor for first births (83 percent) than for births of order six or higher (67 percent).

Virtually all births in Kazakhstan (98 percent) are delivered at health facilities. The great majority of births occur in a delivery hospital (89 percent) and another 9 percent in a public hospital. Only 2 percent of births are reported as occurring outside the setting of a health facility (i.e., primarily at the respondent's home). Almost all births are delivered under the supervision of persons with medical training: 77 percent by a doctor and 22 percent by a doctor's assistant and a nurse or trained midwife.

In the 1999 KDHS the child vaccination data was collected from the health cards maintained at the health facilities. The survey data showed high levels of vaccination coverage with about 99 percent of children age 12-23 months having received a BCG vaccination and the first dose of polio and DPT/DP vaccines.

Coverage for the second dose of polio and DPT/DT was 98 and 99 percent, respectively. The third dose of polio and DPT/DT was received by 92 and 98 percent of children, respectively. Eighty-seven percent of children have received measles vaccine. The percentage of children 12-23 months of age who have received all WHO-recommended vaccinations is 81 percent.

CHILDHOOD MORTALITY

One of the main objectives of the 1999 KDHS was to document current levels and trends in infant and child mortality. In the KDHS, infant mortality data were collected based on the international definition of a live birth, which, irrespective of the duration of the pregnancy, is an infant that breathes or shows any signs of life (such as the beating of the heart or movement of voluntary muscles) after separation from the mother. An infant death is the death of a live-born infant under one year of age (United Nations, 1992).

For the five years immediately preceding the survey (1994-99), the infant mortality estimate was 62 per 1,000 births. The estimates of neonatal and postneonatal mortality were 34 and 28 per 1,000 births, respectively. The estimate of child mortality (age 1 to age 5) was much lower; 10 per 1,000. The overall under-five mortality rate for the period was 71 per 1,000.

For the fifteen-year period preceding the survey, the estimates of infant mortality indicate a decline from 55 per 1,000 (1984-89) to 50 per 1,000 (1989-94) and then an increase to 62 per 1,000 (1994-99). The same pattern is evident in the estimates of child mortality where there is a decline from 12 per 1,000 (1984-89) to 7 per 1,000 (1989-94) and then an increase to 10 per 1,000 (1994-99). While these statistics suggest improving mortality conditions between the mid-1980s and the early 1990s, then deteriorating conditions from the early 1990s to the late 1990s, the true extent of mortality change may differ from the estimated rates because of sampling variability.

BREASTFEEDING AND NUTRITIONAL STATUS

Breastfeeding is nearly universal in Kazakhstan; 95 percent of children born in the five years preceding the survey were breastfed. Forty-seven percent of children age 0-3 months were exclusively breastfed. This percentage is significantly higher than in 1995 when only 12 percent of children age 0-3 months were exclusively breastfed.

Exclusive breastfeeding among children age 4-7 months has also increased from 3 percent in 1995 to 10 percent in 1999. During these months most breastfed children (64 percent) receive supplementary feeding and 10 percent receive plain water. For all of Kazakhstan, the median duration of any breastfeeding is 7.1 months, and the durations of exclusive and full breastfeeding (breastfeeding plus plain water) are 0.7 and 1.9 months, respectively.

After the first birthday, almost all nonbreastfeeding children receive high protein foods made of flour. A high proportion of them (more than 70 percent) receive products rich in protein, vitamins and minerals, such as meat, poultry, and some fruits and vegetables.

In the 1999 KDHS, all surviving children born since January 1994 and living in every second selected household were eligible for height and weight measurements. (In the cities of Almaty, Zhezkazgan, and Semipalatinsk children were selected in all households but in every second cluster.) Complete and plausible anthropometric data were collected for a total of 612 children under age five.

For all of Kazakhstan, 10 percent of children are moderately or severely stunted, 2 percent are moderately or severely wasted, and 4 percent are moderately or severely underweight for age. Children age 12-23 months and 36-47 months are less well-nourished than infants by almost all indices of undernutrition. Stunting is more common among female children than among male (11 versus 9 percent), whereas boys are more likely to be wasted than girls.

Anemia

Anemia remains among the leading public health problems in Kazakhstan. The 1999 KDHS data show that 36 percent of the women in Kazakhstan are classified as having some degree of anemia; 8 percent of women have moderate anemia, and 1 percent have severe anemia. Thirty-six percent of children under the age of five are anemic; 17 percent have moderate anemia, and 1 percent are severely anemic.

A comparison of probability plots of cumulative percent distributions for hemoglobin concentrations in the blood of children, nonpregnant and nonlactating women, as well as men, showed that hemoglobin distribution curves for women and children are shifted downward compared with those for men. This pattern is characteristic of populations where iron deficiency is the main cause of anemia. This confirms previous suggestions that anemia among women and children in Kazakhstan is primarily due to negative iron balance.

Supplementation of iron during pregnancy is one of the main components of the UNICEF/CARK Anemia Control and Prevention Strategy in Kazakhstan. The government of Kazakhstan supports this program by promoting iron supplementation during pregnancy and the postpartum period. The 1999 KDHS showed that 48 percent of women in Kazakhstan received iron pills during the last pregnancy; they took the iron pills for an average of 22 days.

Compared with the results from the 1995 KDHS there has been a decline in the prevalence of moderate-to-severe anemia among both women and children during the four-year period. The rate of moderate-to-severe anemia has declined from 12 to 9 percent among women and from 39 to 26 percent among children under age three.

HIV/AIDS and Other Sexually Transmitted Infections

The current low level of the HIV epidemic in Kazakhstan provides a unique window of opportunity for early targeted interventions to prevent further spread of the infection. However, increases in the cumulative incidence of HIV infection as well as the exponential increase in other sexually transmitted infections (STIs), suggest that this window of opportunity is rapidly closing.

The 1999 KDHS data show that the knowledge of HIV/AIDS among women and men in Kazakhstan is nearly universal and a large proportion of them know one or more valid ways to protect against HIV/AIDS, such as using condoms, having only one sex partner, or limiting the number of sex partners.

There is some stigma regarding HIV/AIDS in Kazakhstan, which is evidenced by the fact that 40 percent of women and 26 percent of men would prefer to keep information about HIV/AIDS private. The percentage of women and men who wouldn't be willing to care for a relative with AIDS at home, which is an indicator of discriminatory attitudes toward such persons, was 31 and 15 percent, respectively.

Despite the high prevalence of STIs other than HIV/AIDS, 18 percent of women and 7 percent of men in Kazakhstan reported that they had not heard of such infections. Among those who have heard of STIs, more than 40 percent of women and more than 60 percent of men cited one or more symptoms of STIs such as abdominal pain, genital discharge, and burning pain on urination. Relatively low levels of knowledge of STI symptoms among men and women of younger ages raises concerns because of their potential contribution to future epidemics of HIV/AIDS and other STIs in Kazakhstan.

Since the spread of HIV/AIDS and other STIs depends on unprotected sex with people who have multiple partners, the fact that 10 percent of married men reported having extramarital sexual relationships and that 22 percent of unmarried men have multiple sex partners raises another concern. The data also show that about 81 percent of women and 42 percent of men did not use a condom during the last sexual intercourse with a noncohabitating partner. Such behaviors carry a high risk of transmission of HIV/AIDS and other STIs.

TUBERCULOSIS

With high levels of morbidity and mortality, tuberculosis (TB) presents a major health problem in Kazakhstan: The 1999 KDHS data showed that more than 9 percent of men and women in Kazakhstan reported that someone in their family had had TB and more than 23 percent reported having frequent exposure to a person with TB. This information confirms the high prevalence of tuberculosis in different regions of Kazakhstan reported by government statistics.

The 1999 KDHS data also show that almost 100 percent of both female and male respondents have heard of tuberculosis and more than 71 percent of them can correctly identify the way tuberculosis is transmitted, which is through the air during coughing. Approximately half of the respondents mentioned without prompting the main symptom of tuberculosis, which is coughing for more than three weeks. A significant percentage of the respondents also cited other important symptoms of tuberculosis such as fever, blood in sputum, and night sweating.

However, despite such high levels of knowledge of TB symptoms and the modes of its transmission, only 68 percent of women and 62 percent of men knew that tuberculosis could be completely cured with proper medication. The complete curability of tuberculosis with a properly selected drug treatment regimen is an important concept of the DOTS (Directly Observed Treatment Short-Course) strategy endorsed by the WHO.

Another important concept is the possibility of follow-up home treatment under close observation of a health professional, after the initial phase of intensive drug therapy in the hospital. In the 1999 KDHS, only 13 percent of female respondents and 9 percent of male respondents cited such a sequence of TB treatment. The vast majority of respondents, more than 82 percent, believe that the entire TB treatment should be carried out in the hospital. In addition, more than half of the respondents would seek treatment at a hospital in the event of a case of TB in their family, compared with less than 19 percent who would seek treatment at a TB dispensary and less than 18 percent who would rely on an ambulatory care setting such as a polyclinic or family group practice.

KAZAKHSTAN


RUSSIA
North Kazakhstanskaya
Koustanaiskaya
Pavlodarskaya
Akmolinskaya
West Kazakhstanskaya
Aktyubinskaya
East Kazakhstanskaya
Atyrauskaya
Karagandinskaya
Kzylordinskaya
Almatinskaya
Mangistauskaya
Zhambylskaya
ALMATY CITY
Caspian Sea
South Kazakhstanskaya
UZBEKISTAN
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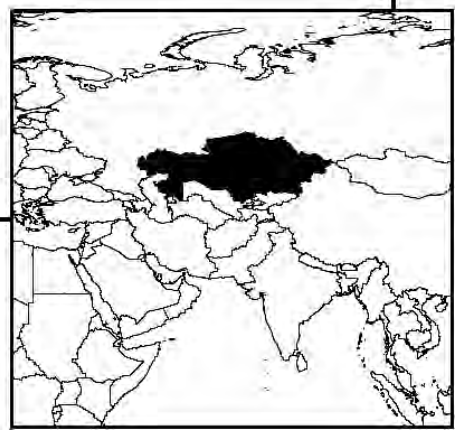


KAZAKHSTAN: BACKGROUND INFORMATION, OBJECTIVES, AND ORGANIZATION OF THE SURVEY 1

Toregeldy Sharmanov

1.1 Geography and Population

Kazakhstan lies in the north of the central Asian republics and is bounded by Russia in the north, China in the east, the Kyrgyz Republic and Uzbekistan in the south, and the Caspian Sea and part of Turkmenistan in the west. The territory of Kazakhstan is mostly steppe with hilly plains and plateaus.

The national language is Kazakh, which belongs to the Turkic language group. Russian is widely spoken and is an important language of communication. The primary religion of the people of Kazakhstan is Sunni Islam.

According to the last census, conducted in 1999, the population of Kazakhstan is 14.9 million people, making Kazakstan the fourth most populous former Soviet republic. Fifty-six percent of the country's residents live in cities (National Statistical Agency, 1999). With a population density of approximately 6 people per square kilometer, Kazakhstan is one of the most sparsely populated regions in the world.

Currently, Kazakhstan is experiencing rapid social change that includes a dramatic reduction in the number of children desired and fertility rates fast approaching Western levels. The country is now nearing the end of a demographic transition, having an annual rate of natural increase of 0.5 percent and a total fertility rate estimated at 2.0 births per woman.

People representing more than 100 nationalities live in Kazakhstan, with Kazakhs and Slavs (mostly Russians and Ukrainians) constituting the two largest ethnic groups. According the 1999 census, the ethnic breakdown was as follows: 53.4 percent Kazakh, 30.0 percent Russian, and 16.6 percent Ukrainian, Uzbek, German, Tartar, Byelorussian, Korean, and others. (National Statistical Agency, 1999).

Kazakhstan is experiencing a pronounced outflow of citizens, primarily Russians moving to other former Soviet republics. Official figures indicate that 472,273 people left Kazakhstan in 1998; 63.9 percent of them were ethnically non-Kazakh. To some extent, the outflow has been offset by in-migration. Kazakhstan's government has actively encouraged the return of ethnic Kazakhs from elsewhere in the former Soviet Union, as well as from Mongolia, Turkey, Iran, and other countries. As a result, 40,624 persons identified as ethnic Kazakhs immigrated to Kazakhstan in 1998 (National Statistical Agency, 1999).

1.2 History of Kazakhstan

Historically, the Kazakh people pursued a nomadic lifestyle for which the region's climate and terrain were well suited. The indigenous Kazakhs belonged to several divisions of Turkic tribes, and the movements, conflicts, and alliances of these tribes determined the early history of Kazakhstan. The earliest well-documented state in the region was the Turkic Kaganate, which came into existence in the sixth century A.D. Various Turkic tribes ruled the country until it fell under 200 years of Mongol rule in the thirteenth century.

The present-day Kazakhs became a recognizable group in the mid-fifteenth century, when Qasym-Khan ruled the country. The Kazakhs then separated into three hordes: the Great Horde, which controlled Semirech'ye and southern Kazakhstan; the Middle Horde, which occupied north-central Kazakstan; and the Lesser Horde, which occupied western Kazakstan. The hordes were unified in eighteenth century in the Ulu-Tau area by the great leader Abylai Khan. Under his leadership, the country was able to maintain effective diplomatic relations with its powerful neighbors: Russia and China.

Despite such diplomacy, Russia conquered Kazakhstan in the late eighteenth century. The Middle Horde fell first, followed by the rest of the country. Soon after the conquest, the Kazakhs began to resist Russian control, and the first mass uprising was led by Khan Kene, who is now considered a Kazakh national hero.

In 1917, a group of secular nationalists called the Alash Orda attempted to set up an independent national government. This state lasted less than two years (1918-20) before surrendering to the Bolshevik authorities, who then sought to preserve Communist control under a new political system.

In 1920, Kazakhstan became part of the Kyrgyz Autonomous Republic formed by the Soviet authorities, and in 1925 this entity's name was changed to the Kazakh Autonomous Soviet Socialist Republic. In 1936, Kazakhstan was made a full Soviet republic.

After 1930, the Soviet government began forcing the nomadic Kazakhs to settle on collective and state farms, and the Soviets encouraged large numbers of Russians and other Slavs to settle in the region. During this period (known as Stalin's collectivization), Kazakstan endured repeated famines. At least 1.5 million Kazakhs and 80 percent of the republic's livestock died. Thousands more Kazakhs tried to escape to China, Afghanistan, Iran, and Turkey; however, most of them starved in the attempt.

During the so-called Virgin Land campaign (1956-1964) a significant part of Kazakhstan's territory was put to the plow for the cultivation of wheat and corn. Also during this period, industrial development was initiated in Kazakhstan and benefited from the country's abundance of natural resources. Economic development was accelerated by the military industry and the space program, which were promoted by the Soviet government. During this period of intensive industrialization and agricultural development, many non-Kazakhs arrived in the country. By the 1970s Kazakhstan was the only Soviet republic in which the eponymous nationality was a minority in its own territory.

One negative consequence of such intensive industrialization and agricultural development was significant industrial and agrochemical pollution. The Soviet government also used Kazakhstan as a testing ground for nuclear weapons, which raised concerns about radioactive pollution in the Semipalatinsk region where the weapons were tested.

In 1991, after the collapse of the former Soviet Union, Kazakhstan officially declared itself an independent state. According to the country's Constitution, Kazakhstan is a parliamentary republic, with the president as the head of state. Former Communist Party leader Nursultan Nazarbayev became Kazakhstan's first president in 1999. In January 1999, he was sworn into office for another seven years.

Thus, two major demographic trends characterize Kazakhstan in the twentieth century: rapid urbanization and a shift in the national ethnic structure. Kazakhstan's present ethnic spectrum is the result of a migration process initiated and influenced by industrialization and political changes throughout Kazakhstan's history. Millions of ethnic Slavs (Russians, Ukrainians, Byelorussians) settled in the northern territories of Kazakshtan, whereas the central and southern regions remained populated primarily by ethnic Kazakhs.

1.3 Economy

Kazakhstan, the second largest of the former Soviet republics, possesses significant amounts of fuel reserves as well as plentiful supplies of other minerals and metals. It also has considerable agricultural potential: its vast areas of steppe accommodate both livestock and grain production. Kazakhstan's industrial sector rests on the extraction and processing of these natural resources and on a relatively large machine-building sector specializing in construction equipment, tractors, agricultural machinery, and defense items.

The breakup of the USSR and the collapse of demand for Kazakhstan's traditional heavy industry products have resulted in a sharp contraction of the economy since 1991, with the steepest annual decline occurring in 1994. In response to worsening economic conditions, the government began accelerating reforms with a revised package of structural reform. Economic stabilization and fundamental structural reforms in the trade regime have brought about an improvement in Kazakstan's external situation.

Between 1995 and 1997, the pace of the government's program of economic reform and privatization quickened, resulting in a substantial shifting of assets into the private sector. The December 1996 signing of the Caspian Pipeline Consortium agreement to build a new pipeline from western Kazakhstan's Tengiz oil field to the Black Sea increases prospects for substantially larger oil exports in the near future.

However, there was a downward turn in Kazakhstan's economy in 1998 with a 2.5 percent decline in growth of the gross domestic product (GDP) due to slumping oil prices and the Russian financial crisis in August. Another complicating factor was moving the capital to Astana, which has both disrupted government operations and diverted a large portion of the government's budget into the massive construction necessary to make Astana a functioning capital.

Despite these difficulties, most of which can be attributed to the transition period, some evidence indicates that the economy started recovering in 1999. The government continues to commit itself to a free-market economy and has put in place efficient monetary policy and innovative pension reform. Other positive signs are the thriving securities markets and continuous fiscal and banking reform. The government has actively encouraged international trade and foreign investment, leading to higher per capita foreign-investment levels in Kazakhstan than any other former Soviet republic. To become more efficient, the government restructured and consolidated many operations to reduce the number of government ministries and agencies. Because of such policies and Kazakhstan's vast oil and mineral resources, relatively low external-debt obligations, and well-trained work force, the country's medium- and long-term economic prospects continue to be good.

1.4 Health Care System and Epidemiological Profile of Kazakhstan

Until recently, Kazakhstan's health care system, which developed as part of the Soviet-planned system, could be defined as a planned public service provided by the state, with all health personnel being state employees. The system was highly centralized and standardized. Services were free to patients, provided in state-owned facilities, and financed mostly by the state budget. Heavy emphasis was placed on training large numbers of doctors and providing large numbers of hospital beds. The system intended to provide comprehensive health coverage and universal access to services with a focus on disease prevention.

Health services were provided through a network of primary-health-care institutions, including ambulatories, dispensaries, polyclinics, hospitals (rural, delivery, and other types), and doctor's assistant/midwife posts (so-called FAPs). For the purpose of management, the country was divided into health-service-delivery areas, each representing between 3,000 and 4,000 people. Specialized services were provided through secondary and tertiary health systems.

The Soviet health care system has been successful in providing adequate access to services for most of Kazakhstan's population, including those who reside in rural and remote areas. However, maintaining such a system required substantial and continuous budgetary support and enormous manpower resources and managerial skills. Although the Soviet health care system met many of its goals, the system itself and the health of the population has deteriorated, largely due to the political and economic turmoil that accompanied the collapse of the former Soviet Union.

As a result, Kazakhstan inherited a health care system that was in a chronic state of disarray. Even in the years that preceded the collapse, the former Soviet Union was the only major country where the percentage of the gross domestic product (GDP) going to health care decreased, and it was already in the range of just 3 to 4 percent. This percentage compares with average health-care expenditures of 6 to 10 percent of the GDP in most developed countries. After the collapse of the former Soviet Union, funding to the health sector in Kazakhstan decreased to about 1 or 3 percent of the GDP, and the GDP fell by as much as 50 percent. This situation has resulted in decline in life expectancy, increased morbidity, poor conditions of hospitals and other health facilities, and overall public dissatisfaction with health services (Sharmanov et al., 1996).

The failure of the state-run health care system forces people to turn to a growing array of private health services that are available mostly through a cash payment. As a result, the picture now emerging in Kazakhstan is of a dual system: the old state system, facing chronic underfunding, and a second, loosely regulated private system, offering market and competitive solutions.

This situation, as well as the guarantee of free basic health care in the 1995 Constitution of Kazakhstan, prompted the country to search for other ways to fund health services. A new institutional structure, the Health Insurance Fund, was established in 1995 to operate the health insurance system. Initially, the fund was successful in increasing the efficiency of the health sector. However, because of mismanagement and corruption, which resulted in inefficiency and growing public criticism, the idea of the national health insurance system collapsed in 1999.

While searching for an efficient funding mechanism, the country took major steps in restructuring the primary-health-care system with the intent to redirect resources to the primary-health-care sector. Efforts to restructure the primary-care delivery system in Kazakhstan have focused on creating a network of family group practices. These practices are physically, financially, and administratively independent from higher level facilities. The funding mechanism of this system is based on a capitation system, and the ultimate goal is to increase the managerial autonomy and internal control that primary-care providers have over their resources, so they can better adapt to the needs of their service population (Borowitz et al., 1999).

Pilot programs in family group practices and new payment systems demonstrating their cost-effectiveness and high-quality services have been established in the cities of Zhezkazgan and Semipalatinsk. In late 1998, President Nazarbayev endorsed a plan to replicate nationwide the new health-care model, and a large World Bank loan was negotiated to provide support for the program. Despite some criticism among conservative groups of physicians and health administrators, the new system continues to be envisioned as an efficient means of health care management and financing.

From an epidemiological point of view, Kazakhstan has features of both developed and developing countries. The major causes of death are similar to those of industrialized countries: cardiovascular disease, cancer, and accidents. The decline in life expectancy is not due to infectious diseases, but rather to increases in cardiovascular mortality, alcohol-related deaths, accidents, and violence. Infectious diseases account for a relatively low percentage of overall mortality, generally less than 20 percent (Sharmanov, 1996, Borowitz et al., 1999).

At the same time, there is a rising incidence of tuberculosis, especially its multi-drug-resistant forms. Because of tuberculosis' consumption of a large proportion of the limited resources available to the health sector and its potentially to spread to other countries, tuberculosis is of great public-health concern in Kazakhstan. Recently, the government of Kazakshtan endorsed the DOTS program, which is a new treatment protocol for tuberculosis that provides effective treatment and prevents drug-resistant forms of the disease from spreading.

Among children, acute respiratory infections and childhood diarrheal diseases are the main causes of death. From a burden-of-disease perspective, this area is the most critical because it requires significant investment of resources as well as development of effective intervention programs.

1.5 Family Planning Policies and Programs

The main goals of Kazakhstan's family planning policy are to ensure low-risk pregnancies and safe motherhood, to reduce complications due to inadequately spaced pregnancies, and to reduce the incidence and prevalence of pregnancy complications and extragenital diseases among women of reproductive age.

In Kazakhstan, one of the primary methods of birth control is induced abortion. After its initial legalization in 1920, abortion was banned in 1936 as part of a pronatalist policy emphasizing population growth. Since this attempt to increase population growth proved unsuccessful and even harmful because of maternal deaths caused by illegal abortions, the Soviet government again legalized induced abortion for nonmedical reasons in 1955. Abortions were allowed to be performed free of charge in most health facilities, such as outpatient departments of general hospitals and delivery hospitals.

Currently, induced abortion is legal in Kazakhstan during the first 12 weeks of pregnancy. In some cases, it can be performed after 12 weeks if certain medical or social indications exist. These cases require supervision of qualified medical personnel in a hospital setting. Abortion can be done free of charge; however, fee-for-services facilities have become available to perform mini-abortions by the vacuum aspiration technique. Despite indications that the number of induced abortions has declined in recent years, the abortion issue remains a public health concern in Kazakhstan because of the prevalence of complications and the overall adverse effects on women's health.

Because of the policy of promoting safe methods of family planning, widespread use of contraception has been observed in Kazakhstan during the past several years. Among the most popular methods is the intrauterine device (IUD). Many women rely on the IUD as a convenient and safe method of contraception. For many years, oral contraceptives were less available in Kazakhstan because of the order *"On the Side Effects and Complications of Oral Contraceptives",* published by the Ministry of Health of the former Soviet Union in 1974. This document, in effect, banned the distribution and use of oral contraceptives (United Nations, 1995).

After the collapse of the former Soviet Union, the government of Kazakhstan liberalized its policy on family planning. Currently, the government manages a broad spectrum of activities including providing intensive family planning education for the population and supplying contraceptives throughout the country. The private sector is also involved in marketing contraceptives. Women in Kazakhstan now have access to a variety of methods of contraception including oral contraceptives and injectables. Contraceptives are distributed in the public sector by pharmacies and women's consulting centers, and in the private sector by private pharmacies.

Part of the success in reducing the abortion rate has been attributed to social marketing of contraceptives and education programs supported by the U.S. Agency for International Development (USAID) and the United Nations Population Fund (UNFPA). As a result of the government's policies and international assistance, reliance on abortion is diminishing in Kazakhstan as use of contraceptive methods becomes more widespread. Some evidence suggests that further significant declines in the abortion rate can occur with an increase in contraceptive use (Westoff et al., 1998).

1.6 Demographic and Health Data Collection System in Kazakhstan

The demographic and health data collection system in Kazakhstan is based on the registration of events and periodic censuses. The data on births, deaths, marriages, and divorces are registered at the local administrative level of an internal passport control system. These data are then forwarded to the National Statistical Agency through the *raion*- and *oblast*-level statistical offices. The committee is responsible for conducting censuses and maintaining this registration system. The last census in Kazakhstan was conducted in 1999, and its results were published in 2000. The National Statistical Agency is also responsible for tabulating and publishing an annual report of demographic data generated by the registration system.

Collection of health data is a primary responsibility of the Health Statistics Department of the National Agency on Health. Health information is collected by staff at the facilities delivering services and then sent to the Health Statistics Department through the *raion*- and *oblast*-level health information centers. The Health Statistics Department complies and analyzes the data and issues an annual report entitled *Health of the Population of the Republic of Kazakhstan and Health Resources.*

The health data collected and published by the Health Statistics Department consist of the following major categories: 1) morbidity specified by type of disease (infectious and noninfectious); 2) mortality specified by causes of death; 3) infant deaths, including data on antenatal, perinatal, and early neonatal deaths; 4) maternal mortality specified by causes of maternal death; 5) data on maternal and child health, including antenatal care and delivery assistance, contraceptive clients, induced abortion rates, and pediatric services; 6) number of health facilities, medical personnel, hospital beds, and length of average stay in the hospital; and 7) health data specified by type of medical services, including medical care for patients with cancer, tuberculosis, mental disorders, drug abuse, and sexually transmitted diseases. These data are usually tabulated at the national and *oblast* levels, and for some categories, by the age groups 0-14 and 15 or more years.

Despite this collection effort, a data analysis function that provides tools to evaluate and inform policy development is not sufficient. There is significant underreporting of some cases of morbidity and mortality and some of the criteria used to calculate important demographic and health indicators are based on old Soviet definitions, which sometimes do not comply with international standards. An example is the definition of live birth, which is used to calculate infant mortality rates. Kazakhstan still uses the old Soviet definition of live birth. As a result, infant mortality rates, particularly neonatal mortality rates reported by the government, are significantly lower than the actual infant mortality rates.[1]

Besides the problems of inaccurate data and lack of a data analysis function, the health information collection process and systems are vertical and not integrated to create one set of data providing a picture of the health sector in Kazakhstan.

1.7 Objectives and Organization of the Survey

The 1999 Kazakhstan Demographic and Health Survey (1999 KDHS) is the second national-level population and health survey in Kazakhstan. The first Demographic and Health Survey was conducted in 1995. The 1999 KDHS was implemented by the Academy of Preventive Medicine of Kazakhstan and was funded by USAID. Technical assistance for the program was provided by the MEASURE *DHS*+ project of Macro International Inc. in the U.S.

The purpose of the survey is to develop a single integrated set of data for the government of Kazakhstan to use in planning effective policies and programs in the areas of health and nutrition. The survey was designed to provide current data on women's reproductive histories; knowledge and use of methods of contraception; breastfeeding practices; and the nutrition, vaccination coverage, and episodes of diseases among their children under the age of five. Information on knowledge of and attitudes toward HIV/AIDS and other sexually transmitted infections, as well as data on men's reproductive behavior, were also collected in the 1999 KDHS. The survey also included the measurement of the hemoglobin level in the blood to assess the prevalence of anemia, and measurements of height and weight to assess nutritional status (funded by UNICEF).

Since the 1999 KDHS is the second survey, it provides comparable data for analysis of trends in fertility, reproductive health, and child health and nutrition. The 1999 KDHS also contributes to the growing international database on demographic and health-related variables.

1.7.1 Sample Design and Implementation

The sample for the 1999 KDHS successfully interviewed 4,800 women 15-49 years of age and 1,440 men 15-59 years of age. Survey estimates are presented for six geographic regions. The six survey regions were defined as follows:

(1) Almaty City
(2) South Region: Almatinskaya, Zhambylskaya, Kyzylordinskaya, and South-Kazakhstanskaya *oblast*
(3) West Region: Aktyubinskaya, Atyrauskaya, Mangistauskaya, and West-Kazakhstanskaya *oblast*

[1] A detailed description of definitional differences and different estimates of infant mortality is presented in chapter 9 of this report.

(4) North Region: Akmolinskaya, Kostnaiskaya, Pavlodarskaya, and North-Kazakhstanskaya *oblast*
(5) Central Region: Karagandinskaya *oblast*
(6) East Region: East-Kazakhstanskaya *oblast*

The sampling frame for the 1999 KDHS consisted of the lists of health blocks obtained from local health-care departments and the National Committee on Health (for urban areas), and of the lists of villages obtained from the National Statistical Agency.

The 1999 KDHS sample is a stratified two-stage sample. Stratification was achieved by dividing each survey region into urban and rural areas. In the first stage of selection, 251 health blocks and villages were selected as primary sampling units (PSUs) with probability proportional to the population count. A complete listing of the households residing in the selected blocks and villages was carried out. The lists of households served as the sampling frame for the systematic selection of 6336 households in the second stage. Women age 15-49 were identified and interviewed in selected households. Every third household was identified as selected for the male survey, and in those households, all men age 15-59 were interviewed.

Details concerning the 1999 KDHS sample design are provided in Appendix A and the estimation of sampling errors is included in Appendix B.

1.7.2 Questionnaires

Three questionnaires were used for the 1999 KDHS: the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. These questionnaires were based on the model survey instruments developed for the MEASURE *DHS+* program and were adapted to the data needs of Kazakhstan during consultations with specialists in the areas of reproductive health and child health and nutrition in Kazakhstan. The questionnaires were developed in English and then translated into Russian and Kazakh. A pretest was conducted in April 1999. Based on the pretest experience, the questionnaires were further modified.

The Household Questionnaire was used to enumerate all usual members and visitors in a sample household and to collect information relating to the socioeconomic position of the household. In the first part of the Household Questionnaire, information was collected on age, sex, educational attainment, and relationship to the head of household for each person listed as a household member or visitor. A primary objective of the first part of the Household Questionnaire was to identify women and men who were eligible for the individual interview. In the second part of the Household Questionnaire, questions were included on the dwelling unit, such as the number of rooms, the flooring material, the source of water, and the type of toilet facilities, and on the availability of a variety of consumer goods.

The Women's Questionnaire was used to collect information from women age 15-49 on the following major topics:

Background characteristics
Pregnancy history
Outcome of pregnancies, antenatal and postnatal care
Child health and nutrition practices
Child immunization and episodes of diarrhea and respiratory illness
Knowledge and use of contraception

Marriage and fertility preferences
Husband's background and woman's work
Knowledge of HIV/AIDS and other sexually transmitted infections
Maternal and child anthropometry
Hemoglobin measurement of women and children.

The Men's Questionnaire was used to collect information from men age 15-59 on the following topics:

Background characteristics
Reproduction
Contraceptive knowledge and use
Marriage
Fertility preferences and attitudes about family planning
Knowledge of HIV/AIDS and other sexually transmitted infections.

1.7.3 Training and Fieldwork

The 1999 KDHS questionnaires were pretested in April 1999. Eight interviewers were trained during a one-week period at the Academy of Preventive Medicine of Kazakhstan. The pretest included one week of interviewing in an urban area (Almaty City) and one week in a rural area (Talgar District of Almaty Oblast). A total of 110 women were interviewed. Pretest interviewers were retained to serve as supervisors and field editors for the main survey.

Sixty-four persons, mostly physicians, were recruited as field supervisors, editors, health investigators and interviewers for the 1999 KDHS and were trained at the Academy of Preventive Medicine for three and a half weeks in June and July 1999. Male interviewers responsible for the men's interviews were trained separately. Training consisted of lectures and practice in the classroom, as well as interviewing in the field. The training of health investigators, who were responsible for anthropometric measurements (height and weight) and hemoglobin testing of women and children, was accomplished by two days in the classroom and three days in the field.

At the end of the training, the field staff were divided into seven groups according to their assignments to the survey teams. Nine people, including one supervisor, one editor, five female interviewers, one male interviewer, and one male health investigator, were selected for each of the seven survey teams.

The 1999 KDHS field staff represented various medical-research and educational institutions in Kazakhstan, including Kazakhstan State Medical University, Karaganda State Medical Academy, South Kazakhstan State Medical Academy, International Kazakh-Turkish University, National Research Center for Maternal and Child Health, National Research Center for Pediatrics and Pediatric Surgery, National Institute of Nutrition, Institute of Tuberculosis, School of Public Health, National Medical College, and Zhezkazgan Department of Health. The Academy of Preventive Medicine recruited five field coordinators who were responsible for facilitating the communication and coordination between the Academy and the interviewing teams.

All seven 1999 KDHS interviewing teams began collecting data in Almaty City on July 12, 1999. On July 26, 1999, the teams began fieldwork in the remaining survey regions of Kazakhstan. Data collection was completed on September 25, 1999.

1.7.4 Data Processing

Questionnaires were returned to the Academy of Preventive Medicine for data processing. The office editing staff checked that questionnaires for all selected households and eligible respondents were returned from the field. The few questions that had not been precoded (e.g., occupation) were coded at this time. Data were then entered and edited on microcomputers using the Integrated System for Survey Analysis (ISSA) package, with the data entry software translated into Russian. Office editing and data entry activities began on July 12, 1999, and were completed on October 15, 1999.

1.7.5 Response Rates

Table 1.1 presents information on the coverage of the 1999 KDHS sample including household and individual response rates. A total of 6,301 households were selected in the sample, of which 5,960 were occupied at the time the fieldwork was conducted. The main reason for the difference was that some dwelling units that were occupied at the time of the household listing operation were either vacant or the residents were away for an extended period at the time of interviewing. Of the 5,960 occupied households, 5,844 were interviewed, yielding a household response rate of 98 percent.

Table 1.1 Results of the household and individual interviews

Number of households, number of interviews and response rates, Kazakstan 1999

Result	Residence		Total
	Urban	Rural	
WOMEN			
Household interviews			
Households sampled	4,311	1,990	6,301
Households found	4,038	1,922	5,960
Households interviewed	3,939	1,905	5,844
Household response rate	97.5	99.1	98.1
Individual interviews			
Number of eligible women	2,989	1,917	4,906
Number of eligible women interviewed	2,927	1,873	4,800
Eligible woman response rate	97.9	97.7	97.8
MEN			
Household interviews			
Households sampled	959	591	1,550
Households found	915	572	1,487
Households interviewed	899	569	1,468
Household response rate	98.3	99.5	98.7
Individual interviews			
Number of eligible men	897	634	1,531
Number of eligible men interviewed	850	590	1,440
Eligible man response rate	94.8	93.1	94.1

In the interviewed households, 4,906 women were eligible for the individual interview (i.e., all women 15-49 years of age who were either usual residents or visitors who had spent the previous night in the household). Interviews were successfully completed with 4,800 of these women, yielding a response rate of 98 percent. The principal reason for nonresponse was a failure to find an eligible woman at home after repeated visits to the household.

A total of 1,531 eligible men (i.e., all men 15-59 years of age who were either usual residents or visitors who had spent the previous night in the household) were identified in every third household. Interviews were successfully completed with 1,440 of these men, yielding a response rate of 94 percent.

CHARACTERISTICS OF HOUSEHOLDS AND RESPONDENTS 2

Adyl Katarbayev and Kristi Fair

This chapter provides a descriptive summary of the demographic and socioeconomic characteristics of the household population and the individual respondents in the 1999 Kazakhstan Demographic and Health Survey (KDHS). This information is useful for interpreting the survey findings and serves as an approximate indicator of the representativeness of the survey and of the quality of the data.

This chapter is divided into three parts. The first part deals with the characteristics of the household population in terms of age-sex composition, household size and distribution, and educational background. The second part describes the housing environment in which the respondents and their children live. The background characteristics of men age 15 to 59 years and women age 15 to 49 years are discussed in the last part of the chapter.

2.1 Demographic Characteristics of Households

The household questionnaire was used in the 1999 KDHS to collect data on the demographic and social characteristics of all the usual residents of the sampled household and visitors who had spent the previous night in the household. A household, as defined in the survey, refers to a person or group of persons usually living and eating together and jointly running the household's economy (de jure population). A visitor is someone who is not a usual resident of the household but slept in the household the night before the interview.

The distribution of the 1999 KDHS household population is presented in Table 2.1 and Figure 2.1, by five-year age groups according to urban-rural residence and sex. The total de facto population in the selected households was 20,203 people. In general, the survey results show that females outnumber males in Kazakhstan (53 and 47 percent, respectively). The sex ratio varies by age and residence. It is slightly higher in the rural than in urban areas (95 versus 84 males per 100 females). The ratio is as high as 103 among those below age 15 and as low as 55 among those age 65 and older.

About one-third (30 percent) of the population consists of children under 14 years of age, with the proportion of children in rural areas greater than in urban areas (34 and 25 percent, respectively). Starting with age group 40-44, there is a gradual decrease in the proportion of the population in each successive age group. The relatively small size of the male and female populations in age group 55-59 is a reflection of the low birth rates during World War II (i.e., 55 to 60 years prior to the 1999 KDHS). Women 15-49 years of age and men 15-59 years of age, who are the main KDHS respondents, each constitute about one-fourth of the de facto household population (25 and 27 percent, respectively).

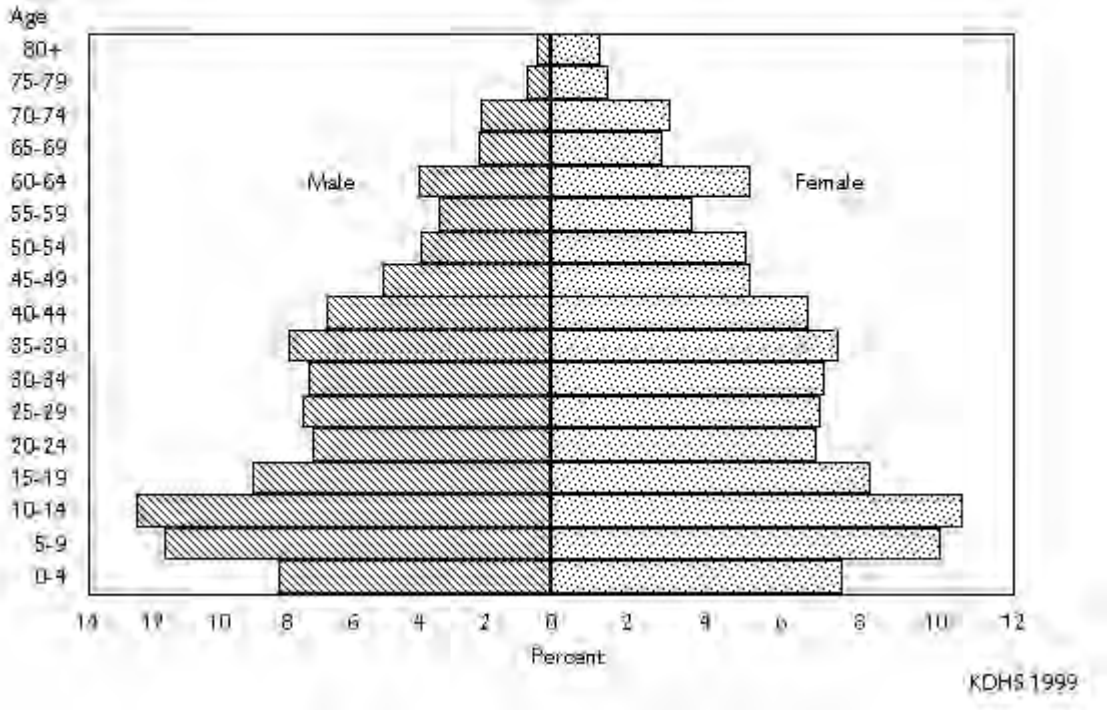
The results further indicate that 62 percent of the population of Kazakhstan is in the 15-64 age group, and the population age 65 years and older accounts for 7 percent of the total population. A distinct feature of the age distribution of the population is that the proportion of the dependent population—those younger than 15 or older than 65—is higher in rural areas (41 percent) than in urban areas (34 percent). This difference may be attributed to rural-urban migration of the economically active population—those age 15 to 65—especially youth, in search of jobs.

Table 2.1 Household population by age, residence, and sex

Percent distribution of the de facto household population by age, according to sex and residence, Kazakhstan 1999

	Urban			Rural			Total		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	6.7	5.5	6.1	9.4	9.6	9.5	8.2	7.6	7.9
5-9	9.8	8.1	8.9	13.3	12.0	12.6	11.7	10.1	10.9
10-14	11.7	8.8	10.1	13.1	12.5	12.8	12.5	10.7	11.6
15-19	8.1	7.8	7.9	9.7	8.8	9.2	9.0	8.3	8.6
20-24	7.4	6.7	7.0	7.1	7.1	7.1	7.2	6.9	7.1
25-29	7.1	7.7	7.5	7.7	6.3	7.0	7.5	7.0	7.2
30-34	8.0	6.7	7.3	6.8	7.5	7.2	7.3	7.1	7.2
35-39	8.5	7.7	8.0	7.5	7.4	7.4	7.9	7.5	7.7
40-44	7.5	7.4	7.4	6.2	6.2	6.2	6.8	6.7	6.8
45-49	5.6	6.2	5.9	4.6	4.3	4.5	5.1	5.2	5.1
50-54	4.7	6.5	5.7	3.3	3.9	3.6	3.9	5.1	4.6
55-59	4.2	4.5	4.4	2.7	2.9	2.8	3.4	3.7	3.5
60-64	4.6	5.9	5.3	3.6	4.5	4.0	4.0	5.2	4.6
65-69	2.7	3.7	3.2	1.8	2.1	1.9	2.2	2.9	2.5
70-74	2.6	3.4	3.0	1.8	2.7	2.3	2.1	3.1	2.6
75-79	0.6	1.7	1.2	0.7	1.3	1.0	0.7	1.5	1.1
80+	0.3	1.8	1.1	0.5	1.0	0.8	0.4	1.3	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	4,273	5,069	9,342	5,289	5,572	10,861	9,562	10,641	20,203

Figure 2.1 **Population Pyramid of Kazakhstan**



The percent distribution of the population by broad age groups according to the 1995 KDHS, the 1999 KDHS, the 1989 Census, and the 1999 Census is presented in Table 2.2. There appears to be a progressive decline since the 1989 Census in the proportion of the population under 15, as well as a concomitant increase in the median age. The growth of the 15-64 age group results in a declining dependency ratio, calculated as the ratio of persons in the dependent age groups to persons in the economically active age group. This slight aging of the population is the result of a continuous, albeit slow decline in fertility levels. It is interesting to compare the 1999 KDHS data with that of the 1999 Census. Correspondence of the percent distribution of the population in broad age groups between the 1999 KDHS and the 1999 Census confirms the representativeness of the
KDHS sample.

Table 2.2 Population by age according to selected sources

Percent distribution of the de jure population by age group, according to selected sources, Kazakstan 1989-1999

Age group	1989 Census	1995 KDHS	1999 Census	1999 KDHS
<15	31.8	31.0	28.6	29.9
15-64	62.5	62.1	64.7	63.0
65+	5.7	6.9	6.7	7.1
Total	100.0	100.0	100.0	100.0
Median age	26.9	26.5	29.9	27.9
Dependency ratio	60.0	61.0	54.6	58.8

2.2 Household Composition

Information on the size and composition of sample households by urban-rural residence is presented on Table 2.3. The head of household (as recognized by other members) and the relationship of each household member to the head was determined in each household. In general, heads of households are male (67 percent). In urban areas the proportion of households headed by men (58 percent) is less than the proportion in rural areas (78 percent).

Compared with the 1995 KDHS, the average size of a household reported in the 1999 KDHS has decreased slightly from 3.8 to 3.6 members. The 1999 KDHS results show that rural households (4.4 members) are larger than urban households (3.0 members). A large proportion of rural households (52 percent) consist of four to six persons, while the majority of urban households (84 percent) have one to four members.

Both the 1995 KDHS data and the 1999 KDHS data show that only 3 percent of households include foster children, i.e., children less 15 years old living with neither biological parent.

Table 2.3 Household composition

Percent distribution of households by sex of head of household, household size, and percentage of households with foster children, according to residence, Kazakhstan 1999

Characteristic	Residence		Total
	Urban	Rural	
Head of household			
Male	57.5	78.1	66.6
Female	42.5	21.9	33.4
Number of members			
1	18.9	5.9	13.1
2	25.6	14.0	20.5
3	21.3	14.4	18.2
4	18.5	22.4	20.2
5	8.1	17.8	12.4
6	3.8	11.5	7.2
7	1.9	6.8	4.1
8	0.9	4.3	2.4
9+	1.0	2.9	1.8
Total	100.0	100.0	100.0
Mean size	3.0	4.4	3.6
Percent with foster children	2.2	4.8	3.3

Note: Table is based on de jure members; i.e., usual residents.

Table 2.4 presents information on fosterhood and orphanhood among children under age 15. The 1995 KDHS and 1999 KDHS show a similar distribution of children under age 15 living with both parents (79 and 81 percent, respectively). As children get older, fewer of them live with both parents; 89 percent of children in the under-three age group live with both parents, compared with 76 percent in the 10 years or older age group. There is little difference by residence in the percentage of children living with both parents: 77 percent in urban areas and 84 percent in rural areas. Households with children living with both parents are more common in the West and South Regions (83 and 85 percent, respectively).

Thirteen percent of children under 15 are living with only their mother; of these children, 4 percent have lost their fathers and 9 percent have fathers who are still alive. There are variations in this parameter depending on age of child, sex, and residence. For example, households with children living with only their mother are more common in urban areas than in rural areas, and in Almaty City and the Central region compared with other regions.

Regarding orphanhood, about 4 percent of children under age 15 have fathers who have died, less than 1 percent have mothers who have died, and an insignificant proportion (0.2 percent) have lost both parents.

Table 2.4 Fosterhood and orphanhood

Percent distribution of de facto children under age 15 by their living arrangement and survival status of parents, according to child's age, sex, residence, and region, Kazakhstan 1999

Background characteristic	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent				Missing info. on father/ mother	Total	Number of children
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Father only alive	Mother only alive	Both dead			
Age												
0-2	88.8	6.7	1.2	0.2	0.0	2.3	0.0	0.1	0.0	0.7	100.0	941
3-5	85.2	8.8	1.8	0.6	0.4	2.5	0.0	0.0	0.0	0.7	100.0	1,035
6-9	81.4	9.2	3.6	0.4	0.1	2.8	0.3	0.2	0.3	1.7	100.0	1,864
10-14	75.7	11.0	6.1	0.6	1.0	2.6	0.6	0.4	0.3	1.8	100.0	2,463
Sex												
Male	80 3	9.6	4.3	0.6	0.4	2.7	0.3	0.2	0.3	1.4	100.0	3,196
Female	81.5	9.3	3.5	0.4	0.6	2.5	0.3	0.3	0.2	1.4	100.0	3,108
Residence												
Urban	76.6	14.2	4.0	0.2	0.6	1.8	0.3	0.1	0.1	2.2	100.0	2,452
Rural	83.6	6.5	3.9	0.6	0.4	3.1	0.4	0.3	0.3	0.9	100.0	3,851
Region												
Almaty City	71.2	17.2	5.3	1.0	0.6	1.8	0.4	0.0	0.0	2.7	100.0	224
South	84.8	7.6	3.1	0.2	0.4	2.8	0.3	0.2	0.1	0.4	100.0	2,781
West	83.1	5.6	5.6	0.3	0.5	2.6	0.3	0.7	0.3	1.1	100.0	917
Central	76.2	14.2	3.1	0.0	0.8	2.6	0.1	0.4	0.1	2.5	100.0	415
North	76.6	11.5	4.4	1.3	0.1	1.8	0.6	0.0	0.4	3.2	100.0	1,281
East	75.9	12.9	4.0	0.3	1.5	3.3	0.1	0.2	0.1	1.6	100.0	685
Total	80.9	9.5	3.9	0.5	0.5	2.6	0.3	0.2	0.2	1.4	100.0	6,303

Note: By convention, *foster* children are those who are not living with either parent. This includes *orphans,* i.e., children both of whose parents are dead.

2.3 Educational Level of Household Members

The high correlation between level of education and positive health and other social indicators makes education an important variable in any study of households. Higher education, especially for women, is usually associated with greater knowledge and use of sound health practices and family planning methods.

Kazakhstan's primary and secondary educational system has three levels: primary (classes 1 through 4, age 7 to 11 years), principal (classes 5 through 9, age 12 to 15 years), secondary (classes 10 and 11, age 16 to 17 years). Most schools in Kazakhstan offer all three levels of *primary/secondary education*. The primary and principal education levels are compulsory. Students who leave school after the principal level may continue in secondary-special (vocational) education. Students who finish all three levels of primary/secondary school can continue on in higher education at universities or in academic training classes.

2.3.1 Educational Attainment of Household Members

Table 2.5 presents information on the highest level of education attained by the population according to sex, age, residence, and region. As the 1995 KDHS data did, the 1999 KDHS data confirm the high educational level of Kazakhstan's population with about 98 percent of men and 97 percent of women having had at least some education.

Educational attainment is slightly higher among women than men in Kazakstan, with 14 percent of female and 12 percent of male household members age 7 and older having had some higher education. There are noticeable attainment differences by residence, with urban residents being more likely than rural residents to have attended secondary-special or higher education. Educational attainment is also significantly higher in Almaty City than in other regions.

2.3.2 School Attendance Ratios

Table 2.6 presents net and gross attendance ratios by education level, sex, and residence. The net attendance ratio (NAR) indicates participation in schooling among children of official school age (age 7 to 10 for primary and 11 to17 for secondary). The gross attendance ratio (GAR) indicates participation in schooling among youth age 7-24 and is expressed as a percentage of the school-aged population for that level of schooling. The GAR is nearly always higher than the NAR for the same level because the GAR includes participation by youths who may be older or younger than the official age range for that level.[1] A NAR of 100 percent would indicate that all of the children in the official age range for that level are attending at that level. The GAR can exceed 100 percent if there is significant overage or underage participation at that level of schooling. The difference between these ratios indicates the incidence of overage and underage participation.

In Kazakhstan, school participation among household members of school age is high. The NAR is virtually the same among female and male youths at both the primary (86 percent each) and secondary levels (87 and 88 percent, respectively). The NAR at both the primary and secondary levels is slightly higher in urban than in rural areas. A comparison of the NAR and GAR among male and female students and urban and rural students indicates that a similar proportion of students (about 13 percent at the primary level, and at 8 percent at the secondary level) is under age or over age across groups within each level.

[1] Youths who are over age for a given level of schooling may have started school over age, may have repeated one or more grades in school, or may have dropped out of school and returned later.

Table 2.5 Educational level of the household population

Percent distribution of the de facto household population age seven and over by highest level of education attended, and median number of years of schooling, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Level of education: No education	Primary/ secondary	Secondary-special	Higher	Missing	Total	Number of females/ males	Median years of schooling
FEMALES								
Age								
7-9	13.9	86.0	0.1	0.0	0.0	100.0	686	1.1
10-14	0.5	99.5	0.0	0.0	0.0	100.0	1,142	5.2
15-19	0.4	76.0	13.3	10.2	0.0	100.0	888	9.8
20-24	0.4	43.0	35.1	21.6	0.0	100.0	737	10.4
25-29	0.1	34.1	47.1	18.5	0.2	100.0	743	10.0
30-34	0.1	30.3	45.9	23.7	0.0	100.0	756	10.0
35-39	0.1	31.7	45.5	22.7	0.0	100.0	798	9.9
40-44	0.5	34.9	46.1	18.3	0.2	100.0	717	9.9
45-49	0.8	34.7	41.4	22.7	0.5	100.0	553	9.9
50-54	0.5	43.1	35.6	20.4	0.4	100.0	545	10.0
55-59	1.4	57.5	24.8	16.2	0.0	100.0	389	9.1
60-64	4.4	68.3	18.1	9.2	0.0	100.0	548	6.9
65+	15.1	65.8	9.8	8.4	0.9	100.0	933	4.9
Residence								
Urban	2.9	47.9	29.6	19.4	0.2	100.0	4,641	9.6
Rural	3.3	65.0	23.1	8.4	0.2	100.0	4,794	9.1
Region								
Almaty City	2.3	37.9	25.2	34.4	0.2	100.0	502	10.3
South	3.3	61.3	22.0	13.0	0.4	100.0	3,334	9.3
West	3.8	63.2	22.5	10.5	0.0	100.0	1,311	9.2
Central	1.9	49.9	32.5	15.7	0.0	100.0	776	9.5
North	2.8	55.0	30.5	11.6	0.2	100.0	2,264	9.1
East	3.1	51.8	30.6	14.4	0.0	100.0	1,248	9.4
Total	3.1	56.6	26.3	13.9	0.2	100.0	9,435	9.3
MALES								
Age								
7-9	15.4	84.6	0.0	0.0	0.0	100.0	739	1.0
10-14	0.4	99.5	0.0	0.0	0.0	100.0	1,194	5.1
15-19	0.3	75.5	17.2	7.0	0.0	100.0	857	9.4
20-24	0.5	53.9	29.0	16.5	0.0	100.0	690	10.3
25-29	0.4	46.4	39.1	14.1	0.0	100.0	712	10.1
30-34	0.4	40.2	43.8	15.6	0.0	100.0	703	9.9
35-39	0.1	37.3	44.8	17.8	0.0	100.0	760	10.0
40-44	0.4	38.6	41.3	19.8	0.0	100.0	649	9.9
45-49	0.8	43.7	35.6	19.1	0.9	100.0	486	9.9
50-54	0.3	41.4	35.7	22.1	0.5	100.0	378	10.1
55-59	0.4	50.6	28.1	20.4	0.5	100.0	321	9.6
60-64	1.6	54.9	27.6	15.8	0.0	100.0	384	9.1
65+	5.8	63.2	17.4	12.9	0.7	100.0	520	6.6
Residence								
Urban	1.6	51.3	29.2	17.7	0.1	100.0	3,859	9.7
Rural	2.5	67.7	22.3	7.3	0.2	100.0	4,533	9.1
Region								
Almaty City	1.1	46.3	21.0	31.6	0.0	100.0	389	10.0
South	2.0	63.8	22.2	11.8	0.1	100.0	3,042	9.4
West	1.9	67.2	21.5	9.4	0.0	100.0	1,188	9.3
Central	1.8	52.5	32.2	13.4	0.1	100.0	654	9.5
North	2.2	57.6	29.8	10.1	0.4	100.0	2,035	9.2
East	2.9	56.9	28.3	11.9	0.0	100.0	1,083	9.3
Total	2.1	60.2	25.5	12.1	0.1	100.0	8,392	9.4

Table 2.6 School attendance ratios

Net attendance ratios (NAR) and gross attendance ratios (GAR) for the de facto household population age 7-24 years, by education level, sex, and residence, Kazakhstan 1999

Variable and category	Net attendance ratio[1]			Gross attendance ratio[2]		
	Male	Female	Total	Male	Female	Total
PRIMARY SCHOOL						
Urban	85.2	84.6	84.9	98.5	99.4	98.9
Rural	85.9	86.4	86.1	98.6	98.8	98.7
Total	86.0	86.0	86.0	99.0	99.0	99.0
SECONDARY SCHOOL						
Urban	88.5	89.5	89.0	97.4	97.6	97.5
Rural	85.7	87.8	86.7	93.8	96.9	95.3
Total	87.0	88.0	88.0	95.0	97.0	96.0

[1] The NAR for primary school is the percentage of the primary-school-age (7-10 years) population that is attending primary school. The NAR for secondary school is the percentage of the secondary-school-age (11-17 years) population that is attending secondary school. By definition the NAR cannot exceed 100 percent.

[2] The GAR for primary school is the total number of primary school students, regardless of age, expressed as the percentage of the official primary-school-age population. The GAR for secondary school is the total number of secondary school students, regardless of age, expressed as the percentage of the official secondary-school-age population. If there are significant numbers of overage and underage students at a given level of schooling, the GAR can exceed 100 percent.

Figure 2.2 presents the age-specific attendance ratios (ASAR) for the population age 7-24, by sex. The ASAR indicates participation in schooling at any level, from primary through higher education. The closer the ASAR is to 100 percent, the higher the proportion of people of a given age attending school.

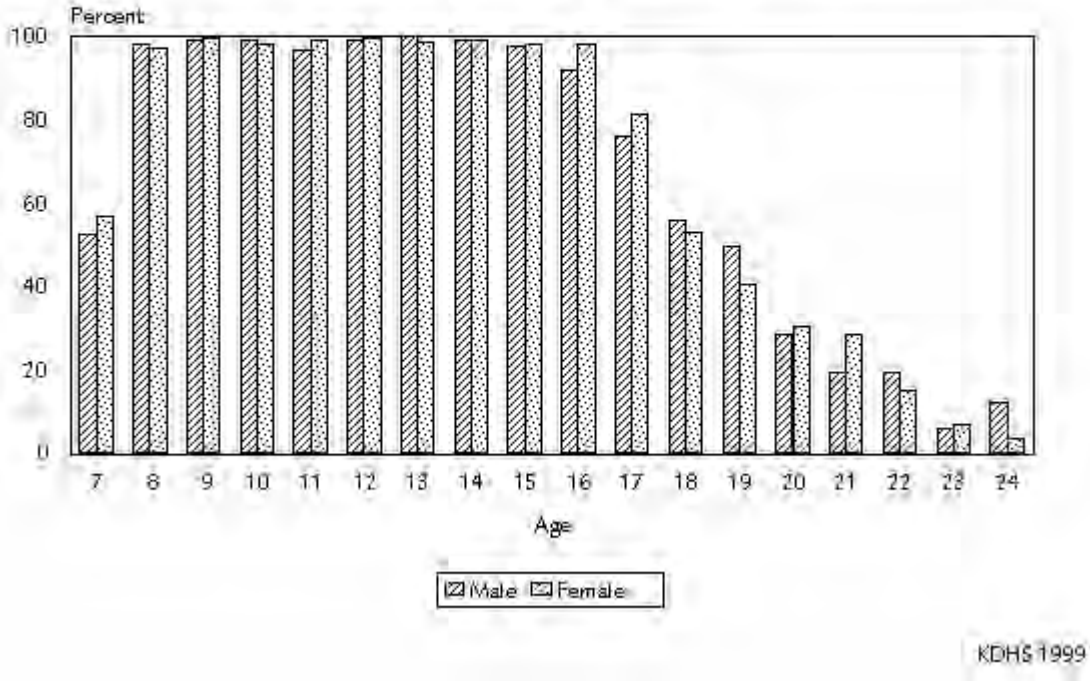
In Kazakhstan, the majority of youths of primary to secondary school age (7-17) attend school, and there are no significant differences by gender. The relatively lower age-specific attendance ratio for children age 7 (about 55 percent) reflects that many of these 7-year-olds were only age 6 during the school year covered by the survey, and hence were not eligible to attend school at that time. From age 18 to 24, an increasingly smaller proportion of youths attend school.

2.3.3 Grade Repetition and Dropout Rates

Table 2.7 shows repetition and dropout rates by school grade. In Kazakhstan, repetition rates are exceptionally low among both male and female students, and in both urban and rural areas. The dropout rate is also low through both the primary and secondary school grades. At the end of secondary school, however, about 48 percent of students leave school instead of continuing to a higher level. Youths in rural areas are less likely than youths in urban areas to make the transition to higher education: more than 61 percent of rural youths leave school after grade 11, compared with 32 percent of urban youth.

Figure 2.2 Age-Specific Attendance Ratios

(Percentage of the De Facto Household Population Age 7-24 Enrolled in School, by Age and Sex)



2.4 Housing Characteristics

Table 2.8 and Figure 2.3 provide information on selected housing characteristics by residence. This information is helpful in assessing the general socioeconomic conditions of the population. To assess the conditions in which respondents live, they were asked questions about certain characteristics of their households, including electricity, source of drinking water, type of sanitation facilities, time to water sources, handwashing facilities, type of fuel for cooking, quality of the floor, and ownership of a garden or dacha and animals.

Overall, 97 percent of the households covered in the 1999 KDHS have electricity. However, in rural areas the percentage of households with electricity has declined from 100 percent in 1995 to 94 in 1999.

More than half of the households in the 1999 KDHS sample have piped water (59 percent) and most of these households have water piped into the residence (50 percent). About one-third of households (30 percent) use water from an open well. A significant difference is noted between urban-rural households. In urban areas, 90 percent of households have piped water, compared with only 35 percent of households in rural areas. Open wells are among the main sources of water in rural areas (59 percent). Tanker trucks provide water to 5 percent of rural households. The vast majority or urban and rural households are within 15 minutes of a source of water.

One indicator of sanitary conditions is the type of toilet in a household. In Kazakhstan, a majority of households (52 percent) have traditional pit toilets (latrines) and 47 percent have flush toilets. In urban areas, 81 percent of households have a flush toilet, compared with 5 percent in rural areas. Ninety-four percent of rural households have traditional pit toilets.

Table 2.7 Grade repetition and dropout rates

Repetition and dropout rates for the de facto household population age 6-24 years by school grade, sex, and residence, Kazakhstan 1999

Characteristic	School grade 1	2	3	4	5	6	7	8	9	10	11
REPETITION RATE[1]											
Sex											
Male	0.8	0.2	0.0	0.8	1.6	0.3	0.0	0.0	1.1	0.0	0.0
Female	0.9	0.6	0.4	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.3
Residence											
Urban	0.0	0.8	0.5	0.2	1.6	0.3	0.0	0.0	0.0	0.0	0.3
Rural	1.4	0.2	0.0	0.6	0.6	0.0	0.3	0.0	0.9	0.0	0.0
Total	0.8	0.4	0.2	0.4	1.0	0.1	0.2	0.0	0.6	0.0	0.1
DROPOUT RATE[2]											
Sex											
Male	0.0	0.0	0.8	1.8	1.9	3.9	3.0	1.1	5.7	3.5	50.7
Female	0.0	0.0	0.0	1.1	3.5	6.8	4.6	0.0	1.3	0.7	46.5
Residence											
Urban	0.0	0.0	0.0	0.8	2.3	4.0	2.7	0.0	3.3	2.3	32.1
Rural	0.0	0.0	0.7	1.9	3.0	6.4	4.4	0.9	3.6	1.7	60.6
Total	0.0	0.0	0.4	1.5	2.7	5.4	3.8	0.6	3.5	2.0	48.2

[1] The repetition rate is the percentage of students in a given grade that are repeating that grade.
[2] The dropout rate is the percentage of students in a given grade in the previous school year who are not attending school.

Regarding the type of flooring material, a large percentage (69 percent) of households have wood planks, which are slightly more common in rural households (89 percent) than urban households (52 percent). Forty-two percent of urban households and 5 percent of rural households have linoleum floors.

Handwashing facilities are available in most households: 93 percent or more use soap or another cleaning agent and have a basin for handwashing.

More than 64 percent of households in Kazakhstan use biogas and natural gas for cooking: biogas is used predominantly in rural areas (51 percent), and natural gas is mostly used in urban areas (42 percent). Twenty-four percent of urban households use electricity for cooking, whereas electricity is used for cooking in only 2 percent of rural households; 39 percent of rural household use firewood, straw, or tezek (dung) for cooking.

In the 1999 KDHS, households were asked if any member owned a dacha or had access to a garden from which he or she obtained fruits and vegetables during the growing season. The data indicate that the majority of urban and rural households (51 and 85 percent, respectively) have access to a dacha or garden. Households were also asked about ownership of animals. Seventy-four percent of rural households own animals, compared with only 13 percent in urban areas.

Table 2.8 Housing characteristics

Percent distribution of households by housing characteristics, according to residence, Kazakhstan 1999

Characteristic	Residence		
	Urban	Rural	Total
Electricity			
Yes	99.4	93.9	97.0
No	0.6	6.1	3.0
Total	100.0	100.0	100.0
Source of drinking water			
Piped into residence	82.4	8.0	49.5
Piped into yard/plot	4.3	15.3	9.2
Public tap	4.1	12.0	7.6
Well in residence	0.1	2.6	1.2
Well in yard/plot	3.6	18.6	10.2
Public well	3.9	34.5	17.4
Open water	0.0	2.8	1.3
Tanker truck	1.3	5.2	3.0
Bottled water	0.2	0.0	0.1
Other	0.2	0.9	0.5
Total	100.0	100.0	100.0
Time to water source			
<15 minutes (%)	94.8	70.0	83.8
Median time to source (minutes)	0.0	4.3	0.0
Sanitation facilities			
Flush toilet	80.8	4.9	47.2
Traditional pit toilet	19.1	94.1	52.3
No facility/bush	0.1	1.0	0.5
Other	0.0	0.1	0.0
Total	100.0	100.0	100.0
Handwashing facilities			
Water/tap in household	97.9	88.5	93.7
Soap or other cleaning agent	97.0	87.7	92.9
Basin in household	97.0	87.1	92.6
Type of fuel			
Electricity	24.2	1.8	14.3
Natural gas	42.0	4.5	25.4
Biogas	29.8	50.7	39.0
Kerosene	0.1	0.2	0.2
Coal/lignite	0.4	2.3	1.2
Charcoal	0.1	0.8	0.4
Firewood/straw	2.2	27.5	13.4
Tezek	0.6	11.1	5.3
Other	0.5	1.1	0.8
Total	100.0	100.0	100.0
Floor material			
Earth/sand	0.3	2.6	1.3
Wood planks	52.2	89.0	68.5
Parquet/polished wood	2.7	0.3	1.7
Linoleum	41.9	4.6	25.4
Cement	0.3	0.7	0.5
Carpet	0.2	0.0	0.1
Other	2.3	2.6	2.5
Missing	0.1	0.0	0.0
Total	100.0	100.0	100.0
Household owns			
A dacha or access to garden	50.6	84.5	65.6
Animals	12.9	73.7	39.8
Number of households	3,257	2,587	5,844

2.4.1 Household Durable Goods

Table 2.9 indicates the percentage of households owning specific durable goods by residence. Ownership of a radio or a television is a measure of access to mass media; refrigerator ownership indicates the capacity for hygienic food storage; and ownership of a bicycle, motorcycle, or private car shows the means of transportation available to the household. The availability of durable consumer goods is a rough measure of household socioeconomic status.

The results show that 41 percent of households have a radio, 92 percent have a television, 79 percent have a refrigerator, 39 percent have a telephone, 14 percent have a bicycle, and 27 percent have a car. Only 9 percent have a private motorcycle. About 4 percent of households have none of these durable goods.

Urban-rural differentials can be seen in the ownership of specific durable goods. In general, these goods are more available in urban households than in rural households. For example, more than half of urban households have a telephone (55 percent), while the proportion in rural areas is only 20 percent. Ninety-one percent of households in urban areas have a refrigerator, compared with 65 percent in rural areas. A higher proportion of both urban and rural households own a television (95 and 87 percent, respectively). Rural households are three times more likely to own a motorcycle than urban households due to the greater need for transportation in rural areas.

Ownership of televisions, telephones, refrigerators, and private cars has increased slightly since the 1995 KDHS. Conversely, the number of households having radios, bicycles, and motorcycles has declined.

Figure 2.3 Housing Characteristics by Residence

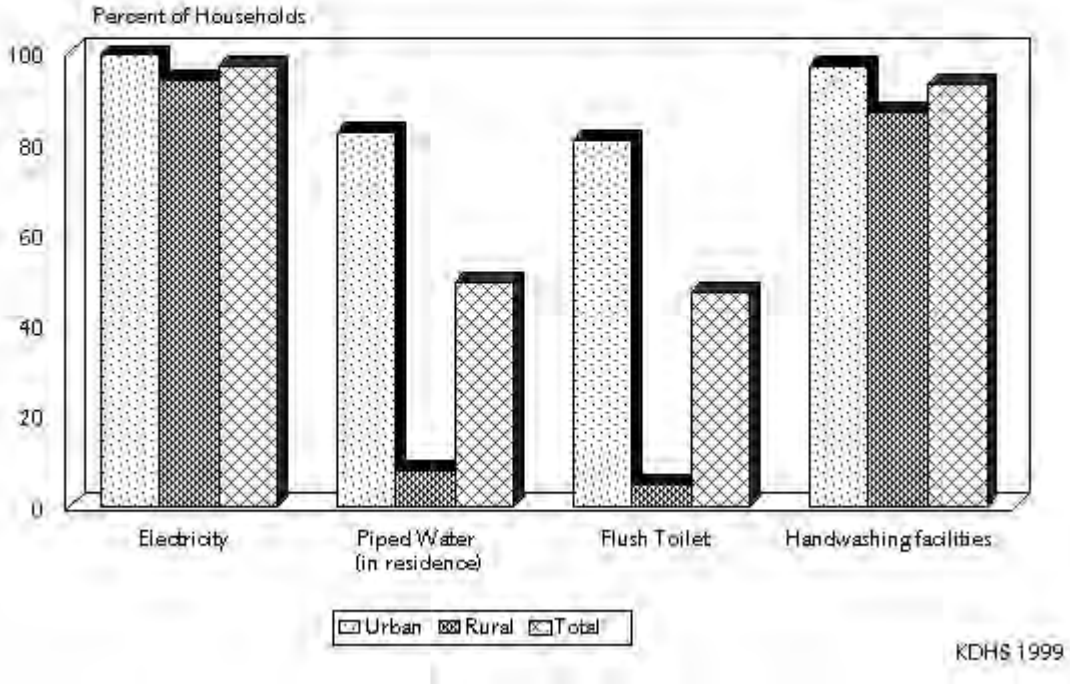


Table 2.9 Household durable goods

Percentage of households possessing various durable consumer goods, by residence, Kazakhstan 1999

Durable goods	Residence		
	Urban	Rural	Total
Radio	51.6	28.5	41.4
Television	95.3	87.3	91.8
Telephone	54.9	19.6	39.3
Refrigerator	90.5	65.1	79.2
Bicycle	12.7	15.7	14.0
Motorcycle	4.8	14.4	9.1
Private car	25.8	27.9	26.7
None of the above	2.0	7.5	4.4
Number of households	3,257	2,587	5,844

CHARACTERISTICS OF SURVEY RESPONDENTS AND WOMEN'S STATUS

3

Raikhan Sissekenova, Sunita Kishor, and Elnar Kurmangaliyeva

3.1 Characteristics of Survey Respondents

3.1.1 Background Characteristics

Table 3.1 presents the percent distribution of women and men by age, current marital status, residence, region, highest educational level, school attendance, religion, and ethnicity. Women and men were asked two questions to determine their ages: "In what month and year were you born?" and "How old were you at your last birthday?" Interviewers were trained in probing techniques for situations in which respondents did not know their age or date of birth. Results show that about 30 percent of women and 28 percent of men are in the age group 15-24 and 29 percent of women and 24 percent of men are in the age group 25-34.

Married women and men comprise large proportions of the total women and men interviewed (63 and 65 percent, respectively), while never-married women and men constitute 25 and 30 percent, respectively. Nine percent of women and 5 percent of men are divorced. The distribution of women by marital status is similar in both the 1995 KDHS and the 1999 KDHS.

Table 3.1 also shows that the majority of both male and female respondents are Muslims (about 56 percent). Twenty-seven percent of the female respondents and 34 percent of men said they are Christians. Kazakhs are the dominant ethnic group, with 54 percent of females and 52 percent of males belonging to this group. Russian women and men account for 30 and 32 percent of the population, respectively.

Table 3.2 shows the distribution of women and men by ethnicity, religion, and residence according to region. The data indicates that the South and West regions have a higher than average concentration of women and men of Kazakh ethnicity, while Russian men and women make up a majority of the respondents in Almaty City and the North region. Similarly, Muslims tend to be concentrated in the South, West, and East regions, while Christians are concentrated in Almaty City.

3.1.2 Educational Level of the Respondents

Information on educational level of the respondents by background characteristics is presented in Table 3.3. Differences in educational attainment among female and male respondents are similar to those among the adult household population, which are discussed in section 2.3.1. Twenty-percent of female respondents have had some higher education, compared with only about 14 percent of male respondents. Among both women and men, respondents of Kazakh and Russian ethnicity are more likely to have had some higher education than are respondents in other ethnic groups.

Table 3.1 Background characteristics of respondents

Percent distribution of women 15-49 and men 15-59 by selected background characteristics, Kazakhstan 1999

Background characteristic	Weighted percent	Number of women		Weighted percent	Number of men	
		Weighted	Un-weighted		Weighted	Un-weighted
Age						
15-19	16.5	791	778	15.7	226	216
20-24	13.9	666	662	12.6	182	174
25-29	14.4	692	688	12.2	176	188
30-34	14.6	698	693	11.9	172	179
35-39	15.6	749	766	15.9	229	218
40-44	14.2	681	680	11.4	164	174
45-49	10.9	522	533	8.5	122	123
50-54	0.0	0	0	7.3	104	105
55-59	0.0	0	0	4.5	65	63
Marital status						
Never married	25.3	1,215	1,243	30.1	433	422
Married/living together	62.9	3,018	2,950	64.8	933	938
Widowed	3.0	145	152	0.5	8	10
Divorced/separated	8.8	422	455	4.6	66	70
Residence						
Urban	55.6	2,668	2,927	54.9	790	850
Rural	44.4	2,132	1,873	45.1	650	590
Region						
Almaty City	6.1	291	636	6.2	90	168
South	30.3	1,455	922	29.6	426	281
West	13.1	628	753	12.7	182	264
Central	9.9	475	875	9.7	139	275
North	26.2	1,259	655	27.5	396	172
East	14.4	692	959	14.4	207	280
Education						
Primary/secondary	40.1	1,927	1,829	45.9	661	645
Secondary-special	39.7	1,908	1,903	40.3	581	568
Higher	20.1	965	1,068	13.8	198	227
Respondent still in school						
Yes	15.4	741	759	13.7	197	192
No	84.0	4,034	4,020	86.2	1,241	1,245
Religion						
Muslim	55.9	2,685	2,601	56.9	819	824
Christian	26.8	1,288	1,397	34.0	490	448
Other	1.4	66	53	0.5	8	4
Not religious	14.4	693	688	8.3	119	159
Don't know	1.4	65	58	0.3	4	5
Missing	0.0	2	3	0.0	0	0
Ethnicity						
Kazakh	53.9	2,587	2,545	51.9	747	761
Russian	30.3	1,454	1,595	31.9	460	468
Other	15.8	760	660	16.2	234	211
Total	100.0	4,800	4,800	100.0	1,440	1,440

Table 3.2 Ethnicity, religion, and residence by region

Percent distribution of women and men by ethnicity, religion and residence, according to region, Kazakhstan 1999

Background characteristic	Region						Total
	Almaty City	South	West	Central	North	East	
	WOMEN						
Ethnicity							
Kazakh	36.6	74.9	72.7	40.6	33.7	45.8	53.9
Russian	47.6	11.0	20.9	45.0	38.9	46.3	30.3
Ukrainian	1.9	1.4	2.1	5.0	11.6	1.5	4.6
German	1.3	0.6	0.5	1.9	6.9	2.9	2.7
Korean	2.2	0.9	0.5	1.5	0.0	0.1	0.6
Tatar	2.5	0.4	1.0	2.3	3.2	1.4	1.7
Other	7.9	10.7	2.3	3.5	5.7	1.7	6.1
Religion							
Muslim	41.2	83.2	71.6	40.9	34.6	39.7	55.9
Christian	45.3	12.9	20.7	41.6	35.0	29.1	26.8
Other	0.8	0.1	0.8	1.0	3.6	1.1	1.4
Not religious	11.9	3.4	5.9	15.8	24.0	28.1	14.4
Don't know	0.8	0.4	1.1	0.7	2.8	1.7	1.4
Residence							
Urban	100.0	37.4	56.8	86.4	48.0	66.8	55.6
Rural	0.0	62.6	43.2	13.6	52.0	33.2	44.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	291	1,455	628	475	1,259	692	4,800
	MEN						
Ethnicity							
Kazakh	33.3	76.3	73.7	36.4	27.8	47.0	51.9
Russian	54.8	9.7	19.7	40.2	47.3	43.5	31.9
Ukrainian	1.2	0.5	1.8	7.2	10.1	1.6	4.2
German	0.6	0.0	1.2	3.3	9.6	2.0	3.4
Byelorussian	3.0	1.9	0.9	1.6	0.0	0.0	1.0
Other	7.1	11.7	2.6	11.3	5.1	5.8	7.6
Religion							
Muslim	37.5	85.0	75.2	39.8	32.2	50.1	56.9
Christian	47.6	4.4	15.2	36.9	67.1	40.1	34.0
Other	0.0	1.0	0.5	0.0	0.7	0.0	0.5
Not religious	14.9	9.3	8.8	22.8	0.0	9.0	8.3
Don't know	0.0	0.3	0.3	0.4	0.0	0.8	0.3
Residence							
Urban	100.0	37.3	57.1	86.5	46.6	64.2	54.9
Rural	0.0	62.7	42.9	13.5	53.4	35.8	45.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	90	426	182	139	396	207	1,440

Table 3.3 Level of education

Percent distribution of women and men by the highest level of education attended, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Highest level of education			Total	Number of women/ men
	Primary/ secondary	Secondary-special	Higher		
WOMEN					
Age					
15-19	76.0	12.9	11.2	100.0	791
20-24	41.7	35.1	23.2	100.0	666
25-29	31.7	48.8	19.5	100.0	692
30-34	28.5	47.9	23.6	100.0	698
35-39	29.5	47.1	23.4	100.0	749
40-44	34.4	46.9	18.7	100.0	681
45-49	33.5	43.4	23.1	100.0	522
Residence					
Urban	32.2	41.5	26.2	100.0	2,668
Rural	50.1	37.5	12.4	100.0	2,132
Region					
Almaty City	25.5	30.7	43.9	100.0	291
South	48.9	32.7	18.4	100.0	1,455
West	49.4	34.6	16.0	100.0	628
Central	29.3	47.1	23.6	100.0	475
North	36.0	47.0	17.0	100.0	1,259
East	34.5	44.7	20.8	100.0	692
Ethnicity					
Kazakh	43.7	35.4	20.9	100.0	2,587
Russian	32.5	46.7	20.7	100.0	1,454
Other	42.6	41.1	16.3	100.0	760
Total	40.1	39.7	20.1	100.0	4,800
MEN					
Age					
15-19	75.7	22.3	2.0	100.0	226
20-24	50.0	36.8	13.2	100.0	182
25-29	36.8	50.6	12.6	100.0	176
30-34	35.4	47.4	17.2	100.0	172
35-39	29.9	54.5	15.6	100.0	229
40-44	35.7	49.5	14.8	100.0	164
45-49	47.1	32.7	20.3	100.0	122
50-54	46.0	34.7	19.3	100.0	104
55-59	62.8	16.7	20.6	100.0	65
Residence					
Urban	38.4	43.1	18.5	100.0	790
Rural	55.0	36.9	8.1	100.0	650
Region					
Almaty City	35.1	31.0	33.9	100.0	90
South	53.3	36.0	10.7	100.0	426
West	51.4	36.8	11.8	100.0	182
Central	38.8	43.5	17.7	100.0	139
North	44.1	44.2	11.7	100.0	396
East	38.8	46.8	14.4	100.0	207
Ethnicity					
Kazakh	51.4	34.2	14.4	100.0	747
Russian	35.3	51.0	13.7	100.0	460
Other	49.1	39.0	11.9	100.0	234
Total	45.9	40.3	13.8	100.0	1,440

3.1.3 Occupation

Table 3.4 shows the occupational profiles of currently employed women by background characteristics. Almost half of all employed women are in professional, technical, or managerial occupations, 26 percent are in sales or service occupations, and 10 percent each are in the skilled manual and unskilled manual occupations. Agricultural occupations account for only 4 percent of women's employment. The professional, technical, or managerial occupations dominate the occupational profiles of employed women at all ages except age 15-19. Women age 15-19 are more likely to be in sales or service occupations than in a professional, technical, or managerial occupation. The professional, technical, and managerial occupations also account for 40 percent or more of employed women in almost all of the other subgroups of the population.

Table 3.4 Occupation: women

Percent distribution of employed women by current occupation, according to background characteristics, Kazakhstan 1999

Background characteristic	Agri-culture	Prof./ tech./ manag.	Sales, services	Skilled manual	Unskilled manual	Other	Missing	Total	Number of women
Age									
15-19	11.2	26.3	47.5	4.2	6.2	4.7	0.0	100.0	61
20-24	3.9	47.9	31.0	6.9	7.3	1.0	2.2	100.0	186
25-29	3.4	44.5	30.3	10.8	9.4	0.8	0.8	100.0	308
30-34	4.8	52.3	27.3	9.3	5.6	0.1	0.4	100.0	328
35-39	2.7	49.2	26.4	7.8	12.2	1.3	0.5	100.0	412
40-44	3.2	45.6	23.5	13.4	13.5	0.0	0.9	100.0	363
45-49	3.3	57.2	17.5	9.6	11.8	0.4	0.1	100.0	323
Marital status									
Never married	3.6	50.5	28.3	9.4	5.4	1.8	1.0	100.0	316
Married/living together	4.0	49.7	25.0	9.1	11.1	0.5	0.5	100.0	1,302
Widowed	2.7	50.5	21.4	13.1	12.2	0.0	0.0	100.0	89
Divorced/separated	3.0	41.9	31.3	11.0	10.7	0.7	1.4	100.0	273
No. of living children									
0	4.0	48.5	30.9	7.5	6.5	1.8	0.8	100.0	390
1-2	2.6	49.5	26.8	10.6	9.3	0.4	0.8	100.0	1,138
3-4	5.1	49.8	21.4	9.0	13.6	0.7	0.5	100.0	375
5+	12.2	35.7	18.6	8.9	24.6	0.0	0.0	100.0	78
Residence									
Urban	1.1	48.1	28.4	12.2	8.4	0.7	1.0	100.0	1,315
Rural	8.9	50.1	21.9	4.6	13.7	0.7	0.1	100.0	665
Region									
Almaty City	0.6	43.2	38.4	5.7	6.5	1.2	4.5	100.0	154
South	9.1	53.2	23.5	8.1	6.1	0.0	0.0	100.0	544
West	3.1	51.0	26.7	7.4	11.1	0.3	0.4	100.0	230
Central	2.5	50.2	20.4	14.1	11.2	0.6	1.0	100.0	204
North	0.7	46.2	25.1	11.5	15.3	0.7	0.4	100.0	534
East	2.2	45.8	30.5	9.7	9.1	2.1	0.6	100.0	314
Education									
Primary/secondary	9.3	20.7	33.5	15.0	20.2	1.1	0.2	100.0	512
Secondary-special	2.5	45.8	29.0	11.2	10.1	0.8	0.6	100.0	877
Higher	0.6	77.6	16.0	2.6	1.7	0.2	1.3	100.0	591
Ethnicity									
Kazakh	3.9	53.7	25.0	6.3	9.8	0.7	0.5	100.0	945
Russian	1.8	46.2	25.2	13.8	11.4	0.5	1.2	100.0	711
Other	7.2	40.2	32.4	10.2	8.5	1.2	0.3	100.0	323
Total	3.7	48.8	26.3	9.6	10.2	0.7	0.7	100.0	1,979

The largest variation in the proportion of women in these occupations is found by level of education. Only 21 percent of women who have completed only secondary school are in professional, technical, or managerial occupations compared with 78 percent of women with higher education. Accordingly, women who have only completed secondary school are also more likely than women in the other educational categories to be in the agricultural occupations and each of the other types of occupations. As expected, agricultural occupations are of negligible importance in urban areas; however, even in rural areas they account for only 9 percent of working women. Agricultural occupations, however, account for 9-12 percent of employment among the youngest women, women with five or more children, women with the lowest levels of education, and women living in the South region. Sales and service occupations are more common among working women in Almaty City than in any other region of the country. These occupations are relatively less common among the oldest women, women with five or more children, and women in the highest educational category than among women in other subgroups. Notably, unskilled manual occupations, which account for 10 percent of all employed women, are at least twice as common among women who have five or more children and women who have completed only secondary school.

Fifty-nine percent of men age 15-59 are currently employed (Table 3.5). This percentage increases from 10 percent for men age 15-19 to 78 percent for men age 35 to 39 and then declines to 41 percent for men age 55-59. Urban men are more likely than rural men to be currently employed and men in Almaty City and the Central region are more likely to be employed than men in other regions. In the West region, only 47 percent of men age 15-59 are currently employed. Men's employment increases with education and is higher among Russian men than among Kazakh men or men of other ethnicities. In contrast with employed women, half of whom are in professional, technical, or managerial occupations, about half of employed men are in skilled manual occupations. Agricultural occupations (15 percent) are the next most common occupations among men. Only 13 percent of men are in professional, technical, and managerial occupations. Rural men are most likely to be in agricultural occupations, whereas urban men are most likely to be in skilled manual occupations. The proportion of men in professional, technical, or managerial occupations increases with age from 0 percent for age 15-19 to 7 percent for age 20-24 and 25 percent for age 55-59.

Almost half of men with a higher education are in these occupations compared with 4-7 percent of men who have completed only secondary or secondary-special education. By region, agricultural occupations are most common in the South region (30 percent); professional, technical, and managerial occupations are most common in the West region (21 percent); sales and service occupations are most common in Almaty City; skilled manual occupations are most common in the Central region; and unskilled manual occupations are most common in the East region. The occupational profile of Russian men is less diversified than that of Kazakh men and men of other ethnicities. For example, 61 percent of Russian men are in the skilled manual occupations, and 10 percent or less are in each of the remaining occupations. In contrast, 37 percent of Kazakh men are in the skilled manual occupations; 19 percent are in agricultural occupations; 16 percent are in professional, technical, or managerial occupations; and the remaining are distributed about equally between sales and services and unskilled manual occupations.

3.1.4 Access to Mass Media

Tables 3.6 and 3.7 show the percentage of female and male respondents exposed to different types of mass media by age, urban-rural residence, region, highest educational level, and ethnicity. It is important to know which subgroups are more or less likely to be reached by the media for purposes of planning programs intended to spread information about health, nutrition, and family planning.

Table 3.5 Occupation: men

Percent distribution of employed men by current occupation, according to background characteristics, Kazakhstan 1999

Background characteristic	Em-ployed	Not em-ployed	Total	Number of men	Agri-culture	Prof./ tech./ manag.	Sales, services	Skilled manual	Un-skilled manual	Other	Missing	Total	Number of men
Age													
15-19	10.1	89.9	100.0	226	15.8	0.0	10.2	38.1	22.0	4.5	9.3	100.0	23
20-24	53.2	46.8	100.0	182	18.3	7.0	10.0	49.4	13.3	1.0	1.0	100.0	97
25-29	70.3	29.7	100.0	176	21.0	8.6	13.8	46.8	8.7	1.1	0.0	100.0	124
30-34	72.8	27.2	100.0	172	12.1	13.9	17.5	43.0	12.1	1.3	0.0	100.0	125
35-39	77.6	22.4	100.0	229	20.7	12.2	11.7	45.3	9.1	0.0	0.9	100.0	178
40-44	73.9	26.1	100.0	164	5.5	18.2	8.6	52.0	12.7	2.6	0.4	100.0	121
45-49	72.6	27.4	100.0	122	11.4	15.3	9.4	53.6	8.0	1.6	0.6	100.0	89
50-54	64.5	35.5	100.0	104	12.4	20.7	2.7	54.7	9.4	0.0	0.0	100.0	67
55-59	41.3	58.7	100.0	65	20.4	25.2	1.9	46.7	5.8	0.0	0.0	100.0	27
Residence													
Urban	65.5	34.5	100.0	790	1.6	15.2	14.4	57.8	8.4	1.8	0.9	100.0	518
Rural	51.2	48.8	100.0	650	36.6	10.2	5.6	33.0	14.1	0.2	0.4	100.0	333
Region													
Almaty City	78.6	21.4	100.0	90	2.3	14.4	22.0	42.4	12.1	3.8	3.0	100.0	71
South	53.3	46.7	100.0	426	29.8	11.8	9.5	37.1	11.9	0.0	0.0	100.0	227
West	46.5	53.5	100.0	182	5.2	20.5	12.6	49.4	8.9	1.7	1.7	100.0	85
Central	78.1	21.9	100.0	139	4.8	12.7	9.5	59.9	9.8	1.9	1.4	100.0	109
North	58.5	41.5	100.0	396	14.7	12.6	6.3	56.7	8.6	1.1	0.0	100.0	232
East	61.7	38.3	100.0	207	13.4	12.0	16.0	44.1	13.2	0.7	0.6	100.0	128
Education													
Primary/secondary	45.9	54.1	100.0	661	21.7	4.4	6.5	50.0	16.0	0.8	0.7	100.0	304
Secondary-special	68.9	31.1	100.0	581	14.3	7.2	11.2	56.1	8.6	1.7	0.9	100.0	400
Higher	73.8	26.2	100.0	198	4.7	48.1	19.6	22.2	5.1	0.3	0.0	100.0	147
Ethnicity													
Kazakh	50.1	49.9	100.0	747	19.2	15.6	13.3	36.9	13.7	0.8	0.5	100.0	374
Russian	71.9	28.1	100.0	460	9.5	10.2	8.0	60.6	9.3	1.7	0.7	100.0	330
Other	62.3	37.7	100.0	234	18.3	14.1	11.5	48.6	5.8	0.7	1.1	100.0	146
Total	59.0	41.0	100.0	1,440	15.3	13.3	10.9	48.1	10.6	1.1	0.7	100.0	850

About 62 percent of women and 51 percent of men read newspapers or magazines at least once a week, 90 percent of women and men watch television weekly, and 28 percent of women and 31 percent of men listen to the radio every day. An approximately equal proportion of female and male respondents (6 and 7 percent, respectively) have no access to mass media. The proportion of people with no access to mass media is higher in rural areas than in urban areas. Female and male respondents in Almaty City are most likely to be exposed to all three types of mass media (48 and 64 percent, respectively). Education clearly has an impact on exposure to mass media. Female and male respondents with higher their education are more likely to have been exposed to mass media. The higher the educational level, the more often women watch television, read newspapers, and listen to the radio. Russian women are more likely to be exposed to mass media (30 percent) than Kazakh women (16 percent) and women of other ethnic groups (23 percent).

3.2 Women's Status

Information on the situation of women of reproductive age (15-49) is useful for understanding the context of reproduction and health in Kazakhstan, and provides indicators of the status of women and of women's empowerment. While education and employment can contribute to women's empowerment, direct measures of women's empowerment allow an evaluation of women's perception of their own rights and their degree of control over their own lives.

Table 3.6 Access to mass media: women

Percentage of women who usually read a newspaper once a week, watch television once a week, or listen to radio daily, by selected background characteristics, Kazakhstan 1999

Background characteristic	No mass media	Mass media: Read newspaper weekly	Mass media: Watch television weekly	Mass media: Listen to radio daily	Mass media: All three media	Number of women
Age						
15-19	6.6	58.1	89.7	28.5	19.8	791
20-24	6.7	60.4	89.5	30.8	22.3	666
25-29	5.7	61.3	90.6	30.2	24.7	692
30-34	7.3	61.7	89.4	26.0	18.6	698
35-39	6.2	64.8	90.1	25.2	20.2	749
40-44	6.5	62.5	90.5	28.0	22.3	681
45-49	6.0	65.9	91.1	29.9	23.9	522
Residence						
Urban	2.5	72.8	94.5	37.2	30.1	2,668
Rural	11.4	48.4	84.6	17.1	10.9	2,132
Region						
Almaty City	1.6	81.4	93.4	57.1	48.0	291
South	9.0	53.7	86.3	27.0	17.1	1,455
West	9.9	52.6	85.7	21.1	14.7	628
Central	4.5	70.4	93.4	26.7	22.9	475
North	5.0	70.5	92.7	28.7	24.8	1,259
East	3.8	58.2	93.6	25.6	19.2	692
Education						
Primary/secondary	10.1	47.9	85.8	21.2	13.2	1,927
Secondary-special	5.4	65.4	91.5	29.8	23.6	1,908
Higher	1.1	83.0	95.8	39.4	34.1	965
Ethnicity						
Kazakh	9.0	54.8	86.8	23.3	16.4	2,587
Russian	3.1	72.6	94.3	36.2	29.8	1,454
Other	3.9	65.8	93.3	29.9	23.4	760
Total	6.4	61.9	90.1	28.3	21.6	4,800

3.2.1 Employment and Cash Earnings

The 1999 KDHS asked a series of questions to determine women's employment status over the 12 months preceding the survey. For women who were employed, information was also obtained on the nature of employment including occupation and type of earnings, if any.

Like education, employment can be a source of empowerment for women, especially if it puts them in control of income. However, measuring women's employment is difficult. The difficulty arises largely because some of the work that women do, especially work on family farms, in family businesses, or in the informal sector, is often not perceived by women themselves as employment, and hence not reported as such. To avoid underestimating women's employment, the 1999 KDHS

asked women several questions to ascertain their employment status. First, women were asked, "Aside from your own housework, are you currently working?" Women who answered "no" to this question were then asked, "As you know, some women take up jobs for which they are paid in cash or in kind. Others sell things, have a small business, or work on the family farm or in the family business. Are you currently doing any of these things or any other work?" Women who answered "no" to this question were asked, "Have you done any work in the last 12 months?" Women are considered currently employed if they answered "yes" to either of the first two questions. Women who answered "yes" to the third question are not currently employed but have worked in the past 12 months. All employed women were asked their occupation, whether they were paid in cash, in kind, or not paid at all, and whether their work was done at home or away from home.

Table 3.7 Access to mass media: men

Percentage of men who usually read a newspaper once a week, watch television once a week, or listen to radio daily, by selected background characteristics, Kazakhstan 1999

Background characteristic	No mass media	Mass media: Read newspaper weekly	Mass media: Watch television weekly	Mass media: Listen to radio daily	Mass media: All three media	Number of men
Age						
15-19	9.8	41.6	87.9	26.0	15.2	226
20-24	5.8	49.9	89.2	32.4	25.0	182
25-29	7.5	41.8	91.2	26.9	17.8	176
30-34	10.1	53.3	87.6	32.5	24.8	172
35-39	4.9	55.4	92.9	35.3	21.8	229
40-44	6.3	53.4	87.1	27.4	14.7	164
45-49	4.8	68.1	90.5	31.6	26.1	122
50-54	6.1	62.8	90.3	38.1	24.8	104
55-59	6.4	40.6	88.4	27.6	12.5	65
Residence						
Urban	2.7	63.2	94.3	39.6	28.3	790
Rural	12.3	37.0	83.7	20.0	10.7	650
Region						
Almaty City	1.2	82.1	95.8	76.2	63.7	90
South	12.0	46.7	82.2	29.6	18.6	426
West	7.6	28.8	90.0	5.1	2.2	182
Central	6.2	65.2	91.3	38.0	30.8	139
North	4.4	48.8	93.9	32.4	16.3	396
East	4.7	63.0	92.0	28.0	22.0	207
Education						
Primary/secondary	10.6	37.1	85.6	25.5	14.4	661
Secondary-special	5.1	56.8	91.6	30.9	19.7	581
Higher	1.1	83.0	96.7	47.8	42.5	198
Ethnicity						
Kazakh	10.4	45.0	85.1	22.1	14.3	747
Russian	3.9	61.9	93.6	38.4	27.7	460
Other	2.7	51.0	95.8	43.2	25.3	234
Total	7.0	51.4	89.6	30.7	20.4	1,440

Table 3.8 shows that, in Kazakhstan, almost half (46 percent) of all women age 15-49 were either currently employed or had worked during the 12 months preceding the survey. The majority of the women who had worked at all during the 12 months preceding the survey, were also working at the time of the survey. Only 11 percent of women who had worked during the past 12 months (5 percent of all women) were not currently working. Few women age 15-19 were employed during the past 12 months (9 percent), which is expected because women at these ages are still likely to be enrolled in school. Among women age 20 and older, who are more likely to have completed their studies, age is positively associated with the probability of being employed. One-third of women age 20-24 were employed at some time in the past 12 months compared with two-thirds of women age 45-49.

Table 3.8 Employment

Percent distribution of women by employment status and among those currently working, whether or not they earned cash, according to background characteristics, Kazakhstan 1999

Background characteristic	Employment						Currently working			
	No work last 12 months	Worked last 12 months	Currently working	Missing	Total	Number of women	Earned cash	Did not earn cash	Total	Number of women
Age										
15-19	90.7	1.5	7.7	0.1	100.0	791	71.8	28.2	100.0	61
20-24	66.5	5.5	27.9	0.1	100.0	666	94.9	5.1	100.0	186
25-29	48.9	6.7	44.5	0.0	100.0	692	92.9	7.1	100.0	308
30-34	46.3	6.7	46.9	0.1	100.0	698	90.9	9.1	100.0	328
35-39	38.6	5.7	55.0	0.7	100.0	749	90.2	9.8	100.0	412
40-44	40.4	6.2	53.3	0.1	100.0	681	88.6	11.4	100.0	363
45-49	33.5	4.6	61.8	0.1	100.0	522	88.3	11.7	100.0	323
Residence										
Urban	44.1	6.4	49.3	0.3	100.0	2,668	93.6	6.4	100.0	1,315
Rural	65.0	3.8	31.2	0.0	100.0	2,132	82.9	17.1	100.0	665
Region										
Almaty City	37.9	9.1	52.8	0.2	100.0	291	93.8	6.3	100.0	154
South	58.4	4.2	37.4	0.0	100.0	1,455	86.0	14.0	100.0	544
West	59.5	4.0	36.6	0.0	100.0	628	93.3	6.7	100.0	230
Central	50.3	6.0	42.9	0.8	100.0	475	94.8	5.2	100.0	204
North	52.2	5.2	42.4	0.2	100.0	1,259	87.5	12.5	100.0	534
East	48.1	6.4	45.3	0.3	100.0	692	93.7	6.3	100.0	314
Education										
Primary/secondary	69.0	4.4	26.5	0.1	100.0	1,927	83.0	17.0	100.0	512
Secondary-special	47.5	6.2	46.0	0.3	100.0	1,908	90.5	9.5	100.0	877
Higher	33.7	4.9	61.2	0.2	100.0	965	95.4	4.6	100.0	591
Ethnicity										
Kazakh	59.8	3.6	36.5	0.1	100.0	2,587	91.3	8.7	100.0	945
Russian	43.5	7.4	48.9	0.2	100.0	1,454	91.0	9.0	100.0	711
Other	50.4	6.8	42.5	0.3	100.0	760	84.0	16.0	100.0	323
Total	53.4	5.2	41.2	0.2	100.0	4,800	90.0	10.0	100.0	1,979

The likelihood of employment increases sharply with education. For example, the proportion of women currently employed increases from 27 percent for women who have completed only secondary school to 46 percent for women with secondary-special education and 61 percent for women with higher education. Women in urban areas are more likely than women in rural areas to be employed, and women's employment also varies substantially by region. The proportion of women employed at any time in the past 12 months is highest in Almaty City (62 percent) and

lowest in the South and West regions (41 to 42 percent). Russian women are more likely to be employed than either Kazakh women or women of other ethnic groups.

While the large majority of women who were currently working did earn cash for their work, one in ten women did not earn cash. Employed women age 15-19 are most likely to be working without earning cash (28 percent). Among older women, however, the proportion working without earning cash doubles with age, from 5 percent for women age 20-24 to 11-12 percent for women age 40-49. By background characteristics other than age, the proportion of women working, but not earning cash is never greater than about 17 percent for any subgroup of working women and is highest for rural women, women who have completed only secondary school, women in the South and North regions, and women of non-Kazakh and non-Russian ethnicities.

3.2.2 Decision-making Regarding Use of Cash Earnings

Employed women who earn cash for their work were asked who the main decisionmaker is regarding use of their earnings. This information allows the assessment of women's control over their own earnings. Table 3.9 shows how women's control over their earnings varies by background characteristics. The majority of women (59 percent) decide the use of their earnings alone, and more than one-third (36 percent) do so jointly with their partner or someone else. Only 5 percent of women have no part in deciding how their earnings are used. The likelihood that women decide the use of their earnings alone increases with women's age. This likelihood is higher in urban than in rural areas and in the Central region and Almaty City than in other regions. It does not vary greatly by education or ethnicity, but is much higher among unmarried women (83 percent) than among currently married women (47 percent). Notably, women in the West region of the country and currently married women are the only subgroups in which less than half of the women decide the use of their earnings alone. In both of these subgroups, women are about as likely to decide the use of their earnings alone as they are to do so with their husband or partner.

To assess the relative importance of women's earnings in meeting household expenditures, the 1999 KDHS asked employed women who earned cash the following question: "On average, how much of your household's expenditure do your earnings pay for: almost none, less than half, about half, more than half, or all?" This information not only allows an evaluation of the relative importance of women's earnings in the household economy, but also has implications for women's status. It is expected that the greater the share of women's earnings in meeting household expenditures, the more likely it is that women's employment empowers them, at least within their own households. The variation by background characteristics in the extent to which women's earnings pay for their households' expenditures (for women who are employed and earn cash) is also shown in Table 3.9.

From Table 3.9 it is clear that when women work for cash, their earnings are critical to meeting household expenditures in most cases. Specifically, in the case of 65 percent of women who earn cash, the woman's earnings alone pay for at least half of her household's expenditures, and in the case of 27 percent of women, the woman's earnings alone pay for all of her household's expenditures. This suggests that one-tenth of all households in Kazakhstan are solely dependent on the earnings of women for all their expenditures, and in one-fourth of households at least half the expenditures are paid for by women's earnings alone. For women who earn cash, the likelihood that their earnings alone pay for all of the household's expenditures rises by women's age, from 3 percent for women age 15-19 to 33-34 percent for women age 40-49. This proportion varies from 23 percent in the North region to 39 percent in the West region and is much higher for unmarried women (37 percent) than for currently married women (22 percent). It does not vary much however by urban-rural residence, education level, or ethnic group. With the exception of two subgroups of women (women age 15-19 and 20-25), the earnings of at least 60 percent of women in all other subgroups are used to pay for half or more of the household's expenditures.

Table 3.9 Decision of use of earnings and contribution of earnings to household expenditures

Percent distribution of women receiving cash earnings by person who decides how earnings are used, and by proportion of household expenditures met by earnings, according to background characteristics, Kazakhstan 1999

Background characteristic	Respondent	Person who decides how earnings are used: Partner	Jointly with partner	Someone else	Jointly with someone	Missing	Total	Proportion of household expenditures met by earnings: Almost none	Less than half	About half	More than half	All	None, her income is all saved	Don't know missing	Total	Number of women
Age																
15-19	50.8	0.0	2.0	26.1	21.0	0.0	100.0	15.1	46.6	28.7	5.6	2.7	1.2	0.0	100.0	43
20-24	58.0	2.0	15.4	12.6	11.7	0.3	100.0	15.7	31.0	26.6	8.7	15.9	2.1	0.0	100.0	176
25-29	59.2	1.9	30.6	3.0	5.2	0.0	100.0	5.0	27.7	29.4	13.4	23.0	1.2	0.3	100.0	286
30-34	59.2	2.3	34.2	2.9	1.5	0.0	100.0	3.4	25.2	25.0	15.9	29.0	1.1	0.5	100.0	298
35-39	55.1	0.9	40.9	0.5	2.2	0.4	100.0	4.0	29.7	25.4	11.9	28.6	0.4	0.0	100.0	372
40-44	60.6	1.4	35.5	0.9	1.6	0.0	100.0	3.3	26.9	20.1	16.1	33.5	0.0	0.0	100.0	322
45-49	66.2	1.1	29.1	1.0	2.7	0.0	100.0	3.8	32.7	20.0	10.6	32.5	0.3	0.0	100.0	285
Marital status																
Not married	83.4	0.0	0.7	5.5	10.4	0.0	100.0	7.0	24.7	19.8	9.3	37.2	1.9	0.1	100.0	610
Currently married	46.9	2.3	48.0	2.1	0.6	0.2	100.0	4.5	31.5	26.7	14.8	22.3	0.2	0.1	100.0	1,171
Residence																
Urban	63.0	1.5	29.4	2.1	3.8	0.1	100.0	5.0	28.9	24.3	12.6	28.2	1.0	0.1	100.0	1,231
Rural	51.4	1.4	37.1	5.8	4.1	0.1	100.0	6.1	29.7	24.6	13.6	25.6	0.1	0.3	100.0	551
Region																
Almaty City	67.3	1.9	22.2	3.5	5.1	0.0	100.0	7.0	27.3	21.3	14.0	28.9	1.6	0.0	100.0	144
South	54.6	2.8	31.4	7.7	3.5	0.0	100.0	7.4	33.9	24.0	10.5	23.9	0.0	0.3	100.0	468
West	45.8	0.9	45.8	3.9	3.6	0.0	100.0	5.0	29.3	19.0	7.0	38.8	0.9	0.0	100.0	214
Central	73.1	1.4	20.8	2.4	1.8	0.6	100.0	4.3	26.4	23.2	11.0	33.9	1.3	0.0	100.0	193
North	61.8	0.9	32.3	0.4	4.6	0.0	100.0	5.3	27.5	27.2	15.9	23.3	0.9	0.0	100.0	468
East	60.4	0.7	33.3	0.7	4.6	0.2	100.0	2.1	26.8	26.6	17.2	26.2	0.9	0.3	100.0	294
Education																
Primary/secondary	56.3	2.1	32.3	3.9	5.2	0.1	100.0	6.4	32.6	26.8	8.2	25.4	0.3	0.3	100.0	424
Secondary-special	61.4	0.7	32.6	2.3	2.9	0.2	100.0	6.1	29.3	21.6	12.7	29.5	0.7	0.1	100.0	794
Higher	58.9	2.1	30.3	4.2	4.5	0.0	100.0	3.4	26.4	26.3	16.7	26.0	1.2	0.0	100.0	563
Ethnicity																
Kazakh	55.9	1.9	33.3	5.4	3.3	0.1	100.0	6.2	31.3	24.1	11.6	26.1	0.7	0.0	100.0	863
Russian	63.5	0.9	30.5	0.8	4.2	0.1	100.0	3.9	28.8	24.8	13.2	28.0	1.2	0.1	100.0	648
Other	60.9	1.6	30.1	2.3	5.1	0.0	100.0	6.2	23.0	24.2	16.3	29.9	0.0	0.5	100.0	271
Total	59.4	1.5	31.8	3.3	3.9	0.1	100.0	5.3	29.2	24.4	12.9	27.4	0.8	0.1	100.0	1,782

Table 3.10 shows whether working women's control over their own earnings varies by the extent to which their earnings help to meet household expenditures. Among currently married women who work for cash, there is almost no variation in the likelihood that a woman alone will decide how her earnings are to be used by the extent to which her earnings pay for household expenditures. Irrespective of the proportion of household expenditures paid for by the woman's own earnings, only 44-49 percent of women decide how their earnings are to be used alone. Among unmarried women, however, the percentage who decide alone how their earnings are to be used increases from 75 percent for women whose earnings pay for almost none of their household's expenditures to 93 percent for women whose earnings pay for all of their household's expenditures.

Table 3.10 Control over earnings by contribution to household expenditures

Percent distribution of women receiving cash earnings by person who decides how earnings are used and marital status, according to how much of household expenditures are met by earnings, Kazakhstan 1999

Contribution of earnings to household's expenditures	Married/living together								Not married/not living together				
		Jointly with:											
	Self only	Husband/ partner	Some-one else	Husband/ partner only	Some-one else only	Missing	Total	Number of women	Self only	Jointly some-one else	Some-one else only	Total	Number of women
Almost none	43.6	51.5	0.0	3.0	1.9	0.0	100.0	52	74.6	11.5	13.9	100.0	43
Less than half	48.1	46.3	1.1	1.6	2.6	0.4	100.0	369	74.2	13.6	12.3	100.0	151
About half	44.0	49.0	0.9	3.6	2.4	0.0	100.0	313	79.3	16.9	3.9	100.0	121
More than half	49.0	45.1	0.0	4.0	1.6	0.3	100.0	173	80.8	14.4	4.9	100.0	57
All	48.3	50.6	0.0	0.3	0.8	0.0	100.0	261	93.1	6.0	0.9	100.0	227
None, her income is all saved	35.3	64.7	0.0	0.0	0.0	0.0	100	2.0	100.0	0.0	0.0	100.0	11
Don't know/missing	0.0	0.0	0.0	0.0	100.0	0.0	100.0	1	100.0	0.0	0.0	100.0	1
Total	46.9	48.0	0.6	2.3	2.1	0.2	100.0	1,171	83.4	11.1	5.5	100.0	610

3.2.3 Household Decision-making

Besides information on women's education, employment status, and earnings control, the 1999 KDHS also obtained information on some additional direct measures of women's autonomy and empowerment. Questions were asked on women's participation in household decision-making, on their acceptance of wife beating, and on their opinions about when a wife should be able to refuse sex to her husband. These data provide insight into women's control over their environment and their attitudes toward traditional gender roles, which are two important aspects of women's empowerment relevant to understanding women's demographic and health behaviors.

In order to assess women's decision-making autonomy, women were asked about their participation in five different decisions: on the respondent's own health care; on making large household purchases; on making household purchases for daily needs; on visits to family, friends, or relatives; and on what food to cook each day. Table 3.11 shows the percent distribution of women according to who in the household usually has the final say on each of these decisions.

Women are most likely to make decisions alone on matters related to their own health care (68 percent) and to what food to cook each day (69 percent). They are less likely to make other types of household decisions alone: decisions about daily purchases (56 percent); decisions about visits to family, friends, or relatives (28 percent); and decisions about large household purchases (25 percent). Only 18 percent of women do not participate at all in making decisions about their

Table 3.11 Household decision-making

Percent distribution of women by person who makes specific household decisions and marital status, according to type of decision, Kazakhstan 1999

Type of decision	Married/living together							Not married/not living together					All women				
	Self only	Jointly with husband/ partner	Jointly some-one else	Husband/ partner only	Some-one else only	Total	Number of women	Self only	Jointly some-one else	Some-one else only	Total	Number of women	Self only	Jointly some-one else	Some-one else only	Total	Number of women
Respondent's own health	72.9	16.7	1.2	6.9	2.2	100.0	3,018	59.3	7.1	33.5	100.0	1,782	67.9	13.9	18.2	100.0	4,800
Large household purchases	20.9	59.8	2.8	9.6	6.8	100.0	3,018	31.3	14.1	54.6	100.0	1,782	24.7	44.6	30.6	100.0	4,800
Daily household purchases	66.9	21.1	1.9	3.7	6.4	100.0	3,018	37.4	10.9	51.6	100.0	1,782	56.0	18.5	25.5	100.0	4,800
Visits to family, friends, or relatives	17.8	68.4	2.6	5.8	5.4	100.0	3,018	44.4	16.9	38.7	100.0	1,782	27.7	50.9	21.4	100.0	4,800
What food to cook each day	86.2	6.4	2.5	1.2	3.7	100.0	3,018	40.6	14.4	45.0	100.0	1,782	69.2	11.0	19.8	100.0	4,800

own health care (alone or jointly with someone else), but almost one-third (31 percent) do not participate in decisions about making large household purchases. Unmarried women are much less likely than currently married women to be involved in making each of the different decisions. The proportion of currently married women who do not participate in decision-making ranges from 5 percent for decisions about what food to cook to 16 percent for decisions about making large household purchases, whereas the proportion of unmarried women who do not participate in decision-making ranges from 34 percent for decisions about the woman's own health care to 55 percent for decisions about making large household purchases.

Table 3.12 shows how participation in decision-making varies for all women by background characteristics. The proportion of women who participate in all five decisions increases more or less steadily with age, from 12 percent for women age 15-19 to 86 percent for women age 40-44 and then declines slightly to 82 percent for women age 45-49. More than nine out of ten women age 35 and older participate in each of the specific decisions. Among younger women, however, participation varies greatly by type of decision. Never-married women are the least likely to participate in all decisions, and widowed women are the most likely to do so. Almost one-third of never-married women do not participate in any of these decisions.

Women with one or two children are more likely than women with no children or three or more children to participate in all decisions. Furthermore, among women who have children, decision-making power decreases sharply with number of children. Women who have five or more children are four times less likely than women with one or two children to participate in any of the decisions. Urban women are slightly more likely than rural women to participate in decision making; however, the size of the urban-rural differential varies by the type of decision. For example, the percentages of urban and rural women participating in decisions about what food to cook are similar (81 and 80 percent, respectively), but 74 percent of urban women participate in decisions about large purchases compared with 64 percent of rural women. Participation in all decisions varies from 74-75 percent for women in the Central and East regions to only 47 percent for women in the South region. Almost one in five women in the South region does not participate in any decision at all. Although women who have completed only secondary school are less likely than women with more education to participate in all the decisions, women with a higher education are somewhat less likely than women with secondary-special education to do so. Kazakh women are much less likely than Russian women and women of other ethnicities to participate in decision-making. As expected women who work, especially women who work for cash, are more likely to participate in all decisions than women who do not work.

Women may have a say in some decisions but not in others. To assess a woman's overall decision-making autonomy, the total number of decisions she participates in (i.e., she alone has the final say or does so jointly with her husband or someone else) are added together. Figure 3.1 gives the distribution of all women according to the number of decisions in which they participate. In Kazakhstan, the majority of women participate in all five of the decisions, and 9 percent do not participate in any of the decisions. Nine percent also participate in only four decisions. The remainder of the women are distributed about equally among those who participate in only one, only two, and only three decisions.

3.2.4 Women's Agreement with Reasons for Wife Beating

Attitudes that see wife beating as "justified" are indicative of women's lower status both absolutely and relative to men. To assess women's acceptance of wife beating, the 1999 KDHS asked all women the following: "Sometimes a husband is annoyed or angered by things which his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations. . ."

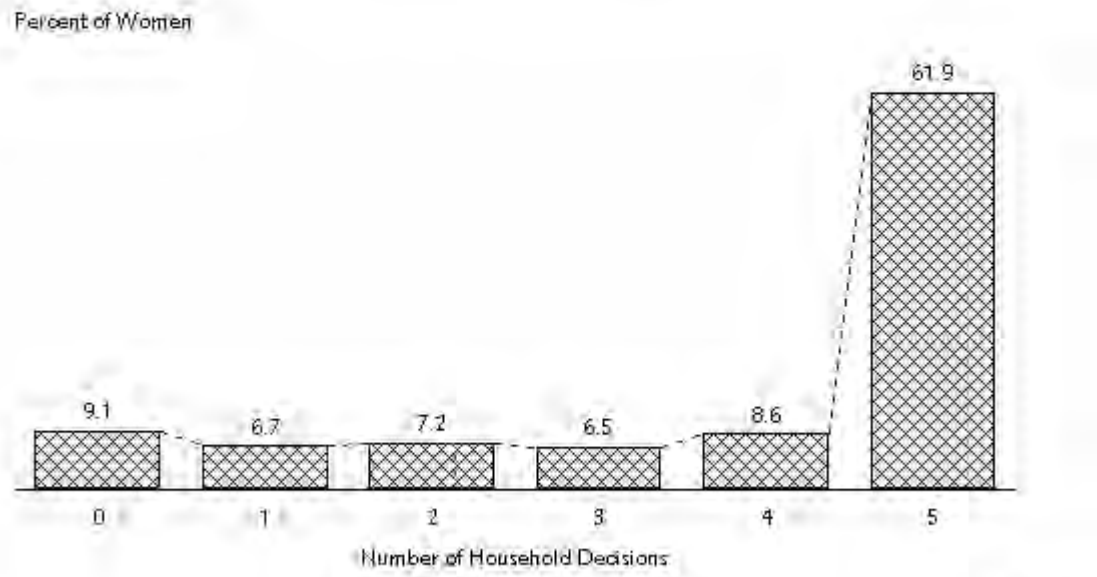
Table 3.12 Final say in household decisions

Percentage of women who say they alone or jointly have the final say in specific household decisions, according to background characteristics, Kazakhstan 1999

Background characteristic	Alone or jointly has final say in: Own health care	Making large purchases	Making daily purchases	Visits to family, friends, relatives	Food to cook daily	Has final say in specified decisions	Has final say in no specified decisions	Number of women
Age								
15-19	40.9	17.0	20.8	35.1	30.7	12.2	42.2	791
20-24	73.8	48.1	54.5	64.6	68.3	37.9	11.7	666
25-29	90.5	74.2	81.6	86.8	90.3	67.5	1.6	692
30-34	91.1	81.1	89.1	87.4	94.2	72.5	1.1	698
35-39	93.6	91.4	95.4	95.0	96.9	84.7	0.6	749
40-44	95.9	92.1	94.7	95.7	96.0	85.8	0.5	681
45-49	94.7	92.4	95.6	93.8	93.7	82.4	0.1	522
Marital status								
Never married	52.8	27.2	30.4	46.8	39.4	20.4	32.3	1,215
Married/ living together	90.9	83.5	89.9	88.8	95.1	75.3	1.2	3,018
Widowed	99.0	93.4	94.2	97.4	92.7	89.1	0.4	145
Divorced/separated	94.6	81.3	84.4	90.7	86.9	76.2	2.1	422
No. of living children								
0	75.2	58.7	62.0	69.5	69.7	49.9	14.7	856
1-2	86.3	76.7	80.5	85.2	85.6	69.1	5.3	2,563
3-4	79.6	62.8	71.9	73.4	78.7	57.5	10.8	1,092
5+	69.6	60.4	67.0	66.7	69.3	51.0	20.5	290
Residence								
Urban	85.6	73.6	77.1	83.2	80.8	65.6	7.4	2,668
Rural	77.1	64.0	71.1	72.8	79.5	57.3	11.3	2,132
Region								
Almaty City	88.8	74.1	78.3	86.2	82.2	63.5	3.3	291
South	68.3	55.8	63.3	64.3	73.6	47.3	17.9	1,455
West	79.5	70.8	72.7	77.3	79.4	63.2	9.7	628
Central	91.0	79.0	80.9	87.6	85.1	73.5	4.8	475
North	87.5	73.8	80.6	84.5	83.9	66.5	4.2	1,259
East	92.7	79.9	82.2	89.7	83.9	74.6	4.7	692
Education								
Primary/secondary	71.5	56.9	62.6	67.0	69.8	49.7	16.7	1,927
Secondary-special	88.9	79.7	84.2	87.5	89.4	72.3	3.6	1,908
Higher	88.4	73.9	78.8	84.1	82.8	65.9	5.0	965
Ethnicity								
Kazakh	76.6	63.6	69.7	71.9	77.3	56.0	12.7	2,587
Russian	89.6	77.6	80.5	87.8	83.1	70.6	5.0	1,454
Other	84.6	73.2	78.8	83.6	84.5	65.3	4.8	760
Employment								
Not employed	74.9	59.8	65.9	70.6	74.6	53.2	13.5	2,821
Working for cash	92.7	83.4	87.3	90.7	88.7	75.2	2.2	1,782
Working, not for cash	82.3	78.8	80.8	82.5	83.8	66.9	9.6	198
Total	81.8	69.4	74.4	78.6	80.2	61.9	9.1	4,800

The five situations presented to women for their opinion were as follows: she burns the food, she argues with him, she goes out without telling him, she neglects the children, and she refuses to have sex with him. The first five columns in Table 3.13 show how acceptance of wife beating varies for each reason. The sixth column gives the percentage of women who feel that wife beating is justified for at least one of the given reasons.

Figure 3.1 Women's Participation in Decision-making



Among women age 15-49, agreement with the different reasons justifying wife beating is relatively low, varying from only 4 percent for "she burns the food" to 26 percent for "she neglects the children." Nevertheless, 30 percent of women age 15-49 agreed with at least one reason for which a husband would be justified in beating his wife. There is little variation by age in the proportion of women agreeing with each of the different reasons; nevertheless, the data do suggest that younger women (age 15-34) are somewhat more likely than older women (age 35-49) to agree with at least one reason justifying wife beating. Currently married women more than women in any other marital status are likely to agree with each of the reasons. The proportion agreeing with at least one reason justifying wife beating ranges from 32 percent for currently married women to 22 percent for women who are divorced or separated. Women who have one or two children are less likely than women with no children or three or more children to agree with any of the reasons justifying wife beating. Furthermore, among women who have children, women's acceptance of wife beating increases sharply with the number of children from 25 percent for women with one or two children to 44 percent for women with five or more children. Rural women are more than twice as likely as urban women to agree with each of the different reasons for wife beating.

The level of agreement with wife beating varies greatly by region. Only 10 percent of women in the Central region agree with at least one reason for wife beating compared with 48 percent in the South region. Women in the South region are also more likely than women in most other subgroups to agree with each of the reasons for wife beating. Agreement falls sharply with education level. Those who have completed only secondary school are more than twice as likely (39 percent) as those who have a higher education (17 percent) to agree with at least one reason. Agreement with each of the reasons for wife beating is highest among Kazakh women and lowest among Russian women. Only 14 percent of Russian women agree with at least one reason for wife beating compared with 40 percent of Kazakh women. As expected, women who work for cash are much less likely to agree with each of the different reasons for wife beating. However, women who work but do so without earning cash are likely to agree with each of the reasons for wife beating than unemployed women or women who work for cash.

Table 3.13 Women's agreement with reasons for wife beating

Percentage of women who agree with specific reasons for justifying wife beating and percentage who agree with at least one reason or none of the reasons, according to background characteristics, Kazakhstan 1999

Background characteristic	Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses sexual relations	At least one selected reason	All reasons	Total
Age								
15-19	3.1	11.4	9.8	28.0	3.7	32.4	1.0	791
20-24	4.2	11.1	10.6	26.6	6.7	30.8	1.2	666
25-29	5.5	11.1	12.0	25.1	5.1	29.2	2.6	692
30-34	6.0	13.2	13.9	31.0	7.3	35.6	2.8	698
35-39	2.9	8.9	10.4	23.8	4.7	26.3	1.5	749
40-44	4.4	10.9	10.4	22.7	6.8	27.1	1.6	681
45-49	4.2	12.8	11.8	25.1	7.9	28.6	2.0	522
Current marital status								
Never married	3.5	7.9	7.6	23.9	3.6	27.7	1.0	1,215
Married/ living together	4.8	13.3	13.5	27.9	7.2	32.3	2.2	3,018
Widowed	3.7	8.5	7.2	23.7	5.2	25.5	0.8	145
Divorced/separated	3.1	7.5	7.1	20.5	3.4	22.4	1.6	422
No. of living children								
0	4.7	10.3	10.6	22.8	5.7	28.4	1.9	856
1-2	2.9	8.0	8.0	22.6	4.7	25.4	1.2	2,563
3-4	6.0	17.5	16.1	34.1	7.2	38.6	2.0	1,092
5+	8.6	19.2	23.2	37.3	11.5	43.9	5.5	290
Residence								
Urban	2.8	7.3	6.8	18.6	4.3	21.5	1.5	2,668
Rural	6.2	16.2	16.8	35.5	7.8	40.9	2.2	2,132
Region								
Almaty City	2.2	4.6	3.5	13.4	1.6	15.6	0.6	291
South	7.6	22.3	25.9	40.5	11.7	47.8	4.0	1,455
West	8.4	14.7	13.6	25.4	8.3	31.4	2.8	628
Central	1.1	2.7	0.4	9.0	1.0	9.9	0.0	475
North	1.6	4.5	3.0	26.1	2.4	27.9	0.1	1,259
East	1.5	5.9	4.0	13.7	3.0	15.5	0.9	692
Mother's education								
Primary/Secondary	6.4	15.5	15.7	33.7	8.0	38.9	2.5	1,927
Secondary-special	3.5	9.9	9.8	24.4	5.5	27.6	1.6	1,908
Higher	1.7	5.5	5.1	14.3	2.4	17.4	0.8	965
Ethnicity								
Kazakh	6.4	16.6	17.0	34.1	8.6	39.6	2.6	2,587
Russian	1.2	2.3	2.3	11.8	1.9	13.6	0.4	1,454
Other	3.0	10.2	8.6	26.4	4.4	29.1	1.7	760
Employment								
Not employed	4.7	12.7	12.3	29.2	6.3	33.3	1.8	2,821
Working for cash	3.5	8.4	9.0	20.5	4.7	24.3	1.8	1,782
Working not for cash	5.8	17.0	15.7	32.2	9.9	35.8	2.0	198
Number of decisions in which she has final say								
0-1	5.1	16.2	15.8	34.3	6.8	38.7	2.1	760
2-3	6.4	13.1	13.1	31.0	8.4	37.6	3.0	656
4-5	3.7	9.8	9.8	23.3	5.2	26.7	1.5	3,384
Total	4.3	11.3	11.2	26.1	5.9	30.1	1.8	4,800

As expected agreement with at least one reason for wife beating falls with the level of women's participation in household decision-making, from 39 percent for women who participate in no more than one household decision to 27 percent for women who participate in all or almost all (4 to 5) household decisions. The lower level of agreement with wife beating among women who are working for cash and among those who participate in all or most household decisions reinforces the idea that even normative acceptance of wife beating decreases with women's empowerment. Nevertheless, that a substantial proportion of even the women who earn cash and the women who have a relatively high degree of decision-making autonomy agree with at least one reason for wife beating testifies to the strength of norms that promote the acceptance of wife beating.

3.2.5 Women's Agreement with Reasons for Refusing Sexual Relations

The extent of control women have over when and with whom they have sex has important implications for demographic and health outcomes. The 1999 KDHS included a question on whether the respondent thinks that a wife is justified in refusing to have sex with her husband under four circumstances: she is tired or not in the mood, she has recently given birth, she knows her husband has sex with other women, and she knows her husband has a sexually transmitted disease. These four circumstances for which women's opinions are sought were chosen because they are effective in combining issues regarding women's rights and women's health. Table 3.14 shows the percentage of women who say that women are justified in refusing sex to their husband for specific reasons by background characteristics. The table also shows how women's opinions on refusing sex to their husband vary with their decision-making autonomy and their attitude toward wife beating, both important aspects of women's empowerment.

Overall, 69 percent of women in Kazakhstan agree that women can refuse sex to their husband for all four reasons. Specifically, 79 percent said that women can refuse to have sex with their husband if they are tired or not in the mood, 92 percent said that they can refuse if they have recently given birth, 83 percent said that they can refuse if the husband has sexual relations with other women, and 91 percent said that they can refuse if the husband has the AIDS virus. The proportion of women agreeing with a woman's right to refuse sex varies little by age for women age 20-49; however, women age 15-19 are less likely than all older women to agree with each of the reasons for women refusing sex to their husband. Sixteen percent of women age 15-19 do not agree with any of the reasons for refusing sex. Furthermore, 13 percent of never-married women and 7 percent of women with no children (both groups that are likely to be composed of younger women) do not agree with any of the reasons for refusing sex. Among ever-married women, divorced women followed by currently married women are more likely than widowed women to agree with all four reasons.

Among women with children, the likelihood that a woman will agree with each of the four reasons decreases with the number of children. Urban women are somewhat more likely than rural women to agree with the different reasons for refusing sex. The variation by region is much greater; 65 percent of women in the South region agree with all four reasons compared with 78 percent of women in the Central region. Variation in agreement with all selected reasons is also as expected by education, employment, women's participation in household decision-making, and with the level of women's agreement with wife beating. Women with secondary-special and higher education, women working for cash, women who participate in most household decisions (all 4-5 decisions asked about) and women who disagree with all of the reasons for wife beating are more likely than other women in these subgroups to agree with all four reasons for refusing sex. Indeed, agreement with each of the four reasons varies more by the number of decisions women participate in than by most other background variables. For example, 59 percent of women who have the lowest level of participation in household decisions (0-1 decisions only) agree with all four reasons for refusing sex compared with 72 percent of women who have the highest level of participation in household decisions (4-5 decisions). These results also suggest that the different aspects of women's empowerment, as measured by the indicators being used here, strongly reinforce each other.

Table 3.14 Women's agreement with reasons for refusing sexual relations

Percentage of women who agree with specific reasons for justifying a wife refusing to have sexual relations with her husband, according to background characteristics, Kazakhstan 1999

Background characteristic	Reason justifying wife refusing sexual relations with husband				All specified reasons	No specified reasons	Number of women
	Wife tired or not in the mood	Wife gave birth recently	Wife knows husband has sexual relations with other women	Wife knows her husband has the AIDS virus			
Age							
15-19	67.8	77.2	75.7	81.4	61.4	15.7	791
20-24	79.7	91.4	84.3	91.0	70.7	4.3	666
25-29	81.6	93.9	85.3	93.5	70.6	2.7	692
30-34	82.1	95.5	84.6	93.1	71.2	1.9	698
35-39	82.5	95.6	84.9	94.6	72.9	1.3	749
40-44	78.4	93.7	83.6	92.1	68.7	3.3	681
45-49	80.2	96.0	82.9	94.3	70.0	1.4	522
Marital status							
Never married	70.6	80.0	77.6	84.5	63.6	12.9	1,215
Married/living together	81.5	95.1	84.1	93.4	70.8	2.0	3,018
Widowed	77.4	95.4	82.1	89.8	66.9	3.4	145
Divorced/separated	82.0	97.2	90.4	94.6	74.8	0.9	422
No. of living children							
0	76.2	88.9	81.0	88.9	67.6	6.9	856
1-2	80.6	94.0	84.6	92.5	70.5	3.1	2,563
3-4	78.0	89.1	81.9	91.6	69.1	5.4	1,092
5+	72.0	85.9	77.4	84.7	62.5	9.4	290
Residence							
Urban	80.7	92.8	84.4	91.9	71.5	4.0	2,668
Rural	76.2	89.8	81.1	90.3	66.3	5.5	2,132
Region							
Almaty City	81.4	91.7	82.1	89.6	68.7	4.7	291
South	74.0	88.3	79.3	89.4	64.8	7.6	1,455
West	78.2	86.5	81.9	85.4	71.4	8.8	628
Central	83.5	96.1	91.1	94.6	77.6	1.5	475
North	76.9	94.4	84.3	94.8	66.3	1.2	1,259
East	87.7	94.3	83.7	91.9	76.1	3.3	692
Education							
Primary/secondary	74.9	87.0	79.4	87.8	65.4	7.5	1,927
Secondary-special	81.2	95.3	85.8	93.5	72.2	2.9	1,908
Higher	81.1	93.1	84.2	93.3	70.9	2.6	965
Ethnicity							
Kazakh	76.9	88.6	80.8	89.7	67.8	6.7	2,587
Russian	82.1	95.4	85.9	92.9	72.2	2.1	1,454
Other	78.3	94.0	84.3	92.9	68.4	2.8	760
Employment							
Not employed	77.1	89.2	81.6	89.8	67.6	6.1	2,821
Working for cash	82.0	95.1	85.5	93.9	73.0	2.3	1,782
Working, not for cash	71.4	91.4	78.3	86.3	58.8	5.4	198
Number of decisions in which women has final say							
0-1	63.7	74.7	72.3	79.2	58.6	18.5	760
2-3	78.4	89.9	84.1	92.4	67.1	3.2	656
4-5	82.1	95.6	85.1	93.6	72.0	1.9	3,384
Number of reasons wife beating justified							
0-1	69.2	88.1	75.9	88.6	62.7	7.0	195
2-3	74.2	89.3	80.4	90.0	62.1	4.4	1,249
4-5	80.9	92.5	84.3	91.8	72.2	4.7	3,356
Total	78.7	91.5	82.9	91.2	69.2	4.7	4,800

FERTILITY 4

Toregeldy Sharmanov and Kia I. Weinstein

All women interviewed in the 1999 KDHS were asked to provide their complete pregnancy histories. For the data to accurately describe the fertility status of the population of Kazakhstan, it was important for women to report all their pregnancies. To encourage complete reporting of all such events, women were asked separate questions about pregnancies that had ended in live births, induced abortions, miscarriages, and stillbirths. An accounting of live births was achieved by asking separately about the number of sons and daughters living with the respondent, the number living elsewhere, and the number who had died. An accounting of all pregnancies was double-checked by interviewers probing for intervening pregnancies in all pregnancy intervals of four or more years.

Each woman's pregnancy history was obtained in reverse chronological order, from the most recent pregnancy to the respondent's first pregnancy. The outcome of each pregnancy was recorded (live birth, abortion, miscarriage, or stillbirth), as was the date the pregnancy ended. For each pregnancy that resulted in a live birth, information was collected on the sex of the child, survival status, and age (of living children) or age at death (of deceased children).

This chapter presents the findings pertaining to live births. Because ethnicity is a major determinant of fertility in Kazakhstan, fertility data are shown separately for ethnic Kazakhs and ethnic Russians, as well as the overall rates for all of Kazakhstan. Findings pertaining to pregnancy loss are presented in another chapter.

4.1 Current Fertility

Age-specific and total fertility rates presented in Table 4.1 and Figure 4.1 were calculated directly from the information obtained in the pregnancy history. The reported rates refer to the three-year period preceding the survey (mid-1996 to mid-1999). Age-specific fertility rates were calculated by dividing the number of births to women in a five-year age interval by the number of woman-years lived in that age interval.[1] The total fertility rate (TFR) is a construct of the age-specific rates computed by summing the age-specific rates and multiplying by five. The TFR is expressed per woman and is calculated to provide a snapshot view of current fertility levels. The TFR is interpreted as the number of children a woman would have in her lifetime if she experienced the currently observed age-specific fertility rates during her childbearing years.

Table 4.1 presents two other summary measures of fertility: the general fertility rate (GFR) and the crude birth rate (CBR). The GFR represents the annual number of births in the population per 1,000 women age 15-44. The crude birth rate is the annual number of births in the population per 1,000 population. These measures are calculated from the birth history data for the three-year period preceding the survey and the age and sex distribution of the household population.

[1] Numerators for age-specific fertility rates are calculated by summing the number of live births that occurred in the 1-36 months preceding the survey (determined from the date of interview and birth date of the child) and classifying them by age (in five-year groups) of the mother at the time of birth (determined from the birth date of the mother). The denominators of the rates are the number of woman-years lived in each of the specified five-year age groups during the 1-36 months preceding the survey.

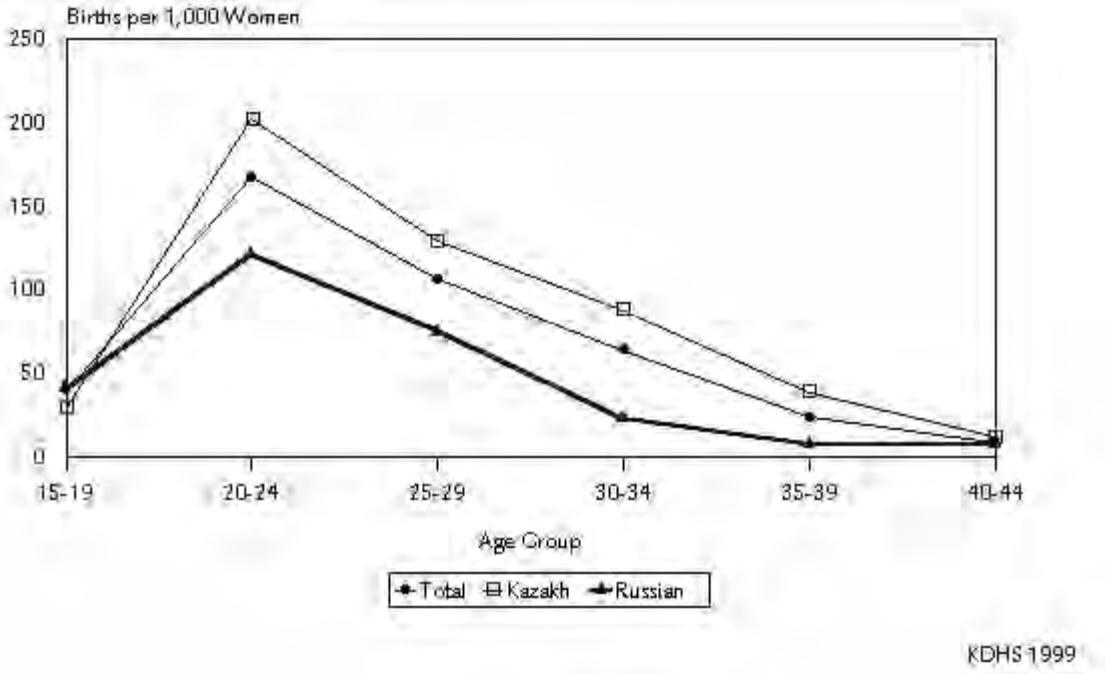
Table 4.1 Current fertility

Age-specific and cumulative fertility rates and the crude birth rate for the three years preceding the survey, by residence and ethnicity, Kazakhstan 1999

	Residence		Ethnicity			
Age	Urban	Rural	Kazakh	Russian	Other	Total
15-19	36	44	30	41	79	40
20-24	109	233	202	121	(126)	167
25-29	86	133	129	75	67	106
30-34	51	78	88	23	47	64
35-39	18	32	39	8	8	24
40-44	6	12	12	8	0	9
45-49	0	0	0	0	(0)	0
TFR 15-49	1.52	2.66	2.50	1.38	1.63	2.05
TFR 15-44	1.52	2.66	2.50	1.38	1.63	2.05
GFR	50.00	88.00	84.00	43.00	52.00	67.00
CBR	11.90	19.40	-	-	-	15.40

Note: Rates are for the period 1-36 months preceding the survey. Rates for age group 45-49 may be slightly biased due to truncation. Rates in parentheses indicate that one or more of the component age-specific rates is based on fewer than 250 woman-years of exposure.
TFR: Total fertility rate, expressed per woman
GFR: General fertility rate (births divided by number of women 15-44), expressed per 1,000 women
CBR: Crude birth rate, expressed per 1,000 population

Figure 4.1 Age-specific Fertility Rates by Ethnicity



Fertility among urban women is lower than it is among rural women throughout all the childbearing years, resulting in a TFR among urban women that is one child lower than among rural women. If fertility were to remain constant at current levels, a woman in Kazakhstan would give birth to an average of 2.1 children; urban women would have 1.5, while rural women would have 2.7 children. The peak childbearing years for both urban and rural women are during the early twenties (age 20-24). No respondents age 45-49 reported having a live birth in the three years preceding the survey.

Ethnic Kazakhs and ethnic Russians both experience their peak childbearing years during their early twenties. However, ethnic Kazakhs achieve a TFR that is higher (2.5 children per woman) than the overall TFR of 2.1, and ethnic Russians achieve a TFR that is lower (1.4 children per woman) than the overall TFR. The lower TFR of ethnic Russians is a result of lower age-specific rates at every age, with the exception of women age 15-19, among whom ethnic Russians exhibit slightly higher fertility than do ethnic Kazakhs.

Table 4.2 and Figure 4.2 present TFRs for the three years preceding the survey by background characteristics. It can be seen that regional variation in fertility is substantial, varying by nearly two children. The TFR is lowest among women in Almaty City (1.0 children per woman) and the East region (1.4); intermediate in the Central region (1.6), North region (1.7), and West region (2.3); and highest in the South region (2.9).

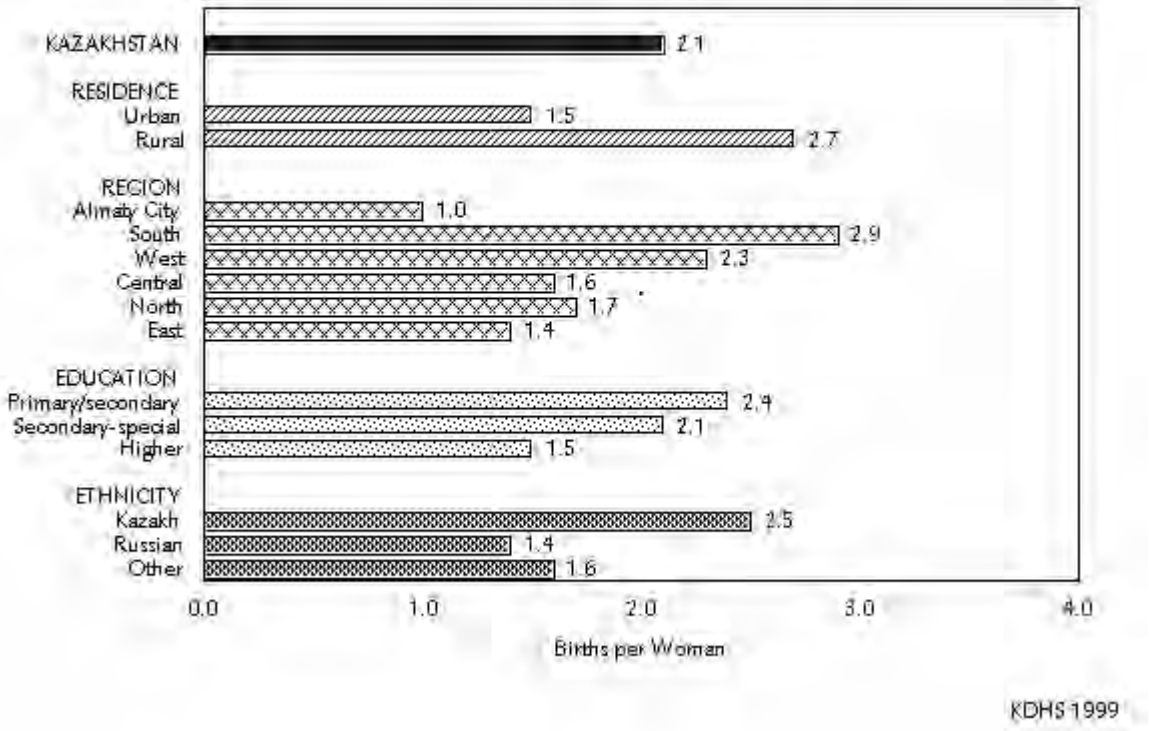
Table 4.2 Fertility by background characteristics

Total fertility rate for the three years preceding the survey, percentage currently pregnant and mean number of children ever born to women age 40-49, by selected background characteristics, Kazakhstan 1999

Background characteristic	Total fertility rate[1]	Percentage currently pregnant[1]	Mean number of children ever born to women age 40-49
Residence			
Urban	1.52	2.51	2.40
Rural	2.66	3.36	3.71
Region			
Almaty City	1.00	1.73	1.94
South	2.86	4.75	3.81
West	2.26	2.20	3.22
Central	1.59	2.30	2.25
North	1.72	2.28	2.62
East	1.42	1.58	2.57
Education			
Primary/secondary	2.42	3.38	3.62
Secondary-special	2.06	2.61	2.77
Higher	1.51	2.44	2.11
Ethnicity			
Kazakh	2.50	2.95	3.71
Russian	1.38	2.49	2.12
Other	1.63	3.42	2.67
Total	2.05	2.89	2.92

[1] Women age 15-49 years

Figure 4.2 Total Fertility Rate by Background Characteristics



Women in Kazakhstan exhibit a childbearing pattern, observed in many societies, of decreasing fertility with increasing education. The TFR declines from 2.4 children per woman among women with primary or secondary schooling to 2.1 among women with secondary-special schooling and then down to 1.5 children per woman among those with higher education.

Table 4.2 shows the percent of women who report themselves to be currently pregnant. Because women at early stages of pregnancy may not yet know they are pregnant, this proportion may be underestimated. Percentages are generally low, commensurate with fertility that is relatively low overall. The percentage of pregnant women generally exhibits the same patterns by background characteristics as the TFR.

Trends in fertility can be inferred by comparing the TFR (a measure of current fertility) with the mean number of children ever born (CEB) to women age 40-49 (a measure of completed fertility). If there had been no change in fertility for three or more decades before the survey, the TFR and CEB would be nearly the same. That the TFR (2.1 children per woman) is lower than the CEB (2.9) indicates that fertility has declined in Kazakhstan over the past three decades. The TFR is lower than the CEB among both urban and rural women, and in every region, education level, and ethnic group. More recent changes in fertility need not be inferred; they may be analyzed directly by comparing 1999 KDHS data with other available data sources.

4.2 Fertility Trends

The most direct way of observing fertility trends is to examine changes in age-specific rates over time. Table 4.3 compares age-specific fertility rates (ASFRs) from the 1999 KDHS (which were shown in Table 4.1) with ASFRs reported in the 1989 Census and the 1995 KDHS. The data provide evidence of continual declines in fertility over the past decade. The TFR declined from 2.9 children per woman for the period of 1988-1989 (Darsky and Dworak, 1993) to 2.5 for the period 1992-1995 (National Institute of Nutrition and Macro International Inc., 1996) to 2.1 for the period 1996-1999.

Table 4.3 Trends in fertility

Age-specific fertility rates and total fertility rates for Kazakh, Russian, and total populations, 1989 Census, 1995 KDHS, and 1999 KDHS, Kazakhstan 1999

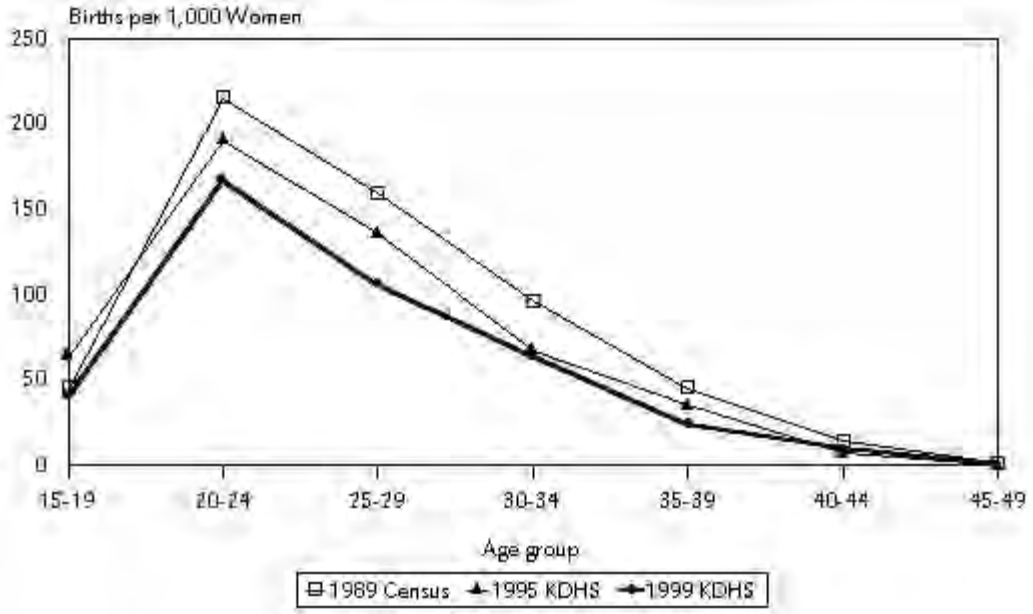
	Kazakh			Russian			Total[1]		
Age of woman	1989 Census	1995 KDHS	1999 KDHS	1989 Census	1995 KDHS	1999 KDHS	1989 Census	1995 KDHS	1999 KDHS
15-19	31	37	30	59	97	41	45	64	40
20-24	232	229	202	182	125	121	215	190	167
25-29	208	180	129	110	73	75	159	136	106
30-34	140	100	88	63	27	23	96	67	64
35-39	76	60	39	27	15	8	45	35	24
40-44	27	14	12	7	1	8	14	7	9
45-49	3	0	0	0	0	0	1	0	0
Total fertility rate	3.58	3.11	2.50	2.24	1.69	1.38	2.88	2.49	2.05

Note: Single-year period rates are used for the census; three-year period rates are used for the KDHS.
[1] Includes Kazakh, Russian, and other ethnic groups.

Figure 4.3 shows that fertility has fallen in almost every age group. During the decade between the 1989 Census and the 1999 KDHS, the TFR declined by 29 percent, almost one child per woman. The fertility decline has been exhibited by both ethnic Kazakh women and ethnic Russian women. The TFR among ethnic Kazakh women has declined from 3.6 to 2.5 over the past decade, a decline of one child per woman. Among ethnic Russians, the TFR has declined from 2.2 to 1.4 over the past decade, a decline of not quite one child per woman, but resulting in a TFR below replacement levels.

Comparisons of the 1999 KDHS and the 1995 KDHS show that fertility declines over the four years between the surveys occurred not only among ethnic Kazakh and ethnic Russian women, but also among urban and rural women, among women of all regions of Kazakhstan, and among all education groups. One of the greatest areas of decline has been in the Central region, where the TFR fell by one child per woman, from 2.7 to 1.6.

Figure 4.3 Age-specific Fertility Rates 1989 Census, 1995 KDHS, and 1999 KDHS



Evidence of a recent decline in fertility is also supported by the ASFRs calculated over time, using only data from the 1999 KDHS. Table 4.4 presents age-specific fertility rates for five-year periods preceding the survey using data on live births from respondents' pregnancy histories.[2] Declines from 5-9 to 0-4 years prior to the survey are seen among women of all age groups (with the exception of women age 45-49, who reported no live births). Declines of about 25-30 percent are seen among women under the age of 35, and even greater declines are seen among older women (declines of 37 and 65 percent among women age 35-39 and 40-44, respectively).

Table 4.4 Trends in age-specific fertility rates

Age-specific fertility rates for five-year periods preceding the survey, by mother's age at the time of birth, Kazakhstan 1999

Mother's age	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	44	64	45	42
20-24	166	214	222	202
25-29	115	162	188	179
30-34	63	82	119	[108]
35-39	29	46	[70]	-
40-44	6	[17]	-	-
45-49	[0]	-	-	-

Note: Age-specific fertility rates are per 1,000 women. Estimates in brackets are truncated.

[2] The rates for the older age groups (shown in brackets in Table 4.4) represent partial fertility rates due to truncation. Women 50 years of age and older were not included in the survey, and the further back in time that the rates are calculated, the more severe is the truncation. For example, rates cannot be calculated for women age 40-44 for the period 10-14 years before the survey because these women would have been over age 50 years at the time of the survey and thus were not interviewed.

Table 4.5 presents fertility rates for ever-married women by duration since first marriage for five-year periods preceding the survey. Fertility decline usually begins among older women who want to stop their childbearing, but as Table 4.5 shows, the fertility decline in Kazakhstan has been achieved by women at all marital durations, including those of less than five years. This decline at even the shortest marital durations was not observed at the time of the 1995 KDHS.

Table 4.5 Trends in fertility by marital duration

Fertility rates for ever-married women by duration (years) since first marriage for five-year periods preceding the survey, Kazakhstan 1999

Marriage duration at birth	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
0-4	261	329	351	346
5-9	99	120	165	162
10-14	45	62	97	111
15-19	16	40	82	109
20-24	6	20	67	-
25-29	0	36	-	-

Note: Duration-specific fertility rates are per 1,000 women.

4.3 Children Ever Born and Living

Table 4.6 presents the distribution of all women and currently married women by number of children ever born. The modal number of children among all women age 30 and above is two. Perhaps the most notable change since the 1995 KDHS is the change among women in their twenties. At the time of the 1995 KDHS, the modal number of children among women in their late twenties was two; it is one in the 1999 KDHS. And more women in their early twenties (age 20-24) have not yet begun childbearing. Forty-four percent of women age 20-24 had not yet had any children at the time of the 1995 KDHS; that percent has risen to 54 percent in the 1999 KDHS. The greatest difference between the data for currently married women and the total sample occurs among young women due to the large number of unmarried young women with minimal fertility. Differences at older ages reflect the generally fertility-reducing impact of marital dissolution (divorce or widowhood).

Table 4.6 Children ever born and living

Percent distribution of all women and of currently married women age 15-49 by number of children ever born (CEB) and mean number ever born and living, according to five-year age groups, Kazakhstan 1999

Age group	Number of children ever born (CEB)												Number of women	Mean no. of CEB	Mean no. of living children
	0	1	2	3	4	5	6	7	8	9	10+	Total			
ALL WOMEN															
15-19	95.6	4.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	791	0.05	0.05
20-24	53.7	28.4	15.3	2.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	100.0	666	0.67	0.63
25-29	18.8	35.2	28.1	13.1	3.9	0.6	0.2	0.0	0.0	0.0	0.0	100.0	692	1.51	1.38
30-34	9.0	23.8	33.1	20.1	9.7	2.5	0.9	0.9	0.0	0.0	0.0	100.0	698	2.13	1.99
35-39	4.7	15.6	35.1	22.8	12.0	5.6	2.9	0.8	0.6	0.0	0.0	100.0	749	2.58	2.40
40-44	5.4	9.4	35.5	21.9	12.7	6.6	4.0	2.8	1.3	0.4	0.0	100.0	681	2.88	2.67
45-49	5.7	14.7	31.3	19.5	8.3	7.8	5.9	2.5	2.1	1.5	0.7	100.0	522	2.99	2.68
Total	29.3	18.5	24.9	13.9	6.6	3.1	1.8	0.9	0.5	0.2	0.1	100.0	4,800	1.76	1.63
CURRENTLY MARRIED WOMEN															
15-19	53.6	43.1	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	63	0.50	0.48
20-24	23.2	44.5	27.3	4.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	353	1.14	1.08
25-29	6.2	35.6	34.5	17.4	5.1	0.9	0.3	0.0	0.0	0.0	0.0	100.0	506	1.83	1.67
30-34	3.5	19.7	37.1	22.8	11.8	3.0	1.1	0.9	0.0	0.0	0.0	100.0	546	2.38	2.22
35-39	1.7	12.9	36.5	23.9	13.2	6.8	3.3	1.0	0.7	0.0	0.0	100.0	617	2.77	2.57
40-44	2.0	6.6	36.8	23.0	14.1	7.6	5.0	2.9	1.6	0.6	0.0	100.0	548	3.11	2.91
45-49	1.6	10.4	34.1	19.8	9.3	10.2	6.3	3.2	2.9	1.3	1.0	100.0	385	3.31	2.95
Total	6.4	20.8	34.3	19.1	9.5	4.8	2.6	1.3	0.8	0.3	0.1	100.0	3,018	2.43	2.25

Table 4.6 also shows the mean number of children ever born and the mean number surviving by five-year age group of the mother. On average, women in their early twenties have had 0.7 children, women in their late twenties have had 1.5 children, women in their thirties have had two children, and women in their forties have had nearly three children.

A cursory view of the survival status of children can be made by comparing the mean number of children ever born to the mean number surviving. Overall, 7 percent of live births had not survived to the time of the survey. This survival level generally holds true for women age 20-44. Ten percent of children born to women age 45-49 at the time of the survey had not survived.

4.4 Birth Intervals

The length of birth intervals is an important component of childbearing. Research has shown that children born too close to a previous birth have an increased risk of dying, especially when the interval between births is less than 24 months. Table 4.7 presents the percent distribution of second- and higher-order births in the five years prior to the survey by the number of months since the previous birth. Overall, about one-third of births (32 percent) were born within 24 months of the previous birth. The median birth interval is 35 months, up from a median of 32 months in the 1995 KDHS.

The length of birth intervals by region shows some correlation with patterns of fertility. The region with the highest fertility (the South region) exhibits the shortest median birth interval (only 28 months); 41 percent of non-first births in the South region were born within 24 months of the previous birth. The regions with the lowest fertility (Almaty City and the East region) exhibit much longer median birth intervals (49 and 48 months, respectively). The North region exhibits a median birth interval of 49 months, although it exhibits an intermediate level of fertility.

Urban and rural women also exhibit significant differentials in birth intervals. Births to urban women have a median interval of 48 months while births to rural women have a median interval of 30 months; birth interval length among urban women represents a significant increase since the 1995 KDHS when it was 39 months. Birth intervals are significantly longer among births to Russian mothers (median interval of 52 months) than among births to Kazakh mothers (median interval of 31 months). Median interval length among births to Russian mothers increased from 44 months at the time of the 1995 KDHS. Median interval length also increases with increasing education of the mother, from 29 months among mothers with primary or secondary education to as high as 54 months among women with higher education.

4.5 Age at First Birth

The age at which childbearing begins has important demographic consequences for societies as a whole, as well as for the health and welfare of mothers and children. Early initiation into childbearing is generally associated with large family size and rapid population growth when family planning is not widely practiced.

Table 4.8 presents the percent distribution of women by age at first birth according to current age. Initiation into childbearing has a relatively narrow age range in Kazakhstan. While the age at which women begin childbearing has not changed greatly over time, women currently age 20-24 are less likely to have begun childbearing than were women who were age 20-24 at the time of the 1995 KDHS. The 1995 KDHS found that 44 percent of women age 20-24 had not yet had a birth, compared with 54 percent in the 1999 KDHS.

Table 4.7 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since previous birth, according to demographic and socioeconomic characteristics, Kazakhstan 1999

Characteristic	Number of months since previous birth					Total	Median number of months since previous birth	Number of births
	7-17	18-23	24-35	36-47	48+			
Age of mother								
15-19	*	*	*	*	*	100.0	*	*
20-29	20.5	25.7	22.3	8.3	23.2	100.0	24.8	446
30-39	7.2	12.9	16.0	13.2	50.8	100.0	48.5	414
40+	4.9	4.9	14.6	8.9	66.7	100.0	68.6[1]	56
Birth order								
2-3	13.9	20.7	16.8	9.8	38.8	100.0	34.6	680
4-6	12.2	13.8	24.7	11.7	37.6	100.0	35.4	216
7+	(16.0)	(8.3)	(27.8)	(20.6)	(27.3)	100.0	(34.7)	22
Sex of prior birth								
Male	13.0	16.2	18.7	9.3	42.9	100.0	40.0	462
Female	14.1	21.5	19.2	11.7	33.5	100.0	31.5	456
Survival of prior birth								
Living	33.5	17.6	23.7	12.9	12.3	100.0	22.7	77
Dead	11.7	18.9	18.5	10.3	40.6	100.0	38.1	841
Residence								
Urban	10.5	13.3	16.6	9.3	50.3	100.0	48.2	353
Rural	15.4	22.3	20.4	11.2	30.7	100.0	30.0	565
Region								
Almaty City	(6.2)	(14.6)	(14.6)	(12.5)	(52.1)	100.0	(48.5)	22
South	18.7	21.8	19.6	11.7	28.3	100.0	28.0	466
West	7.6	14.2	23.1	11.4	43.7	100.0	42.4	130
Central	9.8	14.7	20.4	6.4	48.6	100.0	41.6	72
North	9.6	18.0	14.3	7.1	50.9	100.0	48.8	157
East	5.4	15.2	17.3	11.8	50.2	100.0	48.1	71
Education								
Primary/secondary	17.3	23.7	18.5	11.1	29.5	100.0	28.6	381
Secondary-special	12.3	14.4	21.6	11.4	40.3	100.0	38.9	402
Higher	6.9	18.2	12.5	6.2	56.3	100.0	53.9[1]	136
Ethnicity								
Kazakh	14.8	20.5	19.7	11.5	33.5	100.0	31.1	673
Russian	6.8	15.2	13.0	7.3	57.7	100.0	51.5[1]	118
Other	13.1	13.1	20.5	8.3	45.0	100.0	40.2	127
Total	13.5	18.8	18.9	10.5	38.2	100.0	34.7	918

Note: First births are excluded. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.
[1] Median number is more than 48 months.

Table 4.9 presents the median age at first birth for women age 25-49 by background characteristics. The median age at first birth hovers around age 22 for all five-year age cohorts, as was reported in the 1995 KDHS. The greatest differentials are by education; the median age at first birth increases by two to three years with increasing education.

Table 4.8 Age at first birth

Percent distribution of women 15-49 by age at first birth, according to current age, Kazakhstan 1999

Current age	Women with no births	Age at first birth						Total	Number of women	Median age at first birth
		<15	15-17	18-19	20-21	22-24	25+			
15-19	95.6	0.0	1.8	2.7	NA	NA	NA	100.0	791	[a]
20-24	53.7	0.2	5.8	16.1	19.1	5.2	0.0	100.0	666	[a]
25-29	18.8	0.1	4.2	20.1	27.1	23.2	6.4	100.0	692	21.9
30-34	9.0	0.1	3.3	16.3	28.8	26.5	16.0	100.0	698	22.1
35-39	4.7	0.0	2.9	14.3	23.9	31.2	22.9	100.0	749	22.6
40-44	5.4	0.0	1.6	16.4	23.4	30.7	22.4	100.0	681	22.6
45-49	5.7	0.0	3.4	15.1	27.6	24.2	24.0	100.0	522	22.4

NA = Not applicable

[a] Omitted because less than 50 percent of the women in the age group *x* to *x+4* have had a birth by age *x*

Table 4.9 Median age at first birth

Median age at first birth among women age 25-49 years, by current age and selected background characteristics, Kazakhstan 1999

Background characteristic	Current age					Ages
	25-29	30-34	35-39	40-44	45-49	25-49
Residence						
Urban	22.1	22.2	22.6	22.6	23.2	22.5
Rural	21.6	22.1	22.7	22.6	21.5	22.2
Region						
Almaty City	22.1	22.9	23.9	23.7	24.2	23.3
South	21.8	21.8	22.7	22.1	21.7	22.0
West	22.2	22.3	22.8	23.3	23.1	22.7
Central	21.8	22.0	22.7	22.2	22.9	22.3
North	21.6	21.9	22.4	22.7	22.1	22.2
East	22.4	22.8	22.7	22.8	22.4	22.6
Education						
Primary/Secondary	20.8	20.9	21.0	21.7	21.2	21.1
Secondary-special	22.0	22.2	22.6	22.5	22.0	22.3
Higher	23.6	23.4	25.1	25.0	25.8	24.7
Ethnicity						
Kazakh	22.4	22.5	23.2	23.2	22.5	22.7
Russian	21.3	21.6	22.0	22.0	22.4	21.9
Other	20.7	21.8	22.2	22.8	21.9	21.9
Total	21.9	22.1	22.6	22.6	22.4	22.4

Note: The medians for cohorts 15-19 and 20-24 could not be determined because half the women have not yet had a birth.

4.6 Pregnancy and Motherhood Among Teenage Women

Fertility among women age 15-19 warrants special attention because young mothers at this age, as well as their children, are at high risk of encountering social and health problems. There has been much research on this topic, and the causes of the problems have proven difficult to identify. Children born to young mothers are associated with higher levels of illness and mortality during childhood than are children born to older mothers.

Table 4.10 presents the percentage of women age 15-19 who are mothers or are pregnant with their first child. Overall, 7 percent of women age 15-19 have begun childbearing (have already given birth or were pregnant with their first child at the time of the survey), a decline from 9 percent at the time of the 1995 KDHS.

Table 4.10 Pregnancy and motherhood among teenage women

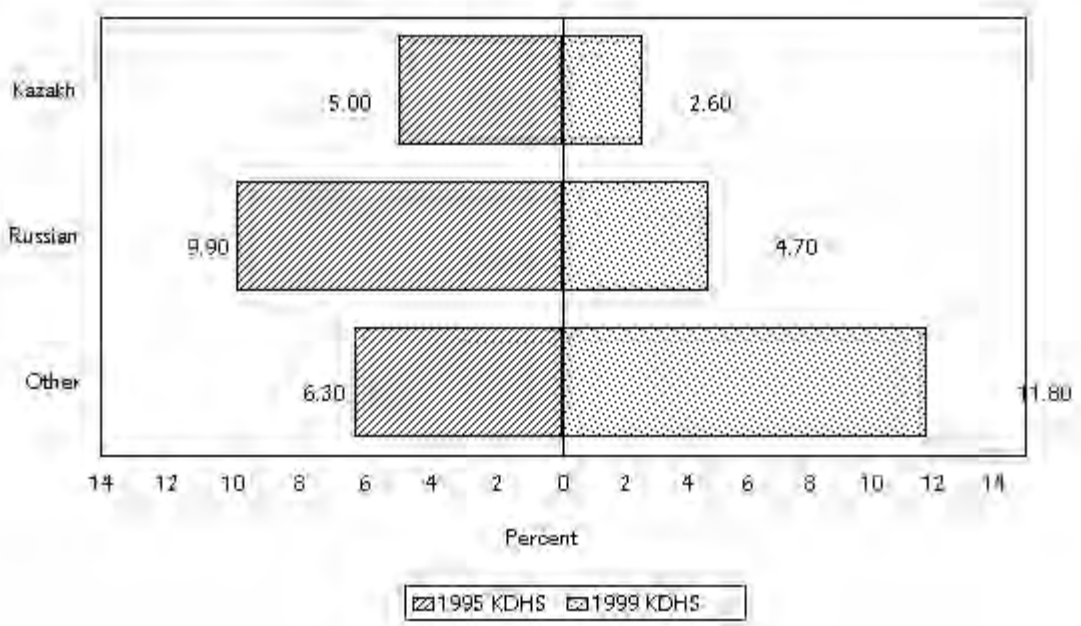
Percentage of women 15-19 who are mothers or pregnant with their first child, by selected background characteristics, Kazakhstan 1999

Background characteristic	Percentage who are: Mothers	Pregnant with first child	Percentage who have begun child-bearing	Number of women
Age				
15	0.0	0.0	0.0	153
16	0.3	1.0	1.3	177
17	1.5	1.6	3.1	162
18	5.4	4.7	10.1	160
19	16.8	4.4	21.2	138
Residence				
Urban	4.4	2.6	7.0	409
Rural	4.4	1.9	6.4	382
Region				
Almaty City	(3.8)	(1.9)	(5.7)	48
South	4.3	3.1	7.4	271
West	3.7	0.6	4.3	110
Central	3.9	4.1	8.0	68
North	4.8	0.9	5.7	197
East	5.3	3.5	8.8	98
Education				
Primary/secondary	4.0	2.1	6.2	601
Secondary-special	7.9	4.6	12.5	102
Higher	2.9	0.5	3.4	88
Ethnicity				
Kazakh	2.6	1.9	4.5	473
Russian	4.7	4.0	8.7	213
Other	11.8	0.4	12.3	105
Total	4.4	2.3	6.7	791

Note: Figures in parentheses are based on 25-49 unweighted cases.

The percentage of women who become mothers does increase during the teenage years, so that one in five 19-year-olds (21 percent) has begun childbearing. However, fewer women are beginning childbearing in their teen years than just a few years ago; the 1995 KDHS found that one in four 19-year-olds had begun childbearing. The percentage of women who mothers in their teen years has decreased among both ethnic Kazakh and ethnic Russian women; however, it has increased among women of other ethnicities. Figure 4.4 shows the percentage of women 15-19 who are mothers according to ethnicity in the 1995 KDHS and the 1999 KDHS.

Figure 4.4 **Percentage of Women 15-19 Who Are Mothers by Ethnicity, 1995 KDHS and 1999 KDHS**



CONTRACEPTION 5

Holly Seyhan and Akkumis Salkhanova

The primary function of family planning programs is to advocate conscious entry into parenthood for both men and women, i.e., to grant families the right to define their desired number of children and provide them the means to achieve that goal. The efficacy of family planning depends on people's knowledge of methods and on the availability of methods to meet the varying needs of a wide spectrum of potential users. Availability of methods, in turn, depends on the quality and quantity of service providers and on available financial and technical resources.

In the republics of the former Soviet Union, family planning primarily consisted of the use of traditional contraceptive methods through the 1960s. Low levels of infrastructure and technology, as well as knowledge and attitudes towards family planning, limited use of modern methods. Historically, the status of a Kazakh woman in the family was such that the number of children she was to bear was determined not only by the husband and wife as a couple, but also by the husband's family. These factors, as well as many others, have resulted in high levels of reliance on induced abortion as a means of fertility control. Beginning in the early 1990s, the Ministry of Health actively engaged in efforts to reduce the heavy reliance on abortion by providing safe and effective modern contraceptive methods (Foreit and McCombie, 1995). Family planning offices have been opened in most *oblasts* and regional centers, in both large cities and villages. These offices, spanning most of the country, offer women professional advice and supply a variety of family planning methods.

With Kazakhstan's transition to a market economy and the accompanying general reduction in living standards, desires to limit family size appear to be on the rise. Statistics on the number of IUD and pill users obtaining supplies from government facilities have been maintained by the Ministry of Health since 1988. These statistics indicate a substantial increase in contraceptive use between 1988 and 1993: the prevalence rate for these two methods increased by 48 percent, from 20 to 29 percent of all women age 15-49 (Church and Koutanev, 1995). The 1995 KDHS indicated that contraceptive use was continuing to increase throughout the country: one-third of all respondents reported that they currently use a modern contraceptive method.

Family planning topics addressed in this chapter include knowledge of contraceptive methods, sources of supply, use of methods in the past and present, reasons for nonuse, desire to use in the future, and exposure to family planning messages. While the focus is on women, some results from the men's survey are also presented since men play an important role in the realization of reproductive goals. These data can serve as an information base for the Agency on Health and family planning organizations to better define the need for contraception and the allocation of resources.

5.1 Knowledge of Contraceptive Methods

Knowledge of contraceptive methods is a prerequisite for their use. Data on knowledge were collected by asking the respondent to name ways or methods by which a couple could delay or avoid pregnancy. If the respondent failed to mention a particular method spontaneously, the

interviewer described the method and asked if she recognized it. Thus, knowledge of a contraceptive method is defined simply as having heard of a method.

Contraceptive methods include both modern and traditional methods. Modern methods include the pill, the IUD, injectables, implants, female sterilization, male sterilization, emergency contraception, and the barrier methods (diaphragm, foam, jelly, male and female condom). Traditional methods include lactational amenorrhea, periodic abstinence (rhythm method), withdrawal, and vaginal douching.

Table 5.1 shows the percentage of women and men who have heard of specific contraceptive methods. Knowledge of contraception is universal: 99 percent of both women and men are able to name at least one modern method. Among women, the IUD is the most recognized method (known by 97 percent of respondents), followed by the condom (94 percent) and the pill (87 percent). While women who have never had sex are less likely to know of specific methods than are married or sexually active unmarried women, more than three-quarters (76 percent) have heard about the pill, and an even greater proportion recognize the IUD and condom.

Table 5.1 Knowledge of contraceptive methods

Percentage of all women and men, currently married women and men, sexually active unmarried women and men, and of women who have never had sex, who know specific contraceptive methods, by specific methods, Kazakhstan 1999

	Women				Men		
Contraceptive method	All women	Currently married women	Sexually active unmarried women	Women who never had sex	All men	Currently married men	Sexually active unmarried men
Any method	98.6	99.6	100.0	94.5	99.1	99.8	100.0
Any modern method	98.6	99.5	100.0	94.5	98.7	99.5	99.7
Pill	87.1	88.8	96.3	76.0	75.6	80.0	87.3
IUD	96.5	99.1	99.0	86.4	86.9	95.6	87.5
Injectables	53.5	59.7	65.7	32.2	25.2	28.3	36.1
Diaphragm/Foam/Jelly	51.7	56.8	64.5	28.9	17.5	21.1	22.4
Condom	93.9	94.6	99.1	88.3	97.7	98.2	99.3
Female sterilization	53.5	58.4	62.5	32.5	41.4	47.0	54.7
Male sterilization	29.2	31.3	47.5	16.1	19.9	22.4	31.5
Implant	10.0	11.1	13.8	6.0	4.2	5.2	5.4
Female condom	17.9	18.3	24.6	13.7	4.9	5.5	8.0
Emergency contraception	33.4	37.1	40.5	17.6	9.8	11.3	12.4
Any traditional method	82.4	89.2	95.0	53.1	81.2	87.8	89.4
Lactational amenorrhea	51.5	62.9	41.8	17.5	22.3	31.3	5.3
Periodic abstinence	63.8	70.4	76.3	36.2	47.9	55.9	55.7
Withdrawal	57.3	62.6	80.9	29.1	72.1	76.8	83.1
Douche	16.3	20.1	18.3	3.1	3.8	5.0	2.2
Other	1.6	1.8	2.7	0.6	0.5	0.4	2.6
Number of women/men	4,800	3,018	249	958	1,440	933	149
Mean number of methods	7.2	7.7	8.3	4.8	5.3	5.8	5.9

On average, women know 7.2 methods of contraception, up from 5.4 methods in 1995. The average number of methods known varies by marital status of the respondents. Currently married women know an average of 7.7 methods, while unmarried women who are sexually active know of 8.3 methods, and women who have never had sex know on average 4.8 methods.

In general, the men surveyed are less knowledgeable than women about specific methods of contraception. Men, on average, recognize only 5.3 contraceptive methods. Among men, 98 percent recognized the condom, 87 percent had heard of IUDs, and 76 percent recognized the pill.

Knowledge of traditional methods is also high. Eighty-nine percent of currently married women and 95 percent of sexually active unmarried women have knowledge of a traditional method. Almost 90 percent of currently married and sexually active unmarried men have also heard of at least one traditional method.

5.2 Ever Use of Contraception

All respondents who had heard of a method of contraception were asked whether they (or a partner with them) had ever used the method; each method was inquired about separately. An additional probe for use was made for women who reported no contraceptive use. Results are presented in Table 5.2 for all women, for currently married women, and for sexually active unmarried women age 15-29 by five-year age groups.

Approximately nine out of ten currently married and sexually active unmarried women have used a method of contraception at some time in their life. Levels of ever-use among all women are somewhat lower than among currently married women because the former includes women who have never been sexually active.

Eighty-eight percent of all married women report having used a contraceptive method, up from 84 percent in the 1995 KDHS. Ever use of a modern method is up from 77 percent in 1995 to 82 percent. Ever use of the pill and condom has not changed since 1995, but the proportion of married women who report ever use of the IUD has risen from 62 percent to 69 percent. Emergency contraception, which has been available in Kazakhstan since 1990, has been used by 2.4 percent of married women.

Among unmarried, sexually active women, 90 percent have used any method of contraception; of these, 93 percent have used a modern method. The percentage of all sexually active unmarried women who have used a modern method has increased since 1995 from 69 percent to 84 percent. Ever use of the pill, IUD, and condom has increased since 1995. Five percent of the respondents in this group have used emergency contraception.

5.3 Current Use of Contraception

Table 5.3 presents levels of current use of contraception for all women, for currently married women, and for sexually active unmarried women age 15-29 by five-year age groups.

Almost four out of ten women (39 percent) of reproductive age are using a modern method of contraception, up from 34 percent in 1995. As in 1995, approximately 9 percent reported current use of a traditional method.

Table 5.2 Ever use of contraception

Percentage of all women, of currently married women, and of sexually active unmarried women who have ever used any contraceptive method, by specific method and age, Kazakhstan 1999

		Modern method											Traditional method						
Age	Any method	Any modern method	Pill	IUD	Injec-tables	Diaph./ foam/ jelly	Condom	Female sterili-sation	Male sterili-sation	Im-plant	Female condom	Emer-gency contra-ceptive	Any trad. method	Lacta-tional amen.	Periodic absti-nence	With-drawal	Douche	Other methods	Number of women
ALL WOMEN																			
15-19	11.2	9.3	2.7	1.4	0.1	0.6	8.0	0.0	0.0	0.0	0.0	0.2	7.3	1.1	2.2	5.2	1.3	0.0	791
20-24	53.2	44.5	13.5	25.4	1.8	2.0	25.8	0.1	0.0	0.0	0.0	2.9	34.0	10.2	13.7	18.6	5.5	0.7	666
25-29	80.7	76.0	22.6	57.6	2.8	3.6	41.5	0.3	0.0	0.0	0.1	3.7	50.3	19.5	18.9	29.0	12.8	0.6	692
30-34	88.6	83.7	17.2	72.6	2.6	2.7	32.4	1.4	0.0	0.1	0.0	2.2	49.9	21.8	22.7	23.9	9.6	0.3	698
35-39	90.3	85.9	18.8	73.0	3.3	5.9	38.0	3.6	0.0	0.0	0.1	3.0	57.0	26.0	28.2	25.9	14.1	0.7	749
40-44	86.8	81.6	16.8	70.5	2.3	5.8	31.6	5.2	0.0	0.0	0.3	1.8	51.4	21.3	26.6	20.6	14.5	0.4	681
45-49	81.6	73.8	13.5	60.4	2.0	6.3	29.3	4.0	0.0	0.0	0.1	1.5	52.4	18.6	29.5	22.6	14.9	0.9	522
Total	69.0	63.9	14.8	50.6	2.1	3.7	29.2	2.0	0.0	0.0	0.1	2.2	42.3	16.7	19.7	20.5	10.1	0.5	4,800
CURRENTLY MARRIED WOMEN																			
15-19	50.8	35.1	10.0	14.5	0.7	0.8	23.8	0.0	0.0	0.0	0.0	0.0	41.0	13.1	13.1	19.6	10.0	0.0	63
20-24	77.1	62.7	18.0	42.7	2.9	2.4	32.4	0.1	0.0	0.0	0.0	4.1	48.7	18.6	18.0	25.3	9.0	1.0	353
25-29	88.0	83.5	23.4	67.6	3.7	4.1	41.7	0.4	0.0	0.0	0.1	3.2	53.6	24.2	20.2	29.5	13.5	0.9	506
30-34	93.4	89.3	18.2	79.8	2.3	2.6	34.9	1.8	0.0	0.1	0.0	2.2	51.6	24.7	22.5	24.5	10.5	0.3	546
35-39	92.6	88.5	18.2	76.6	3.2	6.4	38.7	3.9	0.0	0.0	0.1	2.8	57.0	27.2	28.0	24.9	14.2	0.6	617
40-44	90.6	85.5	17.3	76.2	2.3	5.5	31.4	5.6	0.0	0.0	0.3	1.7	54.8	23.9	27.0	21.1	16.0	0.5	548
45-49	86.6	78.2	13.9	65.5	2.0	7.1	30.1	4.5	0.0	0.0	0.1	1.2	56.1	19.0	32.9	23.3	17.6	0.5	385
Total	88.2	81.8	18.2	68.9	2.7	4.7	35.1	2.8	0.0	0.0	0.1	2.4	53.6	23.3	24.7	24.6	13.5	0.6	3,018
SEXUALLY ACTIVE UNMARRIED WOMEN																			
15-19	80.7	70.7	23.3	1.1	0.0	5.1	66.9	0.0	0.0	0.0	0.0	3.7	51.1	0.0	11.8	46.4	9.9	0.0	40
20-24	86.9	85.6	33.0	23.6	2.1	6.0	61.5	0.0	0.0	0.0	0.0	8.3	62.4	0.0	31.0	38.3	5.2	1.0	48
25-29	93.9	86.8	31.0	60.5	2.6	6.7	50.8	0.0	0.0	0.0	0.0	4.3	62.4	13.8	36.9	40.0	12.5	1.3	161
Total	90.4	84.0	30.2	43.9	2.1	6.3	55.4	0.0	0.0	0.0	0.0	5.0	60.6	9.0	31.7	40.7	10.7	1.0	249

Table 5.3 Current use of contraception: women

Percent distribution of all women, of currently married women, and of sexually active unmarried women who are currently using a contraceptive method by specific method, according to age, Kazakhstan 1999

Age	Any method	Modern method: Any modern method	Pill	IUD	Injec-tables	Diaph./ foam/ jelly	Condom	Female sterili-zation	Male sterili-zation	Traditional method: Any trad. method	Lacta-tional amen.	Periodic absti-nence	With-drawal	Douche	Other methods	Not currently using	Total	Number of women
ALL WOMEN																		
15-19	6.7	4.2	0.7	1.2	0.1	0.0	2.2	0.0	0.0	2.5	0.7	0.3	1.0	0.6	0.0	93.3	100.0	791
20-24	35.6	25.7	3.1	16.4	0.6	0.4	5.1	0.1	0.0	9.9	3.2	2.5	3.0	1.3	0.0	64.4	100.0	666
25-29	56.8	46.9	4.1	33.7	0.7	0.8	7.2	0.3	0.0	9.9	1.6	2.6	2.5	2.9	0.3	43.2	100.0	692
30-34	64.8	54.1	1.8	46.4	0.3	0.3	3.9	1.4	0.0	10.8	0.9	3.4	2.7	3.6	0.2	35.2	100.0	698
35-39	70.3	57.4	2.6	46.8	0.6	0.2	3.6	3.6	0.0	12.9	0.5	5.1	2.7	4.3	0.4	29.7	100.0	749
40-44	63.3	51.2	2.4	39.6	0.4	0.1	3.5	5.2	0.0	12.1	0.3	5.7	1.2	4.5	0.3	36.7	100.0	681
45-49	40.1	32.3	0.3	24.6	0.2	0.5	2.6	4.0	0.0	7.9	0.0	3.7	1.1	3.1	0.0	59.9	100.0	522
Total	48.0	38.6	2.2	29.7	0.4	0.3	4.0	2.0	0.0	9.4	1.0	3.3	2.0	2.9	0.2	52.0	100.0	4,800
CURRENTLY MARRIED WOMEN																		
15-19	39.2	16.0	0.8	12.2	0.7	0.0	2.2	0.0	0.0	23.2	8.4	3.2	5.5	6.1	0.0	60.8	100.0	63
20-24	53.0	36.4	3.3	27.2	0.8	0.7	4.2	0.1	0.0	16.6	5.8	3.7	5.3	1.7	0.0	47.0	100.0	353
25-29	65.3	52.6	4.1	39.0	1.0	0.9	7.3	0.4	0.0	12.7	2.1	3.2	3.2	3.6	0.5	34.7	100.0	506
30-34	71.6	60.1	1.7	51.9	0.3	0.4	4.0	1.8	0.0	11.5	1.1	3.4	2.8	3.8	0.3	28.4	100.0	546
35-39	76.7	62.8	2.7	51.0	0.7	0.3	4.1	3.9	0.0	13.9	0.5	5.7	3.1	4.4	0.2	23.3	100.0	617
40-44	72.3	57.9	2.7	45.3	0.5	0.0	3.9	5.6	0.0	14.4	0.4	6.6	1.5	5.6	0.3	27.7	100.0	548
45-49	50.0	39.9	0.0	30.9	0.3	0.7	3.6	4.5	0.0	10.1	0.0	4.6	1.5	4.1	0.0	50.0	100.0	385
Total	66.1	52.7	2.4	42.0	0.6	0.4	4.5	2.8	0.0	13.4	1.6	4.6	2.9	4.1	0.2	33.9	100.0	3,018
SEXUALLY ACTIVE UNMARRIED WOMEN																		
15-19	60.3	49.4	9.9	1.1	0.0	0.0	38.3	0.0	0.0	10.9	0.0	0.0	8.7	2.2	0.0	39.7	100.0	40
20-24	79.0	66.9	18.2	16.8	2.1	0.0	29.9	0.0	0.0	12.1	0.0	5.9	1.9	4.3	0.0	21.0	100.0	48
25-29	67.6	53.8	7.4	34.1	0.3	0.9	11.1	0.0	0.0	13.7	0.0	5.3	2.7	4.5	1.3	32.4	100.0	161
Total	68.6	55.6	9.9	25.5	0.6	0.6	19.1	0.0	0.0	13.0	0.0	4.6	3.5	4.1	0.8	31.4	100.0	249

Note: For the sexual active panel 25-29 = 25+

More than half (53 percent) of currently married women use a modern method of contraception, up from 46 percent in 1995. Significant increases in contraceptive use have occurred among the older cohorts. In the 35 to 39 age group there has been an increase in the use of modern methods from 55 to 63 percent; among 40- to 44-year-olds the increase was from 47 to 58 percent; and among married women age 45 to 49 use of modern methods increased form 22 to 40 percent. This pattern suggests that modern contraceptive methods are being adopted by women in older cohorts in order to limit births.

The IUD is by far the most widely used method of modern contraception. Among married women there has been a slight increase in users, from 40 percent in 1995 to 42 percent in 1999. After the IUD, the condom is the next most widely used modern method. Since 1995 there has been no significant increase in condom use overall, but among married women age 25 to 29, condom use has jumped from 3.4 to 7.3 percent. A significantly larger proportion of this cohort reports using condoms than any other cohort. Approximately 3 percent of currently married women report that they have been sterilized. As in 1995, 13 percent of currently married women state that they are using a traditional method.

The most significant changes in contraceptive use have occurred among unmarried, sexually active women. Currently, 56 percent report using a modern method, as opposed to 39 percent in 1995. Use of the pill has doubled (from 5 to 10 percent) as has use of the IUD (from 14 to 26 percent). Condom use, however, appears to have remained constant in the last five years (approximately 19 percent). Use of traditional methods has decreased. Currently, 13 percent of all sexually active unmarried women report using a traditional method, down from 19 percent in 1995.

Current use of contraception is much higher among men than among women (Table 5.4). Fifty-five percent of men are currently using a method of contraception; almost half (48 percent) of all men surveyed use a modern method. Among men who use a modern method, 54 percent report using the IUD, the most common method among all age groups. Condom use was reported by 37 percent of the male respondents, but use is concentrated among younger men (for example 35 percent of 20- to 24-year-olds versus 17 percent of 40- to 44-year-olds).

More than half (55 percent) of married men report that they are using a modern method and an additional 8 percent are currently using a traditional method. Overall, use of modern methods is concentrated among men age 30 to 49, more than 60 percent of whom are using a modern method. The IUD is the most commonly used method (38 percent of all married men), followed by the condom (11 percent). Three percent of married men report using the pill and female sterilization. Pill use is concentrated among men age 20 to 34. Men 35 and above are more likely to report using female sterilization than younger men. Among sexually active unmarried men, 85 percent report using a modern method of contraception. The condom accounts for 85 percent of modern method use.

5.4 Current Use by Background Characteristics

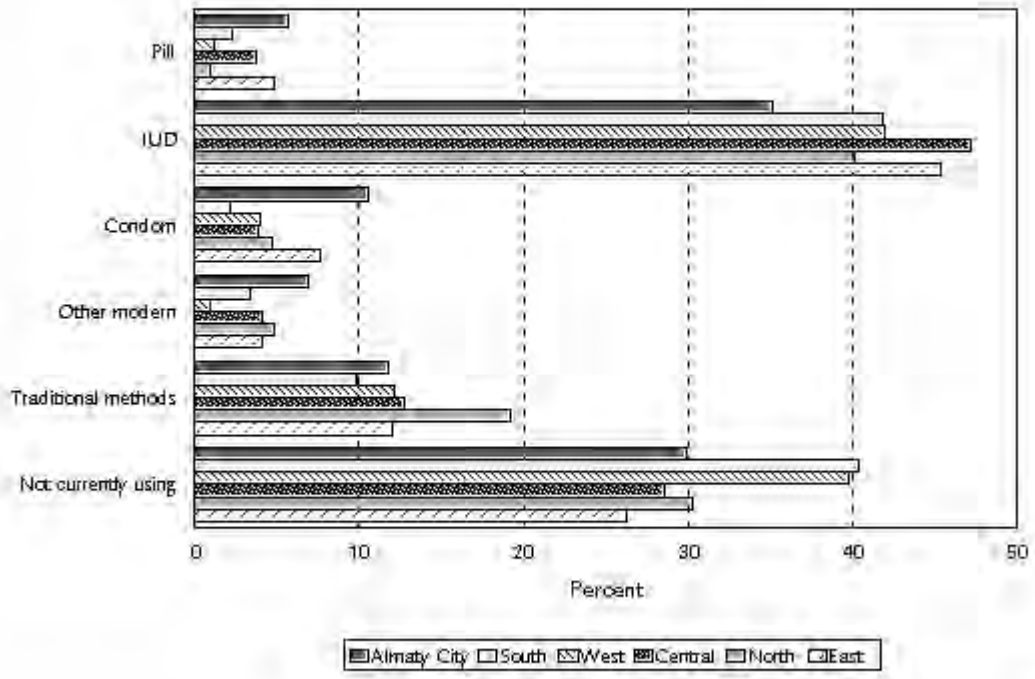
Table 5.5 presents levels of contraceptive use among currently married women by background characteristics. Overall, use of modern contraceptive methods varies little: 54 percent of women in urban areas and 51 percent of women in rural areas report using a modern method. Urban women are more likely than rural women to use the pill (4 percent versus 1 percent) and the condom (6 percent versus 2 percent). A larger proportion of rural women (44 percent) than urban women (40 percent) rely on the IUD. This pattern of modern contraceptive use closely resembles the findings of the 1995 KDHS.

While 54 percent of both ethnic Kazakh and ethnic Russian women use a modern method of contraception, there is some variation in the use of specific methods. The most commonly used method among both ethnic groups is the IUD, but only 38 percent of Russians as opposed to 47 percent of Kazakhs use the IUD. On the other hand, a greater proportion of Russians rely on the pill (4.4 percent versus 1.3 percent) and the condom (7 percent versus 3 percent). Traditional methods are also more prevalent among Russian (16 percent) than Kazakh (10 percent) respondents.

Contraceptive use by region does not vary to the degree that might be expected from the fertility differentials by region. The North and East regions, for example, have much lower levels of fertility than the South and West regions, but do not differ greatly in contraceptive use (approximately 70 percent versus 60 percent). Induced abortion, which is more prevalent in the North and East regions, could account for this discrepancy (see Chapter 6). It is also notable that while use of the IUD is lower in Almaty City (35 percent) than in the other regions (40 to 47 percent), use of modern methods other than the IUD is higher in Almaty City than the other regions (Figure 5.1).

The increase in contraceptive use in all regions is primarily due to increases in modern methods. In all regions except the South region, the IUD accounts for much more of the increase the pill or condom. In the South region, however, there has been no significant increase in IUD use; in this region pill and condom use account for some of the overall rise in modern contraceptive use. The most significant increase in modern method use (47 to 58 percent) and the greatest decrease in reliance on traditional methods (17 to 12 percent) occurred in Almaty City.

Figure 5.1 **Current Use of Family Planning by Region**



KDHS 1999

Table 5.4 Current use of contraception: men

Percent distribution of all men, of currently married men, and of sexually active unmarried men, who are currently using a contraceptive method by specific method, according to age, Kazakhstan 1999

		Modern method							Traditional method							
Age	Any method	Any modern method	Pill	IUD	Injec-tables	Condom	Female sterili-zation	Male sterili-zation	Any trad. method	Lacta-tional amen.	Periodic absti-nence	With-drawal	Other methods	Not currently using	Total	Number of men
							ALL MEN									
15-19	23.8	22.0	1.4	0.0	0.0	20.7	0.0	0.0	1.8	0.0	0.0	1.8	0.0	76.2	100.0	226
20-24	53.1	46.3	3.3	7.9	0.0	35.1	0.0	0.0	6.8	2.9	2.6	1.3	0.0	46.9	100.0	182
25-29	62.0	53.6	7.1	26.3	0.0	19.9	0.0	0.3	8.4	1.5	3.9	1.8	1.2	38.0	100.0	176
30-34	64.9	60.7	2.3	32.9	0.0	24.2	1.3	0.0	4.2	0.6	0.7	2.6	0.3	35.1	100.0	172
35-39	74.8	62.5	2.2	46.1	0.6	9.6	4.1	0.0	12.3	0.8	6.0	3.7	1.7	25.2	100.0	229
40-44	67.5	60.1	1.6	39.6	0.0	17.2	1.6	0.0	7.4	0.0	2.6	4.0	0.9	32.5	100.0	164
45-49	69.6	62.2	0.0	42.5	0.0	12.7	5.3	1.7	7.4	0.4	3.5	1.2	2.3	30.4	100.0	122
50-54	35.7	33.1	1.6	23.4	0.0	4.8	3.3	0.0	2.6	0.0	0.0	2.6	0.0	64.3	100.0	104
55-59	15.4	15.4	0.0	10.7	0.0	1.5	3.2	0.0	0.0	0.0	0.0	0.0	0.0	84.6	100.0	65
Total	54.5	48.2	2.4	25.8	0.1	18.0	1.8	0.2	6.3	0.8	2.4	2.3	0.8	45.5	100.0	1,440
							CURRENTLY MARRIED MEN									
15-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	1
20-24	60.9	41.1	5.0	23.5	0.0	12.6	0.0	0.0	19.8	9.1	8.4	2.4	0.0	39.1	100.0	57
25-29	65.5	55.7	7.9	36.3	0.0	11.5	0.0	0.0	9.8	2.2	3.5	2.2	1.9	34.5	100.0	118
30-34	65.0	60.3	3.0	39.8	0.0	15.8	1.7	0.0	4.7	0.8	0.4	3.4	0.0	35.0	100.0	132
35-39	77.6	64.2	2.1	49.3	0.6	7.8	4.4	0.0	13.3	0.9	6.6	4.0	1.9	22.4	100.0	211
40-44	69.0	62.4	1.8	42.1	0.0	16.6	1.8	0.0	6.6	0.0	2.9	2.8	1.0	31.0	100.0	144
45-49	74.2	65.9	0.0	46.4	0.0	11.7	5.9	1.9	8.3	0.5	3.9	1.3	2.6	25.8	100.0	110
50-54	36.3	33.6	1.1	24.9	0.0	4.0	3.6	0.0	2.7	0.0	0.0	2.7	0.0	63.7	100.0	98
55-59	15.6	15.6	0.0	11.4	0.0	0.8	3.4	0.0	0.0	0.0	0.0	0.0	0.0	84.4	100.0	61
Total	63.0	54.6	2.6	38.2	0.1	10.7	2.8	0.2	8.4	1.2	3.4	2.7	1.1	37.0	100.0	933
							SEXUALLY ACTIVE UNMARRIED MEN									
15-19	92.5	88.7	8.9	0.0	0.0	79.8	0.0	0.0	3.8	0.0	0.0	3.8	0.0	7.5	100.0	35
20-24	83.2	81.6	3.6	0.0	0.0	78.0	0.0	0.0	1.6	0.0	0.0	1.6	0.0	16.8	100.0	57
25-29	92.4	85.9	5.6	16.9	0.0	62.5	0.0	0.9	6.5	0.0	5.5	0.0	0.9	7.6	100.0	57
Total	88.9	84.9	5.6	6.5	0.0	72.4	0.0	0.4	4.0	0.0	2.1	1.5	0.4	11.1	100.0	149

Note: For the sexually active panel 25-29 = 25+

Table 5.5 Current use of contraception by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Any method	Modern method							Traditional method						Not currently using	Total	Number of women
		Any modern method	Pill	IUD	Injec-tables	Diaph./ foam/ jelly	Condom	Female sterili-zation	Any trad. method	Lacta-tional amen.	Periodic absti-nence	With-drawal	Douche	Other methods			
Residence																	
Urban	67.4	54.1	3.7	40.0	0.6	0.8	6.3	2.6	13.3	1.2	6.1	1.7	4.1	0.2	32.6	100.0	1,596
Rural	64.6	51.1	1.0	44.2	0.5	0.0	2.4	3.0	13.5	2.1	2.9	4.2	4.0	0.3	35.4	100.0	1,422
Region																	
Almaty City	70.1	58.3	5.7	35.1	1.7	2.6	10.6	2.6	11.8	0.6	4.3	1.4	5.2	0.3	29.9	100.0	159
South	59.6	49.8	2.3	41.8	0.4	0.2	2.2	2.8	9.8	1.6	2.9	2.3	2.7	0.3	40.4	100.0	926
West	60.2	48.0	1.2	41.9	0.2	0.0	4.0	0.7	12.2	0.8	4.4	1.3	4.9	0.7	39.8	100.0	394
Central	71.5	58.8	3.7	47.1	1.0	0.4	3.9	2.7	12.7	1.4	7.7	1.1	2.5	0.0	28.5	100.0	281
North	69.7	50.5	0.9	40.1	0.7	0.5	4.7	3.6	19.2	1.8	6.0	6.0	5.3	0.0	30.3	100.0	837
East	73.8	61.8	4.8	45.3	0.4	0.5	7.6	3.2	12.0	2.4	3.7	1.1	4.6	0.2	26.2	100.0	422
Education																	
Primary/secondary	63.5	50.8	1.4	42.3	0.9	0.0	2.9	3.4	12.7	2.0	2.1	3.4	4.9	0.3	36.5	100.0	1,064
Secondary-special	66.2	52.1	2.9	41.4	0.4	0.4	4.5	2.6	14.1	1.2	5.2	3.4	4.0	0.3	33.8	100.0	1,367
Higher	70.6	57.6	3.4	42.7	0.7	1.3	7.2	2.3	13.0	1.6	7.7	0.9	2.8	0.0	29.4	100.0	587
Ethnicity																	
Kazakh	64.0	53.7	1.3	46.5	0.5	0.1	3.1	2.2	10.3	2.0	3.0	1.7	3.4	0.2	36.0	100.0	1,607
Russian	70.1	53.7	4.4	37.5	1.0	1.0	7.2	2.6	16.4	1.0	7.0	3.3	4.8	0.3	29.9	100.0	904
Other	65.5	47.7	2.6	35.4	0.3	0.6	4.0	4.9	17.7	1.5	5.4	5.9	4.8	0.3	34.5	100.0	507
Number of living children																	
0	19.1	13.2	3.6	3.2	0.0	0.2	4.1	2.1	5.9	0.0	1.7	1.8	2.3	0.0	80.9	100.0	204
1	66.0	50.0	3.8	37.8	0.5	0.9	6.3	0.7	16.0	2.6	5.4	4.2	3.6	0.1	34.0	100.0	676
2	72.5	56.7	2.5	44.1	1.1	0.5	5.4	3.2	15.8	1.9	5.4	3.5	4.7	0.2	27.5	100.0	1,102
3	69.6	58.7	1.6	49.9	0.3	0.4	2.9	3.6	10.9	0.6	4.1	1.6	4.3	0.4	30.4	100.0	571
4+	67.5	57.2	0.8	50.2	0.3	0.0	1.6	4.3	10.2	1.4	3.4	1.5	3.7	0.3	32.5	100.0	464
Total	66.1	52.7	2.4	42.0	0.6	0.4	4.5	2.8	13.4	1.6	4.6	2.9	4.1	0.2	33.9	100.0	3,018

One notable change in the pattern of use of modern methods over the preceding five years is use at the lower parities: 13 percent of married women with no children state that they are using a modern method, up from 6 percent in 1995, and 50 percent of women with one living child are using modern method, up from 36 percent.

5.5 Current Use by Women's Status

A woman's ability to use contraceptive methods to control her fertility is likely to be affected by her status and degree of empowerment. The 1999 KDHS collected information on three indicators of women's empowerment: number of decisions in which the respondent has the final say, the number of reasons for which a woman can refuse to have sexual relations with her husband, and the number of reasons for which the respondent feels a husband is justified in beating his wife. The first of these indicators, which ranges from 0 to 5, represents the total number of decisions from among five specified decisions (see Table 3.12 for the list of specific decisions) that the respondent participates in. This indicator is positively related to women's empowerment and reflects the degree of control women are able to exercise in areas that affect their own lives and environments. The second measure, which ranges from 0 to 4, is the total number of circumstances from among four specified circumstances (see Table 3.14 for the list of circumstances) in which the respondent feels that a woman is justified in refusing sexual relations with her husband. This indicator reflects perceptions of sexual roles and women's rights over their bodies and sexuality. This indicator also relates positively to women's sense of self and empowerment. The final measure, which ranges from 0 to 5, is the total number of reasons from among five specified reasons (see Table 3.13 for list of reasons) for which the respondent feels a husband is justified in beating his wife. A lower score on this indicator is interpreted to reflect greater sense of entitlement, self-esteem, and status of women. Thus, this one indicator has a negative association with women's empowerment.

Table 5.6 shows the relationship of each of these three indicators of women's empowerment with current use of contraceptive methods by currently married women age 15-49. Women who are more empowered are expected to be better able to control all aspects of their lives including their fertility. Table 5.6 shows that the higher are women's scores on each of the first two indicators of empowerment and the lower their scores on the third indicator of empowerment, the greater the likelihood that they will be using contraception. This correlation is generally true for women's use of both modern and traditional methods. For example, only 32 percent of women who participate in no more than one household decision are using a modern contraceptive method compared with 54 percent of women who participate in all or almost all (4-5) household decisions. Similarly, only 6 percent of women who say that women cannot refuse sexual relations with their husband for any reason use a traditional method compared with 14 percent of women who say that women can refuse sex with their husbands for all or almost all of the reasons specified. The likelihood of the use of any particular method, however, is not necessarily related in the same way with each of these indicators. For example, use of the IUD (the most popular contraceptive method) is positively associated with women's scores on the indicator measuring acceptance of wife beating. By contrast, condom use increases as women's scores on the acceptance of wife beating decrease. Empowerment measured by all three indicators is positively associated with women's use of periodic abstinence (the most popular method after the IUD). These results suggest that different dimensions of women's empowerment are positively associated with women's use of contraception in Kazakhstan, but differ in their effect on the choice of method.

5.6 Current use of contraception by women's status indicators

Percent distribution of currently married women by contraceptive method currently used, according to selected indicators of women's status, Kazakhstan 1999

Women's status indicator	Any method	Modern method							Traditional method						Not currently using	Total	Number of women
		Any modern method	Pill	IUD	Injec-tables	Diaph./ foam/ jelly	Condom	Female sterili-zation	Any trad. method	Lacta-tional amen.	Periodic absti-nence	With-drawal	Douche	Other methods			
No. of decisions with woman having final say																	
0-1	41.2	31.8	0.0	27.5	1.9	0.0	2.4	0.0	9.4	5.6	0.0	2.3	1.5	0.0	58.8	100.0	120
2-3	61.7	47.0	3.0	37.9	0.1	0.0	5.0	1.1	14.7	2.1	4.4	2.9	4.1	1.1	38.3	100.0	308
4-5	67.8	54.4	2.5	43.1	0.6	0.5	4.5	3.1	13.4	1.3	4.8	2.9	4.2	0.1	32.2	100.0	2,590
No. of reasons to justify refusing sexual relations with husband																	
0	50.1	43.8	0.8	34.9	0.0	0.0	4.7	3.4	6.4	0.0	1.6	0.8	4.0	0.0	49.9	100.0	60
1-2	60.6	49.8	1.2	40.4	1.7	0.9	1.3	4.2	10.8	1.4	3.5	2.2	3.2	0.5	39.4	100.0	277
3-4	67.0	53.2	2.6	42.3	0.5	0.4	4.8	2.6	13.8	1.7	4.8	3.0	4.2	0.2	33.0	100.0	2,682
No. of reasons to justify wife beating																	
4-5	58.9	51.0	0.0	47.3	1.8	0.0	1.1	0.9	8.0	2.2	0.4	0.9	4.4	0.0	41.1	100.0	157
1-3	60.8	48.6	1.0	41.3	0.3	0.1	2.8	3.1	12.2	1.7	2.4	3.7	4.0	0.3	39.2	100.0	819
0	68.8	54.5	3.2	41.8	0.6	0.6	5.4	2.8	14.3	1.5	5.8	2.7	4.1	0.2	31.2	100.0	2,042
Total	66.1	52.7	2.4	42.0	0.6	0.4	4.5	2.8	13.4	1.6	4.6	2.9	4.1	0.2	33.9	100.0	3,018

5.6 Use of the Pill

Users of the pill were asked to present their pill package to the interviewer, who then proceeded to record the brand name of the pills. Respondents who were unable to present the package were asked to report the brand name of their pills. Table 5.7 shows the percentage of women who are using the pill and the percentage of pill users who showed their pill packages to interviewers, by background characteristics. Table 5.8 presents the distribution of pill users by their brand of pills. Both tables present data for all pill users, regardless of marital status.

Table 5.7 Pill use and possession of pill packet

Percentage of all women using the pill and the percentage of pill users who have a packet at home, by background characteristics, Kazakhstan 1999

Background characteristic	All women		Percentage of pill users who could show package
	Percentage using pill	Number of women	
Age			
15-19	0.7	791	44.1
20-24	3.1	666	38.8
25-29	4.1	692	72.7
30-34	1.8	698	77.7
35-39	2.6	749	82.7
40-44	2.4	681	41.7
45-49	0.3	522	61.3
Residence			
Urban	3.2	2,668	62.2
Rural	0.9	2,132	61.3
Region			
Almaty City	5.8	291	54.1
South	1.8	1,455	81.6
West	0.8	628	60.0
Central	3.8	475	58.5
North	1.1	1,259	41.9
East	3.6	692	60.8
Education			
Primary/secondary	1.1	1,927	55.8
Secondary-special	2.6	1,908	68.9
Higher	3.6	965	56.0
Ethnicity			
Kazakh	1.2	2,587	68.4
Russian	3.9	1,454	57.1
Other	2.3	760	66.8
Total	2.2	4,800	62.0

Pill use is highest among women age 25-29 years (4 percent), urban women (3 percent), women living in Almaty City (6 percent), women with higher education (4 percent), and Russian women (4 percent). Overall, 2.2 percent of respondents reported using the pill, as opposed to 1.5 percent in the 1995 KDHS. Pill use appears to have increased among urban women (from 2.0 to 3.2 percent) and women in their twenties (from 2.0 to 3.1 percent among women 20 to 24, and from 2.5 to 4.1 percent among women 25 to 29).

Overall, 62 percent of pill users were able to show their pill packets to the interviewer, less than in 1995 (70 percent). The ability to show the package varied by background characteristics, particularly age and region. Women residing in the South region (82 percent) were twice as likely to show their pill package as pill users residing in the North region (42 percent). The ability to show the package also varied by age from a low of 39 percent of users age 20 to 24 to a high of 83 percent among users age 35 to 39.

Women in Kazakhstan have a choice of types of pills. Table 5.8 indicates that there are 19 brands of pills being used, the most common being Regevidon (23 percent).

Table 5.8 Use of pill brands

Percent distribution of pill users by the brand of pills used, Kazakhstan 1999

Pill brand	Percent
Anovlar	0.5
Bisecurin	0.4
Lo-femenal	4.8
Marvelon	11.8
Microgynon	2.8
Non-ovlon	1.6
Ovidon	0.4
Postinor	9.2
Rigevidon	23.2
Triziston	0.4
Triquilar	6.6
Tri-regol	16.6
Femenal	0.4
Pharmatex	2.2
Blue Lady	4.3
Tryvigidron	0.4
Antiovin	1.3
Organometril	0.4
Exmotol	0.8
Don't know	2.9
Missing	8.7
Total	100.0
Number	105

5.7 Number of Children at First Use of Contraception

To make an assessment of the motivations for using family planning methods, women were asked how many living children they had at the time they first used a method of family planning. Women who first use a method before having a child presumably want to delay their childbearing to some time in the future. Women who first employ a method after having one or two children may either want to delay the next child or to limit their childbearing. Women who use a method for the first time after having several children are more likely to be using family planning to stop childbearing, rather than to space their births.

Table 5.9 presents the percent distribution of ever-married women by the number of living children they had at the time they first used a method of family planning. The use of family planning to delay the first pregnancy is uncommon in Kazakhstan (10 percent). However, first use of contraception is common among ever-married women with one living child (41 percent).

Table 5.9 Number of children at first use of contraception

Percent distribution of ever-married women by number of living children at the time of first use of contraception and median number of children at first use, according to current age, Kazakhstan 1999

Current age	Never used contra-ception	Number of living children at time of first use of contraception						Total	Number of women	Median number of children
		0	1	2	3	4+	Missing			
15-19	45.8	31.4	22.8	0.0	0.0	0.0	0.0	100.0	71	0.0
20-24	24.9	23.1	38.1	13.1	0.6	0.0	0.1	100.0	399	0.4
25-29	13.1	15.1	48.0	19.2	3.4	1.1	0.0	100.0	596	0.6
30-34	8.3	8.7	45.9	25.2	7.3	4.3	0.3	100.0	650	0.8
35-39	7.8	5.6	40.6	26.3	11.6	7.9	0.2	100.0	724	1.0
40-44	10.9	3.8	36.3	25.5	12.5	10.8	0.3	100.0	653	1.2
45-49	14.9	4.8	35.0	19.6	10.0	15.2	0.4	100.0	492	1.1
Total	13.0	9.8	40.6	21.9	7.9	6.6	0.2	100.0	3,585	0.8

Note: Median values are for ever-married women who have ever used contraception. Median values in this report are smaller, by approximately one child, than the values reported in the 1995 KDHS (Table 4.8). The values in the 1995 KDHS report are incorrect. Based on correctly calculated values, there is little change between the 1995 and 1999 estimates of the median number of children at first use of contraception.

Statistics are also shown in Table 5.9 on the median number of living children at the time of first use of contraception for ever-married women who have ever used contraception. Overall, there has been a shift over the past two decades to first use of contraception when there are fewer living children. For example, the median number of children at first use among the younger cohorts of women (below age 35) is less than one child while that for older cohorts (35 and above) is one child or more.

5.8 Source of Family Planning Methods

In Kazakhstan, most modern methods of contraception, such as the IUD and injectables, are distributed through the public sector free of charge. Public sector sources include women's consulting centers and women's consulting offices of polyclinics. Other modern contraceptives, such as pills and condoms, are available for a fee at commercial facilities.

All women currently using a modern method were asked where they most recently obtained their method.[1] Table 5.10 shows the percent distribution of all current users of modern contraceptives by the source from which they most recently obtained their method.

Table 5.10 Source of supply for modern contraceptive methods

Percent distribution of current users of modern contraceptive methods by most recent source of supply, according to specific methods, Kazakhstan 1999

	Method				
Source of supply	Pill	IUD	Condom	Other modern[1]	Total
Public	22.4	85.4	4.8	86.0	73.5
Hospital	3.6	33.1	0.0	57.3	29.7
Polyclinic	3.2	11.1	1.3	1.9	9.0
FGP	2.1	4.7	2.3	2.3	4.2
Women's consulting center	13.5	30.5	1.0	4.4	24.6
Maternity house	0.0	5.0	0.0	0.0	3.8
Other	0.0	1.0	0.2	20.1	2.2
Private medical	70.8	13.7	70.6	13.3	22.8
Hospital/clinic	0.5	0.9	0.7	0.0	0.8
Pharmacy	70.3	12.1	62.6	13.3	20.7
Doctor	0.0	0.4	0.0	0.0	0.3
Other	0.0	0.2	7.2	0.0	0.9
Other	4.9	0.7	15.5	0.8	2.5
Don't know	0.0	0.0	9.2	0.0	1.0
Missing	1.9	0.1	0.0	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0
Number of women	105	1,426	193	130	1,853

[1] Other modern methods includes injectables and diaphragm
FGP = Family Group Practices

[1] Data collection included recording the name of the source so that team supervisors and editors could verify the sources.

The majority of women (74 percent) obtain their contraceptive method through the public sector. However, this is a substantial decrease from 1995 when 92 percent of women obtained their method from the public sector. Thirty percent of users obtain their method from a hospital, while 25 percent obtain their method from a women's consulting center. In the past five years, all pharmacies have been privatized, and the proportion of women obtaining their contraceptive methods through private facilities has increased from less than 1 percent to 23 percent.

The source of supply of the method depends on the method being used. For example, most women using IUDs obtain them at hospitals (33 percent) or women's consulting centers (31 percent). Pharmacies supply 70 percent of pill users and 63 percent of condom users. Pill users also use womens' consulting centers to obtain their pills (14 percent).

5.9 Informed Choice

Women should make decisions regarding contraceptive use after having been fully informed of the various methods and side effects or risks associated with the methods. Table 5.11 shows the percentage of sterilized women who were informed that they would not be able to bear more children after the sterilization operation. The table also shows the percentage of current users of modern contraception who were told about the side effects of methods and the different methods available by a health or family planning worker at the time they accepted their current method.

Eighty-four percent of sterilized respondents report that they were informed that they would not be able to bear more children after the procedure. Among women using other methods of contraception, 31 percent were told about the side effects and 28 percent were told what to do if they did experience side effects. Only 19 percent were informed about other methods of contraception. In general, women who received their contraceptive method from a public facility were more likely to have received information than women who received their method from a private facility. It is clear that both public and private health and family planning workers in Kazakhstan are not providing women with the information they need to make an informed choice about contraceptive methods.

5.10 Discontinuation within 12 Months of Use

Table 5.12 shows contraceptive discontinuation rates. During the three years preceding the survey, 39 percent of all users of contraception discontinued using the method during the first year of use. The first-year discontinuation rate for the IUD (11 percent) is comparatively low. On the other hand, almost two-thirds of the users of the pill and withdrawal (64 and 63 percent, respectively) discontinued within one year of commencing use. Fifty-eight percent of condom users and 48 percent of periodic abstinence users discontinued within 12 months.

Table 5.13 shows the distribution of discontinuations during the last five years of all contraceptive methods by reason for discontinuation. Twenty percent of all discontinuations were attributed to method failure, i.e., accidental pregnancy. The low efficacy of periodic abstinence and withdrawal is evidenced by the high failure rate of these methods during use. Thirty-seven percent of periodic abstinence discontinuations and 28 percent of withdrawal discontinuations were reported to be method failures. Users of diaphragms, foam, or jelly reported method failure as the most common reason for discontinuation (36 percent), and 20 percent of condom users reported method failure. This could indicate that users of these methods are not using them properly.

Table 5.11 Informed choice

Percentage of current users of modern contraceptive methods by whether they were informed of the effects of contraception and about other methods, according to type of modern method, source of supply and background characteristics, Kazakhstan 1999

Characteristic	Informed that sterilization is permanent[1]	Informed about side effects of method	Informed about what to do if experienced side effects	Informed about other methods that could be used
Modern method				
Female sterilization	84.0	25.4	20.9	16.7
Pill	-	48.7	41.6	44.4
IUD	-	29.2	26.6	16.9
Injectables	-	75.9	58.6	59.5
Other	-	-	-	16.4
Source of Current Method				
Public	84.0	31.3	28.0	19.6
Hospital	87.7	30.7	26.6	16.7
Polyclinic	-	34.5	30.0	23.2
FGP	-	43.3	40.2	28.1
Women's consulting center	-	28.1	25.7	19.5
Pharmacy	-	31.6	28.8	23.5
Maternity house	-	39.1	37.0	18.7
Other	73.5	26.7	24.9	12.9
Private medical	-	23.9	21.4	11.4
Hospital/clinic	-	53.2	53.2	18.6
Pharmacy	-	19.5	15.8	7.1
Doctor	-	0.0	0.0	40.7
Other private medical	-	20.5	20.5	0.0
Other	100.0	21.9	21.9	0.0
Missing	-	0.0	0.0	52.1
Residence				
Urban	81.2	30.0	26.4	21.7
Rural	87.0	31.8	29.0	16.0
Region				
Almaty City	60.0	35.2	33.8	30.8
South	84.1	48.3	44.4	28.4
West	100.0	25.9	21.1	14.2
Central	95.0	21.3	17.9	18.1
North	87.3	17.9	16.2	11.3
East	72.0	28.2	24.4	14.7
Education				
Primary/secondary	83.1	29.4	27.0	14.0
Secondary-special	87.2	31.7	28.1	19.8
Higher	77.4	31.4	27.7	26.2
Ethnicity				
Kazakh	91.7	34.2	30.9	18.4
Russian	61.8	27.3	23.5	19.8
Other	92.8	25.9	24.1	20.4
Total	84.0	30.8	27.6	19.1
Number of women	80	507	454	318

[1] Sterilized women only

Table 5.12 Contraceptive discontinuation rates

First-year contraceptive discontinuation rates due to method failure, desire for pregnancy, health reasons, or other reasons, according to specific method, Kazakhstan 1999

Method	Reason for discontinuation				
	Method failure	To become pregnant	Side effects, health	All other reasons	All reasons
Pill	9.9	7.0	21.4	25.8	64.1
IUD	3.1	1.4	5.2	1.6	11.2
Condom	10.5	3.4	0.4	43.2	57.6
Periodic abstinence	21.1	2.6	0.0	24.4	48.1
Withdrawal	17.6	3.8	0.5	41.1	63.1
Other[1]	21.2	3.0	0.5	22.0	46.6
Total	9.7	2.9	5.7	20.2	38.5

[1] Other methods includes injectables and diaphragm

Table 5.13 Reasons for discontinuation

Percent distribution of discontinuations of contraceptive methods in the five years preceding the survey by main reason for discontinuation, according to specific method, Kazakhstan 1999

Reason for discontinuation	Pill	IUD	Injec-tables	Diaph./ foam/ jelly	Condom	Period. absti-nence	With-drawal	Other	Total
Became pregnant	13.9	11.5	1.1	36.1	20.1	36.5	27.8	49.3	19.5
To become pregnant	12.4	21.0	1.1	5.2	8.4	6.9	8.8	3.8	12.4
Husband disapproved	0.0	0.1	0.0	0.0	6.5	1.9	16.9	0.0	2.9
Side effects	12.6	17.5	36.7	0.0	0.2	0.0	0.0	0.8	8.0
Health concerns	18.8	31.9	33.0	0.0	0.5	0.8	1.3	0.9	14.0
Access/availability	3.4	0.1	4.9	17.5	1.3	0.3	0.0	0.0	1.0
More effective meth	12.4	1.7	14.2	24.8	27.7	34.2	25.5	22.8	18.7
Inconvenient to use	3.7	3.3	3.2	4.4	7.8	6.5	6.0	8.9	5.1
Infrequent sex	7.1	3.5	4.3	6.5	16.7	7.0	9.0	7.1	7.2
Cost	10.0	0.0	0.0	5.5	4.5	0.0	0.0	0.0	2.1
Fatalistic	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Menopause	1.0	2.2	0.0	0.0	0.3	2.5	0.7	0.8	1.3
Marital dissolution	0.8	0.7	0.0	0.0	1.1	0.7	0.5	0.8	0.7
Other	2.2	5.2	1.4	0.0	2.7	1.0	1.5	1.4	5.3
Don't know	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0
Missing	1.7	0.8	0.0	0.0	2.1	1.6	1.8	3.2	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	361	970	43	31	511	294	256	170	2,899

In the early stages of family formation, couples generally prefer using family planning methods that are reversible so they can conceive later. The desire to become pregnant is another important reason for discontinuation of a contraceptive method (12 percent).

Nineteen percent of respondents who discontinued using a contraceptive method did so because they found a more effective method. In particular, users of periodic abstinence, condoms, and withdrawal reported switching to a more effective method. Among users of some methods, side

effects and health concerns figure prominently in a couple's decision to discontinue use. Thirty-one percent of pill users, 49 percent of IUD users, and 70 percent of users of injectables who discontinued the method cited either side effects or health concerns as the reason for discontinuation.

It is noteworthy that 10 percent of respondents who discontinued pill use, and 5 percent of respondents who discontinued using the condom did so because of the cost.

5.11 Intention to Use Family Planning among Nonusers

Intentions of women to use family planning methods in the future provide a basis for forecasting potential need for family planning services. The 1999 KDHS asked currently married nonusers of contraception whether they intend to use a method of contraception at some time in the future. Table 5.14 presents the results for currently married women according to the number of living children they have. The results for men are also shown.

Table 5.14 Future use of contraception

Percent distribution of currently married women and men who are not using a contraceptive method by intention to use in the future, according to number of living children, Kazakhstan 1999

Future intentions	Number of living children (women)[1]					All women	All men
	0	1	2	3	4+		
Currently married nonusers							
Intend to use in next 12 months	0.0	0.0	0.0	0.0	0.0	0.0	11.2
Intend to use later	50.9	52.8	40.8	40.8	40.7	44.7	4.8
Unsure as to timing	0.0	0.0	0.0	0.0	0.0	0.0	2.6
Unsure as to intention	7.9	12.5	11.2	7.7	8.5	10.1	17.2
Do not intend to use	41.3	33.2	47.0	50.0	50.8	44.3	62.7
Missing	0.0	1.5	1.0	1.6	0.0	0.9	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women/men	118	234	329	179	164	1,023	345

[1] Includes current pregnancy

Overall, 45 percent of currently married nonusers do intend to use a method of family planning at some time in the future, 44 percent state that they do not intend to use contraception, and 10 percent say that they are not sure about future use. Nonusers who intend to use a method later in the future tend to be women with fewer children. The overall pattern has not changed since the 1995 survey. Of the married women who state that they intend to use a method of contraception in the future, 72 percent intend to use the IUD and 13 percent intend to use the pill (data not shown). The percentage of respondents who do not intend to use contraception increases as the number of children born increases; 33 percent of nonusers with one children as opposed to 51 percent of nonusers with four or more children say they do not intend to use contraception.

A smaller proportion of currently married male nonusers, however, state that they intend to use a contraceptive method in the future. Only 19 percent intend to use a method and another 17 percent are unsure. Sixty-three percent of the currently married male nonusers state that they do not intend to use contraception.

5.12 Reasons for Nonuse of Contraception

The 1999 KDHS asked all nonusers who do not intend to use a method of family planning at any time in the future the reason they do not intend to use a method in the future. Table 5.15 presents these results for all women and for women below and above age 30. The most common reason given among older nonusers for not using contraception (41 percent) is menopause or hysterectomy; surprisingly, 16 percent of respondents under age 30 also cited this reason. The most common reason given by younger women was wanting more children (50 percent). Male responses followed a similar pattern with older men citing menopause or hysterectomy as the main reason for nonuse (49 percent) and younger men stating that they wanted more children (61 percent).

It is notable that significantly more women (15 percent) than men (3 percent) claim to be opposed to contraception. Nevertheless, a smaller proportion of female nonusers cite this reason than in the previous KDHS: in 1995, 35 percent of all female respondents who did not intend to use contraception stated that they were opposed to its use.

Table 5.15 Reasons for not using contraception

Percent distribution of women and men who are not using any contraceptive method and who do not intend to use in the future, by main reason for not intending to use, Kazakhstan 1999

	Women			Men		
	Age			Age		
Reason	< 30	30+	Total	< 30	30+	Total
Infrequent sex	2.7	6.5	6.0	0.0	3.4	3.2
Menopausal, hysterectomy	15.9	40.8	38.0	0.0	49.1	46.4
Subfecund, infecund	7.3	16.7	15.7	4.5	11.1	10.7
Wants more children	50.1	8.7	13.4	61.3	15.6	18.1
Respondent opposed	9.2	15.6	14.9	0.0	3.2	3.0
Spouse opposed	0.8	0.3	0.4	16.7	6.6	7.2
Religious prohibition	1.4	1.4	1.4	17.6	1.0	1.9
Health concerns	3.3	2.3	2.4	0.0	0.3	0.2
Fear of side effects	1.8	1.6	1.6	0.0	0.4	0.4
Costs too much	0.0	0.7	0.7	0.0	0.3	0.2
Inconvenient to use	1.1	0.0	0.1	0.0	1.0	0.9
Interferes with body	0.0	0.0	0.0	0.0	1.2	1.1
Other	0.0	3.4	3.0	0.0	2.4	2.3
Don't know	6.4	2.0	2.5	0.0	3.4	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women/men	51	403	453	12	205	217

5.13 Contact of Nonusers of Family Planning with Family Planning Providers

Table 5.16 shows the percent distribution of female nonusers by their exposure to a family planning provider. Only 7 percent of all women in the survey spoke with a professional about family planning during the preceding year. Forty percent did visit a health facility but did not speak about family planning there. More than half of all respondents (54 percent) neither saw a family planning worker nor visited a health facility in the 12 month period preceding the survey.

Table 5.16 Contact of nonusers with family planning providers

Percent distribution of nonusers by whether they were visited by a family planning (FP) worker or spoke with a health facility staff member about family planning methods during the 12 months prior to interview, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Visited by a family planning worker: Yes; Attended health facility: Yes; Discussed FP[1]: Yes	Visited by a family planning worker: Yes; Attended health facility: Yes; Discussed FP[1]: No	Visited by a family planning worker: Yes; Attended health facility: No	Visited by a family planning worker: No; Attended health facility: Yes; Discussed FP[1]: Yes	Visited by a family planning worker: No; Attended health facility: Yes; Discussed FP[1]: No	Visited by a family planning worker: No; Attended health facility: No	Missing	Neither visited by FP worker nor discussed FP at health facility[2]	Total	Number of women
Age										
15-19	1.0	1.7	2.5	1.8	33.2	59.6	0.2	92.8	100.0	738
20-24	1.4	0.6	0.8	4.5	38.0	54.6	0.2	92.6	100.0	429
25-29	1.4	1.8	0.0	7.0	46.7	43.1	0.0	89.8	100.0	299
30-34	1.3	1.4	0.0	7.4	43.4	46.5	0.0	89.9	100.0	246
35-39	1.4	0.7	1.4	4.0	46.0	46.6	0.0	92.5	100.0	223
40-44	0.0	0.6	0.2	3.9	40.5	54.9	0.0	95.4	100.0	250
45-49	0.2	1.4	0.0	3.7	37.2	57.2	0.2	94.4	100.0	313
Residence										
Urban	0.9	1.5	0.8	4.1	42.3	50.3	0.0	92.6	100.0	1,357
Rural	1.1	0.9	1.3	4.0	35.1	57.3	0.3	92.4	100.0	1,140
Region										
Almaty City	2.3	2.3	2.7	3.3	38.1	51.2	0.0	89.3	100.0	137
South	1.6	1.8	0.7	4.5	40.8	50.7	0.0	91.5	100.0	844
West	0.6	1.0	0.5	2.8	24.1	70.6	0.4	94.7	100.0	357
Central	0.3	1.0	0.2	2.4	33.8	62.3	0.0	96.1	100.0	219
North	0.6	0.6	1.2	4.8	51.7	40.8	0.3	92.5	100.0	616
East	0.6	0.8	2.0	4.5	30.6	61.4	0.0	92.0	100.0	324
Education										
Primary/secondary	1.2	1.1	1.4	3.1	34.4	58.5	0.3	92.9	100.0	1,157
Secondary-special	0.4	1.1	0.7	4.6	43.0	50.2	0.0	93.2	100.0	872
Higher	1.7	1.7	0.7	5.5	42.9	47.5	0.0	90.3	100.0	468
Ethnicity										
Kazakh	1.2	1.4	0.9	3.9	35.2	57.3	0.1	92.5	100.0	1,447
Russian	0.9	1.1	1.0	4.2	42.4	50.2	0.3	92.6	100.0	676
Other	0.4	1.0	1.4	4.5	47.8	44.9	0.0	92.8	100.0	373
Total	1.0	1.2	1.0	4.1	39.0	53.5	0.1	92.5	100.0	2,497

[1] Spoke with a health facility staff member about family planning methods.
[2] Was not visited by a family planning worker and either did not attend a health facility in preceding 12 months or attended facility but did not speak with a staff member about family planning methods.

5.14 Exposure to Family Planning Messages in the Electronic Media

The mass media provide an opportunity to communicate family planning information to a broad spectrum of the population. Approximately 41 percent of the households in Kazakhstan own a radio and nearly all (92 percent) own a television (see Table 2.9). All 1999 KDHS respondents were asked whether they had heard a family planning message on the radio or television in the few months prior to the interview. Results are presented in Table 5.17 by background characteristics.

Television is the most common source of messages on family planning—37 percent of all female respondents have seen a television message, and 16 percent of female respondents have recently heard a family planning message on both radio and television. Only 1.3 percent have heard a radio message but not a television message.

Table 5.17 Exposure to family planning messages on radio and television

Percent distribution of women and men by whether they have heard a radio or television message about family planning in the last few months prior to the interview, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Heard family planning message on radio or television					Total	Number of women/ men
	Radio & tele-vision	Radio only	Tele-vision only	Neither	Missing		
Age							
15-19	12.5	0.9	30.3	56.3	0.1	100.0	791
20-24	16.1	1.5	36.6	45.8	0.0	100.0	666
25-29	15.6	1.8	38.4	44.2	0.0	100.0	692
30-34	16.6	1.0	39.2	43.2	0.0	100.0	698
35-39	18.9	1.5	42.0	37.7	0.0	100.0	749
40-44	15.6	1.4	37.4	45.6	0.0	100.0	681
45-49	21.2	0.9	35.4	42.5	0.0	100.0	522
Residence							
Urban	23.0	1.5	38.2	37.3	0.0	100.0	2,668
Rural	8.2	1.0	35.6	55.2	0.0	100.0	2,132
Region							
Almaty City	40.9	1.7	34.0	23.3	0.2	100.0	291
South	9.5	1.3	31.3	57.9	0.0	100.0	1,455
West	17.0	1.3	36.5	45.2	0.0	100.0	628
Central	20.7	0.2	31.5	47.6	0.0	100.0	475
North	15.0	0.8	49.1	35.1	0.0	100.0	1,259
East	19.7	2.9	32.5	44.9	0.0	100.0	692
Education							
Primary/secondary	11.1	1.3	31.8	55.8	0.0	100.0	1,927
Secondary-special	16.5	1.3	40.1	42.1	0.0	100.0	1,908
Higher	26.8	1.4	41.3	30.4	0.0	100.0	965
Ethnicity							
Kazakh	12.3	1.2	32.0	54.5	0.0	100.0	2,587
Russian	23.5	1.6	41.6	33.2	0.0	100.0	1,454
Other	16.8	1.1	45.3	36.9	0.0	100.0	760
Total women	16.4	1.3	37.0	45.3	0.0	100.0	4,800
Total men	13.6	1.8	42.7	41.9	0.0	100.0	1,440

Note: Figures may not add to 100.0 due to rounding.

Since 1995, those women reporting no exposure to television or radio family planning messages have dropped from 56 to 45 percent, while those women who have heard a message on both television and radio has risen from 9 to 16 percent.

Exposure to television messages varies by residence. Three-quarters (75 percent) of women in Almaty City have recently seen a television family planning message, while only 41 percent of women in the South region have seen such a message. Women in Almaty City are also the most likely to have seen both a television message and heard a radio message (41 percent).

While television messages can be aimed at viewers of all educational levels, the likelihood that a respondent has recently seen a television message increases steadily with increasing

education. Forty-three percent of respondents with primary or secondary education have recently seen a television message, while 57 and 68 percent of women with secondary-special and higher education have seen such a message. Russian women are more likely than Kazakh women to have seen a television message (65 percent and 44 percent, respectively).

5.15 Exposure to Family Planning Messages in the Print Media

The high level of literacy in Kazakhstan makes the print media a viable mechanism for communicating family planning information. Seventy-eight percent of all respondents report that they read a newspaper at least once a week. The 1999 KDHS asked women whether they saw a message about family planning in a newspaper or magazine in the few months preceding the interview. Results are presented in Table 5.18 by background characteristics.

Table 5.18 Exposure to family planning messages in print media

Percentage of women who received a message about family planning through the print media (newspaper or magazines) in the last few months prior to the interview, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Saw family planning message in print media			Number of women
	Yes	No	Total	
Age				
15-19	32.0	68.0	100.0	791
20-24	45.6	54.4	100.0	666
25-29	42.7	57.3	100.0	692
30-34	42.4	57.6	100.0	698
35-39	47.4	52.6	100.0	749
40-44	41.8	58.2	100.0	681
45-49	43.2	56.8	100.0	522
Residence				
Urban	51.2	48.8	100.0	2,668
Rural	30.4	69.6	100.0	2,132
Region				
Almaty City	66.4	33.6	100.0	291
South	31.8	68.2	100.0	1,455
West	35.5	64.5	100.0	628
Central	49.5	50.5	100.0	475
North	49.1	50.9	100.0	1,259
East	41.0	59.0	100.0	692
Education				
Primary/secondary	29.2	70.8	100.0	1,927
Secondary-special	45.7	54.3	100.0	1,908
Higher	60.1	39.9	100.0	965
Ethnicity				
Kazakh	34.7	65.3	100.0	2,587
Russian	51.7	48.3	100.0	1,454
Other	48.2	51.8	100.0	760
Total	42.0	58.0	100.0	4,800

Note: Figures may not add to 100.0 due to rounding.

Forty-two percent of all respondents reported exposure to a family planning message in a newspaper or magazine. In 1995, the same proportion of respondents had seen a newspaper or magazine family planning message. Exposure to family planning messages in the print media varies by age from a low of 32 percent among 15- to 19-year-olds to a high of 47 percent among women age 35 to 39. A woman's likelihood of having seen a message in the print media is also related to residence: women residing in Almaty City, for example, are much more likely to have seen a print message than a woman in the South region (66 percent versus 32 percent). Russian women are also more likely to have seen a print message than Kazakhs (52 percent versus 35 percent).

5.16 Red Apple Social Marketing Logo

The "Red Apple" symbol is the logo of the Kazakhstan Contraceptive Social Marketing Program. The Red Apple logo and information about pills, injectables, and where to buy Red Apple contraceptives have been advertised on television, radio, and in newspapers. Besides asking

respondents if they had heard or seen a family planning message, the 1999 KDHS showed women the Red Apple symbol and asked them if they had ever seen it before. Respondents who answered that they had seen the symbol were asked where they had seen it and what the symbol stood for.

Table 5.19 shows respondents' knowledge of the Red Apple symbol. Twenty-six percent of women interviewed reported having seen the Red Apple logo. Exposure to the logo varied greatly by residence. Almost eight in ten Almaty residents had seen the symbol as opposed to less than 20 percent of women residing in the West, Central, North, and East regions. These data reflect the social marketing program's emphasis on the city of Almaty.

Among women who had seen the Red Apple logo, only half knew that the symbol stood for contraceptives or family planning.

Table 5.19 Knowledge of the Red Apple social marketing logo

Percent distribution of all women by recognition of the Red Apple social marketing logo (symbol), according to selected background characteristics, Kazakhstan 1999

Background characteristic	Saw Red Apple logo				Did not see logo	Missing	Total	Number of women
	Total who saw logo	Think meaning of logo is:						
		A or C	Other	Don't know/ missing				
Age								
15-19	20.6	7.7	3.4	9.4	79.2	0.2	100.0	791
20-24	27.7	12.2	4.6	10.8	72.3	0.0	100.0	666
25-29	29.7	14.5	4.1	11.1	70.3	0.0	100.0	690
30-34	24.1	14.8	2.7	6.5	75.9	0.0	100.0	689
35-39	29.2	14.9	4.6	9.7	70.8	0.0	100.0	723
40-44	25.6	12.9	6.3	6.4	74.4	0.0	100.0	645
45-49	24.1	13.9	4.4	5.8	75.8	0.1	100.0	502
Residence								
Urban	30.2	16.2	4.7	9.3	69.8	0.0	100.0	2,620
Rural	20.4	8.7	3.7	7.9	79.6	0.1	100.0	2,085
Region								
Almaty City	79.4	51.4	13.7	14.2	20.6	0.0	100.0	286
South	30.6	13.8	5.2	11.5	69.4	0.1	100.0	1,424
West	19.8	7.9	5.1	6.9	80.2	0.0	100.0	624
Central	19.8	8.8	3.0	7.9	80.1	0.1	100.0	465
North	17.2	7.8	1.1	8.2	82.8	0.0	100.0	1,229
East	18.6	11.0	4.1	3.5	81.4	0.0	100.0	677
Education								
Primary/secondary	19.6	7.5	3.0	9.2	80.3	0.1	100.0	1,888
Secondary-special	25.9	12.3	4.8	8.8	74.1	0.0	100.0	1,866
Higher	37.9	24.6	5.7	7.5	62.1	0.0	100.0	951
Ethnicity								
Kazakh	24.2	11.5	4.5	8.2	75.8	0.0	100.0	2,542
Russian	28.4	15.2	4.3	8.9	71.5	0.1	100.0	1,428
Other	26.5	13.1	3.5	10.0	73.5	0.0	100.0	734
Total	25.8	12.9	4.3	8.7	74.1	0.0	100.0	4,705

A = Family Planning
C = Condom, Pills, Family Planning Methods

5.17 Attitudes of Couples toward Family Planning

Married women were asked how often they had discussed contraception with their husbands or partners in the previous year. Overall, 50 percent of women have discussed contraception with their husbands, the same proportion as in 1995. Of these women, 27 percent reported having discussed contraception three or more times (data not shown).

Married respondents were asked about their perception of their spouse's attitude toward contraception as well as their own attitude. Table 5.20 presents the distribution of couples by the wife's perception of her spouse's attitude toward family planning.

The data show that husbands and wives are often mistaken about their spouse's attitude toward family planning. Overall 69 percent of husbands and 91 percent of wives do approve of family planning. Among women who stated that their husbands disapproved, 39 percent actually approved. Among men who thought that their wives disapproved, only 13 percent actually disapproved, while 79 percent approved. Similarly, some respondents who believed that their spouse supported family planning were mistaken. This indicates that some husbands and wives are not effectively communicating their attitudes towards family planning.

Table 5.20 Spouse's perception of other spouse's approval of family planning

Percent distribution of couples by husband's and wife's actual attitude toward family planning, according to their spouse's perception of their attitude, Kazakhstan 1999

Perception	Spouse's actual attitude toward family planning			Total	Number of couples
	Approves	Disapproves	Unsure		
Wife's perception of husband's attitude					
Approves	74.3	22.5	3.2	100.0	587
Disapproves	39.0	53.7	7.3	100.0	90
Don't know	60.7	35.8	3.5	100.0	100
Total	68.5	27.8	3.7	100.0	777
Husband's perception of wife's attitude					
Approves	93.7	4.9	1.4	100.0	604
Disapproves	79.3	13.4	7.3	100.0	106
Don't know	84.6	7.4	8.0	100.0	67
Total	90.9	6.3	2.8	100.0	777

INDUCED ABORTION 6

Akkumis Salkhanova and Holly Seyhan

Induced abortion as a means of fertility control has a long history in the republics of the former Soviet Union. Induced abortion was first legalized in the Soviet Union in 1920 but was banned in 1936 as part of a pronatalist policy emphasizing population growth. This decision was reversed in 1955 when abortion for nonmedical reasons was again legalized throughout the former Soviet Union.

The practice of induced abortion can adversely affect a woman's health, reduce her chances for further childbearing, and contribute to maternal and perinatal mortality. In Kazakhstan, approximately 22 percent of maternal deaths are associated with this practice (Ministry of Health, 1996). In an effort to curtail this practice Kazakhstan's Agency on Health is committed to making modern, safe, and effective contraceptive methods readily available to the population.

Information about induced abortion was collected in the reproductive section of the Women's Questionnaire (see Appendix E). The section began with a series of questions to determine the total number of live births, induced abortions, miscarriages, and stillbirths that a respondent has had. When reporting the number of abortions, respondents were told to include pregnancies terminated by vacuum aspiration (i.e., mini-abortions)[1]. Next an event-by-event pregnancy history was collected. For each pregnancy, the type of outcome and year and month of termination were recorded.[2]

6.1 Pregnancy Outcomes

Table 6.1 shows the percent distribution of outcomes for pregnancies terminating during the three-year period preceding the survey (mid-1996 to mid-1999). In Kazakhstan, 52 percent of pregnancies end in a live birth and 48 percent end in fetal wastage (i.e., an induced abortion, a miscarriage, or a stillbirth). Induced abortion is the most commonly reported type of fetal wastage, accounting for 37 percent of all pregnancy outcomes.

Table 6.1 also presents information on pregnancy terminations by background characteristics. Women in all groups use induced abortion as a means of fertility control, but the extent to which they do so varies substantially. For example, urban women abort 46 percent of their pregnancies, while rural women abort 28 percent.

[1]The term *abortion* as used in the remainder of this report includes mini-abortions unless indicated otherwise.

[2] The pregnancy history was structured to ensure as complete reporting of abortions as possible, especially for the period immediately before the survey. Data were collected in reverse chronological order (i.e., information was first collected about the most recent pregnancy and then about the next to last and so on). This procedure was designed to result in more complete reporting of events for the years immediately before the survey than collecting information in chronological order would. At the end of the pregnancy history, interviewers were required to check the consistency between the aggregate data collected at the outset of the reproductive section and the number of events reported in the pregnancy history. Finally, interviewers were required to probe pregnancy intervals of four years or more to detect omitted events.

Table 6.1 Pregnancy outcomes by background characteristics

Percent distribution of pregnancies terminating in the three years preceding the survey, by type of outcome, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Pregnancy outcome				Total	Number of pregnancies
	Live birth	Induced abortion	Mis-carriage	Still-birth		
Residence						
Urban	42.0	45.8	10.2	2.0	100.0	805
Rural	62.2	27.6	9.5	0.8	100.0	788
Region						
Almaty City	32.9	58.4	8.7	0.0	100.0	74
South	64.1	25.0	9.8	1.1	100.0	564
West	61.2	28.3	9.5	1.0	100.0	195
Central	49.7	37.4	11.0	1.9	100.0	124
North	41.2	47.5	9.4	1.9	100.0	427
East	40.5	46.7	11.1	1.7	100.0	209
Education						
Primary/secondary	56.8	31.7	9.9	1.6	100.0	628
Secondary-special	47.9	40.6	10.4	1.1	100.0	708
Higher	51.0	38.9	8.4	1.7	100.0	256
Ethnicity						
Kazakh	63.4	26.9	8.9	0.9	100.0	905
Russian	38.5	48.6	10.1	2.7	100.0	399
Other	34.8	51.5	12.4	1.2	100.0	288
Total	52.0	36.8	9.9	1.4	100.0	1,593

Recourse to induced abortion also varies by region. As expected, levels of abortion and fertility are inversely correlated. In the relatively low fertility areas of Almaty City and the North and the East regions, women abort approximately half of their pregnancies (58, 48, and 47 percent respectively). In the high-fertility South and West regions, on the other hand, women abort a smaller proportion of pregnancies (25 and 28 percent respectively).

Education and ethnicity are associated with pregnancy outcome. For example, women of Russian ethnicity are almost twice as likely to abort a pregnancy (49 percent) as Kazakh women (27 percent).

Overall, the pattern of pregnancy outcome is similar to the 1995 KDHS, in which 38 percent of all pregnancies ended in an induced abortion.

6.2 Lifetime Experience with Induced Abortion

Table 6.2 shows the lifetime experience of women with abortion. It should be noted that the statistics on the proportion of women who have ever had an abortion are based on all women 15-49 irrespective of their exposure to the risk of pregnancy.

Overall, 40 percent of women of reproductive age in Kazakhstan have had at least one abortion. As expected, the percentage who have had an abortion increases rapidly with age; from

16 percent among women 20-24 to 63 percent among women 35 and older. Differences are large by urban-rural residence; rural women have less experience with abortion (33 percent) than urban women (45 percent). Regional and ethnic differences are even greater; 50 percent of women in the North region report experience with abortion compared with 29 percent in the South region, and 27 percent of Kazakh women have had an induced abortion compared with 55 percent of Russian women.

Table 6.2 also presents information on repeat use of induced abortion. Among women who have ever had an abortion, a majority (64 percent) have had more than one. Among women age 35 and older who have had an abortion, 71 percent have had more than one. Among these women, the mean number of abortions is 3.0, and 10 percent have had 6 or more abortions. It is clear that among women who have used abortion to control their fertility, repeat use has been common.

Table 6.2 Lifetime experience with induced abortion

Percentage of women who have had at least one induced abortion and, among these women, the percent distribution by the number of induced abortions and the mean number of induced abortions, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Percentage of women who had an induced abortion	Among women who have had an induced abortion, percentage who have had specific numbers of abortions					Mean number of abortions	Number of women
		1	2-3	4-5	6+	Total		
Age								
<20	1.6	84.2	15.8	0.0	0.0	100.0	1.2	791
20-24	15.5	54.6	41.8	3.5	0.0	100.0	1.6	810
25-34	43.2	46.5	39.9	9.9	3.6	100.0	2.1	1,246
35+	62.7	29.3	44.1	16.3	10.3	100.0	3.0	1,953
No. of live births								
0	4.9	60.3	37.8	1.9	0.0	100.0	1.5	1,427
1	44.7	43.9	40.4	10.9	4.8	100.0	2.4	946
2-3	61.4	31.8	43.9	14.7	9.6	100.0	2.9	1,923
4-5	47.9	37.2	41.1	16.9	4.9	100.0	2.5	416
6+	32.3	41.6	41.2	10.8	6.4	100.0	2.3	89
Residence								
Urban	45.0	35.9	44.3	12.7	7.1	100.0	2.6	2,668
Rural	32.8	36.8	39.6	14.9	8.7	100.0	2.7	2,132
Region								
Almaty City	47.0	29.8	47.8	13.7	8.7	100.0	2.7	291
South	28.5	41.4	42.9	8.7	7.0	100.0	2.4	1,455
West	30.5	45.3	43.6	8.7	2.4	100.0	2.0	628
Central	45.0	34.5	44.4	15.9	5.2	100.0	2.7	475
North	49.7	32.2	40.4	16.7	10.7	100.0	3.0	1,259
East	45.7	35.8	42.4	14.9	6.9	100.0	2.7	692
Education								
Primary/secondary	29.8	35.6	38.5	14.9	10.9	100.0	2.9	1,927
Secondary-special	49.4	34.1	44.5	13.9	7.5	100.0	2.7	1,908
Higher	39.6	42.5	43.9	10.5	3.1	100.0	2.1	965
Ethnicity								
Kazakh	27.1	44.9	42.8	8.9	3.4	100.0	2.1	2,587
Russian	55.4	31.4	41.0	16.8	10.8	100.0	3.0	1,454
Other	51.9	30.6	45.3	15.2	8.9	100.0	2.8	756
Marital status								
Never married	4.1	63.6	35.5	0.9	0.0	100.0	1.4	1,215
Currently married, living together	50.7	36.3	42.4	13.5	7.8	100.0	2.7	3,018
Ever married	56.3	31.7	44.6	15.7	8.0	100.0	2.8	567
Total	39.6	36.2	42.6	13.5	7.7	100.0	2.7	4,800

6.3 Rates of Induced Abortion

In this section rates of induced abortion are shown for the three-year period preceding the 1999 KDHS (mid-1996 to mid-1999). Three types of rates are presented; age-specific rates, the total abortion rate (TAR), and the general abortion rate (GAR). The age-specific rates, which are shown per 1,000 women, represent the probability that women of a given age will have an abortion during a period of one year. The TAR, which is expressed per woman, is a summary measure of the age-specific rates. The TAR is interpreted as the number abortions a woman would have in her lifetime if she experienced the currently observed age-specific rates during her childbearing years.

As shown in Table 6.3, at the national level, the age-specific rates for induced abortion increase in the first few age groups of women, peak among women aged 25-29 (87 per 1,000), and decline in the older age groups. The pattern is such that the age-specific rates for abortion are less than the fertility rates of women under age 35 but are greater than the fertility rates for older women (Figure 6.1).

Table 6.3 Induced abortion rates

Age-specific induced abortion rates, total abortion rates, and general abortion rates for the three-year period before the survey, by residence and ethnicity, Kazakhstan 1999

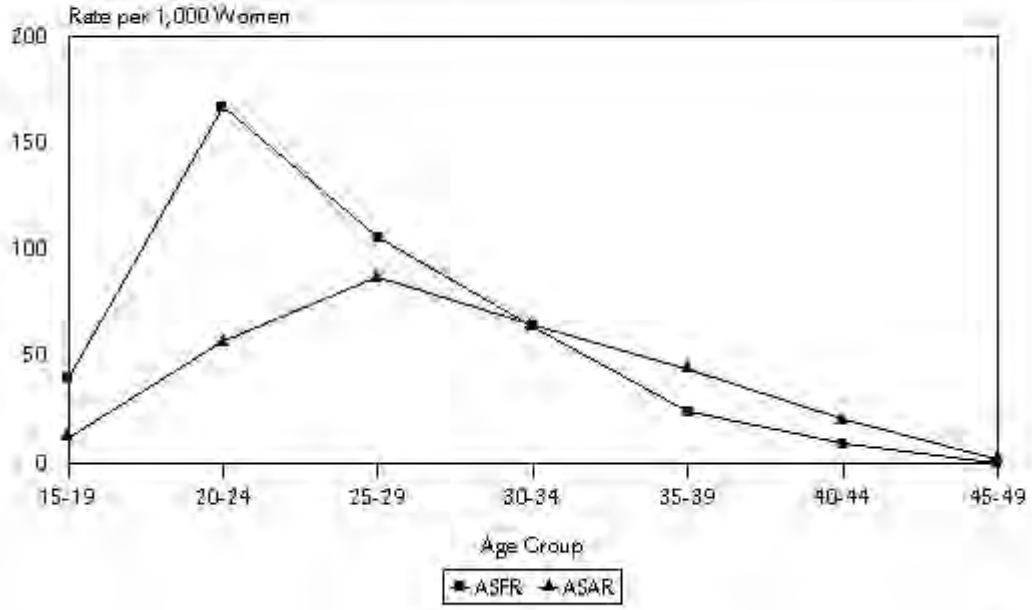
	Residence		Ethnicity			
Age	Urban	Rural	Kazakh	Russian	Other	Total[1]
15-19	0.017	0.006	0.003	0.036	0.003	0.012
20-24	0.071	0.042	0.034	0.063	0.133	0.057
25-29	0.099	0.072	0.065	0.120	0.118	0.087
30-34	0.071	0.058	0.052	0.082	0.081	0.065
35-39	0.043	0.046	0.044	0.027	0.073	0.044
40-44	0.023	0.016	0.013	0.019	0.044	0.020
45-49	0.002	0.001	0.000	0.002	0.006	0.002
TAR 15-49	1.630	1.204	1.060	1.746	2.295	1.437
TAR 15-44	1.619	1.198	1.060	1.736	2.267	1.427
GAR	53.792	39.721	35.794	53.964	75.868	47.462

TAR: Total abortion rate expressed per woman
GAR: General abortion rate (induced abortions divided by number of women 15-44) expressed per 1,000 women
[1] Includes Kazakh, Russian, and other ethnic groups

The age-specific rates imply a lifetime TAR of 1.4 abortions per woman. This estimate can be compared with the estimates for Uzbekistan and the Kyrgyz Republic derived from national-level surveys recently conducted in those countries. The estimate for Kazakhstan is slightly less than the estimate for the Kyrgyz Republic (1.6 abortions per woman, mid-1994 to mid-1997) but is substantially greater than the estimate for Uzbekistan (0.7 abortions per woman, mid-1993 to mid-1996) (RIOP and MI, 1998; IOG and MI, 1997).

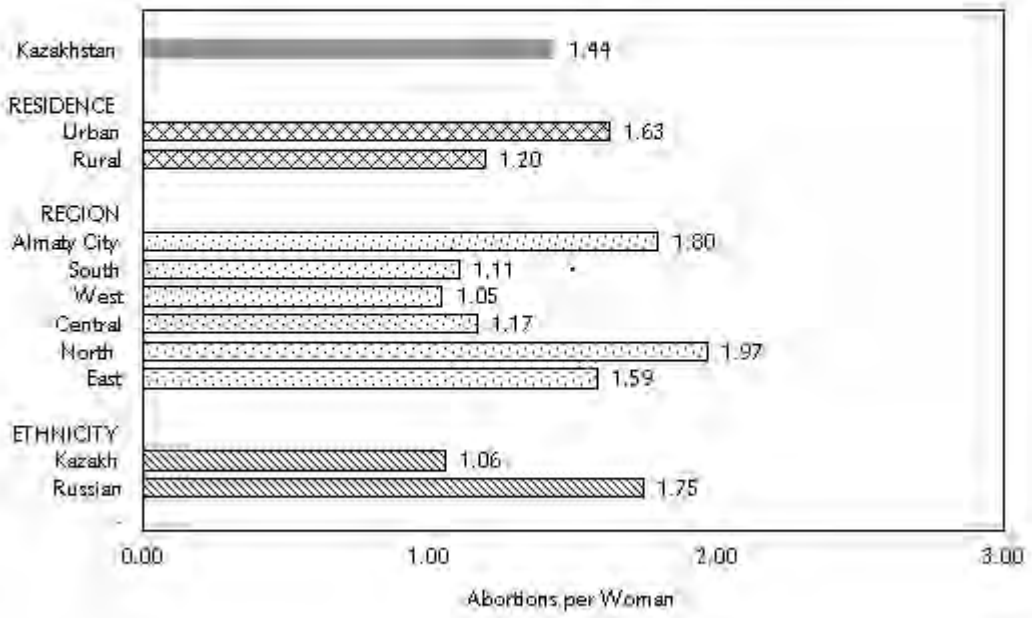
Table 6.3 also shows induced abortion rates by residence and ethnicity. Age-specific abortion rates in the urban areas exceed the rural rates, except among women 35 to 39. The urban TAR (1.6 abortions per woman) exceeds the rural TAR (1.2) by 33 percent (Figure 6.2). The differentials by ethnicity are even greater than by residence. The TAR for Russian women (1.7 abortions per woman) exceeds the TAR for Kazakh women (1.1) by about 55 percent.

Figure 6.1 Age-specific Rates of Fertility (ASFR) and Induced Abortion (ASAR)



KDHS 1999

Figure 6.2 Total Induced Abortion Rate by Background Characteristics



KDHS 1999

6.4 Time Trends in Induced Abortion

An indication of time trends in induced abortion can be obtained by comparing values of the TAR for the three years preceding the 1995 KDHS and the 1999 KDHS. Table 6.4 and Figure 6.3 indicate that for all of Kazakhstan, the current TAR (1.4 abortions per woman) is less than the TAR of the 1995 KDHS (1.8). Declines in the TAR have occurred regardless of residence or educational attainment. Not all ethnic groups, however, have exhibited a change in rates. The TAR among Kazakhs appears to have remained stable at 1.1, while the TAR among Russians has declined by 33 percent from 2.7 to 1.8.

Table 6.4 Time trends in induced abortion

Total induced abortion rate for the three-year period preceding the 1995 and 1999 KDHS, by residence and ethnicity, Kazakhstan 1999

Characteristic	1995[1]	1999
Residence		
Urban	1.97	1.63
Rural	1.48	1.20
Ethnicity		
Kazakh	1.11	1.06
Russian	2.74	1.75
Total	1.75	1.44

[1]Source: Kazakhstan Demographic and Health Surveys 1995 (NIN and MI, 1996).

6.5 Abortion Rates from the Agency on Health

The Agency on Health (AOH) has for many years collected abortion data through a registration system that operates in all of its facilities. The data on induced abortion are shown in terms of annual rates per 1,000 women of childbearing age. Comparison of the AOH data with that of the KDHS will be useful as a means of evaluating the reliability of the two data sets.

Figure 6.3 Age-specific Abortion Rates, 1995 KDHS and 1999 KDHS

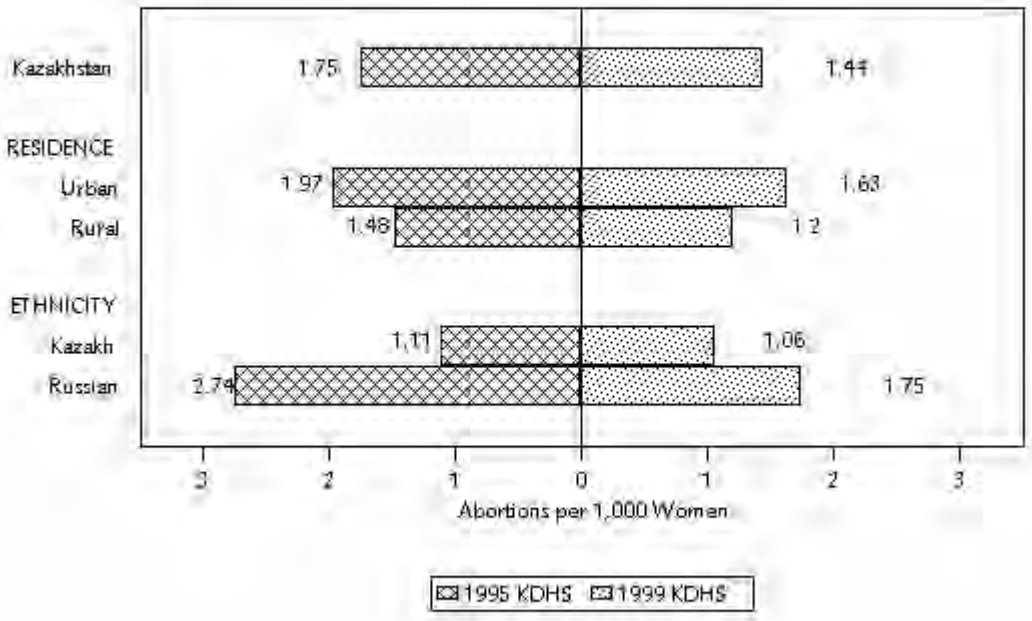


Table 6.5 compares estimates of the GAR based on data from the KDHS and from the Agency on Health for two periods: the three years preceding the 1995 KDHS (1993-1995) and the three years preceding the 1999 KDHS (1997-1999). For the earlier period the estimates of the AOH and KDHS are quite close: 57 per 1,000 for the 1995 KDHS and 55 for the AOH. For the more recent period, the rates are quite different: 47 per 1,000 for the 1999 KDHS and 32 for the AOH. The trends of the two sets of rates are quite different. The KDHS rates show a decline of 18 percent between the two periods, while the AOH rates show a decline of 41 percent.

Table 6.5 Comparison of abortion rates

General abortion rates (induced abortions per 1,000 women of childbearing age) by period, and percentage decline, Agency on Health and KDHS, 1992-99

Source	Time period		Percent decline
	1992-95	1996-99	
KDHS	57	47	18
Agency on Health	55	32	41

Note: Rates for the KDHS are displaced six months from the dates shown. The KDHS rate for 1992-95 is calculated for the three years preceding the survey, from mid-1992 to mid-1995. Similarly, the rate for 1996-99 is for mid-1996 to mid-1999 (see Table 6.3).
Source: Agency on Health (1995-1999)

6.6 Contraceptive Use before Abortion

For each pregnancy terminated by induced abortion in the three years preceding the survey, respondents were asked whether they were using a method of contraception at the time they became pregnant, and if so, which method.

Fifty-two percent of induced abortions were preceded by contraceptive failure (Table 6.6). Although more than half of method failures that resulted in abortion occurred while using modern methods (primarily the IUD), 46 percent occurred while using traditional methods. It seems clear that the availability of more reliable methods would reduce the incidence of induced abortion.

Table 6.6 Use of contraception before pregnancy

Percent distribution of live births, induced abortions, miscarriages, stillbirths, and all pregnancies in the three years preceding the survey, by contraceptive method used (if any) at the time of conception, Kazakhstan 1999

Contraceptive method	Live births	Induced abortions	Mis-carriage	Still-birth	All pregnancies
No contraception	82.6	47.6	65.6	72.3	67.9
Any method	17.4	52.4	34.4	27.7	32.1
Any modern method	10.5	28.0	17.3	18.6	17.8
Pill	1.2	4.5	4.6	0.0	2.8
IUD	6.2	13.0	8.6	0.0	8.8
Condom	3.1	9.5	4.1	18.6	5.8
Foam/jelly	0.0	1.0	0.0	0.0	0.4
Any traditional method	7.0	24.2	17.1	9.1	14.3
Periodic abstinence	2.4	9.5	7.4	6.3	5.5
Withdrawal	2.9	6.3	4.8	0.0	4.3
Lactational amenorrhea	0.3	1.9	1.5	2.8	1.1
Other	1.4	6.5	3.4	0.0	3.4
Total	100.0	100.0	100.0	100.0	100.0
Number of pregnancies	822	580	157	22	1,581

6.7 Service Providers and Procedures Used

All women who had an induced abortion in the three years prior to the survey were asked where the abortion was performed and which procedure was used. Table 6.7 indicates that a majority of abortions were performed at delivery hospitals (32 percent) and government hospitals (29 percent). Women's consulting centers accounted for 20 percent of abortions, and hospitals' fee-for-service departments accounted for another 10 percent.

Table 6.7 also shows the distribution of abortions by procedure used. Dilation and curettage was the procedure used for more than half of the abortions (51 percent), while vacuum aspiration was employed for the remaining cases (49 percent).

Table 6.7 Source of services and type of procedure used for abortion

Percent distribution of induced abortions in the three years preceding the survey by source of services and type of procedure used, Kazakhstan 1999

Characteristic	Percent
Source of services	
Delivery hospital	31.8
Government hospital	28.9
Public fee-for-service	9.6
Private clinic	5.0
Women's consulting center	19.5
Family group practice	0.6
Other	3.4
Missing	1.3
Procedure	
Dilation and curettage	51.2
Vacuum aspiration	48.8
Total	100.0
Number of induced abortions	580

OTHER PROXIMATE DETERMINANTS OF FERTILITY 7

Kia I. Weinstein and Zhanar Ashenova

This chapter addresses the principal factors, other than contraception and abortion, which affect a woman's risk of becoming pregnant. These include nuptiality, sexual activity, postpartum amenorrhea and abstinence from sexual relations. Marriage is an overall indicator of exposure to the risk of pregnancy. More direct measures of exposure are age at first sexual intercourse and the frequency of intercourse. Postpartum amenorrhea and abstinence affect the interval between births. These factors determine the length and pace of reproductive activity and are therefore important in understanding fertility.

7.1 Marital Status

Table 7.1 and Figure 7.1 show the distribution of all women and men by marital status at the time of the survey. The term "married" refers to legal or formal marriage (civil or religious), while "living together" refers to informal unions. In subsequent tables, these two categories are merged and referred to collectively as "currently married" or "currently in union." Persons who are widowed, divorced, and not living together (separated) make up the remainder of the "ever-married" or "ever in union" category.

Nearly two-thirds of women age 15-49 are currently in a union (63 percent are married or living together). However, a fair proportion of women enter their twenties having never been married; 40 percent of women age 20-24 have never been married, up from 32 percent at the time of the 1995 KDHS. Seventy-nine percent of women age 30 and older are in a union; 14 percent are widowed or divorced. As expected, the proportion of women who are widowed increases with age reaching 9 percent among women 45-49 years old.

Younger men (under the age of 30) are less likely than women to be married; however, older men (age 35 and above) are more likely to be currently married. Two-thirds of men in their early twenties (66 percent) have not yet married, compared with 40 percent of women. About equal proportions of men and women age 30-34 are currently married, while 91 percent of men age 35-59 are currently married compared with only 79 percent of women age 35-49.

7.2 Age at First Marriage

Marriage is an important demographic and social indicator; it generally marks the point in a person's life when parenthood becomes welcome. Information on age at first marriage was obtained by asking all ever-married respondents the month and year they started living together with their first spouse. The data in Tables 7.2 and 7.3 show that the median age at marriage has been steady at about 21 years for women and 23 to 24 years for men. This finding indicates that half the women in Kazakhstan marry before the age of 21 and half the men marry before the age of 24.

Table 7.1 Current marital status

Percent distribution of women and men by current marital status, according to age, Kazakhstan 1999

Age	Marital status						Total	Number of women/ men
	Never married	Married	Living together	Widowed	Divorced	Not living together		
WOMEN								
15-19	91.0	7.5	0.5	0.0	0.4	0.5	100.0	791
20-24	40.1	51.2	1.7	0.2	4.5	2.3	100.0	666
25-29	13.9	71.8	1.4	1.4	8.2	3.3	100.0	692
30-34	7.0	76.5	1.6	2.8	10.5	1.6	100.0	698
35-39	3.4	80.5	1.9	3.7	8.3	2.2	100.0	749
40-44	4.0	78.8	1.8	5.6	8.6	1.2	100.0	681
45-49	5.9	72.7	0.9	9.3	9.9	1.3	100.0	522
Total	25.3	61.5	1.4	3.0	7.0	1.8	100.0	4,800
MEN								
15-19	99.5	0.5	0.0	0.0	0.0	0.0	100.0	226
20-24	65.6	29.9	1.7	0.3	1.4	1.2	100.0	182
25-29	25.1	67.0	0.3	0.0	5.4	2.1	100.0	176
30-34	16.1	76.4	0.3	0.0	6.3	0.9	100.0	172
35-39	3.0	92.2	0.0	0.4	4.0	0.5	100.0	229
40-44	2.8	87.0	0.9	0.5	7.4	1.4	100.0	164
45-49	4.3	89.9	0.0	1.1	4.7	0.0	100.0	122
50-54	0.5	94.2	0.0	1.0	3.7	0.5	100.0	104
55-59	0.0	93.9	0.0	4.8	1.3	0.0	100.0	65
Total	30.1	64.4	0.4	0.5	3.8	0.8	100.0	1,440

Note: Figures may not add to 100.0 due to rounding.

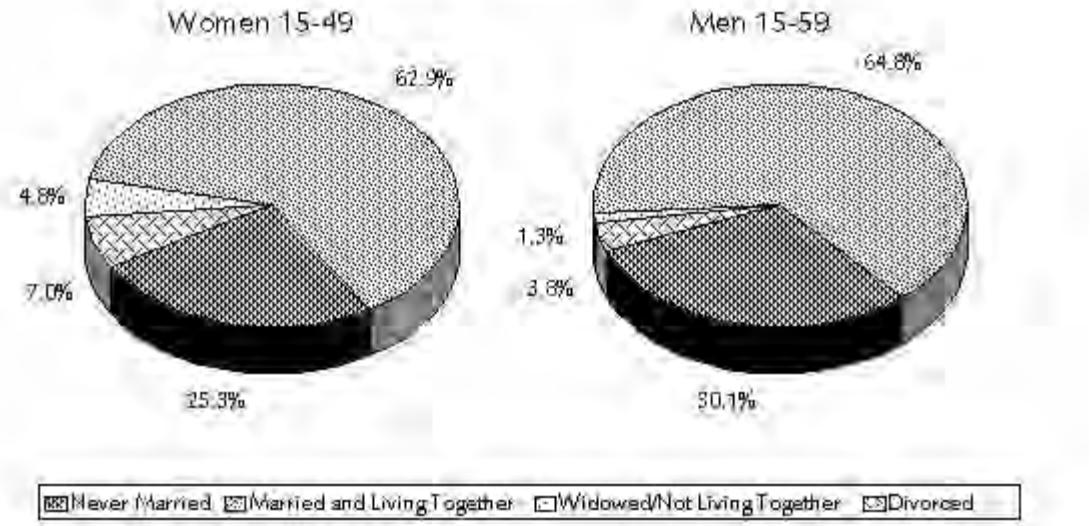
Cohort trends in age at marriage can also be described by comparing the cumulative distribution for successive age groups, as shown in Tables 7.2 and 7.3[1] Women and men in Kazakhstan generally marry within a fairly narrow age range, although men marry a bit later, and in not quite as narrow an age range as do women. One-third of women are married by age 20, and nearly an additional third by age 22. One-third of men are married by age 22, with an additional third married by age 25.

Table 7.4 presents the median ages at marriage for women age 25-49 and men age 25-59. There are a few findings of note. The first is a differential in median age at marriage among women of different educational levels—age at marriage increases with increasing education. A differential of at least two years in the median from least to most educated occurs within every age group; women with a higher education have a median age at marriage of 23.2 years, which is three years older than women with only a primary or secondary education (20.0 years). This differential, observed among women in many societies, does not occur among men. The median age at

[1] For each cohort, the accumulated percentages stop at the lower age boundary of the cohort to avoid censoring problems. For instance, for the cohort currently age 20-24, accumulation stops with the percentage married by exactly age 20.

marriage among men remains steady at around 23 or 24 years for all age groups and levels of education. The one-year differential in median age at marriage between ethnic Kazakhs and ethnic Russians holds true for both women and men. Ethnic Kazakh women and men exhibit a median age at marriage of around 22 and 24, respectively; however, ethnic Russian women and men marry one year younger, around the ages of 21 and 23, respectively. Overall, men exhibit a median age at marriage that is more than two years older than women.

***Figure 7.1* Marital Status of Respondents**



KDHS 1999

7.3 Age at First Sexual Intercourse

While age at first marriage is commonly used as a proxy for exposure to intercourse, the two events do not always coincide exactly. People may engage in sexual relations prior to marriage; thus, using marriage alone as an indicator of sexual activity would underestimate the percentage of the population that is sexually active. The 1999 KDHS asked women and men to state the age at which they first had sexual intercourse. The results are presented in Tables 7.5 and 7.6.

By comparing Table 7.5 with Tables 7.2 and 7.3, it can be seen that the proportion of women having first intercourse by specific ages is slightly higher than the proportions married at that age. For example, 33 percent of women are married by age 20 while 39 percent have had sexual intercourse by age 20.

The majority of men have initiated sexual activity in their teen years. Two-thirds of 20- to 24-year-old men (69 percent) report having had intercourse by age 20, while less than 10 percent are married by that age (latter figure not shown). Three-quarters of men age 25 and older (78 percent) have initiated sexual activity by the age of 22, while only one-third (30 percent) are married by that age.

Table 7.2 Age at first marriage: women

Percentage of ever-married women who were first married by exact age 15, 18, 20, 22, and 25, and median age at first marriage, according to current age, Kazakhstan 1999

Current age	Percentage first married by exact age: 15	18	20	22	25	Percentage who never married	Number of women	Median age at first marriage
15-19	0.2	NA	NA	NA	NA	91.0	791	a
20-24	0.3	14.4	39.9	NA	NA	40.1	666	a
25-29	0.2	9.6	39.8	66.1	81.4	13.9	692	20.7
30-34	0.3	6.6	31.9	62.5	83.4	7.0	698	21.1
35-39	0.3	6.1	31.0	56.0	82.1	3.4	749	21.5
40-44	0.1	7.7	29.3	55.8	80.8	4.0	681	21.6
45-49	0.7	8.4	35.5	58.4	77.1	5.9	522	21.2
25-49	0.3	7.6	33.4	59.8	81.2	6.8	3,343	21.2

NA = Not applicable
[a] Omitted because less than 50 percent in the age group *x* to *x+4* had married by age *x*.

Table 7.3 Age at first marriage: men

Percentage of ever-married men who were first married by exact age 20, 22, 25, 28, and 30, and median age at first marriage, according to current age, Kazakhstan 1999

Current age	Percentage first married by exact age: 20	22	25	28	30	Percentage who never married	Number of men	Median age at first marriage
25-29	8.1	31.4	60.6	NA	NA	25.1	176	23.7
30-34	7.9	25.4	61.8	78.0	80.6	16.1	172	23.7
35-39	6.0	32.3	67.5	85.0	90.3	3.0	229	23.1
40-44	6.1	31.5	67.9	87.3	92.1	2.8	164	23.5
45-49	12.7	33.8	68.5	83.4	91.3	4.3	122	22.9
50-54	13.9	31.9	69.9	89.3	94.2	0.5	104	23.2
55-59	6.6	17.8	56.0	87.9	91.1	0.0	65	24.5
25-59	8.3	30.1	65.1	82.9	86.9	8.6	1,032	23.5

NA = Not applicable

Table 7.6 presents the median age at first intercourse by age and selected background characteristics. Differentials among women in median age at first intercourse generally mimic the differentials seen in median age at marriage. Median age at first intercourse increases with increasing education, varying by as much as two years in age. And ethnic Russian women exhibit a median age at first intercourse that is one year younger than ethnic Kazakh women. Ethnic Russian men exhibit a median age at first intercourse that is two years younger than ethnic Kazakh men. Men, however, do not exhibit an increasing median age with increasing education.

By comparing Tables 7.6 and 7.4, it can be seen that among women, median age at first intercourse is generally about one-half year younger than the median age at marriage. Although in the North and East regions, women exhibit a median age at first intercourse that is nearly one year younger than their median age at marriage. A one-year differential is also seen among Russian women under the age of 35.

Table 7.4 Median age at first marriage

Median age at first marriage among women age 25-49 years and men age 25-59 years, by current age and selected background characteristics, Kazakhstan 1999

Background characteristic	Current age						Women age 25-49	Men age 25-59
	25-29	30-34	35-39	40-44	45-49	50-59		
WOMEN								
Residence								
Urban	20.8	21.1	21.5	21.5	21.7	-	21.3	-
Rural	20.5	21.0	21.6	21.6	20.5	-	21.2	-
Region								
Almaty City	20.8	21.4	21.7	22.0	22.4	-	21.6	-
South	20.7	20.9	21.5	21.1	20.7	-	20.9	-
West	20.7	21.1	21.7	22.3	21.6	-	21.5	-
Central	20.5	21.1	21.6	21.0	21.7	-	21.2	-
North	20.5	21.0	21.3	21.9	21.1	-	21.3	-
East	21.0	21.7	21.7	21.7	21.2	-	21.6	-
Education								
Primary/secondary	19.8	19.9	19.8	20.8	19.8	-	20.0	-
Secondary-special	20.7	21.0	21.5	21.5	21.0	-	21.1	-
Higher	22.2	22.4	23.5	23.2	24.6	-	23.2	-
Ethnicity								
Kazakh	21.3	21.5	22.2	22.0	21.5	-	21.7	-
Russian	20.0	20.4	20.7	21.2	21.2	-	20.7	-
Other	19.8	20.7	20.9	21.7	20.6	-	20.8	-
Total	20.7	21.1	21.5	21.6	21.2	-	21.2	-
MEN								
Residence								
Urban	23.2	23.1	23.3	23.6	22.7	23.7	-	23.4
Rural	24.5	24.0	22.9	23.2	23.2	23.7	-	23.6
Region								
Almaty City	23.3	23.8	22.8	22.9	23.9	24.8	-	23.5
South	24.7	23.7	24.2	23.3	25.4	24.0	-	24.1
West	-	24.2	23.6	24.1	24.3	24.1	-	24.2
Central	23.4	22.4	23.3	23.4	22.6	24.8	-	23.3
North	22.6	23.9	22.2	23.3	21.5	23.0	-	22.6
East	22.7	24.3	23.9	23.7	22.4	24.1	-	23.7
Education								
Primary/secondary	23.3	23.6	23.6	23.2	22.7	23.4	-	23.3
Secondary-special	23.9	23.9	22.8	23.4	23.1	24.1	-	23.4
Higher	23.2	24.0	24.3	24.6	22.9	24.3	-	23.9
Ethnicity								
Kazakh	24.9	23.7	23.4	23.9	24.0	23.9	-	23.9
Russian	22.4	24.1	22.0	23.4	22.3	23.5	-	22.9
Other	23.6	23.2	23.7	21.8	23.3	23.7	-	23.3
Total	23.7	23.7	23.1	23.5	22.9	23.7	-	23.5

Note: The medians for women and men 15-19 and 20-24 could not be determined because less than 50 percent were married by ages 15 and 20 in all subgroups shown in the table.

Age differentials among women for initiation of intercourse and marriage are overshadowed by the age differentials among men. Overall, men exhibit a median age at first intercourse that is four years younger than their median age at marriage. Men age 25-29 exhibit a median age at first intercourse that is five years younger than their median age at marriage.

Table 7.5 Age at first sexual intercourse

Percentage of women and men who had first sexual intercourse by exact age 15, 18, 20, 22, and 25, and median age at first intercourse, according to current age, Kazakhstan 1999

Current age	Percentage who had first intercourse by exact age: 15	18	20	22	25	Percentage who never had intercourse	Number of women/ men	Median age at first intercourse
				WOMEN				
15-19	1.1	NA	NA	NA	NA	82.5	791	a
20-24	1.9	25.5	50.1	NA	NA	30.3	666	a
25-29	0.1	15.2	48.1	73.2	86.3	7.2	692	20.1
30-34	0.5	10.1	39.8	66.9	85.0	2.6	698	20.6
35-39	0.7	8.5	34.8	60.3	83.1	1.9	749	21.1
40-44	0.1	9.1	33.3	59.1	82.0	1.7	681	21.3
45-49	0.7	11.2	37.0	59.7	79.2	2.2	522	21.0
25-49	0.4	10.8	38.6	64.0	83.3	3.2	3,343	20.8
				MEN				
15-19	5.9	NA	NA	NA	NA	66.7	226	a
20-24	4.5	40.1	68.9	NA	NA	16.2	182	18.6
25-29	5.5	35.7	66.7	87.9	94.4	3.5	176	18.6
30-34	3.6	27.9	48.4	74.1	90.8	2.7	172	20.1
35-39	6.5	37.7	58.7	79.4	93.2	0.3	229	18.8
40-44	1.3	30.0	55.2	81.2	93.2	0.0	164	19.5
45-49	6.6	29.2	60.1	76.9	90.5	0.0	122	19.1
50-54	7.9	23.2	49.7	67.7	87.4	0.5	104	20.0
55-59	4.0	17.9	44.6	67.3	83.0	0.0	65	20.3
25-59	5.0	30.8	56.2	78.0	91.5	1.2	1,032	19.3

NA = Not applicable
[a] Omitted because less than 50 percent in the age group *x* to *x+4* had had intercourse by age *x*.

7.4 Recent Sexual Activity

In the absence of contraceptive use, frequency of sexual intercourse is a direct determinant of pregnancy; therefore, knowledge of frequency is a useful indicator of exposure to pregnancy. Tables 7.7 and 7.8 show the percent distribution of women and men by sexual activity in the four weeks prior to the survey. The distribution of women includes information as to whether those who are not sexually active have or have not recently had a birth (are postpartum). Respondents are considered to be sexually active if they have had sexual intercourse at least once in the four weeks prior to the survey.

Overall, 61 percent of all women interviewed were sexually active in the four weeks preceding the survey. Only 1 percent of women are postpartum abstaining, 17 percent of women are not sexually active for reasons unrelated to childbirth, and 20 percent of women have never had sexual intercourse. These overall findings match the findings of the 1995 KDHS. About three-quarters of women age 25-44 are sexually active. Ethnic Russian women are a bit more likely than ethnic Kazakh women to be sexually active (66 versus 57 percent, respectively). Not surprisingly, women who are using a method of family planning are more likely to be sexually active than women who are not using a method (many of the women using no method have not yet had intercourse). Sexual activity does not vary greatly by method of contraception, although women who have been sterilized are slightly less likely to be sexually active (70 versus 91 percent of users of the pill).

Table 7.6 Median age at first intercourse

Median age at first sexual intercourse among women age 25-49 and men age 25-59, by current age and selected background characteristics, Kazakhstan 1999

Background characteristic	Current age						Women age 25-49	Men age 25-59
	25-29	30-34	35-39	40-44	45-49	50-59		
Residence								
Urban	20.0	20.5	21.1	21.1	21.4	-	20.8	19.0
Rural	20.3	20.7	21.2	21.5	20.5	-	20.8	19.7
Region								
Almaty City	19.8	20.3	21.8	21.8	22.0	-	21.2	18.9
South	20.6	20.7	21.2	21.2	20.8	-	20.9	20.6
West	20.5	21.1	22.0	22.3	21.8	-	21.6	21.5
Central	19.8	20.2	21.0	20.7	21.5	-	20.6	18.8
North	19.6	20.3	20.6	20.9	20.5	-	20.3	18.4
East	19.8	20.9	21.2	21.1	20.9	-	20.8	18.9
Education								
Primary/secondary	19.6	19.6	19.6	20.7	19.7	-	19.8	19.7
Secondary-special	20.0	20.5	21.2	20.9	20.8	-	20.7	18.8
Higher	21.4	21.6	23.0	22.9	24.0	-	22.4	20.1
Ethnicity								
Kazakh	20.9	21.3	22.1	22.2	21.6	-	21.6	20.4
Russian	19.1	19.3	20.3	20.3	20.7	-	20.0	18.5
Other	19.3	20.3	20.3	21.4	20.5	-	20.3	18.6
Total women	20.1	20.6	21.1	21.3	21.0	-	20.8	-
Total men	18.6	20.1	18.8	19.5	19.1	20.2	-	19.3

Note: The median for cohort 15-19 could not be determined because less than 50 percent of the women had had intercourse for the first time by age 15.

Overall, 69 percent of all men interviewed were sexually active in the four weeks preceding the survey. As was true for women, men in the middle of the surveyed age range report themselves most likely to be sexually active: 80-90 percent of men age 25-49 are sexually active. As was also true of women, ethnic Russian men are a bit more likely than ethnic Kazakh men to be sexually active (76 versus 64 percent). While sexual activity is not confined to marriage, it is still true that currently married men are the most likely to be sexually active (91 percent compared with 28 percent for never-married men).

Table 7.9 provides data on sexual activity outside of marriage. The table presents the distribution of all men by number of persons with whom they had sexual intercourse in the last 12 months, excluding spouses. One in ten married men reported having sexual intercourse in the previous year with a woman other than his spouse (most reported only one non-marital partner). Twenty-one percent of never-married men had two or more partners in the previous 12 months, compared with 29 percent of formerly married men. Overall, one in five men had sexual intercourse in the previous year with a woman who was not his spouse. As may be expected, men in their twenties had the most partners: 6 percent of men in their twenties had four or more partners in the previous 12 months.

Table 7.7 Recent sexual activity: women

Percent distribution of women by sexual activity in the four weeks preceding the survey, and among those not sexually active, the duration of abstinence and whether postpartum or not postpartum abstaining, according to selected background characteristics and contraceptive method currently used, Kazakhstan 1999

Background characteristic/ contraceptive method	Sexually active in last 4 weeks	Not sexually active in last 4 weeks: Postpartum abstaining 0-1 years	Postpartum abstaining 2+ years	Not postpartum abstaining 0-1 years	Not postpartum abstaining 2+ years	Missing	Never had sex	Total	Number of women
Age									
15-19	12.0	0.4	0.0	4.8	0.0	0.3	82.5	100.0	791
20-24	55.9	1.3	0.9	10.2	0.9	0.5	30.3	100.0	666
25-29	72.5	2.6	0.7	14.0	2.6	0.3	7.2	100.0	692
30-34	79.2	1.7	0.8	12.0	3.5	0.2	2.6	100.0	698
35-39	80.4	0.3	0.3	11.2	5.7	0.3	1.9	100.0	749
40-44	74.3	0.4	0.1	14.6	8.0	0.8	1.7	100.0	681
45-49	57.8	0.0	0.0	23.2	15.4	1.3	2.2	100.0	522
Duration of union (years)									
Never married	9.2	0.4	0.2	8.1	2.5	0.7	78.8	100.0	1,215
0-4	82.9	3.4	0.7	10.8	1.2	0.7	0.3	100.0	528
5-9	82.8	2.2	1.1	11.1	2.5	0.3	0.0	100.0	736
10-14	83.3	0.7	0.4	10.8	4.8	0.0	0.0	100.0	721
15-19	78.0	0.2	0.3	15.5	5.6	0.4	0.0	100.0	689
20-24	75.4	0.1	0.1	15.5	8.1	0.8	0.0	100.0	541
25-29	62.1	0.0	0.0	21.5	15.2	1.2	0.0	100.0	323
30+	(56.2)	(0.0)	(0.0)	(34.2)	(9.6)	(0.0)	(0.0)	100.0	47
Residence									
Urban	60.7	0.8	0.2	13.5	5.1	0.8	18.9	100.0	2,668
Rural	61.5	1.1	0.7	10.9	4.2	0.2	21.4	100.0	2,132
Region									
Almaty City	61.3	0.8	0.2	12.4	7.2	0.8	17.3	100.0	291
South	58.9	0.8	0.8	11.3	3.8	0.2	24.3	100.0	1,455
West	59.0	1.9	0.3	11.5	3.3	0.3	23.8	100.0	628
Central	60.7	0.3	0.2	13.3	5.6	0.2	19.6	100.0	475
North	64.2	1.2	0.1	14.1	4.7	0.8	14.9	100.0	1,259
East	62.1	0.7	0.4	11.4	6.5	0.8	18.1	100.0	692
Education									
Primary/secondary	52.4	1.2	0.6	10.8	3.0	0.5	31.5	100.0	1,927
Secondary-special	68.5	0.9	0.2	14.8	6.3	0.4	8.8	100.0	1,908
Higher	63.6	0.6	0.3	10.6	5.2	0.6	19.1	100.0	965
Ethnicity									
Kazakh	57.4	1.3	0.6	10.4	3.7	0.2	26.4	100.0	2,587
Russian	65.8	0.4	0.1	14.3	5.9	1.1	12.4	100.0	1,454
Other	64.5	0.9	0.4	15.1	5.9	0.4	12.8	100.0	760
Contraceptive method									
No method	36.7	1.6	0.7	14.1	7.7	0.8	38.4	100.0	2,497
Pill	91.0	0.0	0.0	8.1	0.0	0.8	0.0	100.0	105
IUD	87.4	0.0	0.1	10.3	2.1	0.1	0.0	100.0	1,426
Sterilization	69.9	2.9	0.0	21.4	5.7	0.0	0.0	100.0	95
Periodic abstinence	87.0	0.0	0.0	12.3	0.4	0.3	0.0	100.0	157
Other	90.7	0.7	0.0	8.4	0.0	0.2	0.0	100.0	520
Total	61.1	1.0	0.4	12.3	4.7	0.5	20.0	100.0	4,800

Note: Figures in parentheses are based on 25-49 unweighted women.

Table 7.8 Recent sexual activity: men

Percent distribution of men by sexual activity in the four weeks preceding the survey, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Sexually active in last 4 weeks	Not sexually active in last 4 weeks	Never had sex	Total	Number of men
Age					
15-19	15.6	17.7	66.7	100.0	226
20-24	62.7	21.1	16.2	100.0	182
25-29	80.9	15.6	3.5	100.0	176
30-34	81.2	16.1	2.7	100.0	172
35-39	89.1	10.7	0.3	100.0	229
40-44	82.7	17.3	0.0	100.0	164
45-49	89.8	10.2	0.0	100.0	122
50-54	76.3	23.1	0.5	100.0	104
55-59	55.5	44.5	0.0	100.0	65
Marital Status					
Never married	28.2	27.5	44.3	100.0	433
Currently married	90.8	9.2	0.0	100.0	933
Formerly married	36.9	63.1	0.0	100.0	74
Residence					
Urban	74.6	14.2	11.2	100.0	790
Rural	62.5	21.5	16.0	100.0	650
Education					
Primary/secondary	55.6	21.2	23.2	100.0	661
Secondary-special	78.8	15.2	6.0	100.0	581
Higher	86.2	11.8	2.0	100.0	198
Ethnicity					
Kazakh	64.0	20.0	16.0	100.0	747
Russian	75.5	13.3	11.2	100.0	460
Other	73.1	17.9	9.0	100.0	234
Total	69.2	17.5	13.3	100.0	1,440

7.5 Postpartum Amenorrhea, Abstinence, and Insusceptibility

Postpartum amenorrhea refers to the interval between childbirth and the return of menstruation. During this period, the risk of pregnancy is reduced. The duration of reduced risk of conception largely depends on two factors: the length and intensity of breastfeeding, which tends to suppress the resumption of ovulation, and the length of time before the resumption of sexual intercourse. Women who are either amenorrheic or abstaining (or both), are considered insusceptible to the risk of pregnancy.

The percentage of births in the past three years for which mothers are presently postpartum amenorrheic, abstaining, or insusceptible is shown in Table 7.10 by the number of months since birth. These distributions are based on current status data, i.e., on the proportion of births occurring *x* months before the survey for which mothers are still amenorrheic, abstaining, or insusceptible. The estimates of the median and mean durations shown in Tables 7.10 and 7.11 are calculated from the current status proportions in each period. The prevalence/incidence mean is defined as the number of children whose mothers are amenorrheic (prevalence) divided by the average number of births per month (incidence). The data are grouped in two-month intervals to minimize fluctuations in the estimates.

Table 7.9 Number of partners

Percent distribution of all men by number of persons with whom they had sexual intercourse (excluding wives) in the last 12 months, according to background characteristics, Kazakhstan 1999

Background characteristic	Number of sexual partners					Total	Number of men	Mean number of partners
	0	1	2	3	4+			
Age								
15-19	73.0	21.2	0.0	0.7	5.1	100.0	226	0.6
20-24	49.0	42.6	0.3	2.1	6.1	100.0	182	0.9
25-29	70.4	20.3	1.4	1.5	6.4	100.0	176	0.6
30-34	81.3	15.8	0.8	0.3	1.8	100.0	172	0.3
35-39	94.2	4.6	0.2	0.2	0.8	100.0	229	0.1
40-44	89.6	8.9	0.4	0.3	0.9	100.0	164	0.1
45-49	91.1	6.6	0.7	0.0	1.7	100.0	122	0.2
50-54	98.5	1.0	0.5	0.0	0.0	100.0	104	0.0
55-59	98.5	1.5	0.0	0.0	0.0	100.0	65	0.0
Marital Status								
Never married	53.0	26.0	12.7	1.6	6.8	100.0	433	1.0
Currently married	90.3	7.9	0.9	0.1	0.8	100.0	933	0.1
Formerly married	30.3	41.1	17.9	3.2	7.5	100.0	74	1.2
Residence								
Urban	78.9	16.3	0.5	0.9	3.4	100.0	790	0.4
Rural	82.3	14.5	0.4	0.4	2.4	100.0	650	0.3
Education								
Primary/secondary	80.9	15.9	0.4	0.3	2.5	100.0	661	0.3
Secondary-special	80.7	14.4	0.3	0.6	4.1	100.0	581	0.4
Higher	78.0	17.5	1.3	2.3	0.9	100.0	198	0.3
Total	80.4	15.5	0.5	0.7	2.9	100.0	1,440	0.4

While both postpartum amenorrhea and postpartum abstinence are fairly short in duration, the former is longer than the latter and is therefore the principal determinant of the length of postpartum insusceptibility. Nearly all women are insusceptible to pregnancy for some time in the first two months following a birth. However, the proportion insusceptible falls fairly quickly as the months since birth increase. By 4-5 months after a birth, only two-thirds of women are still insusceptible, and by 10-11 months, only one-third remain insusceptible. The median durations are 6.2 months for amenorrhea, 1.9 months for abstinence, and 6.9 months for insusceptibility.

Table 7.11 presents the median durations of postpartum amenorrhea, abstinence, and insusceptibility by background characteristics. The only notable difference by background characteristics in the median duration of postpartum amenorrhea is that the duration among women in the Central region is five months longer than the overall median.

7.6 Menopause

After age 30, the risk of pregnancy declines as increasing proportions of women become menopausal. Although the onset of menopause is difficult to determine for an individual woman, there are ways of estimating it for a population as a whole. Table 7.12 presents data on the percentage of women age 30 and older who are menopausal, that is, who have not menstruated for six months or longer in the period preceding the survey or who reported being menopausal. Few women are menopausal before reaching their forties, after which time the proportion of menopausal women increases with age from 9 percent among women age 42-43 to 45 percent among women age 48-49.

Table 7.10 Postpartum amenorrhea, abstinence, and insusceptibility

Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrheic, abstaining, and insusceptible, by number of months since birth, and median and mean durations, Kazakhstan 1999

Months since birth	Amenor-rheic	Abstaining	Insus-ceptible	Number of births
<2	*	*	*	*
2-3	(79.4)	(10.3)	(84.1)	(47)
4-5	(59.1)	(7.7)	(66.8)	(40)
6-7	(46.8)	(0.0)	(46.8)	(47)
8-9	(38.3)	(9.3)	(43.7)	(47)
10-11	(30.3)	(6.3)	(36.6)	(44)
12-13	(21.2)	(4.0)	(22.8)	(46)
14-15	(8.2)	(0.9)	(8.2)	(52)
16-17	(7.9)	(1.6)	(9.5)	(46)
18-19	(6.2)	(1.7)	(7.8)	(44)
20-21	(0.0)	(7.9)	(7.9)	(38)
22-23	(2.3)	(3.5)	(4.8)	(54)
24-25	0.0	0.0	0.0	59
26-27	(3.8)	(3.4)	(7.2)	(50)
28-29	0.0	0.0	0.0	50
30-31	(1.7)	(4.9)	(4.9)	(43)
32-33	(1.4)	(6.8)	(8.1)	(38)
34-35	(0.0)	(0.0)	(0.0)	(50)
Total	20.2	6.6	23.0	822
Median	6.2	1.9	6.9	-
Mean	8.3	3.4	9.4	-
Prevalence/ Incidence mean[1]	7.2	2.4	8.2	-

Note: Figures in parentheses are based on 25-49 unweighted births. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

[1] The prevalence/incidence mean is borrowed from epidemiology and is defined as the number of children whose mothers are amenorrheic (prevalence) divided by the average number of births per month (incidence).

Table 7.11 Median duration of postpartum amenorrhea, abstinence, and insusceptibility

Median number of months of postpartum amenorrhea, postpartum abstinence, and postpartum insusceptibility, by selected background characteristics, Kazakhstan 1999

Background characteristic	Postpartum amenorrhea	Postpartum abstinence	Postpartum insuscep-tibility	Number of births
Age				
<30	6.5	1.7	7.1	568
30+	5.1	2.2	6.3	254
Residence				
Urban	6.4	2.1	7.8	334
Rural	6.1	1.7	6.4	488
Region				
Almaty City	3.5	2.2	4.5	24
South	7.0	1.5	7.5	360
West	2.4	3.2	4.9	119
Central	11.2	1.9	11.2	61
North	5.7	2.0	5.7	174
East	6.3	1.8	6.3	84
Education				
Primary/secondary	5.8	1.8	6.5	356
Secondary-special	7.3	1.9	7.6	338
Higher	4.1	2.0	4.1	129
Ethnicity				
Kazakh	6.1	2.0	6.9	571
Russian	7.5	1.8	9.0	151
Other	5.4	1.8	5.4	100
Total	6.2	1.9	6.9	822

Note: Medians are based on current status.

Table 7.12 Menopause

Percentage of currently married women age 30-49 who are menopausal, by age group, Kazakhstan 1999

Age	Percentage menopausal[1]	Number of women
30-34	0.7	698
35-39	2.7	749
40-41	5.3	309
42-43	8.8	269
44-45	11.1	229
46-47	31.4	218
48-49	44.5	178
Total	9.0	2,651

[1] Percentage of nonpregnant, non-amenorrheic, currently married women whose last menstrual period occurred six or more months preceding the survey or who report that they are menopausal.

FERTILITY PREFERENCES 8

Jeremiah M. Sullivan and Igor Tsoy

Both female and male respondents in the 1999 KDHS were asked a series of questions to ascertain their fertility preferences, that is, their desire to have another child and the length of time they would like to wait before having another child. The answers to theses questions make the quantification of fertility preferences possible and allow the estimation of unmet need for family planning in Kazakhstan. Respondents were also asked to report the number of children that they consider ideal. These data, in conjunction with the number of children that respondents currently have, allow the estimation of unwanted fertility in the population.

8.1 Fertility Preferences

In the 1999 KDHS, women and men were asked a series of questions about their fertility preferences. Table 8.1 and Figure 8.1 present results for currently married women and currently married men. The salient finding is that the majority of currently married women and men want no more children. In the case of currently married women, 63 percent either wanted no more children (55 percent), are sterilized (3 percent), or are infecund (5 percent). Alternatively, about one-third (30 percent) want to have another child: 12 percent want to have a child within two years, 13 percent want to wait at least two years, and the remaining 5 percent are undecided about the timing of another child. A similar pattern is observed among currently married men: 66 percent either want no more children or their spouse is sterilized or infecund, while about one-third (32 percent) want another child.

Table 8.1 also shows fertility preferences by number of living children as expected, the desire to limit childbearing increases sharply as the number of living children increases (Figure 8.2). Only 4 percent of currently married women with no living children want no more children, while 26 percent with one living child and 65 percent with two living children either want no more children or are sterilized. The data on currently married men show the same sharp increase in the proportion wanting no more children.

Table 8.2 shows the fertility preferences of currently married women by age. Particularly for younger women, it is important to keep in mind that these statistics apply to the currently married. The desire for no more children is high among women 15-19 (18 percent) and increases steadily in subsequent age groups, peaking among women 40-44 and 45-49 (91 and 95 percent, respectively). On the other hand, among women under age 30, a significant proportion (about 30 percent) report wanting another child after waiting at least two years. Thus, a substantial proportion of women under age 30 (about 50 percent) have a potential need to either limit or space childbearing. The potential need for family planning is even greater among women above age 30 and is concentrated in a desire to limit childbearing.

Table 8.2 also shows the fertility preferences of currently married men. The overall pattern of male preferences by age is similar to that of females. The most noteworthy difference occurs among men below age 25, who have a greater desire than women to have another child. This difference is most likely because men in Kazakhstan marry later than women and have fewer children at younger ages.

Table 8.1 Fertility preferences by number of living children

Percent distribution of currently married women and men by desire for more children, according to number of living children, Kazakhstan 1999

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
WOMEN								
Have another soon[2]	64.0	21.6	7.3	5.4	3.2	0.0	0.0	12.2
Have another later[3]	8.3	28.4	11.9	5.0	6.1	1.0	1.7	12.9
Have another, undecided when	5.7	8.3	3.2	4.2	3.1	4.0	0.0	4.6
Undecided	1.2	10.8	8.6	6.4	7.0	1.5	2.6	7.7
Want no more	1.7	25.3	61.6	72.2	74.7	87.3	88.3	55.4
Sterilized	2.7	0.7	3.1	3.6	5.2	1.8	5.1	2.8
Declared infecund	16.3	4.9	4.2	3.2	0.7	4.4	2.3	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	157	680	1,128	577	256	140	81	3,018
MEN								
Have another soon[2]	39.3	16.0	4.4	9.3	3.7	(3.3)	(0.0)	9.5
Have another later[3]	26.3	25.4	10.5	10.3	5.7	(3.3)	(1.2)	13.3
Have another, undecided when	10.2	8.4	9.8	10.4	9.7	(4.6)	(1.2)	9.0
Undecided	5.3	4.2	1.4	3.5	1.2	(0.0)	(0.0)	2.4
Want no more	5.7	37.9	63.9	59.7	66.3	(73.7)	(81.0)	55.7
Sterilized	0.0	0.6	4.8	3.0	4.0	(5.2)	(0.0)	3.0
Declared infecund	13.2	7.5	5.3	3.8	9.5	(9.9)	(16.7)	7.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	60	183	354	178	71	40	47	933

Note: Figures in parentheses are based on 25-49 (unweighted) cases.

[1] Includes current pregnancy

[2] Want next birth within 2 years

[3] Want to delay next birth for 2 or more years

A comparison with the results of the 1995 KDHS indicates only marginal changes in the fertility preferences of currently married women. The percentage who want another child has decreased from 34 percent in 1995 to 30 percent in 1999. The proportion who want no more children or who are sterilized or infecund has remained the same at 63 percent. However, the proportion undecided about having another child has increased from 3 percent to 8 percent.

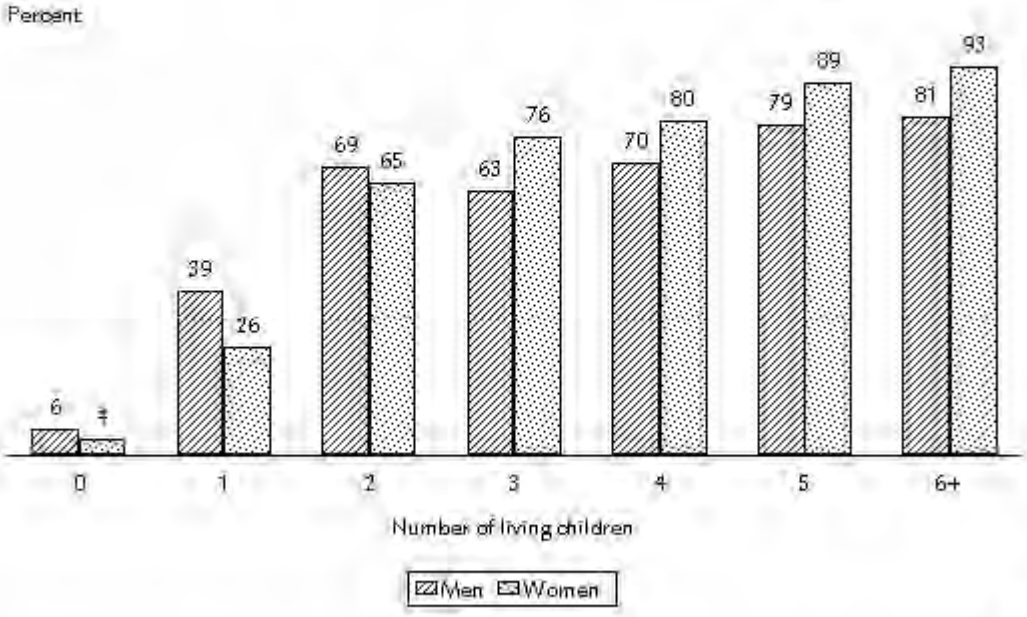
Within a family, the fertility preferences of a woman and her spouse may be the same or they may differ. Table 8.3 examines the fertility desires of 777 couples who were living together in the same household at the time of the survey. There is general agreement among couples on their desire for children. Sixty-six percent of couples agree in their desire either to have more children (20 percent) or to have no more children (46 percent).

Table 8.4 shows the percentage of currently married women and men who want no more children by number of living children, according to selected background characteristics (residence, region, education, and ethnicity). The most pronounced differentials for both women and men are by ethnicity. The proportion of respondents of Russian and other ethnicities who desire no more children is substantially greater than the proportion of Kazakh respondents, especially for

Figure 8.1 Fertility Preferences for Currently Married Women 15-49

KDHS 1999

Figure 8.2 Desire to Limit Childbearing among Currently Married Women and Men by Number of Living Children



KDHS 1999

Table 8.2 Fertility preferences by age

Percent distribution of currently married women and men by desire for more children, according to age, Kazakhstan 1999

Desire for children	Current age									Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	
WOMEN										
Have another soon[1]	24.7	23.6	19.7	16.4	9.4	2.8	1.9	-	-	12.2
Have another later[2]	34.3	36.1	25.5	14.9	4.1	0.4	0.3	-	-	12.9
Have another, undecided when	7.4	6.0	6.5	6.8	4.8	2.1	0.7	-	-	4.6
Undecided	15.4	10.5	13.3	12.5	4.0	3.3	1.8	-	-	7.7
Want no more	18.2	21.9	31.9	45.6	69.4	80.6	78.6	-	-	55.4
Sterilized	0.0	0.1	0.4	1.8	3.9	5.6	4.5	-	-	2.8
Declared infecund	0.0	1.9	2.7	2.1	4.5	5.2	12.3	-	-	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	100.0
Number of women	63	353	506	546	617	548	385	-	-	3,018
MEN										
Have another soon[1]	*	21.6	16.7	20.3	10.8	2.9	2.2	0.0	0.0	9.5
Have another later[2]	*	59.5	31.4	18.6	8.5	5.9	0.5	0.5	0.0	13.3
Have another, undecided when	*	5.5	15.7	11.0	17.3	4.4	3.2	0.0	2.1	9.0
Undecided	*	5.1	7.8	4.0	2.3	0.4	0.0	0.0	0.0	2.4
Want no more	*	6.0	26.7	41.6	47.7	76.9	79.1	83.2	81.2	55.7
Sterilized	*	0.0	0.0	1.7	4.4	1.8	7.8	3.6	3.4	3.0
Declared infecund	*	2.3	1.7	2.8	8.9	7.7	7.3	12.7	13.3	7.0
Total	*	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	1	57	118	132	211	144	110	98	61	933

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.
[1] Want next birth within 2 years
[2] Want to delay next birth for 2 or more years

Table 8.3 Desire for more children among monogamous couples

Percent distribution of monogamous couples by desire for more children, according to number of living children, Kazakhstan 1999

Number of living children reported	Both want more	Husband more/ wife no more	Wife more/ husband no more	Both want no more	Husband/ wife infecund	One or both undecided/ missing	Total	Number of couples
Same number								
0	67.3	5.0	0.0	0.0	16.4	11.3	100.0	51
1	40.0	7.0	8.5	19.4	9.1	16.0	100.0	141
2	13.0	10.3	5.7	53.7	7.1	10.1	100.0	278
3	11.0	12.6	2.4	57.0	5.0	12.2	100.0	134
4-5	4.9	11.5	4.3	65.4	9.9	4.1	100.0	81
6+	*	*	*	*	*	*	100.0	22
Different number								
Husband > wife	(21.8)	(14.0)	(1.3)	(43.9)	(16.3)	(2.7)	100.0	42
Wife > husband	(11.9)	(20.5)	(6.4)	(50.7)	(5.7)	(4.9)	100.0	28
Total	20.3	10.3	4.7	46.1	8.4	10.1	100.0	777

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.

Table 8.4 Desire to limit childbearing

Percentage of currently married women and men who want no more children, by number of living children and selected background characteristics, Kazakhstan 1999

Background characteristic	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
WOMEN								
Residence								
Urban	4.5	29.8	71.7	78.5	78.0	(85.4)	(100.0)	58.5
Rural	(4.3)	19.6	54.0	73.8	80.7	90.7	90.5	57.8
Region								
Almaty City	(7.1)	37.9	69.6	80.9	80.0	100.0	*	56.0
South	(0.0)	11.6	49.6	68.8	76.7	(86.3)	(94.5)	54.9
West	(3.7)	23.5	64.1	66.4	81.3	(84.3)	(100.0)	58.1
Central	(12.3)	34.9	71.8	86.8	(85.9)	(100.0)	(100.0)	62.8
North	(4.1)	25.7	66.6	82.2	(80.0)	(93.8)	(75.6)	57.9
East	(8.4)	33.4	78.5	90.2	(90.5)	(94.8)	(88.1)	63.8
Education								
No education	*	*	*	*	*	*	*	90.9
Primary/secondary	7.5	25.0	65.5	74.0	78.5	87.9	(91.2)	61.1
Secondary-special	3.4	25.8	62.7	75.7	80.8	(90.4)	(97.2)	57.1
Higher	(0.0)	27.4	68.9	79.1	(81.5)	(91.1)	(100.0)	54.8
Ethnicity								
Kazakh	4.7	16.4	48.7	70.4	79.6	89.2	96.8	55.1
Russian	6.8	33.9	80.5	93.9	(71.0)	(91.0)	(100.0)	62.7
Other	(0.0)	28.9	69.4	79.0	(86.7)	(87.1)	(70.6)	60.0
Total	4.4	26.0	64.7	75.8	79.9	89.1	93.4	58.2
MEN								
Residence								
Urban	(8.6)	42.4	76.5	69.6	(83.5)	(96.2)	(93.9)	63.0
Rural	(0.0)	(27.7)	55.8	56.6	(63.5)	(69.6)	(75.5)	53.2
Region								
Almaty City	*	*	*	*	*	*	*	53.2
South	(0.0)	(9.5)	37.3	42.4	(49.4)	69.3	95.1	41.8
West	(0.0)	(46.7)	(62.7)	(71.2)	(72.3)	(90.1)	(45.3)	58.9
Central	*	*	69.5	*	*	*	*	59.3
North	*	51.4	85.9	(70.7)	*	*	*	73.1
East	*	(44.4)	(82.6)	(72.7)	*	*	*	66.4
Education								
No education	*	*	*	*	*	*	*	*
Primary/secondary	(3.3)	42.4	70.1	68.2	(72.7)	(89.3)	(76.8)	61.8
Secondary-special	(9.1)	40.9	66.4	58.7	(64.7)	(68.9)	(80.3)	56.2
Higher	*	(23.6)	72.3	(61.3)	*	*	*	58.7
Ethnicity								
Kazakh	(0.0)	21.5	48.5	51.4	67.1	(77.9)	(81.0)	50.4
Russian	*	50.2	83.7	(81.9)	*	*	*	69.5
Other	*	(37.2)	71.6	(78.9)	*	*	*	61.9
Total	5.7	38.5	68.6	62.7	70.3	79.0	81.0	58.7

Note: Women who have been sterilized are considered to want no more children. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.

[1] Includes current pregnancy

respondents with fewer than three living children. Urban respondents are somewhat more likely than rural respondents to want no more children. This difference is more pronounced among men than among women. Among the regions, the South Region stands out as having the lowest proportions of both women and men wanting no more children.

8.2 Need for Family Planning Services

Maternal health care services are concerned with defining the size of the population of women who have a potential need for family planning services and identifying women whose need for contraception is not being met. Currently married fecund women who either want no more children or want to wait at least two years before having another child, but who are not using contraception, are considered to have an *unmet need* for family planning.[1] Current users of family planning methods are said to have a *met need* for family planning. The *total demand* for family planning is the sum of the met need and unmet need for family planning.

Table 8.5 shows the demand for family planning services according to selected background characteristics. Nine percent of currently married women in Kazakhstan have an unmet need for family planning: 4 percent have an unmet need for spacing, and 5 percent have an unmet need for limiting. This percentage is a substantial reduction from the 16 percent of currently married women who reported an unmet need for family planning in the 1995 KDHS.

In Kazakhstan, the total demand for family planning among currently married women (the sum of the met and unmet need) is 75 percent. A high proportion of the total demand for family planning is being met, with nearly nine out of ten currently married women with a need for family planning using contraception.

Because so much of the total demand is being met, there is little opportunity for substantial variation in unmet need between population subgroups. Nevertheless, the level of unmet need is greater among younger women than among older women. Unmet need is also greater among rural women (10 percent), among women in the South and the West Regions (10 and 12 percent, respectively), and among women of Kazakh ethnicity (10 percent).

8.3 Ideal Family Size

Information on what respondents feel is the ideal family size was obtained by asking two questions. Respondents who had no children were asked how many children they would like to have if they could choose the number of children to have. Respondents who had children were asked how many children they would like to have if they could go back to the time when they did not have any children and could choose the number of children to have. Responses to these questions are meant to be independent of the number of children that a respondent already has. However, there is typically a correlation between the actual number of children that respondents have and their reported ideal. This correlation may be because people who want larger families tend to have more children or because respondents adjust their ideal family size to match their actual family size or because of combination of these factors.

Table 8.6 indicates that, for all women in the survey, the mean ideal number of children is 2.8 and that, for currently married women, the figure is marginally higher (3.0). These ideal family-size preferences are virtually unchanged from those reported for the 1995 KDHS (2.9 and 3.1, respectively).

[1] For an exact description of the calculation, see footnote 1, Table 8.5.

Table 8.5 Need for family planning services

Percentage of currently married women with unmet need for family planning, and met need for family planning, and the total demand for family planning services, by selected background characteristics, Kazakhstan 1999

Background characteristic	Unmet need for family planning[1]			Met need for family planning (currently using)[2]			Total demand for family planning			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
Age											
15-19	13.0	0.0	13.0	28.4	10.8	39.2	42.4	10.8	53.2	75.6	63
20-24	10.1	3.4	13.4	40.3	12.7	53.0	51.1	17.4	68.5	80.4	353
25-29	5.6	5.0	10.6	43.8	21.5	65.3	49.5	26.6	76.1	86.1	506
30-34	4.5	5.1	9.6	33.2	38.4	71.6	38.1	43.4	81.6	88.2	546
35-39	1.7	5.5	7.2	15.4	61.3	76.7	17.2	66.8	84.0	91.5	617
40-44	0.4	7.3	7.7	5.3	67.0	72.3	5.7	74.3	80.0	90.4	548
45-49	0.0	3.7	3.7	2.2	47.8	50.0	2.2	51.4	53.7	93.2	385
Residence											
Urban	2.7	4.8	7.6	23.7	43.8	67.4	26.5	48.7	75.2	90.0	1,596
Rural	4.6	5.3	10.0	22.4	42.2	64.6	27.4	47.8	75.2	86.8	1,422
Region											
Almaty City	2.9	4.0	6.9	29.0	41.1	70.1	32.2	45.4	77.6	91.1	159
South	5.1	5.2	10.3	21.0	38.6	59.6	26.5	43.8	70.3	85.4	926
West	3.9	7.7	11.6	22.0	38.2	60.2	26.1	46.1	72.3	83.9	394
Central	2.8	3.7	6.5	22.0	49.5	71.5	25.3	53.2	78.5	91.8	281
North	2.7	4.4	7.1	24.0	45.7	69.7	26.7	50.5	77.2	90.8	837
East	2.9	4.8	7.7	25.1	48.6	73.8	28.2	53.5	81.6	90.6	422
Education											
No education	*	*	*	*	*	*	*	*	*	*	10
Primary/secondary	4.8	5.3	10.1	18.9	44.7	63.6	24.1	50.4	74.4	86.5	1,054
Secondary-special	3.1	5.3	8.4	24.1	42.1	66.2	27.4	47.5	74.9	88.7	1,367
Higher	2.8	3.7	6.5	28.3	42.2	70.6	31.1	45.9	77.1	91.5	587
Ethnicity											
Kazakh	4.3	5.8	10.1	24.1	39.9	64.0	28.7	45.7	74.4	86.5	1,607
Russian	2.3	4.3	6.6	22.3	47.8	70.1	24.9	52.4	77.3	91.4	904
Other	3.7	4.2	7.9	20.9	44.6	65.5	24.7	49.3	74.0	89.3	507
Total: Currently married women	3.6	5.1	8.7	23.0	43.0	66.1	26.9	48.3	75.2	88.5	3,018
Total: Women not currently married	1.5	1.1	2.6	9.2	8.1	17.3	10.8	9.3	20.2	86.9	1,782
Total: All women	2.8	3.6	6.4	17.9	30.1	48.0	20.9	33.8	54.8	88.2	4,800

[1] Unmet need for *spacing* includes pregnant women whose pregnancy was mistimed, amenorrheic women whose last birth was mistimed, and women who are neither pregnant nor amenorrheic and who are not using any method of family planning but say they want to wait two or more years for their next birth. Also included in unmet need for spacing are women who are unsure whether they want another child or who want another child but are unsure when to have the birth. Unmet need for *limiting* refers to pregnant women whose pregnancy was unwanted, amenorrheic women whose last child was unwanted, and women who are neither pregnant nor amenorrheic and who are not using any method of family planning but who want no more children. Excluded from the unmet need category are menopausal and infecund women.

[2] Using for *spacing* is defined as women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Using for *limiting* is defined as women who are using and who want no more children. Note that the specific methods used are not taken into account here.

Table 8.6 also shows the ideal number of children by the number of children that the respondent currently has. The mean ideal number of children increases steadily from 2.3 among childless women to 5.0 among women with six or more children.

Also shown in Table 8.6 is the ideal number of children reported by men. Overall, the mean ideal number of children is slightly greater among men (3.2) than among women (2.8).

Table 8.6 Ideal and actual number of children

Percent distribution of all women and men by ideal number of children, and mean ideal number of children for all women and men and for currently married women and men, according to number of living children, Kazakhstan 1999

Ideal number of children	Number of living children[1] 0	1	2	3	4	5	6+	Total
WOMEN								
0	0.4	0.1	0.4	0.0	0.0	0.0	0.8	0.3
1	10.5	10.9	3.6	2.9	2.7	0.0	0.0	6.7
2	52.9	52.2	48.7	17.4	14.3	11.4	8.8	42.5
3	19.8	24.3	25.1	35.8	5.7	12.0	5.0	23.0
4	7.5	5.0	13.6	21.3	40.8	13.9	16.8	12.8
5	1.8	2.3	3.8	8.1	14.5	30.3	6.2	5.0
6+	0.7	0.7	1.7	4.9	7.1	13.1	34.3	2.9
Nonnumeric response	6.4	4.5	3.0	9.5	15.0	19.3	28.1	6.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	1,374	954	1,306	648	277	150	90	4,800
All women:								
Mean ideal number[2]	2.3	2.3	2.7	3.4	3.9	4.6	5.0	2.8
Number of women	1,286	911	1,266	586	236	121	65	4,471
Currently married women:								
Mean ideal number[2]	2.5	2.4	2.7	3.5	3.9	4.6	4.9	3.0
Number of women	152	652	1,091	520	220	114	57	2,805
MEN								
0	0.3	0.0	0.0	0.0	0.0	(0.0)	(0.0)	0.1
1	4.4	1.6	1.7	1.9	0.0	(0.0)	(0.0)	2.4
2	35.2	48.0	26.2	9.6	4.6	(11.7)	(1.6)	28.1
3	19.9	27.2	29.4	24.9	5.4	(4.0)	(4.3)	22.4
4	4.4	5.2	15.9	18.2	17.3	(3.4)	(0.0)	9.8
5	4.1	3.1	9.8	16.3	9.8	(12.6)	(4.0)	7.5
6+	3.1	4.4	3.1	6.3	18.2	(19.2)	(19.2)	5.5
Nonnumeric response	28.6	10.5	14.0	22.7	44.7	(49.1)	(71.0)	24.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	506	210	378	183	74	40	49	1,440
All men:								
Mean ideal number[2]	2.8	2.8	3.2	3.8	(5.4)	*	*	3.2
Number of men	362	188	325	141	41	20	14	1,091
Currently married men:								
Mean ideal number[2]	(2.5)	2.8	3.2	3.9	(5.3)	*	*	3.4
Number of men	47	163	304	137	39	20	14	725

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.

[1] Includes current pregnancy

[2] The means exclude women who gave nonnumeric responses.

Table 8.7 shows the mean ideal number of children for all women and all men by five-year age group and background characteristics. The ideal number increases with increasing age. Women age 15-19 report an ideal of 2.3 children; that number increases to 3.1 for women age 45-49. A similar gradient can be seen for men: men age 15-19 report an ideal of 2.6 children, which increases to 3.7 for men age 45-49. The differentials by background characteristics are all in the expected direction and are more pronounced among older than among younger women. Rural women and

less educated women report a higher ideal number of children. The greatest differentials are found by region and ethnicity: women in the South Region and Kazakh women prefer a larger number of children. The same pattern of differentials was observed for men.

Table 8.7 Mean ideal number of children by background characteristics

Mean ideal number of children for all women and men, by age and selected background characteristics, Kazakhstan 1999

Background characteristic	Age								Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-59	
WOMEN									
Residence									
Urban	2.2	2.4	2.5	2.7	2.7	2.6	2.9	-	2.5
Rural	2.4	2.7	3.0	3.1	3.4	3.5	3.7	-	3.1
Region									
Almaty City	2.2	2.2	2.3	2.6	2.6	2.4	2.8	-	2.4
South	2.7	2.9	3.3	3.4	3.6	3.6	3.8	-	3.2
West	2.4	2.4	2.7	3.2	3.3	3.4	3.2	-	2.9
Central	2.1	2.3	2.5	2.5	2.5	2.5	2.4	-	2.4
North	2.0	2.4	2.2	2.6	3.0	2.7	3.0	-	2.5
East	2.1	2.2	2.4	2.5	2.7	2.7	3.0	-	2.5
Education									
No education	*	*	*	*	*	*	*	*	*
Primary/secondary	2.4	2.5	2.9	3.2	3.4	3.2	3.4	-	2.8
Secondary-special	2.3	2.6	2.6	2.8	3.0	2.8	3.1	-	2.8
Higher	2.2	2.4	2.5	2.7	2.8	2.8	2.9	-	2.6
Ethnicity									
Kazakh	2.6	2.7	2.9	3.2	3.4	3.5	4.0	-	3.1
Russian	2.0	2.2	2.3	2.2	2.4	2.3	2.6	-	2.3
Other	2.0	2.4	2.6	2.7	3.0	3.0	2.7	-	2.7
Total women	2.3	2.5	2.7	2.9	3.0	3.0	3.1	-	2.8
MEN									
Residence									
Urban	2.6	2.9	2.7	3.4	3.2	3.4	3.1	2.9	3.0
Rural	2.6	2.9	3.0	3.6	4.0	4.0	4.4	4.4	3.5
Region									
Almaty City	*	*	*	*	*	*	*	*	2.7
South	3.3	4.3	3.7	*	4.0	*	*	*	3.9
West	*	*	*	*	*	*	*	*	3.8
Central	*	*	*	*	*	*	*	*	3.0
North	2.2	(2.6)	(2.5)	(3.4)	3.6	(3.2)	(3.3)	(3.8)	3.1
East	(2.5)	*	*	*	(3.0)	*	*	*	3.0
Education									
Primary/secondary	2.6	3.1	(2.8)	(3.0)	3.8	(4.1)	(3.9)	4.0	3.3
Secondary-special	(2.5)	2.8	2.8	3.8	3.5	3.3	(3.7)	(2.7)	3.2
Higher	*	*	*	*	(3.2)	*	*	*	3.1
Ethnicity									
Kazakh	2.9	3.5	3.5	3.8	4.2	4.4	(4.9)	(4.7)	3.9
Russian	2.2	(2.2)	2.2	(3.2)	3.0	2.6	(3.0)	2.6	2.6
Other	*	*	(2.7)	*	(3.0)	*	*	(3.8)	3.1
Total men	2.6	2.9	2.8	3.5	3.6	3.6	3.7	3.4	3.2

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.

8.4 Wanted and Unwanted Fertility

In the 1999 KDHS, women were asked a series of questions about each of their children born in the five years preceding the survey—and, if pregnant, their current pregnancy—to determine whether the pregnancy was wanted *then* (planned), wanted *later* (mistimed), or *not* wanted (unplanned).

Table 8.8 shows the percent distribution of births in the five years before the survey by whether the birth was wanted then, wanted later, or not wanted. Nine out of ten births in the last five years were wanted, i.e., either planned (82 percent) or wanted later (8 percent). One out of ten births occurred to women who did not want another child. As expected, the percentage of unwanted births is greater among older women and for higher order births.

Table 8.8 Fertility planning status

Percent distribution of births in the five years preceding the survey and current pregnancies, by fertility planning status, according to birth order and mother's age, Kazakhstan 1999

Birth order and mother's age	Planning status of birth			Missing	Total	Number of births
	Wanted then	Wanted later	Not wanted			
Birth order						
1	90.2	6.6	2.7	0.4	100.0	574
2	79.6	11.3	8.6	0.4	100.0	465
3	79.4	7.7	12.6	0.3	100.0	284
4+	73.6	7.4	19.0	0.0	100.0	265
Age at birth						
<19	83.1	9.6	7.1	0.3	100.0	180
20-24	82.3	11.7	5.9	0.1	100.0	585
25-29	85.7	6.1	7.4	0.8	100.0	443
30-34	81.1	6.0	12.5	0.4	100.0	250
35-39	72.8	3.9	23.3	0.0	100.0	110
40-44	*	*	*	*	100.0	20
Total	82.4	8.3	8.9	0.3	100.0	1,587

Note: Birth order includes current pregnancy. An asterisk indicates that a figure is based on fewer than 25 births (and current pregnancies) and has been suppressed.

Table 8.9 presents *wanted fertility rates*. Wanted fertility rates indicate the theoretical level of fertility that would result if all unwanted births were prevented. Unwanted births are those that exceed respondents' ideal number. The comparison of observed total fertility rates and wanted fertility rates indicates the extent to which couples in a population successfully control their fertility.

In Kazakhstan, there is little difference between the observed total fertility rate (2.0 children per woman) and the wanted total fertility rate (1.9 children per woman). Similarly, only minor differences exist between actual and wanted fertility for population subgroups.

Table 8.9 Wanted fertility rates

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by selected background characteristics, Kazakhstan 1999

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.4	1.5
Rural	2.4	2.7
Region		
Almaty City	(0.9)	(1.0)
South	2.7	2.9
West	2.1	2.3
Central	1.5	1.6
North	1.4	1.7
East	1.3	1.4
Education		
No education	(0.9)	(0.9)
Primary/secondary	2.2	2.4
Secondary-special	1.9	2.1
Higher	1.4	1.5
Ethnicity		
Kazakh	2.3	2.5
Russian	1.2	1.4
Other	(1.4)	(1.6)
Total	1.9	2.0

Note: Rates are based on births to women 15-49 in the period 1-36 months preceding the survey. The total fertility rates are the same as those presented in Table 4.2. Rates in parentheses indicate that one or more of the component age-specific rates is based on fewer than 250 woman-years of exposure.

INFANT AND CHILD MORTALITY 9

Jeremiah M. Sullivan, Auken Mashkeev, and Adyl Katarbayev

9.1 Background and Assessment of Data Quality

This chapter presents information on mortality among children under five years of age. The rates shown provide information on mortality levels, time trends, and differentials between population subgroups. Mortality differentials are useful to agencies providing health services because they identify population subgroups in which the risk of dying in early childhood is high.

The mortality rates presented in this chapter are expressed as deaths per 1,000 live births, except in the case of child mortality rates, which are expressed as deaths per 1,000 children surviving to age one. Rates are presented for the following age intervals:

- Neonatal mortality (NN): the probability of dying within the first month of life.
- Postneonatal mortality (PNN): the difference between infant and neonatal mortality.
- Infant mortality ($_1q_0$): the probability of dying between birth and the first birthday.
- Child mortality ($_4q_1$): the probability of dying between exact ages one and five.
- Under-five mortality ($_5q_0$): the probability of dying between birth and the fifth birthday.

The 1999 KDHS questionnaire included a reproductive history in which questions were asked about each of a woman's pregnancies. Respondents were asked to report their pregnancy outcomes in terms of standard international definitions (WHO, 1993). *Live birth* was defined as any birth, irrespective of the duration of pregnancy, that, after separation of the infant from the mother, showed any signs of life such as breathing, beating of the heart, or movement of voluntary muscles. *Infant death* was defined as the death of a live-born child under one year of age.

For each live birth reported in the pregnancy history, questions were asked about the date of birth (month and year), sex, survivorship status, and current age (for surviving children) or age at death (for deceased children). Mortality estimates for specific periods preceding the survey were calculated from this information.

The accuracy of mortality estimates from the 1999 KDHS depends on the sampling variability of the estimates and on non-sampling error (i.e., the completeness and accuracy with which births and deaths are reported and recorded). Sampling variability is discussed in the next section of this chapter. Typically, the most serious source of non-sampling error in a retrospective survey is underreporting of both the birth and the death of children who do not survive (United Nations, 1982). Such underreporting results in underestimated mortality rates.

Underreporting of deceased children is usually most severe for deaths that occur in early infancy (i.e., in the neonatal period). Underreporting of neonatal deaths results in an abnormally low ratio of neonatal mortality to infant mortality. In retrospective surveys, underreporting of early infant deaths is usually more common for births occurring long before the survey than for births occurring close to the survey date. Hence, it is useful to examine the ratios of neonatal to infant mortality for different retrospective periods.

Neonatal and infant mortality rates from the 1999 KDHS are shown in Table 9.1. The value of the ratio of neonatal mortality to infant mortality for the periods 1984-89, 1989-94, and 1994-99 are 0.53, 0.50, and 0.54, respectively. In countries known for having complete and accurate mortality data at a level of infant mortality between 50 and 60 per 1000 (a range which includes the infant mortality rates estimated by the 1999 KDHS), the value of this ratio is typically between 0.50 and 0.60.[1] The ratios for Kazakhstan are in this range. Accordingly, this inspection of the data does not suggest substantial underreporting of neonatal deaths.[2]

9.2 Levels and Trends in Early Childhood Mortality

Table 9.1 shows infant and child mortality estimates from the 1999 KDHS. For the five years immediately preceding the survey (1994-99), the infant mortality estimate was 62 per 1,000 births. The estimates of neonatal and postneonatal mortality were 34 and 28 per 1,000 births, respectively. The estimate of child mortality (exact age 1 to exact age 5) was much lower: 10 per 1,000. The overall under-five mortality rate for the period was 71 per 1,000.

Table 9.1 Infant and child mortality

Infant and child mortality rates by five-year periods preceding the survey, Kazakhstan 1999

Years preceding survey	Calendar period[a]	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
0-4	1994-99	33.6	28.3	61.9	10.1	71.4
5-9	1989-94	24.6	25.1	49.7	7.3	56.7
10-14	1984-89	29.3	25.7	54.9	11.8	66.1

[a] Periods are from midyear to midyear: 1994-99 is mid-1994 to mid-1999.

For the 15-year period preceding the survey, infant mortality declined 1984-89 (55 per 1,000) and 1989-94 (50 per 1,000) and then increased 1994-99 (62 per 1,000). The same pattern is evident in the estimates of child mortality: declines from 12 per 1,000 (1984-89) to 7 per 1,000 (1989-94) and then increases to 10 per 1,000 (1994-99). While these statistics evidence improving mortality conditions from the late 1980s to the early 1990s and deteriorating conditions from the early 1990s to the late 1990s, the true extent of mortality change may differ from the estimated rates because of sampling variability.[3]

[1] For example, see the neonatal and infant mortality rates for Hungary (1955), Italy (1955), and Puerto Rico (1957) in the *U.N. Demographic Yearbook, 1961* and for Portugal (1968) in the *U.N. Demographic Yearbook, 1974*.

[2] An examination of the ratio of the neonatal to the infant mortality rate can detect gross underreporting of events, but this indicator is not sufficiently sensitive to detect underreporting that is not severe. Thus, while capable of detecting severe event underreporting, this approach cannot confirm that events are completely and accurately reported.

[3] The mortality rates for the 1999 KDHS are based on data provided by a sample of 4,800 women age 15 to 49 and are subject to sampling variability. Of interest here is the 95-percent confidence interval for the estimated rates. For example, the estimated infant mortality rate for 1994-99 (62 per 1,000 live births) has a broad 95-percent confidence interval (47 to 76 per 1,000) (see Appendix B). Thus, the point estimate of 62 per 1,000 cannot be considered exact, and the true rate could be higher or lower.

Additional evidence that mortality levels have increased recently is provided by comparison with mortality estimates from the 1995 KDHS. The 1995 survey estimated an infant mortality rate of 40 per 1,000 for 1990-95. The 1999 survey estimate of 62 per 1,000 (1994-99) represents an increase of 55 percent. The sampling error associated with each of these estimates is substantial and precludes the absolute conclusion that mortality risks have increased. Nevertheless, the magnitude of the difference between the estimates strongly suggests some increase in mortality risks in the past five years.[4]

9.3 Infant Mortality Rates from the Agency on Health

Kazakhstan has a long history of demographic and health data collection. For births and infant deaths, the Agency on Health (AOH) collects data through a system in which reports from local health officials, which primarily document events occurring in health facilities, are forwarded up the reporting hierarchy to the *oblast* level and to the AOH. Official government statistics on infant mortality are published in annual statistical reports.

The protocols used by health officials for collecting information on births and infant deaths are those established during the time of the former Soviet Union. The definitions of events in those protocols differ from the definitions that are recommended by the World Health Organization. For classifying events as live births and infant deaths, the most important definitional difference is for pregnancies terminating at a gestation age of less than 28 weeks. The Soviet protocols classify such pregnancies as miscarriages (even if signs of life are present at the time of delivery) unless the child survives for seven days.[5] Alternatively, WHO defines a birth showing any sign of life (i.e., breathing, beating of the heart, or movement of voluntary muscles) as a live birth, irrespective of the gestation age at pregnancy termination (WHO, 1993). A less important difference in definition occurs for pregnancies terminating at 28 or more weeks of gestation. The Soviet system classifies such events as live births if breathing is present at delivery and otherwise as still births. WHO defines these events as live births if any sign of life is present at delivery and otherwise as stillbirths.

The definitional differences mean that some events classified as live births and infant deaths in the 1999 KDHS would be classified as miscarriages and stillbirths according to AOH protocols. As a result, infant mortality rates, and particularly neonatal mortality rates, reported by the 1999 KDHS can be expected to be greater than the estimates reported by AOH.

Table 9.2 shows infant mortality rates based on the AOH data for single calendar years from 1983 to 1997. Also shown are the average rates for the periods 1984-88, 1989-93, and 1994-97. Overall, the AOH rates show a modest decline between 1984-88 (30 per 1,000) and 1989-93 (27 per 1,000) and essentially no change between 1989-93 and 1994-97 (26 per 1,000).

There are two important differences between the infant mortality rates of the AOH and the 1999 survey (Figure 9.1). First, the AOH's rates are approximately 50 percent lower than the survey estimates. As suggested above, this discrepancy arises to some extent from definitional differences. Second, the trends of the two sets of estimates differ; the AOH's rates show no change between the

[4] It should also be noted that there is a significant difference between the 1995 KDHS infant mortality estimate for 1990-95 (40 per 1,000) and the 1999 KDHS estimate for 1989-94 (50 per 1,000). An explanation for this difference is not known at this time. However, it is more likely that the 10-point difference is due to sampling error than is the 22-point difference between the 1990-95 estimate from the 1995 survey (40 per 1,000) and the 1994-99 estimate from the 1999 survey (62 per 1,000).

[5] In cases where the gestation age is unknown, fetuses that weigh less than 1,000 grams or measure less than 35 centimeters in length are considered immature and are classified as miscarriages.

Table 9.2 AOH infant mortality rates

Infant mortality rates reported by the Agency on Health (AOH), Kazakhstan 1983-97

Year	Infant mortality rate (per 1,000)
1997	24.9
1996	25.4
1995	27.0
1994	27.1
1993	28.0
1992	26.2
1991	27.4
1990	26.4
1989	25.9
1988	29.2
1987	29.4
1986	29.0
1985	30.1
1984	30.2
1983	31.2
Mean 1994-97	26.1
Mean 1989-93	26.8
Mean 1984-88	29.6

Sources: 1983-93, Church and Koutanev, 1995; 1994-97, UNDP, 1998

recent periods (i.e., 27 per 1,000 for 1989-93 and 26 per 1,000 for 1994-97), while the 1999 KDHS estimates show mortality increases between those periods (i.e., 50 per 1,000 for 1989-94 and 62 per 1,000 for 1994-99).

A thorough investigation of the difference between the two sets of estimates is beyond the scope of this report. However, such an investigation would need to consider definitional differences between the AOH and the 1999 KDHS and the degree to which specific subintervals of infancy contribute to the overall difference in infant mortality estimates. Rates from both the AOH and the survey can be calculated for the early neonatal period (0-6 days), the late neonatal period (7-28 days), and the postneonatal period (29-365 days). Reviewing these rates is important because only differences contributed by the early neonatal period can be ascribed to definitional differences between systems. The sampling variability of the survey's estimates would also need to be considered.

9.4 Socioeconomic Differentials in Childhood Mortality

Table 9.3 shows infant and child mortality by selected socioeconomic variables (residence, mother's education, and mother's ethnicity). The mortality rates are presented for the 10-year period preceding the survey. A 10-year period is used to calculate the rates for population subgroups to reduce the sampling variability of the estimates.

The rates for residence display an expected pattern that agrees with the pattern found in most countries. The mortality estimates for rural areas are greater than the estimates for urban areas at all ages. The rural estimate of infant mortality (64 per 1,000) exceeds the urban estimate (44 per 1,000) by 46 percent. The rural estimate of under-five mortality (73 per 1,000) also exceeds the urban estimate (50 per 1,000) by 46 percent.

Mortality estimates by mother's education also display the expected differentials. The rates of infant mortality, for children of women with a primary or secondary education (57 per 1,000) or secondary-special education (56 per 1,000) exceed the rate for children of women with a higher education (47 per 1,000).

Pronounced mortality differentials exist by mother's ethnicity. The infant mortality rate for children of Kazakh ethnicity (58 per 1,000) exceeds the rate for children of Russian ethnicity (40 per 1,000) by 46 percent. The estimate of under-five mortality for children of Kazakh ethnicity (68 per 1,000) is greater than the estimate for children of Russian ethnicity (44 per 1,000) by 56 percent.

Figure 9.1 Trends in Infant Mortality Agency on Health and KDHS

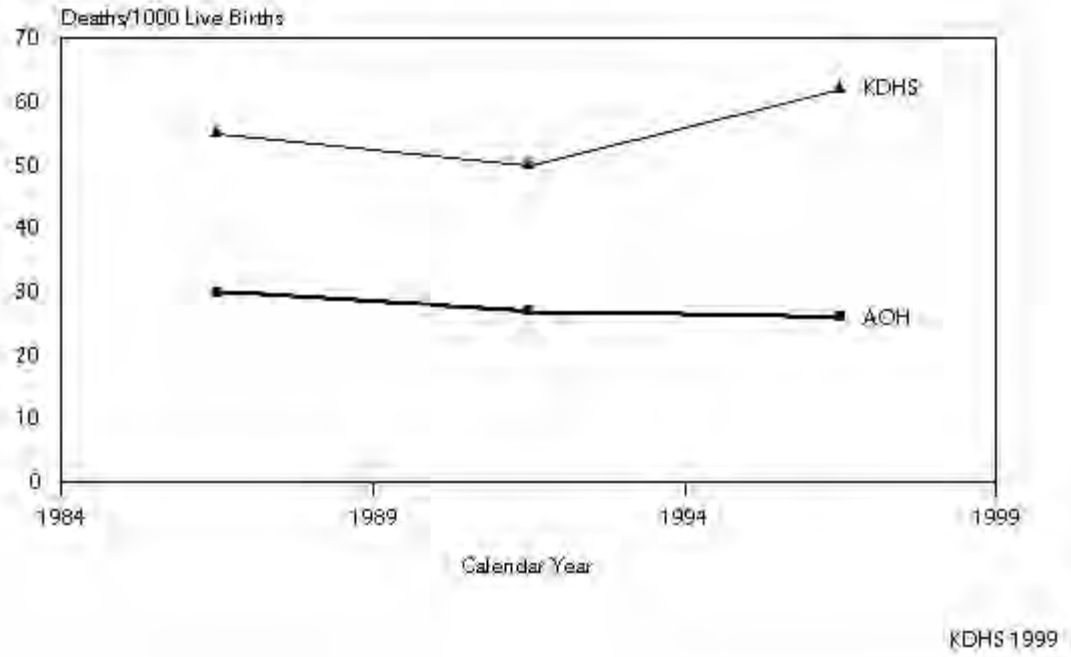


Table 9.3 Infant and child mortality by background characteristics

Infant and child mortality rates for the 10-year period preceding the survey, by selected socioeconomic characteristics, Kazakhstan 1999

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
Residence					
Urban	25.5	18.2	43.7	6.7	50.1
Rural	30.7	33.0	63.8	10.1	73.2
Education					
Primary/secondary	28.0	29.0	57.0	11.0	67.4
Secondary-special	30.2	26.0	56.2	6.6	62.5
Higher	24.8	22.3	47.1	8.2	55.0
Ethnicity					
Kazakh	26.5	31.7	58.2	10.4	68.0
Russian	33.5	6.4	39.8	3.8	43.5
Other	30.4	28.7	59.0	6.6	65.2
Total	28.4	26.5	54.9	8.5	63.0

9.5 Demographic Differentials in Childhood Mortality

The relationship between early childhood mortality and selected demographic variables is shown in Table 9.4. As was the case with the socioeconomic differentials, the rates are shown for the 10-year period preceding the survey.

In Kazakhstan, as in almost all populations, the infant mortality rate for male children (62 per 1,000) exceeds the rate for female children (47 per 1,000). The child mortality rate (ages one to five) for males (11 per 1,000) also exceeds the rate for females (6 per 1,000).

The relationship between mortality and birth order indicates that births of order four or higher are at greater risk of dying than births of lower orders.

A clear association is indicated between mortality risk and the length of the preceding birth interval. The risk of dying in the first year for births occurring less than two years after a previous birth (83 per 1,000) is substantially greater than for births occurring after an interval of 2-3 years (46 per 1,000) or an interval of four or more years (40 per 1,000). This relationship suggests that some reduction in mortality would result if the proportion of births occurring after a short birth interval.

Table 9.4 Infant and child mortality by demographic characteristics

Infant and child mortality rates for the 10-year period preceding the survey, by selected demographic characteristics, Kazakhstan 1999

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
Sex of child					
Male	32.6	29.5	62.0	10.6	72.0
Female	24.0	23.3	47.3	6.4	53.4
Age of mother at birth					
<20	(52.2)	(27.3)	(79.5)	(4.8)	(83.9)
20-29	24.4	26.5	50.9	10.3	60.7
30-39	25.7	24.6	50.3	5.4	55.5
Birth order					
1	29.7	21.4	51.0	11.2	61.6
2-3	26.2	25.6	51.7	5.2	56.7
4+	30.6	32.2	62.8	15.5	77.3
Previous birth interval					
<2 yrs	42.3	40.3	82.6	5.8	87.9
2-3 yrs	14.8	30.9	45.8	9.0	54.3
4+ yrs	23.5	16.6	40.1	6.5	46.3
Total	28.4	26.5	54.9	8.5	63.0

( ) Rate based on 200-499 births

9.6 High-Risk Fertility Behavior

Previous research has shown a strong relationship between the fertility patterns of women and the mortality risks of their children (Sullivan et al., 1994). Typically, mortality risks are greater for children who are born to mothers who are too young or too old, who are born after a short birth interval, or who have a high birth order. In this analysis, a mother is classified as *too young* if she is less than 18 years of age, and *too old* if she is older than 34 years of age. A *short birth interval* is defined as a birth occurring within 24 months of the previous birth, and a child is of *high birth order* if the mother had already given birth to three or more children.

Table 9.5 shows the distribution of children born in the five years before the survey by risk category. While first births to women age 18 to 34 are considered an unavoidable risk, they are included in the analysis and are shown as a separate risk category.

Table 9.5 High-risk fertility behavior

Percent distribution of children born in the five years preceding the survey by category of elevated risk of dying, and the percent distribution of currently married women at risk of conceiving a child with an elevated risk of dying, by category of increased risk, Kazakhstan 1999

Risk category	Births in 5 years preceding the survey		Percentage of currently married women[a]
	Percentage of births	Risk ratio	
Not in any high-risk category	28.1	1.0	32.3[b]
Unavoidable risk category			
First birth between ages 18 and 34	33.2	1.3	5.3
Single high-risk category			
Mother's age <18	2.2	1.2	0.2
Mother's age >34	3.8	0.2	35.9
Birth interval <24 months	15.8	1.5	7.3
Birth order >3	8.2	1.1	2.5
Subtotal	30.1	1.2	45.9
Multiple high-risk category			
Age >34 & birth interval <24 mo.	0.4	7.9	0.3
Age >34 & birth order >3	4.0	0.8	14.2
Age >34 & birth interval <24 & birth order >3	0.4	4.8	0.7
Birth interval <24 & birth order >3	3.9	2.4	1.3
Subtotal	8.6	2.0	16.5
In any avoidable high-risk category	38.7	1.4	62.4
Total	100.0	-	100.0
Number of births	1,449	-	3,018

Note: Risk ratio is the ratio of the proportion dead of births in a specific high-risk category to the proportion dead of births not in any high-risk category.
[a] Women were assigned to risk categories according to the status they would have at the birth of a child, if the child were conceived at the time of the survey: age less than 17 years and 3 months, age older than 34 years and 2 months, latest birth less than 15 months ago, and latest birth of order 3 or higher.
[b] Includes sterilized women

Column 1 of Table 9.5 shows that in the five-year period before the survey, 30 percent of births were in a single high-risk category and 9 percent were in a multiple high-risk category.

Column 2 of the table shows risk ratios for avoidable high-risk births relative to births not having any high-risk characteristics. Overall, the risk ratio for births in a single high-risk category is 1.2 (20 percent higher than births in the no high-risk category). For births with multiple high-risk characteristics, the risk ratio is 2.0 (elevated by 100 percent).

Column 3 of Table 9.5 looks to the future and addresses the question, How many currently married women have the potential for having a high-risk birth? The results were obtained by simulating the risk category into which a birth to a currently married woman would fall if she were to become pregnant at the time of the survey. For example, a woman who was 37 years old at the time of the survey and had three previous births, the last of which occurred three years earlier, would be classified in the multiple high-risk category for being too old (35 or older) and at risk of having a high order birth (greater than 3).

Overall, 62 percent of currently married women have the potential to give birth to a child with an elevated risk of dying. Seventeen percent of women have the potential to give birth to a child with multiple high-risk factors.

MATERNAL AND CHILD HEALTH 10

Toregeldy Sharmanov, Ardak Chuyenbekova, and Adyl Katarbayev

This chapter presents findings concerning maternal and child health in Kazakhstan. Information is presented on usual sources of health care, maternal care during pregnancy and delivery, vaccinations of children, and child illnesses (respiratory infection, fever, and diarrhea) in the two weeks preceding the survey.

10.1 Usual Source of Health Care

Traditionally, health services in Kazakhstan were provided through a network of primary health care institutions such as polyclinics, hospitals (urban, rural, delivery hospitals, and other types), and women's consulting centers in urban areas and doctor's assistant/midwife posts (so-called FAPs) in rural areas. These institutions provided many types of primary health services, including routine physical examinations, vaccinations, antenatal care, and delivery assistance. For the purpose of management, the entire country was divided into health-service delivery areas, each representing between 3,000 and 4,000 people. Specialized services were provided through secondary and tertiary health systems.

Recently, a network of Family Group Practices (FGPs) has been created in Kazakhstan. In some areas, the FGPs have replaced polyclinics and other traditional types of primary health care institutions as the main source of health care for many families. The restructuring of the health care system is aimed at shifting from expensive specialized services to basic primary health care. The FGPs are thought to be more efficient than the traditional system because their financing is based on a capitation system designed to increase the managerial autonomy and internal control that primary-care providers have over their resources.

Women interviewed in the 1999 KDHS were asked if they have a usual source of care, and if they answered yes, they were asked what kind of place it is—a Family Group Practice, a polyclinic, a women's consulting center, an FAP, a hospital, or some other place. The results are presented in Table 10.1.

Thirty-seven percent of women reported that an FGP is their usual source of care, whereas 27 percent go to polyclinics for health services. FGPs are the most prevalent source of health care in the West, Central, and East regions (51, 52, and 55 percent, respectively). However, in Almaty City, less than 1 percent of women use FGPs as their primary source of care; 92 percent of them go to polyclinics for primary health care services.

Overall, 14 percent of women in Kazakhstan consider the hospital their usual source of care. Reliance on the hospital, which usually provides specialized services, is high in the South and North regions (19 and 18 percent, respectively) when compared with Almaty City and the West and East regions, where only 3, 5, and 8 percent of women, respectively, rely on the hospital as their usual source of care. Fourteen percent of women in Kazakhstan receive their primary health care services from FAPs (doctor's assistant/midwife posts), which are responsible mostly for antenatal services and delivery assistance in rural and remote areas.

Table 10.1 Usual source of health care by type of facility

Percent distribution of women who reported having a usual source of health care by type of facility, according to background characteristics, Kazakhstan 1999

Background characteristic	Family group practice	Poly-clinic	Women's consulting center	FAP	Hospital	Other	Out-patient clinic	Don't know	Missing	Total	Number of women
Age											
15-19	35.4	26.9	0.0	15.7	15.4	3.2	2.7	0.2	0.5	100.0	709
20-24	34.3	27.2	0.3	15.3	15.0	3.5	3.9	0.2	0.4	100.0	604
25-29	39.3	26.0	0.2	11.1	15.0	4.2	4.0	0.0	0.2	100.0	644
30-34	37.6	24.5	0.1	15.7	13.1	4.7	4.2	0.0	0.1	100.0	656
35-39	37.1	24.9	0.3	15.2	14.2	4.9	3.0	0.2	0.1	100.0	695
40-44	35.5	30.5	0.1	13.8	13.0	4.1	2.9	0.1	0.1	100.0	629
45-49	38.2	31.8	0.0	14.0	9.4	3.0	3.4	0.3	0.0	100.0	484
Residence											
Urban	41.0	43.5	0.1	0.1	12.2	2.6	0.2	0.2	0.1	100.0	2,442
Rural	31.4	7.1	0.1	32.1	15.7	5.7	7.5	0.0	0.3	100.0	1,979
Region											
Almaty City	0.7	92.0	0.7	0.2	3.3	3.3	0.0	0.0	0.0	100.0	267
South	36.4	15.1	0.2	15.7	19.4	6.9	6.0	0.0	0.3	100.0	1,341
West	51.4	31.9	0.0	5.6	5.2	2.7	2.8	0.3	0.0	100.0	529
Central	52.1	26.1	0.1	6.3	10.0	4.1	0.1	0.9	0.2	100.0	413
North	24.2	29.4	0.0	26.1	17.7	2.6	0.0	0.0	0.1	100.0	1,229
East	54.5	18.2	0.1	8.1	8.3	1.9	8.6	0.1	0.3	100.0	643
Mother's education											
Primary/secondary	37.2	20.6	0.0	19.2	14.5	3.8	4.3	0.1	0.3	100.0	1,753
Secondary-special	37.5	26.5	0.2	13.1	15.0	4.5	3.0	0.0	0.1	100.0	1,782
Higher	34.4	41.7	0.2	7.8	9.8	3.2	2.4	0.4	0.1	100.0	886
Ethnicity											
Kazakh	38.1	20.8	0.1	18.3	13.0	4.6	4.8	0.1	0.2	100.0	2,363
Russian	34.9	37.6	0.1	7.1	14.4	3.1	2.5	0.2	0.1	100.0	1,346
Other	35.8	28.8	0.3	15.6	15.2	3.5	0.5	0.0	0.3	100.0	712
Total	36.7	27.2	0.1	14.4	13.8	4.0	3.4	0.1	0.2	100.0	4,421

Note: Figures are for births in the period 0-59 months preceding the survey. Figures may not add to 100.0 due to rounding.
FAP = Doctor's assistant/midwife post

10.2 Antenatal Care

The 1999 KDHS interviewers recorded all medical personnel that women reported having seen for antenatal care for each live birth in the five years preceding the survey. For the purpose of presenting results, antenatal care is classified in terms of the provider with the highest medical qualifications.

Table 10.2 and Figure 10.1 show the percentage of births for which mothers received antenatal care. A large proportion of mothers received care from professional health-care providers (94 percent). For 76 percent of births in the five years preceding the survey, mothers received antenatal care from a doctor, 3 percent received care from a doctor's assistant, and 15 percent

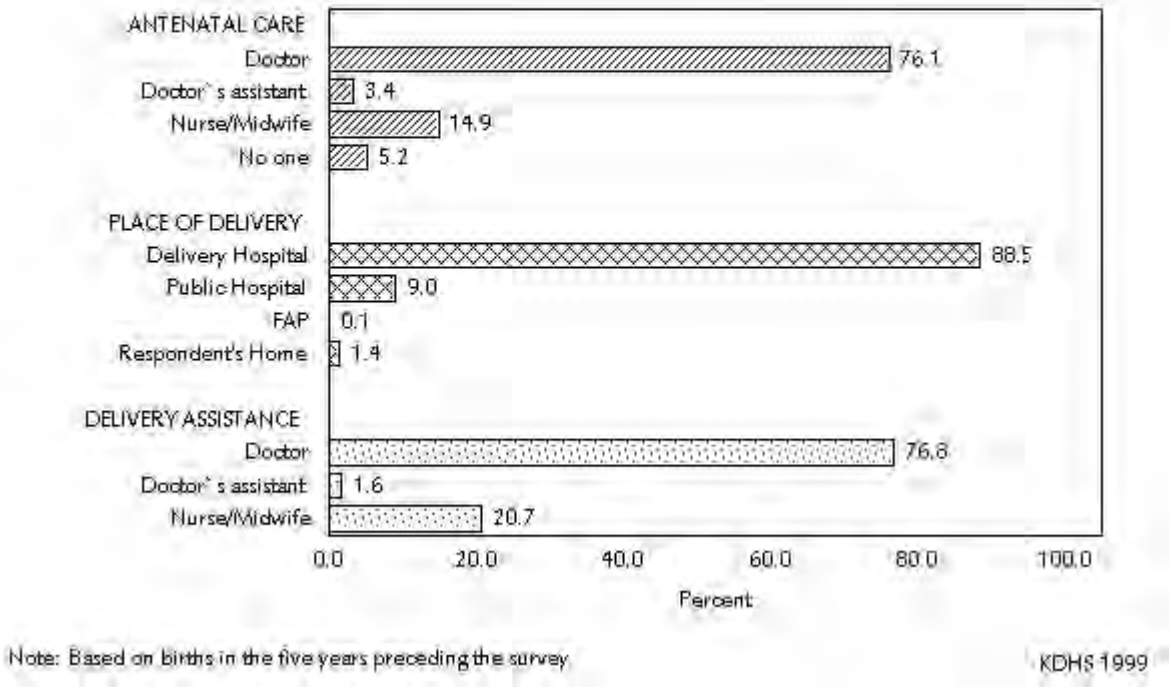
Table 10.2 Antenatal care

Percent distribution of births in the five years preceding the survey by source of antenatal care during pregnancy, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Antenatal care provider[1]						Number of births
	Doctor	Doctor's assistant	Nurse/ trained midwife	No one	Missing	Total	
Mother's age at birth							
<20	80.7	0.6	14.4	2.4	1.8	100.0	111
20-34	74.7	4.0	15.2	5.7	0.3	100.0	905
35+	82.8	0.6	13.2	3.4	0.0	100.0	112
Birth order							
1	83.3	3.2	9.4	4.1	0.0	100.0	357
2-3	74.3	3.9	16.3	4.6	0.9	100.0	570
4-5	68.9	2.5	20.3	8.3	0.0	100.0	153
6+	66.6	1.4	22.0	9.9	0.0	100.0	49
Residence							
Urban	84.4	1.3	5.5	7.8	1.0	100.0	523
Rural	68.9	5.1	23.1	2.9	0.0	100.0	605
Region							
Almaty City	88.5	0.0	4.6	6.9	0.0	100.0	40
South	74.9	1.8	19.8	3.0	0.5	100.0	460
West	69.7	8.2	20.1	1.4	0.6	100.0	153
Central	81.4	0.0	2.0	16.6	0.0	100.0	101
North	79.3	4.6	12.9	2.4	0.8	100.0	244
East	73.9	4.5	8.5	13.1	0.0	100.0	131
Mother's education							
Primary/secondary	67.7	4.3	21.2	6.9	0.0	100.0	430
Secondary-special	80.4	3.6	10.7	4.7	0.6	100.0	499
Higher	83.4	0.9	12.0	2.6	1.0	100.0	199
Ethnicity							
Kazakh	73.4	3.4	17.8	4.9	0.4	100.0	741
Russian	83.5	4.4	5.4	5.8	0.9	100.0	225
Other	77.9	1.7	14.8	5.6	0.0	100.0	162
No. of decisions with woman having final say							
0-1	74.1	4.8	17.6	2.6	0.8	100.0	261
2-3	77.6	3.8	13.4	4.9	0.3	100.0	671
4-5	73.5	0.0	16.5	9.5	0.5	100.0	197
No. of reasons to justify refusing sexual relations with husband							
0	77.1	6.7	9.2	6.9	0.0	100.0	25
1-2	82.1	4.0	11.0	2.9	0.0	100.0	82
3-4	75.6	3.2	15.4	5.3	0.5	100.0	1,021
No. of reasons to justify wife beating							
4-5	69.2	2.0	22.2	6.6	0.0	100.0	71
1-3	71.5	5.0	18.1	4.2	1.2	100.0	347
0	79.0	2.7	12.6	5.5	0.1	100.0	712
All births	76.1	3.4	14.9	5.2	0.4	100.0	1,129

Note: Figures are for births in the period 0-59 months preceding the survey.
[1] If the respondent mentioned more than one source of antenatal care, only the provider with the highest qualifications is considered.

Figure 10.1 Percent Distribution of Births by Antenatal Care and Delivery Characteristics



Note: Based on births in the five years preceding the survey KDHS 1999

received care from a nurse or trained midwife. In urban areas, doctor's provided 84 percent of antenatal care, doctor's assistants provided 1 percent, and nurses and midwives provided 6 percent, In rural areas, doctors provided 69 percent of antenatal care, doctor's assistants provided 5 percent, and nurses and midwives provided 23 percent.

Differences in antenatal care between age groups of women are negligible. Differences by birth order are more pronounced. Mothers are more likely to receive care for a doctor for first births (83 percent) than for births of order six and higher (67 percent).

There are significant differences in the source of antenatal care by region. The percentage of mothers who received care from a doctor is greater in Almaty City (89 percent) than in all other regions. The percentage of mothers who received no antenatal care is highest in the Central and East regions (17 and 13 percent, respectively).

Mother's education and ethnicity are also associated with antenatal care. Women with a higher education and Russian women are more likely to receive antenatal care from a doctor than are less-educated women and women of Kazakh or other ethnicities.

Antenatal care is most beneficial when it is sought early in pregnancy and is continued throughout pregnancy. The first visit to the women's consulting center should occur in the first three months of pregnancy so that a timely assessment of each woman's health can be made and appropriate procedures can be employed for the management of the pregnancy.

Table 10.3 shows information on the timing and number of visits to health care providers during pregnancy for live births in the five years preceding the survey. By the start of the third month of pregnancy, most women (84 percent) have made their first antenatal visit, and by the start of the sixth month of pregnancy, 92 percent have made a visit. The median duration of pregnancy for the first antenatal visit is 3.5 months.

Table 10.3 also indicates that 70 percent of women make four or more antenatal care visits. The median number of antenatal care visits is nine. Thus, in Kazakhstan, antenatal care is received early in pregnancy and, for most women, it is continued throughout pregnancy.

Table 10.3 Number of antenatal care visits and stage of pregnancy

Percent distribution of live births in the five years preceding the survey by number of antenatal care visits, and by the stage of pregnancy at the time of the first visit, Kazakhstan 1999

Characteristic	Percentage of births
Number of visits	
0	5.2
1	2.8
2-3	8.1
4+	70.0
Don't know/missing	13.9
Total	100.0
Median	9.0
Number of months pregnant at time of first visit	
No antenatal care	5.2
<3 months	84.0
3-5 months	8.2
6+ months	1.8
Don't know/missing	0.8
Total	100.0
Median	3.5
Number of births	1,129

Note: Figures are for births in the period 0-59 months preceding the survey.

10.3 Antenatal Care Content

Determining of the extent of care given during the antenatal visits is important in judging the value of antenatal care services. In Kazakhstan, a set of procedures that is usually provided during the antenatal visit includes weighing, height measurement, blood pressure measurement, and blood and urine testing. These procedures are helpful in early diagnosis of pregnancy complications, which are important sources of maternal and child mortality and morbidity.

In the 1999 KDHS women were asked if these procedures were done at least once during their last pregnancy that occurred in five years preceding the survey. The respondents were also asked whether they had been told about the signs of pregnancy complications.

Table 10.4 presents information on the percentage of women who were informed about the signs of pregnancy complications, and who received routine antenatal care procedures during their last pregnancy in the five years preceding the survey by background characteristics. About half of the respondents reported that they were informed about the signs of pregnancy complications. Blood pressure measurement and urine and blood sampling was performed on more than 70 percent of women during their antenatal visits. Height and weight measurement is part of the antenatal care services for 67 and 68 percent of women, respectively.

Such routine antenatal care procedures are more common among women residing in urban areas than in rural areas, among women living in Almaty City and the North region than in other regions, among Russian women than women of Kazakh and other ethnicities, and among women with a higher education than women with lower levels of education.

Mother's age at birth and birth order are important differentials of the content of antenatal care. As seen in Table 10.4, routine antenatal care procedures are more often provided to women age 35 years and older because they are at a greater risk of pregnancy complications. Additionally, women with higher order births are more likely to receive routine antenatal care services than women with lower order births.

Table 10.4 Antenatal care content

Percentage of last live births in the five years preceding the survey for which mothers received antenatal care, by content of antenatal care and selected background characteristics, Kazakhstan 1999

Background characteristic	Informed of signs of compli-cations	Blood pressure measured	Urine sample taken	Blood sample taken	Weighed	Height measured	Received iron	Number of births
Mother's age at birth								
<20	42.7	64.8	64.1	64.1	61.0	58.0	30.2	164
20-34	49.4	71.6	72.2	72.3	66.9	66.3	37.9	1,162
35+	70.3	86.7	85.2	85.2	85.6	82.5	43.3	123
Birth order								
1	44.9	64.8	64.9	64.9	62.4	60.0	33.9	522
2-3	52.9	76.7	77.0	77.2	70.7	70.7	40.0	689
4-5	51.4	74.0	74.1	74.1	70.0	68.2	35.4	184
6+	70.1	79.0	81.6	81.6	76.5	76.5	46.8	54
Residence								
Urban	57.6	77.5	77.8	77.8	75.5	73.7	46.2	612
Rural	45.3	68.2	68.5	68.6	62.2	61.6	31.0	837
Region								
Almaty City	63.3	81.6	80.6	80.6	79.6	74.5	55.1	45
South	48.2	65.9	66.3	66.5	58.5	58.3	32.2	660
West	48.8	75.3	75.2	75.2	71.3	70.1	33.0	193
Central	51.5	69.8	69.9	69.9	68.8	65.8	39.4	118
North	53.2	82.0	82.6	82.6	80.7	78.7	47.2	284
East	52.6	75.9	75.9	75.9	75.9	75.4	41.2	149
Mother's education								
Primary/secondary	42.5	64.7	65.4	65.6	60.1	58.3	28.9	599
Secondary-special	54.5	75.7	75.8	75.8	71.4	71.1	42.0	616
Higher	60.3	81.9	81.7	81.7	78.3	76.9	47.5	233
Ethnicity								
Kazakh	47.4	68.5	68.6	68.8	62.6	62.1	36.6	1,002
Russian	58.4	82.6	83.0	83.0	81.7	79.6	41.7	251
Other	56.0	77.1	78.1	78.1	76.9	74.1	36.3	196
All births	50.5	72.1	72.4	72.5	67.8	66.7	37.5	1,449

Note: Figures are for births in the period 0-59 months preceding the survey.

10.4 Assistance and Medical Care at Delivery

Hygienic conditions during delivery and supervision of delivery by trained medical staff reduce the risk of infections and ensure that complications of delivery are effectively handled. The 1999 KDHS collected information on the place of delivery for all children born in the five years preceding the survey and the type of medical staff assisting during delivery.

Table 10.5 indicates that virtually all births are delivered at health care facilities (98 percent). The great majority of births occur in a delivery hospital (89 percent). Another 9 percent of births occur in a public hospital. Only 2 percent of births are reported to occur outside a health care facility (i.e., primarily at the respondent's home). The high proportion of births delivered in delivery hospitals leaves little potential for differentials in place of delivery by background characteristics. Table 10.5 indicates that the percentage of births delivered in a hospital is 81 percent or higher for all population groups.

Table 10.5 Place of delivery

Percent distribution of live births in the five years preceding the survey by place of delivery, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Place of delivery								Number of births
	Delivery hospital	Public hospital	FAP	Respond-ents home	Other public	Other	Don't know/ missing	Total	
Mother's age at birth									
<20	92.2	5.1	0.0	0.3	1.7	0.4	0.3	100.0	164
20-34	88.0	9.8	0.1	1.2	0.3	0.2	0.4	100.0	1,162
35+	88.8	6.5	0.0	4.7	0.0	0.0	0.0	100.0	123
Birth order									
1	89.2	9.7	0.0	0.4	0.1	0.1	0.5	100.0	522
2-3	89.6	8.2	0.2	0.9	0.5	0.1	0.4	100.0	689
4-5	85.0	9.3	0.0	3.8	1.1	0.8	0.0	100.0	184
6+	80.5	10.2	0.0	9.3	0.0	0.0	0.0	100.0	54
Residence									
Urban	89.6	8.3	0.0	0.8	0.7	0.0	0.6	100.0	612
Rural	87.7	9.4	0.2	1.9	0.3	0.3	0.2	100.0	837
Region									
Almaty City	95.9	3.1	0.0	1.0	0.0	0.0	0.0	100.0	45
South	87.0	11.1	0.0	0.9	0.2	0.2	0.5	100.0	660
West	90.2	3.5	0.0	5.1	0.0	0.4	0.9	100.0	193
Central	95.3	2.9	0.7	0.7	0.0	0.3	0.0	100.0	118
North	89.1	9.5	0.0	0.0	1.4	0.0	0.0	100.0	284
East	84.5	12.1	0.5	2.0	0.5	0.0	0.4	100.0	149
Mother's education									
Primary/secondary	84.1	12.5	0.1	2.2	0.7	0.1	0.2	100.0	599
Secondary-special	91.6	6.3	0.1	1.1	0.3	0.3	0.4	100.0	616
Higher	91.9	6.9	0.0	0.3	0.0	0.0	0.9	100.0	233
Ethnicity									
Kazakh	88.3	9.0	0.2	1.7	0.2	0.2	0.6	100.0	1,002
Russian	90.4	6.8	0.0	1.1	1.7	0.0	0.0	100.0	251
Other	87.6	11.6	0.0	0.5	0.0	0.4	0.0	100.0	196
Antenatal care visits									
0 visits	80.5	13.2	0.0	3.7	2.6	0.0	0.0	100.0	79
1-3 visits	84.7	12.7	0.0	1.9	0.4	0.0	0.3	100.0	174
4 or more visits	89.8	8.4	0.1	1.1	0.1	0.2	0.2	100.0	999
Don't know/missing	88.8	6.8	0.4	1.4	1.0	0.0	1.6	100.0	196
All births	88.5	9.0	0.1	1.4	0.4	0.2	0.4	100.0	1,449

Note: Figures are for births in the period 0-59 months preceding the survey.
FAP = Doctor's assistant/midwife post

Table 10.6 indicates that almost all births are delivered under the supervision of medically trained personnel: 77 percent are delivered by a doctor and 22 percent by a doctor's assistant or a nurse or trained midwife.

While virtually all births are delivered by trained medical staff, there are differences in the percentage of deliveries performed by a doctor, a doctor's assistant, or a nurse or midwife by residence and region. More deliveries are attended by doctors in urban areas (86 percent) than in rural areas (70 percent), and more deliveries are attended by a doctor in the Central region (90 percent) and Almaty City (89 percent) than in the East and South regions (77 and 71 percent, respectively).

Table 10.6 Assistance during delivery

Percent distribution of live births in the five years preceding the survey by reported provider during delivery, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Attendant assisting during delivery[1]						Total	Number of births
	Doctor	Doctor's assistant	Nurse/ trained midwife	Traditional birth attendants	Relative/ other	Don't know/ missing		
Mother's age at birth								
<20	72.7	1.7	24.0	0.0	0.0	1.6	100.0	164
20-34	77.5	1.5	20.0	0.2	0.2	0.6	100.0	1,162
35+	75.6	2.3	22.1	0.0	0.0	0.0	100.0	123
Birth order								
1	80.6	0.9	17.7	0.0	0.0	0.8	100.0	522
2-3	76.5	1.3	21.2	0.1	0.1	0.7	100.0	689
4-5	69.4	3.4	26.4	0.0	0.8	0.0	100.0	184
6+	69.8	3.8	22.6	3.8	0.0	0.0	100.0	54
Residence								
Urban	86.3	0.0	12.1	0.3	0.0	1.3	100.0	612
Rural	69.8	2.7	27.0	0.1	0.2	0.2	100.0	837
Region								
Almaty City	88.8	0.0	11.2	0.0	0.0	0.0	100.0	45
South	71.0	1.7	25.9	0.3	0.2	0.8	100.0	660
West	83.6	3.6	11.9	0.0	0.4	0.5	100.0	193
Central	90.4	0.0	8.9	0.7	0.0	0.0	100.0	118
North	78.3	1.3	19.7	0.0	0.0	0.7	100.0	284
East	76.5	0.5	22.6	0.0	0.0	0.4	100.0	149
Mother's education								
Primary/secondary	74.5	2.7	22.5	0.1	0.1	0.1	100.0	599
Secondary-special	76.2	0.8	21.8	0.3	0.2	0.7	100.0	616
Higher	84.6	0.8	12.9	0.0	0.0	1.8	100.0	233
Ethnicity								
Kazakh	75.2	1.8	21.8	0.3	0.2	0.7	100.0	1,002
Russian	84.7	1.0	13.5	0.0	0.0	0.8	100.0	251
Other	75.1	0.9	23.9	0.0	0.0	0.0	100.0	196
No. of decisions with woman having final say								
0-1	72.9	2.8	22.9	0.2	0.0	1.1	100.0	368
2-3	79.3	1.3	18.5	0.2	0.2	0.5	100.0	845
4-5	74.0	0.6	25.0	0.0	0.0	0.4	100.0	236
No. of reasons to justify refusing sexual relations with husband								
0	88.4	2.3	9.3	0.0	0.0	0.0	100.0	31
1-2	83.0	5.2	10.7	0.0	0.0	1.2	100.0	115
3-4	76.0	1.2	21.8	0.2	0.2	0.6	100.0	1,302
No. of reasons to justify wife beating								
4-5	87.6	1.2	11.2	0.0	0.0	0.0	100.0	120
1-3	71.2	2.7	23.8	0.5	0.2	1.6	100.0	460
0	78.3	1.0	20.3	0.1	0.2	0.2	100.0	869
Antenatal care visits								
0 visits	57.0	0.9	41.1	1.0	0.0	0.0	100.0	79
1-3 visits	70.7	4.4	24.6	0.0	0.0	0.3	100.0	174
4 or more visits	81.8	0.9	16.9	0.2	0.1	0.1	100.0	999
Don't know/missing	65.0	2.8	28.2	0.0	0.4	3.6	100.0	196
Total	76.8	1.6	20.7	0.2	0.1	0.6	100.0	1,449

Note: Figures are for births in the period 0-59 months preceding the survey. Total includes 26 births for which data on antenatal care are missing.

[1] If the respondent mentioned more than one attendant, only the most qualified attendant is considered.

As observed with antenatal care, the likelihood of delivery under a doctor's supervision increases with a woman's educational level and is greater for women of Russian ethnicity (85 percent) than for women of Kazakh and other ethnicities (75 percent).

10.5 Characteristics of Delivery

In the 1999 KDHS, respondents were asked if their births were delivered by caesarean section. Respondents were also asked if their children were weighed at the time of birth, and if so, how much each baby weighed. Additionally, they were asked for their subjective assessment of their baby's size at birth (very large, larger than average, average size, smaller than average, or very small).

Table 10.7 indicates that according to mothers' reports, 10 percent of births in the five years before the 1999 KDHS were delivered by caesarean section. This estimate is slightly higher than reported statistic of 6 percent of deliveries by caesarean section (Agency on Health, 1998). Delivery by caesarean section is more common among births to older women (especially to women age 35 and older), women residing in urban areas, women with a higher education, and women of non-Kazakh ethnicity. The rate of caesarean section among births in Almaty City and the West region (20 and 13 percent, respectively) is significantly higher than among births in the other regions (7 to 9 percent).

Mothers whose babies were weighed at birth were able to report the birth weight for 97 percent of all births in the past five years. As Table 10.7 indicates, 7 percent of births had a weight of less than 2.5 kilograms, which is classified as low birth weight and is considered to result in a higher than average risk of early childhood death.

According to the mother's subjective evaluation of the size of the child at birth, 6 percent of children were reported as very small at birth and another 13 percent were smaller than average. The percentage of births reported as very small is consistent with the 7 percent of births with a birth weight below 2.5 kilograms.

10.6 Use of Smoking Tobacco

Smoking tobacco during pregnancy adversely affects fetal development and increases the risk of perinatal morbidity. Tobacco use at other times has a negative impact on women’s health status and may adversely affect children’s growth and cause childhood illnesses, especially respiratory diseases.

In the 1999 KDHS, women who had one or more children living with them were asked if they currently smoked cigarettes or other tobacco products, and, if yes, how many times they smoked in the past 24 hours. As seen in Table 10.8, 9 percent of women in Kazakhstan smoke tobacco; most of them smoke cigarettes. An approximately equal percentage of women smokers smoked 1-2 times, 3–5 times, or 6 or more times in the 24 hours preceding the interview (31, 33, and 30 percent, respectively).

Women residing in urban areas, women living in Almaty City and the Central region, women with a secondary-special education, and Russian women are more likely to be smokers than women of other population subgroups.

Table 10.7 Delivery characteristics: caesarean section, birth weight, and size

Among live births in the five years preceding the survey, the percentage of deliveries by caesarean section, and the percent distribution by birth weight and by mother's estimate of baby's size at birth, according to selected background characteristics, Kazakhstan 1999

Background characteristic	Delivery by C-section	Birth weight				Size of child at birth					Number of births
		Less than 2.5 kg	2.5 kg or more	Don't know	Total	Very small	Smaller than average	Average or larger	Don't know	Total	
Age											
<20	4.1	7.7	91.3	1.0	100.0	9.4	16.1	74.2	0.3	100.0	164
20-34	8.4	6.7	90.0	3.3	100.0	5.0	13.0	81.2	0.8	100.0	1,162
35+	28.0	12.3	84.9	2.8	100.0	6.3	10.6	83.1	0.0	100.0	123
Birth order											
1	11.4	7.2	91.3	1.5	100.0	6.7	14.5	77.8	1.0	100.0	522
2-3	7.7	7.3	89.5	3.3	100.0	4.8	12.6	81.9	0.7	100.0	689
4-5	9.0	6.4	88.7	4.9	100.0	5.1	12.5	82.3	0.0	100.0	184
6+	16.8	11.1	81.2	7.7	100.0	6.0	9.0	85.0	0.0	100.0	54
Residence											
Urban	12.1	6.2	92.1	1.7	100.0	4.2	13.5	81.7	0.6	100.0	612
Rural	7.7	8.1	87.9	4.0	100.0	6.6	12.9	79.7	0.8	100.0	837
Region											
Almaty City	20.4	6.1	92.9	1.0	100.0	1.0	17.3	81.6	0.0	100.0	45
South	9.1	8.1	87.4	4.5	100.0	6.2	11.2	81.7	0.9	100.0	660
West	13.1	5.7	91.1	3.2	100.0	5.3	10.4	83.5	0.9	100.0	193
Central	7.4	6.3	92.6	1.1	100.0	3.8	11.8	84.4	0.0	100.0	118
North	7.5	6.7	92.7	0.6	100.0	6.0	18.7	74.6	0.6	100.0	284
East	9.4	8.3	89.1	2.7	100.0	5.3	14.7	79.6	0.4	100.0	149
Mother's education											
Primary/secondary	7.9	8.1	87.7	4.2	100.0	7.0	14.1	78.1	0.7	100.0	599
Secondary-special	9.7	6.7	91.2	2.1	100.0	5.3	12.6	81.7	0.4	100.0	616
Higher	13.3	6.9	90.8	2.3	100.0	2.7	12.1	83.7	1.5	100.0	233
Ethnicity											
Kazakh	8.7	7.9	88.4	3.6	100.0	6.0	13.0	80.0	1.0	100.0	1,002
Russian	11.1	8.6	90.5	0.9	100.0	6.0	14.1	79.9	0.0	100.0	251
Other	12.2	2.4	95.2	2.5	100.0	2.8	12.7	84.5	0.0	100.0	196
Total	9.6	7.3	89.7	3.0	100.0	5.6	13.2	80.6	0.7	100.0	1,449

Note: Figures are for births in the period 0-59 months preceding the survey. Figures may not add to 100.0 due to rounding.

10.7 Vaccinations

According to guidelines developed by the World Health Organization, a child should have received a BCG vaccination to protect against tuberculosis, three doses of DPT/DT to protect against diphtheria, pertussis, and tetanus, three doses of the polio vaccine, and a measles vaccination by the age of 12 months.

Table 10.8 Use of smoking tobacco

Percent distribution of women by use of tobacco for smoking and percent distribution of smokers by frequency of use in preceding 24 hours, according to background characteristics, Kazakhstan 1999

Background characteristic	Does not use tobacco	Cigar-ettes	Other tobacco	Total	Number of women	Frequency of tobacco use in preceding 24 hours: 0	1-2	3-5	6+	Total	Number of women
Age											
<20	94.2	5.6	0.0	100.0	658	2.6	29.1	27.4	41.0	100.0	37
20-34	90.8	9.0	0.1	100.0	3,745	7.5	31.4	32.6	28.5	100.0	341
35+	91.1	8.2	0.0	100.0	397	0.0	23.1	47.5	29.4	100.0	32
Residence											
Urban	87.4	12.3	0.0	100.0	2,668	5.7	27.5	36.5	30.2	100.0	328
Rural	96.1	3.7	0.2	100.0	2,132	9.4	42.6	20.4	27.6	100.0	82
Region											
Almaty City	77.5	22.2	0.0	100.0	291	5.0	24.8	33.3	36.9	100.0	64
South	95.6	4.2	0.0	100.0	1,455	7.9	32.6	42.7	16.9	100.0	61
West	92.2	7.3	0.2	100.0	628	20.3	50.1	24.2	5.5	100.0	48
Central	85.4	14.2	0.0	100.0	475	4.3	26.7	31.6	37.4	100.0	68
North	92.2	7.7	0.1	100.0	1,259	2.1	35.6	32.8	29.5	100.0	99
East	89.4	10.1	0.0	100.0	692	5.4	17.2	33.7	43.8	100.0	70
Mother's education											
Primary/secondary	92.5	7.2	0.0	100.0	1,927	9.5	34.1	32.0	24.4	100.0	140
Secondary-special	89.6	10.1	0.1	100.0	1,908	4.0	27.7	33.3	35.0	100.0	195
Higher	92.0	7.8	0.0	100.0	965	7.2	31.3	36.0	25.5	100.0	75
Ethnicity											
Kazakh	96.1	3.6	0.1	100.0	2,587	10.5	44.9	34.0	10.5	100.0	96
Russian	83.4	16.4	0.0	100.0	1,454	5.1	26.2	32.7	36.0	100.0	238
Other	89.9	9.8	0.2	100.0	760	5.4	26.2	34.5	33.9	100.0	76
Total	91.3	8.5	0.1	100.0	4,800	6.5	30.6	33.3	29.7	100.0	410

Note: Figures may not add to 100.0 due to rounding.

Information on vaccination coverage was collected in the 1999 KDHS for all children under five years of age. In Kazakhstan, child health cards are maintained in the local health care facilities rather than in the homes of respondents. In the 1995 KDHS survey, vaccination data were collected from the woman's questionnaires (i.e., based on mother's recall). As demonstrated by the 1996 Uzbekistan DHS survey and the 1997 Kyrgyz Republic DHS survey, mothers' reports of vaccination coverage are an unreliable source of information (Institute of Obstetrics and Gynecology of Uzbekistan and Macro International Inc., 1997; Institute of Obstetrics and Pediatrics of the Kyrgyz Republic and Macro International Inc., 1998). For this reason the 1999 KDHS collected vaccination data only from the health cards maintained at health care facilities. Because of the differences in the sources of the vaccination data, the information on vaccination coverage from the 1995 KDHS is not comparable to the 1999 KDHS.

In the 1999 KDHS, vaccination data from health cards were collected by the supervisors of the interviewing teams by visiting the health care facilities and searching for the child health cards with the help of facility personnel (i.e., a nurse or archive clerk). Cards were found for 91 percent

of children 12 to 23 months of age reported in the women's questionnaires. The team supervisors recorded the vaccination data for each child on forms designed for that purpose.

Table 10.9 shows rates of vaccination coverage for children 12-23 months of age (i.e., children who should be fully vaccinated). BCG vaccination is usually given in delivery hospitals soon after delivery and was found to be nearly universal (99 percent). Ninety-three percent of children had received the initial dose of the polio vaccine in the hospital. Almost all children (99 percent) had received the first doses of polio and DPT/DT. Coverage for the second dose of polio and DPT/DT was also very high (98 and 99 percent, respectively). The third doses of polio and DPT/DT were received by 92 and 98 percent of children, respectively. Eighty-seven percent of children had received the measles vaccine. Because of the high levels of coverage for BCG, measles, and individual doses of polio and DPT/DT vaccines, the percentage of children age 12-23 months who had received all WHO-recommended vaccinations was high (81 percent).

Table 10.9 Vaccinations by background characteristics

Percentage of children age 12-23 months who had received specific vaccines by the time of the survey (according to the vaccination card), by selected background characteristics, Kazakhstan 1999

Background characteristic	Percentage of children who received:											Number of children
		DPT/DT			Polio					All vaccinations	No vaccinations	
	BCG	1	2	3+	0	1	2	3+	Measles			
Sex												
Male	99.5	99.5	99.5	99.5	94.8	99.5	99.5	91.9	87.7	81.9	0.5	117
Female	98.7	98.9	97.7	96.2	92.0	98.2	97.2	91.3	85.4	79.3	0.0	127
Birth order												
1	98.4	97.9	97.4	97.4	94.3	97.9	97.4	93.0	84.7	82.5	0.6	96
2-3	100.0	100.0	99.1	99.1	92.3	99.1	98.5	89.7	88.2	81.5	0.0	113
4-5	97.4	100.0	100.0	92.8	92.5	100.0	100.0	92.8	92.6	75.5	0.0	28
6+	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	55.8	55.8	0.0	6
Residence												
Urban	98.6	99.4	98.0	96.1	95.6	98.5	98.0	93.2	90.1	82.9	0.6	106
Rural	99.5	99.0	99.0	99.0	91.6	99.0	98.5	90.4	83.7	78.8	0.0	138
Region												
Almaty City	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	88.2	88.2	0.0	8
South	100.0	98.5	98.5	98.5	88.7	98.5	98.5	93.2	88.0	84.2	0.0	92
West	100.0	100.0	97.6	97.6	100.0	97.6	95.8	85.6	89.1	77.2	0.0	40
Central	96.7	96.7	93.8	93.8	90.5	96.7	93.8	87.7	88.9	79.9	3.3	18
North	100.0	100.0	100.0	96.3	96.7	100.0	100.0	90.0	82.7	75.7	0.0	55
East	94.7	100.0	100.0	100.0	92.4	100.0	100.0	97.6	83.5	81.1	0.0	31
Mother's education												
Primary/secondary	99.3	100.0	100.0	98.0	91.9	100.0	99.3	91.4	86.7	78.0	0.0	100
Secondary-special	98.6	98.1	96.7	96.7	94.1	97.2	96.7	89.8	85.2	80.8	0.6	107
Higher	100.0	100.0	100.0	100.0	94.8	100.0	100.0	97.3	89.4	86.8	0.0	36
Ethnicity												
Kazakh	100.0	99.2	98.6	98.6	92.1	98.6	98.2	90.7	88.2	83.7	0.0	170
Russian	95.7	98.8	97.8	94.0	95.7	98.8	97.8	96.0	79.6	71.5	1.2	52
Other	100.0	100.0	100.0	100.0	97.1	100.0	100.0	87.9	89.5	77.4	0.0	21
All children	99.1	99.2	98.6	97.7	93.3	98.8	98.3	91.6	86.5	80.5	0.3	244

10.8 Acute Respiratory Infection

Acute respiratory infection (ARI) is a primary cause of morbidity among children and a leading cause of infant mortality throughout the world. In the 1999 KDHS, mothers were asked if their children under five years of age had been ill with a cough accompanied by short, rapid breathing in the two weeks preceding the survey. These symptoms are compatible with ARI. It should be noted that the morbidity data collected in the 1999 KDHS are subjective in the sense that they are based on the mother's perception of illness without validation by medical personnel. Also, the data apply to the period from June to September, while the peak prevalence of ARI is in midwinter.

Table 10.10 and Figure 10.2 indicate that 3 percent of children under five years of age were ill with a cough accompanied by short, rapid breathing in the two weeks preceding the survey. Differentials in the prevalence of ARI are most pronounced by age, with children 12-23 months of age (5 percent) being more likely to have had an episode of ARI than other children (1 to 3 percent).

Differentials in ARI also exist according to birth order and area of residence. Whether these differentials in illness prevalence reflect genuine differences in morbidity or are due to differences in perceptions of illness cannot be ascertained from these data.

Overall, 48 percent of children with ARI or fever were taken to a health care facility or health care provider for treatment. (Because of the relatively small number of reported cases of ARI data on treatment are not shown.)

10.9 Fever

Table 10.10 shows that 12 percent of children had an episode of fever during the two weeks prior to the survey. Differentials in the prevalence of fever are most pronounced by age, with children 6-11 and 12-23 months of age (15 and 21 percent, respectively) being more likely to have had a fever than children of any other age group.

10.10 Diarrhea

Dehydration caused by severe diarrhea is a major cause of morbidity among young children and an important cause of infant and child death.

Table 10.11 indicates that 13 percent of children under five had diarrhea in the two weeks preceding the survey. The age pattern of diarrhea shows a peak at 6-11 and 12-23 months (i.e., around the time when a child begins to crawl and experience more exposure to the environment). The most pronounced differentials in diarrhea are associated with region. Children in Almaty City and the West region are most likely to have diarrhea (16 percent), while children in the Central and the North regions are least likely to have diarrhea (10 and 11 percent, respectively).

A prompt increase in a child's fluid intake is a simple and effective procedure to prevent diarrhea from developing into a life-threatening illness. Increased fluid intake should be administered in the form of a sugar, salt, and water solution, i.e., oral rehydration therapy (ORT). A product called *Rehydron* is widely available throughout Kazakhstan for use in ORT.

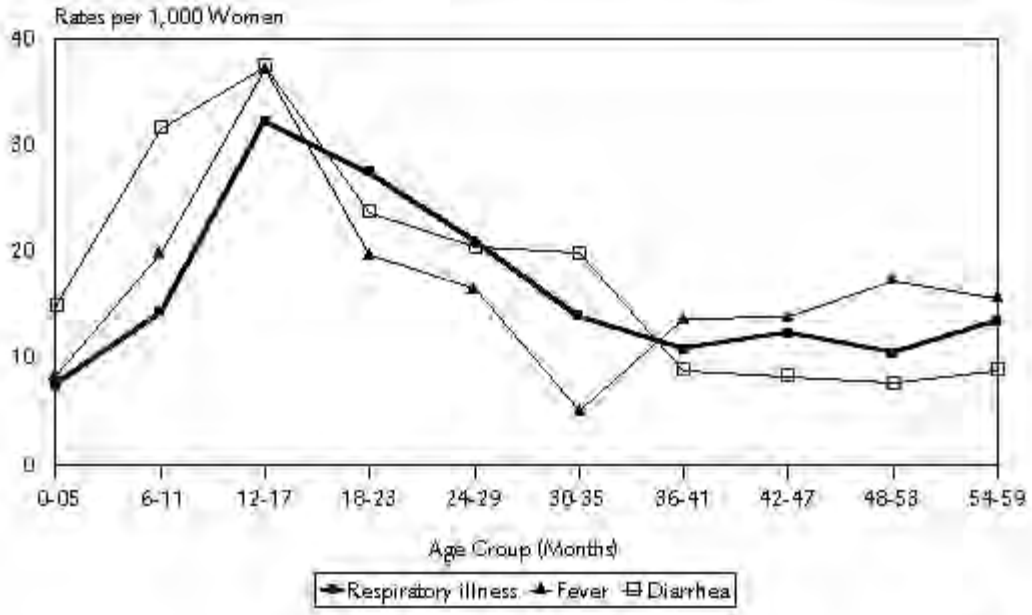
Table 10.10 Prevalence of acute respiratory infection and fever

Percentage of children under five years who were ill with a cough accompanied by short, rapid breathing (acute respiratory infection) during the two weeks preceding the survey, and the percentage of children with fever during the two weeks preceding the survey, by selected background characteristics, Kazakhstan 1999

Background characteristic	Percentage of children with cough and rapid breathing	Percentage of children with a fever	Percentage taken to a health facility or provider[1]	Number of children
Child's age				
<6 months	0.9	7.4	100.0	113
6-11 months	1.9	15.2	83.6	130
12-23 months	4.7	21.1	42.3	269
24-35 months	2.9	7.7	8.7	276
36-47 months	2.9	10.6	87.2	259
48-59 months	2.8	10.7	42.3	307
Sex				
Male	2.9	11.4	57.9	677
Female	3.1	13.2	38.6	678
Birth order				
1	2.2	13.8	61.8	487
2-3	3.7	12.7	41.1	647
4-5	1.8	7.8	73.4	170
6+	5.5	8.3	25.3	51
Residence				
Urban	3.2	12.8	46.9	583
Rural	2.8	11.9	49.0	771
Region				
Almaty City	5.2	13.5	100.0	44
South	3.0	11.6	19.2	602
West	4.2	10.6	62.0	183
Central	3.2	10.7	66.9	114
North	2.1	16.3	100.0	268
East	2.3	10.9	27.4	143
Education				
Primary/secondary	2.7	11.4	29.1	562
Secondary-special	3.3	13.5	62.4	577
Higher	2.8	11.4	49.2	215
Ethnicity				
Kazakh	3.0	12.0	35.4	933
Russian	2.6	15.3	78.6	236
Other	3.5	10.0	72.8	185
All children	3.0	12.3	48.0	1,354

Note: Figures are for children born in the period 0-59 months preceding the survey.
[1] Children with cough accompanied by short, rapid breathing or children with fever.

Figure 10.2 **Prevalence of Respiratory Illness, Fever and Diarrhea in the Last Two Weeks by Age of the Child**



KDHS 1999

All women who had a birth in the past five years were asked some basic questions about how to care for a child with diarrhea; namely, if the intake of liquids and solid foods should be increased and if they had ever heard of Rehydron as a treatment for diarrhea. Most women reported that they had heard of Rehydron (87 percent) (data not shown).

Mothers were also asked if their children had had an episode of diarrhea in the past two weeks and if so, whether Rehydron or any other treatment was given for the diarrhea and whether fluid intake was increased or decreased. Table 10.12 shows that 26 percent of children with diarrhea were taken to a health facility for treatment, 32 percent of children received oral rehydration therapy (Rehydron), and 58 percent of children received increased fluids. Overall, ORT or increased fluids were used to treat 63 percent of children with diarrhea.

Table 10.13 summarizes the feeding practices that mothers followed when children had diarrhea. Eighty-six percent of children with diarrhea were given fluids in either the same or increased amounts, whereas only 11 percent were given reduced amounts of fluids.

Table 10.11 Prevalence of diarrhea

Percentage of children under five years of age with diarrhea during the two weeks preceding the survey, by selected background characteristics, Kazakhstan 1999

Background characteristic	Diarrhea prevalence 2 weeks	Number of children
Child's age		
< 6 months	13.0	113
6-11 months	24.3	130
12-23 months	22.7	269
24-35 months	14.6	276
36-47 months	6.6	259
48-59 months	5.3	307
Sex		
Male	12.7	677
Female	14.1	678
Birth order		
1	17.6	487
2-3	12.9	647
4-5	6.3	170
6+	2.8	51
Residence		
Urban	14.8	583
Rural	12.3	771
Region		
Almaty City	15.6	44
South	13.9	602
West	15.9	183
Central	10.1	114
North	11.4	268
East	13.6	143
Education		
Primary/secondary	13.9	562
Secondary-special	13.5	577
Higher	11.7	215
Ethnicity		
Kazakh	13.7	933
Russian	13.9	236
Other	11.2	185
All children	13.4	1,354

Note: Figures are for children born in the period 0-59 months preceding the survey.

Table 10.12 Treatment of diarrhea

Among children under five years who had diarrhea in the two weeks preceding the survey, the percentage taken to a health facility or provider for treatment, the percentage who received oral rehydration therapy, the percentage who received increased fluids, and the percentage who received neither oral rehydration therapy nor increased fluids, Kazakhstan 1999

Treatments received	Percentage of children
Taken to a health facility or provider[1]	25.8
Received oral rehydration therapy Rehydron	32.0
Received increased fluids	57.6
Neither Rehydron, homemade sugar-salt-water solution, nor increased fluids	47.4
Number of children	181

[1] Includes health center, hospital, clinic, and private doctor

Table 10.13 Feeding practices during diarrhea

Percent distribution of children under five who had diarrhea in the past two weeks by amount of solid foods given and amount of fluids given, Kazakhstan 1999

Feeding practices	Percent
Amount of fluids	
Same	28.6
Increase	57.6
Decrease	11.1
Don't know/missing	2.7
Amount of solid foods	
Same	40.6
Increase	7.5
Decrease	51.2
Don't know/missing	0.8
Total	100.0
Number of children	181

Note: Figures are for children born in the period 0-59 months preceding the survey.

NUTRITION OF WOMEN AND CHILDREN 11

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This chapter covers two topics: infant feeding practices and the nutritional status of women and children. The former is described in terms of breastfeeding practices, supplementary feeding practices, and the use of bottles for supplementary feeding. Nutritional status is reported in terms of the height and weight of women and children.

11.1 Breastfeeding and Supplementation

Infant feeding practices have important influences on both the child and the mother. For example, they determine a child's nutritional status and susceptibility to morbidity. Breastfeeding also affects the health of a woman because of its influence on the return of ovulation after a birth and a woman's risk of another pregnancy.

Optimal infant feeding is defined by WHO and UNICEF as follows (WHO/UNICEF, 1990; WHO, 1994):

- Initiation of breastfeeding within about one hour of birth;
- Frequent, on-demand feeding (including night feeds);
- Exclusive breastfeeding (defined as breast milk only and no other foods or liquids until the infant is about six months of age);
- Breastfeeding complemented with hygienically prepared, appropriate local foods at about six months of age;
- Increased breastfeeding during illness and recovery;
- Continued breastfeeding well into the second year of life and beyond.

The Government of Kazakhstan conforms to the above definition, with recommendations for exclusive breastfeeding until about six months of age, followed by complementary foods at about the same age.

In the 1999 KDHS, for each child born in the last five years, mothers were asked if they had breastfed the child and, if so, how long after delivery breastfeeding was initiated. Women were also asked if their children were still breastfeeding and the age at which supplemental feeding began. Finally, for children not currently breastfeeding, the age at which they stopped breastfeeding was obtained.

With these data, it is possible to look at several aspects of breastfeeding. For children born in the last five years, the length of time between delivery and initiation of breastfeeding can be investigated. From the data on current breastfeeding status (i.e., status at the time of the survey), the percentage of children breastfeeding by age can be calculated as well as median durations of breastfeeding by background characteristics of mothers.

11.2 Initiation of Breastfeeding

Early initiation of breastfeeding is important because it fosters bonding between mother and infant and takes advantage of the newborn's sucking reflex and alertness immediately postpartum. Initiation of breastfeeding within the first hour of life permits the newborn to benefit from colostrum, which has been proven to be highly nutritious and to contain the antibodies necessary to protect babies from infection before their immune system is fully mature. (Righard and Alade, 1990).

Early initiation of breastfeeding also stimulates breast milk production and causes the uterus to retract, which can reduce postpartum blood loss. Delayed initiation of breastfeeding often results in the newborn being provided with another source of nourishment, often ritual liquids and foods that can introduce infection and delay lactogenesis (milk arrival) (Perez-Escamilla et al., 1996)

Table 11.1 indicates that breastfeeding is almost universal in Kazakhstan; 95 percent of children born in the five years preceding the survey were breastfed. Overall, 27 percent of children were breastfed within an hour of birth and 62 percent within 24 hours of birth.

There was no significant variation between population groups in the percent of children breastfed. However, there were significant differences in the timing of initiation of breastfeeding. Initiation within an hour of birth is more likely among urban women (38 percent) than among rural women (19 percent) and more likely in Almaty City (54 percent) and the Central region (58 percent) than in other regions. Some differentials in the initiation of breastfeeding exist by mother's ethnicity. Breastfeeding was less likely within an hour of birth among Kazakh women and women of other ethnicities (25 and 19 percent, respectively) than among Russian women (39 percent). This differential was maintained for the period within one day of birth (61, 55, and 70 percent, respectively).

11.3 Breastfeeding Patterns by Age

Frequent, on-demand breastfeeding, including night feeds, are important to ensure both that an infant receives sufficient breast milk and that the supply of breast milk is maintained. Frequent feedings can also help to prevent problems of engorgement and sore nipples. On-demand feeding is important to ensure that newborns regain their birth weight (de Carvalho et al., 1983). Infants should be breastfed 8-10 times every 24 hours and even more frequently during the first month of life.

Exclusive breastfeeding, defined as breast milk as the only source of infant food or liquid, meets nutritional requirements (Cohen et al., 1994), and protects against illness (Huffman and Combest, 1990) for about the first six months of life. Exclusively breastfed infants are 14 times less likely to die from diarrhea compared with formula fed infants and four times less likely to die compared to partially breastfed infants (Victora et al., 1987). Thus exclusive breastfeeding is the infant feeding behavior most predictive of infant survival.

At about six months of age, breast milk alone will no longer satisfy the energy and protein requirements of most infants. Local foods that are rich in energy, protein, and micronutrients, and that are hygienically prepared and soft to eat need to be provided. During this transitional period when complementary foods are being introduced, on-demand and frequent breastfeeding should continue to ensure that infants receive all the benefits of breastfeeding. Increased diarrheal morbidity due to the introduction of other foods and liquids can be prevented with proper hygiene.

Table 11.1 Initial breastfeeding

Percentage of children born in the five years preceding the survey who were ever breastfed, and the percentage of last-born children who started breastfeeding within one hour of birth and within one day of birth, by selected background characteristics, Kazakhstan 1999

Background characteristic	Percentage ever breastfed	Among last-born children, percentage who started breastfeeding: Within 1 hour of birth	Among last-born children, percentage who started breastfeeding: Within 1 day of birth[1]	Number of children
Residence				
Urban	96.7	38.3	68.5	338
Rural	94.5	19.1	56.7	490
Region				
Almaty City	98.1	53.8	75.0	24
South	94.8	19.9	50.9	362
West	95.4	31.0	70.7	119
Central	97.8	57.8	75.5	62
North	96.7	26.2	71.9	176
East	92.5	22.5	57.8	85
Mother's education				
Primary/secondary	94.1	26.1	63.0	357
Secondary-special	97.4	26.6	61.5	339
Higher	93.5	30.7	57.8	131
Ethnicity				
Kazakh	95.8	25.3	60.5	573
Russian	93.8	39.3	69.8	154
Other	95.7	18.8	55.1	100
All children	95.4	27.0	61.6	827

[1] Includes children who started breastfeeding within 1 hour of birth.

Increased breastfeeding during illness and recovery is important to reduce the risk of inadequate nutrient intake during illness, reduce the risk of dehydration, and to promote catch-up growth. Dietary intake of all foods, except breast milk, is reduced during illness (Hoyle et al., 1980). Thus, breastfeeding, by providing a continual source of high quality and hygienic food, plays a critical role in the maintenance of infant and child nutritional status in and around periods of illness.

Table 11.2 shows the breastfeeding status of children by age in months. In Kazakhstan almost all children are breastfed. At 0-3 months of age, 99 percent of children are breastfed, and at 8-11 months of age, 80 percent are still breastfed. This proportion falls to 17 percent by 20-23 months of age.

In Kazakhstan, 47 percent of children at ages 0-3 months are exclusively breastfed. During these early months of infancy, 38 percent of breastfed children receive plain water, and 14 percent receive other foods and liquids. In 1995, the percentage of children age 0-3 months exclusively breastfed was substantially lower (12 percent).

Table 11.2 Breastfeeding status

Percent distribution of living children under three years of age by current breastfeeding status, according to child's current age in months, Kazakhstan 1999

	Percentage of living children who are:						
			Breastfeeding and:				
Age in months	Not breast-feeding	Exclusively breast-fed	Plain water only	Supple-ments	Total	Using bottle with a nipple	Number of children
0-3	0.8	46.6	38.2	14.4	100.0	24.8	74
4-7	15.7	10.4	10.3	63.6	100.0	53.9	84
8-11	19.8	1.6	0.0	78.6	100.0	45.4	86
12-15	41.4	0.0	0.0	58.6	100.0	26.0	95
16-19	63.7	2.3	0.0	34.0	100.0	13.4	86
20-23	82.8	0.0	0.0	17.2	100.0	11.1	87
24-27	90.3	0.0	0.0	9.7	100.0	10.7	106
28-31	89.4	0.0	0.0	10.6	100.0	7.7	86
32-35	96.7	0.0	0.0	3.3	100.0	10.7	85
0-3 months	0.8	46.6	38.2	14.4	100.0	24.8	74
4-6 months	12.5	15.2	11.8	60.5	100.0	45.0	57
7-9 months	18.7	1.9	2.6	76.7	100.0	52.4	71

Note: Breastfeeding status refers to the preceding 24 hours.

Exclusive breastfeeding among children age 4-7 months has increased from 3 percent in 1995 to 10 percent in 1999. During these months, most breastfed children (64 percent) receive supplementary feeding, and 10 percent receive plain water.

Table 11.3 shows information on the median duration of breastfeeding. For all of Kazakhstan, the median duration of any breastfeeding is 7 months, however the durations of exclusive and full breastfeeding (breastfeeding plus plain water) are short (0.7 and 1.9 months, respectively).

The most pronounced differentials in breastfeeding are by region and ethnicity. The median duration of any breastfeeding is longer in the South, Central, North, and East regions (7 months) than in Almaty City and the West region (5 and 6 months, respectively). The median duration of

any breastfeeding is longer for Kazakh women and women of other ethnicities (7 months) than for Russian women (5 months).

11.4 Supplemental Foods

In the 1999 KDHS, mothers were asked about the types of foods that were given to children in the 24 hours preceding the survey. The foods given to a child are not mutually exclusive; therefore, a child could be reported as receiving several types of food.

Table 11.4 indicates the types of foods given to children in the 24 hours preceding the survey according to breastfeeding status. Among breastfeeding children 0-3 months of age, plain water was commonly used to supplement breast milk (45 percent). Powdered and evaporated milk (9 percent) and fruit juice (7 percent) were also used. Only 3 percent of breastfeeding children age 0-3 months received infant formula, down from 20 percent in 1995. Tea is especially popular in Kazakhstan and was given in the past 24 hours to 13 percent of infants age 0-3 months.

Table 11.3 Median duration and frequency of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and full breastfeeding among children under five years of age, according to background characteristics, Kazakhstan 1999

Background characteristic	Median duration in months[1]			Number of children under 5 years of age	Children under six months			
	Any breast-feeding	Exclusive breast-feeding	Full breast-feeding[2]		Percentage breast-fed 6+ times in past 24 hours	Mean number of feeds		Number of children
						Daytime	Nighttime	
Sex								
Male	6.9	0.6	1.8	418	93.4	6.0	2.9	53
Female	7.1	1.0	1.9	409	85.6	6.4	2.8	60
Residence								
Urban	6.5	0.7	1.8	338	89.0	6.9	2.8	37
Rural	7.5	0.7	2.0	490	89.4	5.9	2.9	76
Region								
Almaty City	5.0	0.6	1.5	24	100.0	7.4	3.0	2
South	7.1	0.5	1.8	362	88.2	6.4	2.8	47
West	5.9	0.7	2.1	119	88.7	5.9	2.9	15
Central	6.6	0.5	0.7	62	77.0	4.8	2.2	5
North	7.4	1.7	2.7	176	88.0	5.9	2.9	32
East	7.2	0.5	1.0	85	100.0	7.1	3.2	12
Mother's education								
Primary/secondary	7.7	0.7	1.8	357	89.8	5.8	2.7	65
Secondary-special	6.4	0.7	1.9	339	88.7	6.7	2.8	37
Higher	7.2	0.9	1.9	131	88.1	7.1	3.9	12
Ethnicity								
Kazakh	7.2	0.7	2.0	573	88.0	6.2	3.0	77
Russian	4.6	0.5	1.0	154	97.4	6.9	2.0	20
Other	7.4	1.7	2.1	100	84.9	5.3	3.0	16
Total	7.1	0.7	1.9	827	89.3	6.2	2.8	113
Mean	7.9	1.9	2.8	95.4	-	-	-	-
Prevalence/Incidence[3]	14.5	2.0	3.6	-	-	-	-	-

[1] Medians and means are based on current status.
[2] Either exclusive breastfeeding or breastfeeding and plain water only
[3] Prevalence-incidence mean

Meat, poultry, fish, and eggs contain protein and other nutrients important for the physical and mental development of young children. At age 4-7 months, 15 percent of breastfeeding infants received these foods. More than 20 percent of them received bread and other food made of flour, as well as fruits and vegetables, which are important sources of vitamins and minerals. A significant proportion of breastfeeding children age 4-7 months also received tea (62 percent), baby formula (14 percent), fruit juice (22 percent), fresh milk products (39 percent), and fermented milk products (24 percent).

A relatively high percentage of breastfeeding children were also fed using a bottle with a nipple: 24 percent at age 0-3 months, 45 percent at 4-7 months of age, and 40 percent at 8-11 months of age

Table 11.4 Foods received by children in preceding 24 hours

Percentage of children under 59 months of age by type of food received in the 24 hours before the interview, and the percentage using a bottle with a nipple, according to breastfeeding status and child's age in months, Kazakhstan 1999

Age (in months)	Breast milk only	Plain water	Tea	Infant formula	Fruit juice	Milk[1]	Other liquids	Food made of flour	Food made of grain	Pumpkin squash/ carrot/ potato	Candy/ sweets	Green leafy vege-tables	Fruits and vege-tables	Meat/ poul./ eggs	Cheese kefir/ yogurt	Using bottle with a nipple	Number of children
BREASTFEEDING CHILDREN																	
0-3	47.0	44.6	13.2	3.3	7.4	9.0	0.0	0.0	1.7	0.0	0.0	0.0	1.2	0.0	0.0	24.1	73
4-7	11.7	69.3	62.1	14.4	21.6	39.0	15.4	34.3	28.3	26.1	5.6	4.2	30.1	14.9	23.9	45.3	71
8-11	0.0	69.6	95.2	3.3	13.8	62.6	30.9	83.5	43.9	60.0	32.5	12.1	73.1	25.2	25.1	40.0	69
12-23	0.0	85.3	94.2	2.9	19.1	55.7	44.1	94.9	41.2	73.8	57.0	22.3	77.6	67.1	55.7	17.3	102
Total	13.5	68.8	68.4	5.6	15.8	42.6	24.5	56.8	29.7	43.0	26.9	10.8	48.2	30.6	28.9	30.1	315
NONBREASTFEEDING CHILDREN																	
0-11	NA	90.1	80.5	30.1	39.3	70.2	40.9	71.7	69.1	58.2	11.1	15.4	61.6	39.5	50.6	81.9	31
12-23	NA	89.7	93.9	8.4	22.0	77.1	43.3	97.1	61.3	82.6	61.5	45.0	77.6	69.6	65.8	17.0	167
24-29	NA	97.2	95.3	3.1	22.9	80.2	51.6	97.9	55.2	82.0	71.3	45.3	84.0	73.1	53.3	9.1	136
30-35	NA	90.7	93.8	9.5	28.3	62.7	50.8	98.1	55.1	84.9	71.2	54.0	83.2	71.6	55.9	9.8	118
Total	NA	92.2	93.4	8.6	25.1	73.8	47.6	95.8	58.4	81.4	63.6	45.4	79.9	69.1	58.4	17.2	451

NA = Not applicable
[1] Tinned or powdered milk, or fresh animal milk

Among nonbreastfeeding children, a high proportion at all ages received plain water (about 90 percent) or powdered or evaporated milk (about 70 percent). Among this group of children, baby formula represents an important substitute for breast milk; 30 percent of nonbreastfeeding children age 0-11 months received baby formula.

After the first birthday, almost all nonbreastfeeding children received high-protein foods made of flour. A large proportion of them (more than 70 percent) received products rich in protein, vitamins, and minerals, such as meat, poultry, and fruits and vegetables.

11.5 Frequency of Food Supplementation

The nutritional requirements of young children are more likely to be met if they are fed a variety of foods. In the 1999 KDHS, interviewers read a list of specific foods and asked the mother to report the number of days during the last seven days that the child received each food.

Table 11.5 shows the percentage of children who received specific foods in the last seven days by age and breastfeeding status. At 0-3 months of age, a high percentage of breastfeeding infants received plain water (52 percent). Milk products were given to a smaller proportion of breastfeeding children 0-3 months of age (11 percent). Meat, poultry, eggs, and fish were only given to children four months of age and older; 24 percent of children age 4-7 months received these products. Grains and cereals and fruits and vegetables were received by a significant proportion of children age four months and older (30 percent or more).

As expected, a high percentage of nonbreastfeeding children were given plain water (90 percent) and milk products (70 percent or more) at all ages.

11.6 Differentials in Food Supplementation

Table 11.6.1 and 11.6.2 show the percentage of children who received specific kinds of foods during the past 7 days and, during that period, the mean number of days that each food type was received by background characteristics. Overall, the tables indicate that a large proportion of children received each type of food (more than 70 percent except for baby formula, fruit juice, other liquids, green leafy vegetables, fish, and food made of legumes).

The data indicate some variation in feeding patterns by residence, ethnicity, and region. For example, children living in urban areas tend to receive baby formula, fruit juice, fish and other seafood more often compared with children living in rural areas. Children of Kazakh ethnicity are less likely to receive these products compared with children of Russian or other ethnicities.

11.7 Nutritional Status of Children under Age Five

The data on height and weight of children in the 1999 KDHS permit the evaluation of nutritional status and the identification of subgroups of children that are at increased risk of faltered growth and morbidity.

Malnutrition results in increased risk of illness and death (Pelletier et al., 1993) and can also result in a lower level of cognitive development, which leads to lower educational attainment (Brozek and Schurch, 1984). In adulthood, the accumulated effect of malnutrition can be a reduction in worker productivity and increased absenteeism in the workplace, both of which may reduce individual and national lifetime earning potential (World Bank, 1993). Malnutrition also

Table 11.5 Foods received by children in the preceding seven days

Percentage of children under 59 months of age who received specific types of food in the seven days preceding the interview, by breastfeeding status and age of the child in months, Kazakhstan 1999

Age (in months)	Breast milk only	Plain water	Tea	Infant formula	Fruit juice	Milk[1]	Other liquids	Food made of flour	Food made of grain	Pumpkin squash/ carrot/ potato	Candy/ sweets	Green leafy vege-tables	Fruits and vege-tables	Meat/ poul./ eggs	Fish/ other seafood	Food made of legumes	Cheese kefir/ yogurt	Using bottle with a nipple	Number of children
BREASTFEEDING CHILDREN																			
0-3	47	51.8	11.8	3.3	10.9	10.9	0.0	0.0	2.9	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	24.1	73
4-7	11	79.5	65.8	14.8	24.0	40.2	29.3	35.1	38.1	35.7	11.3	6.9	43.1	23.8	4.0	3.4	31.2	45.3	71
8-11	0	76.1	95.9	5.3	22.5	60.7	53.6	85.2	52.8	73.9	42.7	13.2	82.0	39.6	9.9	5.3	44.7	40.0	69
12-23	0	84.9	94.5	4.3	35.0	64.2	76.4	96.3	69.6	83.2	70.7	35.1	89.6	85.9	20.2	15.8	70.5	17.3	102
Total	13.5	74.1	69.2	6.6	24.2	45.7	43.1	57.8	43.4	51.2	34.9	15.8	57.0	41.9	9.6	7.1	39.7	30.1	315
NONBREASTFEEDING CHILDREN																			
0-11	NA	90.1	79.0	30.1	46.7	70.2	40.9	71.7	74.3	73.2	15.3	18.3	74.3	48.5	23.9	10.9	70.4	81.9	31
12-23	NA	88.2	94.3	5.9	37.8	82.5	67.9	96.2	82.6	90.9	78.3	50.3	87.2	87.2	19.5	18.3	79.4	17.0	167
24-29	NA	96.2	94.7	3.3	35.1	87.0	72.2	98.0	79.5	92.7	82.1	52.1	86.9	85.9	27.0	18.1	66.8	9.1	136
30-35	NA	85.1	91.2	5.1	30.9	72.7	73.4	93.1	78.3	90.3	76.9	54.6	88.1	78.5	33.4	26.8	70.3	9.8	118
Total	NA	89.9	92.6	6.5	35.8	80.5	68.8	94.2	80.0	90.1	74.8	49.8	86.4	81.9	25.7	20.0	72.6	17.2	451

NA = Not applicable

[1] Tinned or powdered milk, or fresh animal milk

Table 11.6.1 Foods received by children in the preceding seven days by background characteristics

Percentage of children under 59 months of age who received specific types of food in the seven days preceding the interview, by background characteristics, Kazakhstan 1999

Background characteristic	Plain water	Tea	Infant formula	Fruit juice	Milk[1]	Other liquids	Food made of flour	Food made of grain	Pumpkin squash/ carrot/ potato	Candy/ sweets	Green leafy vege-tables	Fruits and vege-tables	Meat/ poul./ eggs	Fish/ other seafood	Food made of legumes	Cheese kefir/ yogurt	Using bottle with a nipple	Number of children
Sex																		
Male	79.8	84.0	6.3	31.5	71.3	59.6	84.1	72.5	82.2	67.5	43.5	77.7	72.0	21.8	19.0	63.9	15.2	251
Female	85.9	86.4	5.7	34.4	77.0	67.3	89.5	74.9	83.6	70.2	48.3	81.5	79.0	25.6	17.8	69.9	16.4	239
Residence																		
Urban	84.6	84.4	11.3	53.3	74.1	69.2	87.6	83.8	84.1	66.6	50.2	86.5	76.8	30.6	27.3	67.4	21.8	219
Rural	81.4	85.9	1.8	16.6	74.1	58.6	86.0	65.5	81.9	70.7	42.3	74.0	74.2	18.1	11.3	66.4	11.0	272
Region																		
Almaty City	94.6	59.5	21.6	70.3	75.7	70.3	86.5	83.8	91.9	78.4	64.9	83.8	75.7	29.7	35.1	89.2	35.1	17
South	79.2	86.2	1.7	16.1	70.5	58.7	87.6	63.1	82.9	72.1	33.9	80.9	73.8	12.4	15.1	63.4	9.7	206
West	86.4	86.0	15.2	37.5	71.3	57.7	86.0	77.7	75.9	56.8	36.3	77.1	77.7	40.1	3.9	67.1	21.9	68
Central	93.6	93.4	9.6	68.3	90.7	67.2	92.2	91.0	92.2	77.2	57.2	89.0	84.3	36.4	35.4	88.2	25.5	42
North	80.0	87.0	1.9	40.6	76.0	72.4	83.3	78.0	81.4	61.6	61.8	71.2	72.6	23.4	13.0	57.6	18.1	106
East	85.4	78.2	11.7	37.1	74.0	64.9	87.1	84.0	84.7	76.3	57.6	85.7	77.1	35.1	42.3	74.3	13.1	52
Education																		
Primary/secondary	86.0	86.7	3.0	22.8	71.4	57.8	87.0	69.2	81.0	67.6	41.6	76.5	73.9	20.9	15.0	66.2	12.6	202
Secondary-special	80.7	86.3	8.1	37.9	76.9	67.1	87.3	76.7	85.3	69.8	50.0	80.8	75.3	27.3	20.3	66.1	18.1	206
Higher	80.0	79.0	8.2	45.4	73.5	67.4	84.7	76.9	81.5	69.4	45.7	83.9	79.2	21.4	22.0	70.2	17.9	83
Ethnicity																		
Kazakh	83.3	86.7	5.5	25.4	74.8	61.6	87.5	71.8	81.8	68.6	38.7	78.1	76.3	15.2	9.7	66.5	13.3	326
Russian	83.7	81.3	6.1	55.3	77.8	68.2	86.7	82.9	86.6	69.7	62.1	83.3	74.4	43.2	36.2	66.2	19.2	103
Other	78.8	83.8	8.4	35.3	63.8	64.0	82.7	67.7	82.7	68.9	56.4	80.9	72.3	35.7	34.9	69.9	23.4	61
Total	82.8	85.2	6.0	32.9	74.1	63.3	86.8	73.6	82.9	68.8	45.8	79.6	75.4	23.7	18.4	66.8	15.8	490

[1] Tinned or powdered milk, or fresh animal milk

Table 11.6.1 Foods received by children in the preceding seven days by background characteristics

Percentage of children under 59 months of age who received specific types of food in the seven days preceding the interview, by background characteristics, Kazakhstan 1999

Background characteristic	Plain water	Tea	Infant formula	Fruit juice	Milk[1]	Other liquids	Food made of flour	Food made of grain	Pumpkin squash/ carrot/ potato	Candy/ sweets	Green leafy vege-tables	Fruits and vege-tables	Meat/ poul./ eggs	Fish/ other seafood	Food made of legumes	Cheese kefir/ yogurt	Using bottle with a nipple	Number of children
Sex																		
Male	79.8	84.0	6.3	31.5	71.3	59.6	84.1	72.5	82.2	67.5	43.5	77.7	72.0	21.8	19.0	63.9	15.2	251
Female	85.9	86.4	5.7	34.4	77.0	67.3	89.5	74.9	83.6	70.2	48.3	81.5	79.0	25.6	17.8	69.9	16.4	239
Residence																		
Urban	84.6	84.4	11.3	53.3	74.1	69.2	87.6	83.8	84.1	66.6	50.2	86.5	76.8	30.6	27.3	67.4	21.8	219
Rural	81.4	85.9	1.8	16.6	74.1	58.6	86.0	65.5	81.9	70.7	42.3	74.0	74.2	18.1	11.3	66.4	11.0	272
Region																		
Almaty City	94.6	59.5	21.6	70.3	75.7	70.3	86.5	83.8	91.9	78.4	64.9	83.8	75.7	29.7	35.1	89.2	35.1	17
South	79.2	86.2	1.7	16.1	70.5	58.7	87.6	63.1	82.9	72.1	33.9	80.9	73.8	12.4	15.1	63.4	9.7	206
West	86.4	86.0	15.2	37.5	71.3	57.7	86.0	77.7	75.9	56.8	36.3	77.1	77.7	40.1	3.9	67.1	21.9	68
Central	93.6	93.4	9.6	68.3	90.7	67.2	92.2	91.0	92.2	77.2	57.2	89.0	84.3	36.4	35.4	88.2	25.5	42
North	80.0	87.0	1.9	40.6	76.0	72.4	83.3	78.0	81.4	61.6	61.8	71.2	72.6	23.4	13.0	57.6	18.1	106
East	85.4	78.2	11.7	37.1	74.0	64.9	87.1	84.0	84.7	76.3	57.6	85.7	77.1	35.1	42.3	74.3	13.1	52
Education																		
Primary/secondary	86.0	86.7	3.0	22.8	71.4	57.8	87.0	69.2	81.0	67.6	41.6	76.5	73.9	20.9	15.0	66.2	12.6	202
Secondary-special	80.7	86.3	8.1	37.9	76.9	67.1	87.3	76.7	85.3	69.8	50.0	80.8	75.3	27.3	20.3	66.1	18.1	206
Higher	80.0	79.0	8.2	45.4	73.5	67.4	84.7	76.9	81.5	69.4	45.7	83.9	79.2	21.4	22.0	70.2	17.9	83
Ethnicity																		
Kazakh	83.3	86.7	5.5	25.4	74.8	61.6	87.5	71.8	81.8	68.6	38.7	78.1	76.3	15.2	9.7	66.5	13.3	326
Russian	83.7	81.3	6.1	55.3	77.8	68.2	86.7	82.9	86.6	69.7	62.1	83.3	74.4	43.2	36.2	66.2	19.2	103
Other	78.8	83.8	8.4	35.3	63.8	64.0	82.7	67.7	82.7	68.9	56.4	80.9	72.3	35.7	34.9	69.9	23.4	61
Total	82.8	85.2	6.0	32.9	74.1	63.3	86.8	73.6	82.9	68.8	45.8	79.6	75.4	23.7	18.4	66.8	15.8	490

[1] Tinned or powdered milk, or fresh animal milk

has intergenerational effects; infants born to women who themselves were malnourished during early childhood are smaller than infants born to better-nourished women (Villar and Rivera, 1988). Infants born with low birth weight (defined as less than 2.5 kg) are at greater risk of illness and death compared with infants of normal weight (IOM, 1985).

Malnutrition is a direct result of both inadequate intake of food and infectious disease. Inadequate food intake results from insufficient food at the household level and improper feeding practices. Infectious diseases, particularly diarrhea, acute respiratory illness, malaria, and measles result from inadequate health care, an insufficient water supply, and poor environmental sanitation. As stated by Scrimshaw et al. (1968), "the simultaneous presence of malnutrition and infection results in an interaction that is more serious for the host than would be expected from the combined effect of the two working independently.

11.8 Measures of Nutritional Status in Childhood

The assessment of nutritional status is based on the concept that in a well-nourished population, the distribution of children's height and weight, for a given age, will approximate a normal distribution. This distribution means that 68 percent of children will have a height or weight within one standard deviation of the median for that age. Of the remainder, 2 percent will have a height or weight less than two standard deviations from the median for the age. Because all populations have similar genetic potential for growth (Habicht et al., 1974), the U.S. National Center for Health Statistics (NCHS) Reference Data are recommended by WHO (1979) to be used in the evaluation of nutritional status.

Three standard indices of physical growth that describe the nutritional status of children are presented:

- height-for-age
- weight-for-height
- weight-for-age.

Each of these indices gives different information about growth and body composition that can be used to assess nutritional status.

Height-for-age is a measure of growth. A child who is below minus two standard deviations (-2 SD) from the median of the NCHS reference population for height-for-age is considered short for his/her age, or *stunted,* a condition reflecting chronic malnutrition. If a child is below minus three standard deviations (-3 SD) from the reference median, the child is considered to be severely stunted.

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations (-2 SD) from the reference median is considered too thin for his/her height, or *wasted,* a condition reflecting an acute or recent nutritional deficit. If a child is below minus three standard deviations (-3 SD) from the reference median, the child is considered severely wasted.

The weight-for-age index does not distinguish between chronic malnutrition (stunting) and acute malnutrition (wasting). A child can be underweight for age because he is stunted, because

he is wasted, or because he is both wasted and stunted. Weight-for-age is a good overall indicator of a population's nutritional health.

Children who are below -2 SD but not below -3 SD are considered moderately malnourished, whereas children who are below -3 SD are considered severely malnourished. Although a child may be both stunted and wasted, these two indicators often reflect different etiologies and consequences and hence have different implications for programmatic action.

In the 1999 KDHS, all surviving children born since January 1994 and living in every second selected household were eligible for height and weight measurement.[1] The following analysis pertains to the 612 children age 0-59 months for whom complete and plausible anthropometric data were collected.

11.9 Levels of Child Undernutrition in Kazakhstan

Table 11.7 shows the percentage of children under five years of age classified as malnourished according to demographic characteristics. For all of Kazakstan, 10 percent of children are moderately or severely stunted, 2 percent are moderately or severely wasted, and 4 percent are moderately or severely underweight for age.

The most pronounced differentials by demographic characteristics are found in age of child and birth interval (Figure 11.1). Children age 12-23 months and 36-47 months are less well nourished than other infants by almost all indices of undernutrition. Stunting is more common among female children than among male children (11 versus 9 percent), whereas boys are more likely to be wasted than girls (Table 11.7).

Table 11.8 shows nutritional indices by background characteristics. Moderate or severe stunting is found in a significant proportion of children in rural areas (12 percent), children in the West and Central regions (18 and 13 percent, respectively), children born to women with a primary or secondary education (12 percent), and children born to women of Kazakh ethnicity (11 percent). Figure 11.2 shows the differentials in stunting by selected background characteristics.

11.10 Women's Anthropometric Status

In the 1999 KDHS, data were collected on the height and weight of women 15-49 years of age. As with children, anthropometric measurements were performed on eligible women (age 15-49 living in every second selected household.[2] The height and weight measurements were obtained for 2,235 of the surveyed women. Three indices of women's nutritional status are presented in this report: height, weight, and body mass index (BMI)—an indicator combining height and weight data.

[1] In the cities Almaty, Zhezkazgan and Semipalatinsk the children measured were from all households in every second cluster.

[2] In the cities of Almaty, Zhezkazgan, and Semipalatinsk the women measured were from all households in every second cluster

Table 11.7 Nutritional status of children by demographic characteristics

Percentage of children 0-59 months of age who are classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by demographic characteristics, Kazakhstan 1999

Demographic characteristic	Height-for-age		Weight-for-height		Weight-for-age		Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below - 2 SD[1]	
Age							
<6 months	2.9	5.5	0.0	1.7	0.0	4.0	48
6-11 months	0.6	5.1	0.0	2.2	0.6	5.0	63
12-23 months	4.9	16.5	0.0	2.4	0.0	6.0	118
24-35 months	1.6	6.5	1.0	1.3	1.6	3.2	125
36-47 months	2.3	10.4	0.0	2.3	0.0	3.1	136
48-59 months	2.0	9.8	0.0	1.1	0.0	4.5	122
Sex							
Male	1.6	8.8	0.4	3.4	0.1	3.8	294
Female	3.4	10.7	0.0	0.3	0.6	4.6	319
Birth order[2]							
1	2.1	5.0	0.3	2.4	0.0	4.1	204
2-3	2.1	9.8	0.0	1.9	0.0	3.6	296
4-5	5.6	17.9	0.6	0.6	2.8	6.4	86
6+	0.0	19.8	0.0	0.0	0.0	5.2	27
Total	2.5	9.7	0.2	1.8	0.4	4.2	612

Note: Figures are for children born in the period 0-59 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as undernourished if their Z-scores are below minus two or minus three standard deviations (-2 SD or -3 SD) from the median of the reference population.
[1]Includes children who are below -3 SD
[2]Excludes first births

Figure 11.1 **Prevalence of Stunting by Age of Child and Length of Birth Interval**

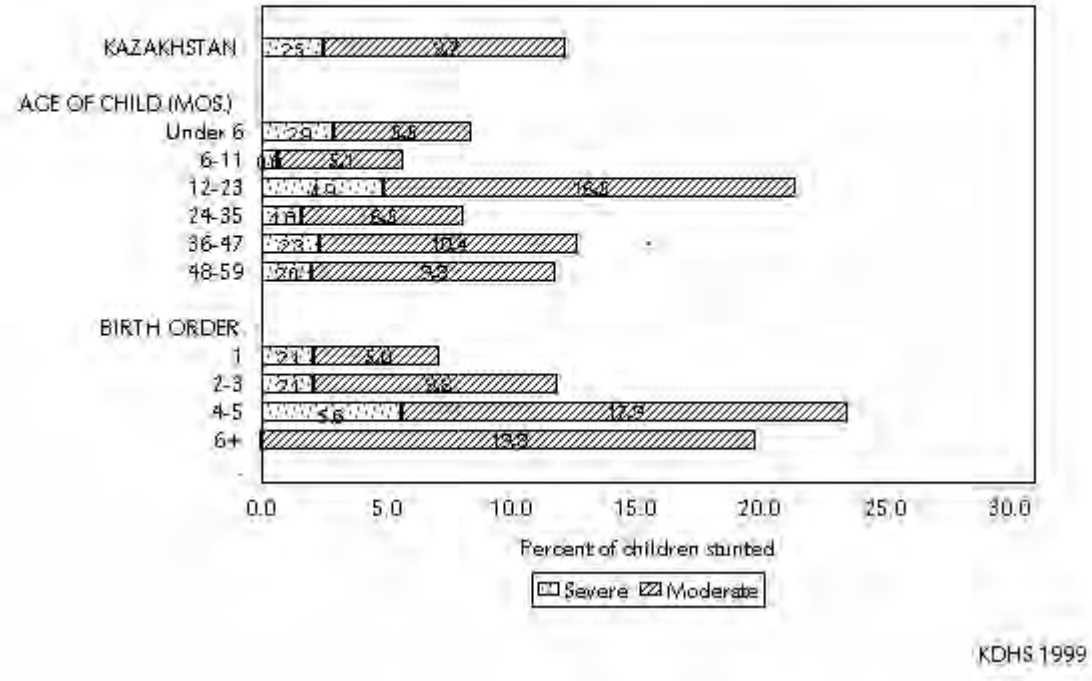


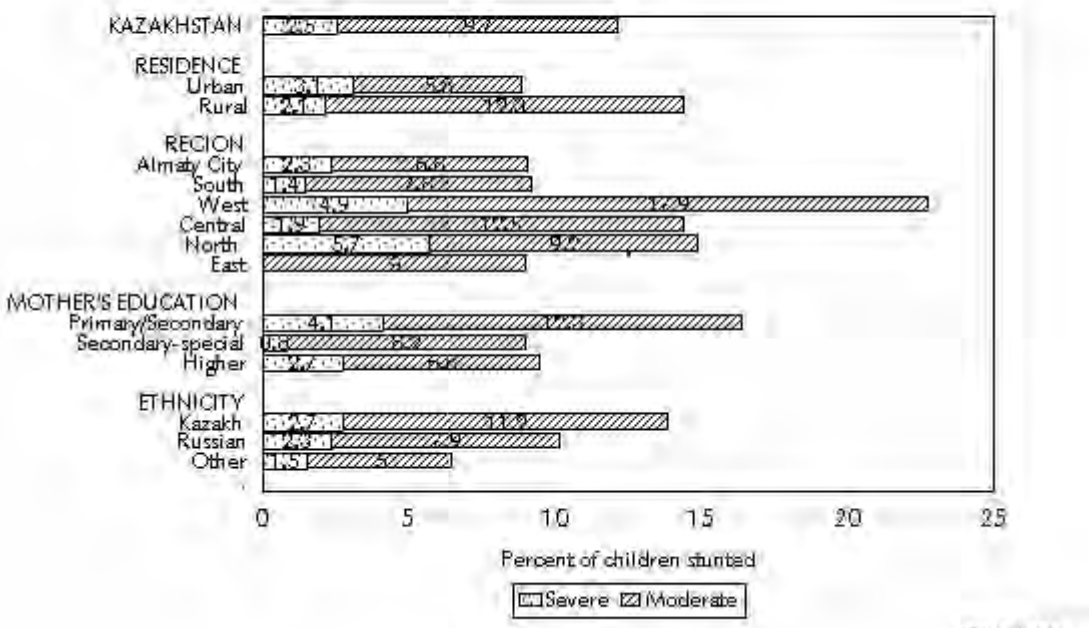
Table 11.8 Nutritional status of children by background characteristics

Percentage of children 0-59 months of age who are classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Kazakhstan 1999

Background characteristic	Height-for-age		Weight-for-height		Weight-for-age		Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below - 2 SD[1]	
Residence							
Urban	3.1	5.8	0.2	2.4	0.8	4.8	242
Rural	2.1	12.3	0.2	1.5	0.1	3.9	371
Region							
Almaty City	2.3	6.8	0.0	2.3	0.0	4.5	20
South	1.4	7.8	0.0	2.3	0.0	3.9	300
West	4.9	17.9	0.9	1.8	0.0	6.7	78
Central	1.9	12.5	1.2	5.5	1.0	3.4	43
North	5.7	9.2	0.0	0.0	1.9	5.7	106
East	0.0	9.0	0.0	0.0	0.0	0.8	65
Mother's education							
Primary/secondary	4.1	12.3	0.3	1.7	0.8	5.5	262
Secondary-special	0.8	8.2	0.2	2.3	0.2	3.3	258
Higher	2.7	6.8	0.0	0.8	0.0	3.4	93
Ethnicity							
Kazakh	2.7	11.2	0.3	2.1	0.6	5.0	417
Russian	2.3	7.9	0.0	0.8	0.0	3.0	104
Other	1.5	5.0	0.0	1.5	0.0	2.0	91
Total	2.5	9.7	0.2	1.8	0.4	4.2	612

Note: Figures are for children born in the period 0-59 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as undernourished if their Z-scores are below minus two or minus three standard deviations (-2 SD or -3 SD) from the median of the reference population.
[1]Includes children who are below -3 SD

Figure 11.2 Prevalence of Stunting by Background Characteristics



KDHS 1999

A woman's height is associated with past socioeconomic status and her access to nutritional foods during childhood and adolescence. Maternal height can be used to predict the risk of difficult delivery since small stature is often associated with small pelvis size. Women who are shorter than 140-150 centimeters can be considered at risk.

Table 11.9 shows the percent distribution of women by height. The mean height of women is 160 cm. Less than 1 percent of women are under 145 cm in height.[3]

Indices of body mass are used to assess thinness and obesity. The most common is the body mass index (BMI), which is defined as weight (in kilograms) divided by height (in meters) squared (kg/m^2). A cutoff point of 18.5 has been recommended for defining energy deficiency among nonpregnant women. Table 11.9 indicates that the mean BMI among nonpregnant, women[4] is 24.1, with 7 percent having a BMI below 18.5.

Table 11.10 shows mean values for height and BMI, and the percent distribution of women for the BMI index by background characteristics. There are significant differentials in the percentage of women with a BMI less than 18.5. Women in the 15-19 age group; those residing in urban areas, Almaty City, and the West region; those with a primary or secondary education; and those of Kazakh ethnicity are more likely to have a lower BMI than other women.

Table 11.9 Anthropometric indicators of women's nutritional status

Percent distribution and mean and standard deviation for all women by height, weight, and body mass index (BMI), Kazakhstan 1999

Indicator	Percent distribution of women	
	Excluding missing	Including missing
Height (cm)		
130.0-134.9	0.1	0.1
135.0-139.9	0.4	0.2
140.0-144.9	4.3	2.1
145.0-149.9	16.9	8.2
150.0-154.9	31.0	15.0
155.0-159.9	29.2	14.1
160.0-164.9	13.0	6.3
165.0-169.9	4.1	2.0
170.0-174.9	0.9	0.5
175.0-179.9	0.0	0.0
Missing	-	51.6
Total	100.0	100.0
Mean	159.6	-
Standard deviation	6.0	-
Number of women	2,324	4,800
Weight (kg)		
35.0-39.9	0.6	0.3
40.0-49.9	17.4	8.4
50.0-59.9	37.5	18.2
60.0-69.9	22.9	11.1
≥700	21.6	10.5
Missing	-	51.5
Total	100.0	100.0
Mean	61.8	-
Standard deviation	15.4	-
Number of women	2,245	4,634
BMI (kg/m^2)		
12.0-15.9	0.5	0.2
16.0-16.9	0.9	0.4
17.0-18.4	6.0	2.9
18.5-20.4	19.2	9.3
20.5-22.9	25.7	12.4
23.0-24.9	15.2	7.3
25.0-26.9	10.4	5.0
27.0-28.9	7.7	3.7
29.0-29.9	1.8	0.9
≥30.0	12.6	6.1
Missing	-	51.8
Total	100.0	100.0
Mean	24.1	-
Standard deviation	5.3	-
Number of women	2,235	4,634

Note: The BMI index excludes pregnant women and those who are less than 3 months postpartum.

[3] If 150 cm is used as the cutoff, 6 percent of women would be considered at risk.

[4] Pregnant women were excluded from the BMI analyses because precise data on gestational age, necessary for adjustments, were not available.

Table 11.10 Nutritional status of women by background characteristics

Mean height and percentage of women shorter than 145 centimeters, mean body mass index (BMI), and percent distribution by BMI, for women age 15-49, by selected background characteristics, Kazakhstan 1999

Background characteristic	Height		Number of women	Body Mass Index					Number of women
					Percent distribution of women 15-49				
	Mean	Percent <145 cm		Mean	<18.5	18.5-29.9	≥ 30.0	Total	
Age									
15-19	159.4	0.5	357	20.9	14.4	85.2	0.4	100.0	348
20-24	160.3	0.0	340	21.4	12.7	85.5	1.8	100.0	316
25-29	160.0	0.5	354	22.8	11.7	81.9	6.5	100.0	326
30-34	160.6	0.4	337	24.7	3.2	83.6	13.3	100.0	316
35-49	158.9	0.7	935	26.5	2.9	74.0	23.1	100.0	932
Residence									
Urban	160.3	0.2	1,296	24.0	7.9	79.9	12.2	100.0	1,247
Rural	158.6	0.9	1,028	24.2	6.7	79.9	13.4	100.0	991
Region									
Almaty City	160.1	0.3	140	23.9	8.7	78.9	12.4	100.0	136
South	158.9	0.6	749	23.5	7.6	82.6	9.7	100.0	716
West	159.4	0.5	293	23.8	8.8	79.5	11.7	100.0	279
Central	162.2	0.0	212	23.2	8.2	83.7	8.1	100.0	206
North	159.1	0.6	609	25.2	6.9	74.9	18.3	100.0	588
East	160.2	0.6	320	24.3	5.4	81.3	13.3	100.0	313
Mother's education									
Primary/secondary	158.7	0.8	960	23.8	8.2	79.6	12.1	100.0	917
Secondary-special	159.8	0.1	889	24.6	7.1	78.1	14.8	100.0	867
Higher	161.0	0.6	474	23.8	6.1	83.8	10.0	100.0	454
Ethnicity									
Kazakh	158.5	0.6	1,272	23.3	8.5	82.7	8.8	100.0	1,223
Russian	161.5	0.5	690	24.9	7.1	76.6	16.2	100.0	670
Other	159.7	0.4	362	25.5	4.0	76.1	19.9	100.0	344
Total	159.6	0.5	2,324	24.1	7.4	79.9	12.7	100.0	2,238

Note: The BMI index excludes pregnant women and those who are less than 3 months postpartum.

ANEMIA 12

Almaz T. Sharman, Bedel T. Sarbayev, Daulet Baskhozhayev, and Dauren Imanbayev

12.1 Scope of the Anemia Problem

Anemia is a condition characterized by a reduction in red blood cell volume and a decrease in the concentration of hemoglobin in the blood. Commonly, anemia is the final outcome of a nutritional deficiency of iron, folate, vitamin B_{12}, and other nutrients. Although many other causes of anemia, such as hemorrhage, infection, genetic disorders, and chronic disease, have been identified, nutritional deficiency, primarily due to a lack of bioavailable dietary iron, accounts for most cases. (INACG, 1979, 1989; DeMaeyer et al., 1989; Hercberg and Galan, 1992; Yip, 1994).

Anemia is known to have detrimental health implications, particularly for mothers and young children. Compared with nonanemic mothers, unfavorable pregnancy outcomes have been reported to be more common in anemic mothers (INACG, 1989). Women with severe anemia can experience difficulty meeting oxygen transport requirements near and at delivery, especially if significant hemorrhage occurs. This may be an underlying cause of maternal death and antenatal and perinatal infant loss (Fleming, 1987; Omar et al., 1994; Thonneau et al., 1992). Iron-deficiency anemia in children is associated with impaired cognitive performance, motor development, coordination, language development, and scholastic achievement (Scrimshaw, 1984; Lozoff et al., 1991). Anemia increases morbidity from infectious diseases because it adversely affects several immune mechanisms.

Anemia due to iron deficiency is recognized as a major public health problem throughout the world. According to the epidemiological data collected from multiple countries by the World Health Organization, 35 percent of women and 43 percent of young children are affected by anemia worldwide. In developing countries, about 50 percent of women and young children are anemic. In the United States and Europe, the prevalence of anemia is 7 to 12 percent among women and children. The highest overall rates of anemia are reported in southern Asia and certain regions of Africa (DeMaeyer et al., 1989).

For decades, anemia has been considered one of Kazakhstan's leading public health problems. In 1995, anemia levels among women and children were determined in conjunction with the 1995 KDHS. Nearly, half of the women (49 percent) and 69 percent of children under the age of three in Kazakhstan suffered from some degree of anemia. The study revealed that the highest rates of anemia are in areas close to the Aral Sea. These areas are characterized by severe agrochemical pollution and other environmental and socioeconomic problems (Sharmanov, 1998).

These findings provided important information for development of health intervention programs to prevent iron-deficiency anemia among women of certain ethnic, educational, and residential groups in these regions. On the basis of the results of the 1995 KDHS anemia study in Kazakhstan, UNICEF's Area Office for the Central Asian Republics and Kazakhstan (UNICEF/CARK), proposed an integrated strategy of education, supplementation, fortification, and research to address the problem and called for donors' support. The proposed strategy considered an intervention approach and includes the following elements (Gleason et al, 1998):

- National and areawide education and training efforts aimed at affordable and acceptable change in the environments of economic transition;

- Fortification of cereal flour with iron;

- A major expansion of weekly iron supplementation for a period of two years to encompass women of reproductive age, children 6-24 months of age, and pregnant women;

- A research agenda of key studies and monitoring activities by the government and other institutions, beginning with a study of the effectiveness of weekly supplementation in all groups, and action research on channels, messages, and other factors that will be developed as part of the program.

The main objectives of the 1999 KDHS anemia study were to further examine the systematic differences in the rates of anemia between certain population groups and to determine, based on assessment of hemoglobin distribution curves, if negative iron balance is the main cause of anemia in Kazakhstan. Another objective was to analyze trends in the prevalence of anemia since the 1995 KDHS.

12.2 Design and Methodology of the 1999 KDHS Anemia Study

As with the 1995 anemia study, the 1999 study was conducted in conjunction with implementation of the 1999 Kazakhstan Demographic and Health Survey. The main differences are as follows:

- Sample design. In the 1999 anemia study, a subsample of the KDHS nationally representative sample was used. Every second household (every second cluster in the cities of Almaty, Zhezkazgan, and Semipalatinsk) among those households selected for the KDHS interview was used for the anemia testing and anthropometric measurement.

- Testing of children under five years of age. Whereas in the 1995 anemia study, the teams tested children under three years of age, the 1999 anemia study included children under five. Use of a subsample of the population yielded a sample size for the anemia testing of 2,216 women age 15-49 and 574 of their children under five years of age.

- Testing of men. In the 1999 anemia study, a subsample of the male population was also tested for hemoglobin concentration. The main objective in testing men was to assess whether iron deficiency is the main cause of anemia among women and children. Rationale for comparative assessment of men's hemoglobin concentration versus women's and children's is presented in section 12.6

- Assessment of iron supplementation. The 1999 anemia study assessed the iron supplementation program. Questions were asked on whether or not women were taking iron pills. Duration of iron treatment was also studied.

Following this study design, anemia testing was carried out on 2,216 women age 15-49 and 574 of their children under age five. The anemia testing was done by a standard procedure used in MEASURE *DHS+* surveys (Sharmanov, 2000). Prior to participating in the study, each respondent was asked to sign a consent form giving permission for the collection of a blood droplet from her and her children.

For hemoglobin measurement, capillary blood was taken from the finger using HemoCue safety lancets (i.e., sterile disposable instruments that allow a relatively painless skin puncture). Hemoglobin was measured in the blood using the HemoCue system. The procedure was performed by specially trained physicians.

Levels of anemia were classified as severe, moderate, and mild based on the hemoglobin concentration in the blood and according to criteria developed by the World Health Organization (DeMaeyer et al., 1989). *Severe anemia* was diagnosed when the hemoglobin concentration was less than 7.0 g/dl, *moderate anemia* when the hemoglobin concentration was 7.0-9.9 g/dl, and *mild anemia* when the hemoglobin concentration was 10.0-11.9 g/dl (10-10.9 g/dl for pregnant women and children under age three).

12.3 Anemia Prevalence Among Women

Table 12.1 presents the anemia rates for women. Thirty-six percent of the women in the 1999 KDHS suffer from some degree of anemia; 8 percent have moderate anemia, and 1 percent have severe anemia.

Among age groups, the highest rate of (combined) moderate and severe anemia was diagnosed among women age 35-39 (13 percent), and the lowest rate was among women age 15-19 (6 percent). A high rate of moderate-to-severe anemia was found among women living in the West region (14 percent), while only 7 percent of women in Almaty City and the South and Central regions were diagnosed with moderate-to-severe anemia.

Women with a higher education are less frequently anemic than women with a primary or secondary-special education. The rates of moderate and severe anemia are higher among rural women than among urban women and are also higher among ethnic Kazakh women than among ethnic Russians or women of other ethnicities.

There are differentials in the anemia rates by nutritional and reproductive health characteristics. Table 12.2 and Figure 12.1 show that the prevalence of moderate-to-severe anemia is higher among women with a body mass index (BMI) less than 18.5 than among women with a higher BMI. The prevalence of moderate-to-severe anemia among women with two or more births (11 percent) is almost twice as high as that among women with less than two births or no pregnancies (7 and 6 percent, respectively). Women with average birth interval of less than 24 months are more likely to have moderate-to-severe anemia (16 percent) than women with a birth interval of more than 24 month (12 percent).

Table 12.2 and Figure 12.1 also show that among women who are using intrauterine devices (IUD) as a method of contraception, the prevalence of moderate-to-severe anemia is twice as high as among women who are not using the IUD. This difference can be explained by the increased menstrual blood loss caused by using an IUD that can lead to iron depletion and iron-deficiency anemia (INACG, 1989, Palomo et al., 1993). According to the 1999 KDHS data, 42 percent of currently married women in Kazakhstan were using an IUD at the time of the survey, i.e., when they were tested for anemia.

Table 12.1 Anemia among women

Percentage of women age 15-49 classified as having anemia, by background characteristics, Kazakhstan 1999

Background characteristic	Percentage of women with anemia			Number of women
	Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	
Age				
15-19	0.0	6.0	25.8	352
20-24	0.8	5.7	27.0	334
25-29	1.4	7.1	23.2	351
30-34	0.4	7.3	29.8	323
35-39	2.4	11.0	27.6	352
40-44	1.7	11.0	29.2	297
45-49	2.0	5.4	23.7	259
Residence				
Urban	0.9	7.2	25.9	1,256
Rural	1.6	8.2	27.6	1,012
Region				
Almaty City	0.7	6.1	17.0	127
South	0.2	6.6	18.5	731
West	3.1	11.1	31.5	285
Central	1.1	6.3	30.0	207
North	1.9	8.3	39.2	605
East	0.9	7.3	18.6	313
Education				
Primary/secondary	0.9	7.1	28.9	951
Secondary-special	1.8	9.1	26.2	867
Higher	0.7	6.0	22.9	451
Ethnicity				
Kazakh	1.4	9.7	28.6	1,250
Russian	1.1	4.1	23.1	664
Other	0.5	7.1	26.5	354
Total	1.2	7.7	26.6	2,269

[1] Hemoglobin level less than 7g/dl
[2] Hemoglobin level 7-9.9 g/dl
[3] Hemoglobin level 10-11.9 g/dl (10-10.9 g/dl for pregnant women)

When iron deficiency is the main etiologic factor of anemia, population groups with high iron requirements are disproportionately affected and develop anemia more frequently. Negative iron balance, due to an imbalance of iron requirements versus iron intake, often occurs during pregnancy and growth. For this reason, when iron deficiency is highly prevalent in a population, pregnant women, who provide the fetus with a considerable amount of iron, are at greater risk of developing anemia than nonpregnant women. This tendency of pregnant women to have lower hemoglobin concentrations can be illustrated when probability plots of cumulative percent distributions of hemoglobin concentrations in pregnant women are compared with those in nonpregnant women.

Table 12.2 Anemia among women by nutritional status, reproductive history, and IUD use

Percentage of women age 15-49 years classified as having anemia by nutritional status, reproductive history and IUD use, Kazakhstan 1999

Background characteristic	Percentage of women with anemia			Number of women
	Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	
BMI Index				
BMI <18.5	1.0	7.3	29.5	163
BMI >18.5	1.2	7.7	26.4	2,088
Reproductive history				
No pregnancies	0.6	5.2	25.5	592
Number of births <2	0.7	5.9	25.1	1,053
Number of births ≥2	1.6	9.2	28.0	1,212
Average birth interval <24 months	2.0	14.0	28.6	284
Average birth interval >24 months	1.7	9.8	34.7	352
Use of IUD				
Currently using	2.5	12.0	31.4	653
Currently not using	0.7	5.9	24.8	1,611
Total	1.2	7.7	26.7	2,269

[1] Hemoglobin level less than 7g/dl
[2] Hemoglobin level 7-9.9 g/dl
[3] Hemoglobin level 10-11.9 g/dl

Figure 12.2 shows the hemoglobin distribution curves for pregnant women, breastfeeding women, and nonpregnant, nonbreastfeeding women. The entire hemoglobin distribution for pregnant women is shifted downward (to the left) compared with the distribution for nonpregnant women. The hemoglobin distribution for breastfeeding women is also shifted downward compared with the distribution for nonpregnant and nonbreastfeeding women, but to a lesser extent than the distribution for pregnant women.

This pattern means that pregnant women tend to have lower hemoglobin concentrations than nonpregnant women, in part due to physiologic hemodilution during the initial stages of pregnancy. However, most of the differences are primarily due to the increased iron requirements of the growing fetus, umbilical cord, and placenta, as well as the expansion of maternal red-blood-cell mass (Lee, 1999). Because of the gap between such high iron requirements and limited body iron reserves during pregnancy, routine iron supplementation is indicated especially for pregnant and postpartum women.

12.4 Iron Supplementation During Pregnancy

Supplementation of iron during pregnancy is one of the main components of the UNICEF CARK Anemia Control and Prevention Strategy in Kazakhstan (Gleason et al., 1999). The Government of Kazakhstan supports this program by promoting iron supplementation during pregnancy and the postpartum period.

Figure 12.1 Prevalence of Moderate-to-severe Anemia among Women by Nutritional Status and Reproductive Health Characteristics

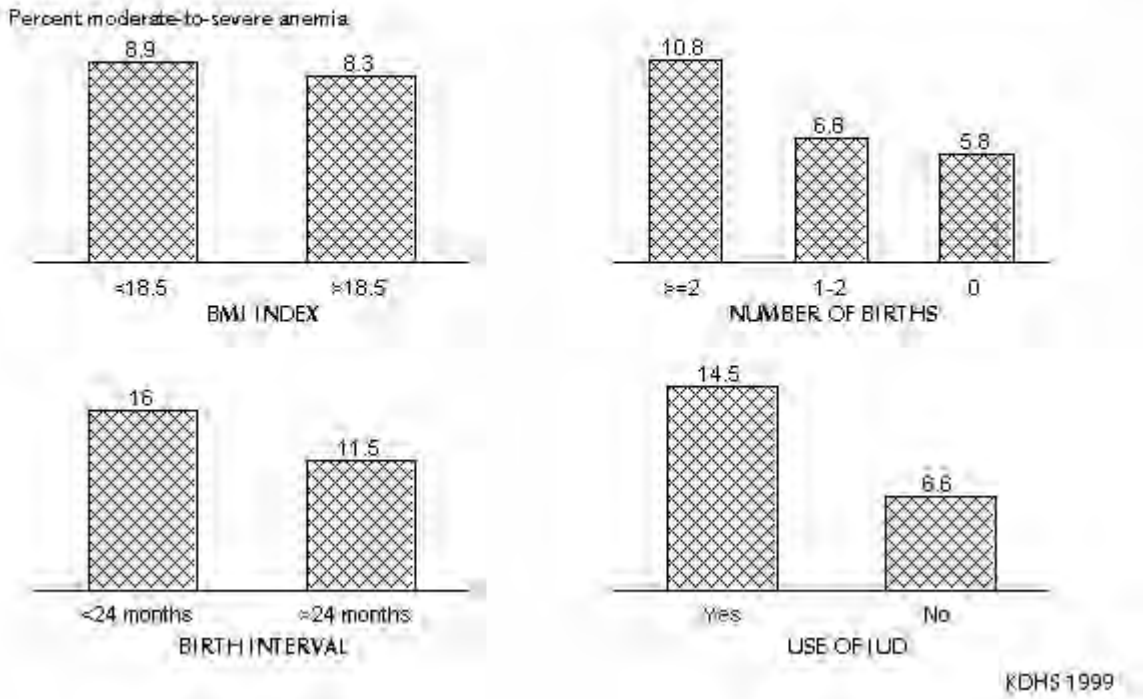


Figure 12.2 Probability Plots of Cumulative Percent Distributions for Hemoglobin Concentrations in Pregnant, Lactating, and Nonpregnant/nonlactating Women, 1999 KDHS

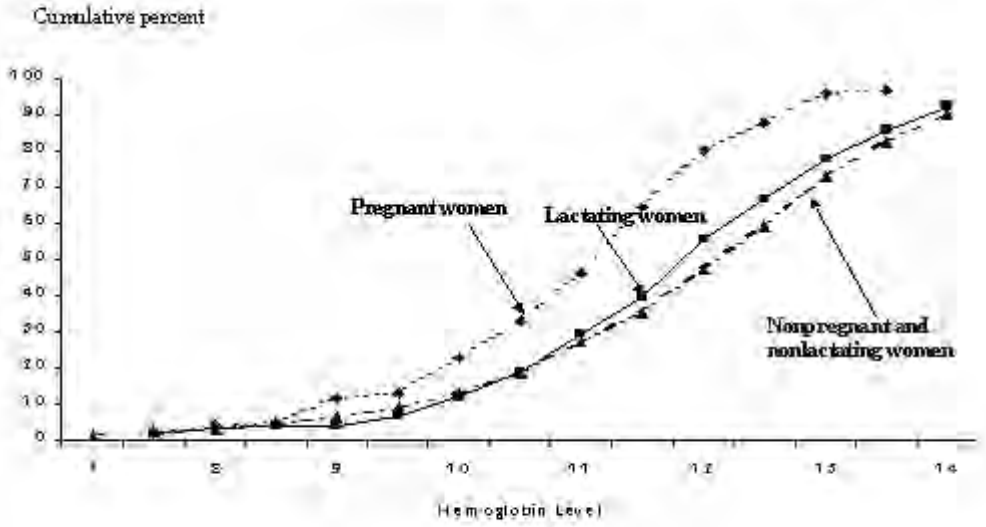


Table 12.3 Iron supplementation

Percentage of women who took iron pills during current or last pregnancy, and average number of days women took iron pills by background characteristics, Kazakstan 1999

Background characteristic	Iron supplementation for current pregnancy or last birth		
	Percentage who took iron pills	Average number of days	Number of women
Age			
15-19	44.4	13.1	35
20-24	51.2	23.4	285
25-29	49.3	23.2	352
30-34	42.5	19.0	253
35-39	50.6	23.4	148
40-44	48.6	18.2	50
Residence			
Urban	54.1	24.2	523
Rural	42.9	19.5	605
Region			
Almaty City	62.1	30.2	40
South	46.3	17.6	460
West	41.5	20.4	153
Central	46.1	25.0	101
North	54.9	24.3	244
East	46.8	27.0	131
Education			
Primary/secondary	40.3	19.8	430
Secondary-special	51.8	21.5	499
Higher	55.5	25.8	199
Ethnicity			
Kazakh	49.5	20.2	741
Russian	46.3	24.7	225
Other	43.9	27.1	162
Total	48.1	21.9	1,129

The recommended dosage of iron supplementation for pregnant women is currently 60 mg per day for six months. This dosage may be increased to 120 mg if the duration of supplementation is short. Also, where the prevalence of anemia in pregnant women is more than 40 percent (which is the case in Kazakhstan), supplementation should continue into the postpartum period. In addition to the iron supplementation, supplementation of 400 g of folic acid around the time of conception not only prevents megaloblastic anemia, but also significantly reduces the incidence of neural tube defects, which are severe birth defects. In areas where parasite infestations (hookworm or malaria) are prevalent, complementary parasite-control measures should be implemented (Stoltzfus and Dreyfuss, 1998).

In the 1999 KDHS women were asked if they received iron pills during their last pregnancy. As shown in Table 12.3, 48 percent of women in Kazakhstan received iron pills during their last pregnancy. On average, women took iron pills for 22 days. Iron supplementation is most common in Almaty City in terms of both the percentage of women taking iron pills (62 percent) and the average length of iron supplementation (30 days). The West region has the lowest percentage of women who took iron pills during their last pregnancy (42 percent). It is important to note that, as seen from Table 12.1, this region also has the highest prevalence of moderate-to-severe anemia (14 percent).

Iron supplementation is more common among women with a higher education (56 percent) and women residing in urban areas (54 percent) than among women with primary or secondary education (40 percent) and to those who reside in rural areas (43 percent).

Thus, despite efforts promoting the iron supplementation, more than half of women in Kazakhstan did not receive iron supplements during their last pregnancy. Even women who received iron pills took them for a shorter period than recommended.

12.5 Anemia Prevalence among Children

Table 12.4 presents anemia rates for children in Kazakhstan. Thirty-six percent of the children under the age of five suffer from some degree of anemia; 17 percent have moderate anemia, and 1 percent are severely anemic.

As was the case with women, there are substantial differences in the anemia rates among children by residence, region, level of mother's education, and ethnicity. The prevalence of moderate-to-severe anemia among children living in rural areas is almost twice as high as among children living in urban areas (22 and 12 percent, respectively). As with the women, the rate of moderate-to-severe anemia is highest among children living in the West region (33 percent). This rate is approximately three times as high as the rate of moderate-to-severe anemia among the children living in Almaty City and the East and South regions.

Table 12.4 also shows that children of mothers who have a primary or secondary education are more likely to have anemia than children whose mothers have a secondary-special or a higher education. The rate of moderate-to-severe anemia among Kazakh children is approximately twice as high as it is among children of Russian and other ethnicities.

Table 12.4 Anemia among children

Percentage of children under five years classified as having anemia, by background characteristics, Kazakstan 1999

Background characteristic	Percentage of children with anemia			Number of children	Un-weighted number of children
	Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]		
Residence					
Urban	0.9	11.4	17.8	245	241
Rural	1.7	20.6	18.0	376	333
Region					
Almaty City	0.0	13.6	27.3	20	44
South	1.4	12.1	14.3	303	198
West	2.8	29.9	26.7	84	107
Central	3.3	21.1	34.1	43	83
North	0.0	24.4	14.4	106	56
East	0.8	9.2	15.3	64	86
Education of mother					
Primary/secondary	2.6	19.9	18.3	270	246
Secondary-special	0.6	14.9	18.4	255	230
Higher	0.0	14.3	15.5	96	98
Ethnicity					
Kazakh	2.0	20.0	18.3	427	395
Russian	0.0	8.9	21.9	101	111
Other	0.0	12.0	11.9	92	68
Total	1.4	17.0	17.9	620	574

[1] Hemoglobin level less than 7g/dl
[2] Hemoglobin level 7-9.9 g/dl
[3] Hemoglobin level 10-10.9 g/dl

12.6 Assessment of Causes of Anemia in Kazakhstan: Population-Based Approach

It has been suggested that the main cause of anemia in Kazakhstan is iron deficiency (Sharmanov, 1998). In the 1999 KDHS, a new approach was used to determine whether anemia in Kazakhstan is primarily due to a negative iron balance. This approach is based on comparative analysis of hemoglobin distribution curves for children, women, and men. Below is the rationale for using such an approach in a large-scale population-based study such as the 1999 KDHS.

Most of the tests for iron status assessment involve taking the venous blood and using relatively sophisticated immunologic tests, such as enzyme-linked immunosorbent assay (ELISA). Detailed morphologic analysis, genetic screening, and clinical assessment are necessary to diagnose hemoglobinopathies, such as thalassemia. Performing these tests could be cumbersome and often requires special technical skills. A further complication is that the facilities to perform such tasks are usually not available in the field. Therefore, various options should be considered for population-based surveys.

Another approach to identifying the causes of anemia in populations is to examine the hemoglobin distribution. This approach helps to determine whether there are any disproportionately affected population groups, such as women and young children (Yip, 1994). In the case of a disproportionate shift in the hemoglobin distribution curve, iron deficiency may be assumed as a main etiologic factor of anemia. Where there is no disproportionate shift of the hemoglobin distribution curve, all population groups, including the adult male population, will be equally affected. In that case, parasite infestation or other factors may be considered as major factors contributing to anemia.

To test these assumptions, it is useful to select a relatively small sample of the adult male population and perform hemoglobin testing on them. The sample size should be large enough to construct a hemoglobin distribution curve comparable to those for women and children. Usually, a subsample of approximately 200 adult males is sufficient to construct such a distribution curve. This approach is feasible and cost-effective. It is also informative enough to determine whether or not iron deficiency is a leading cause of anemia in a specific population.

Comparative analysis of hemoglobin distribution curves was implemented during the 1999 KDHS. Besides women and children, the survey collected the hemoglobin data for a subsample of men. A total of 539 men were tested for hemoglobin levels during the survey.

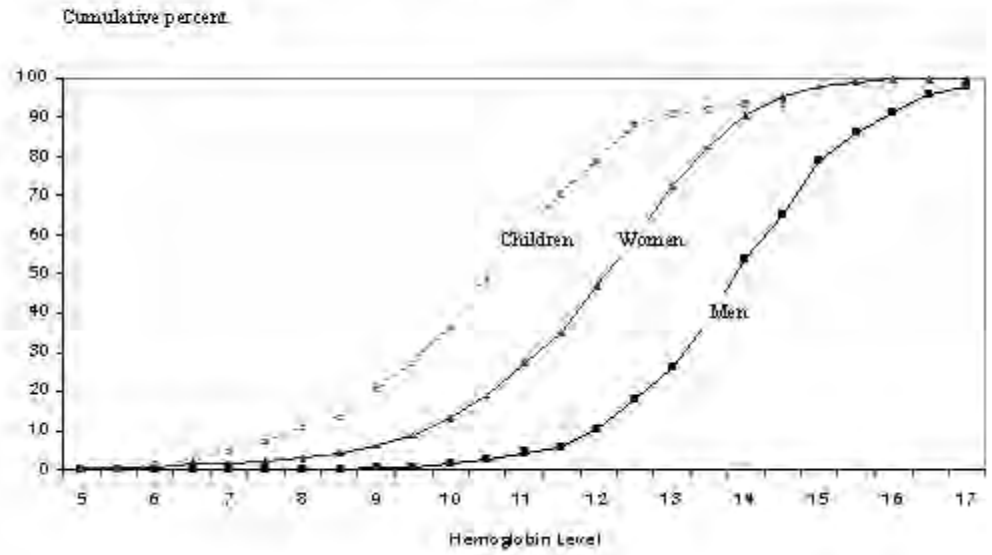
Figure 12.3 shows probability plots of cumulative percent distributions for hemoglobin concentrations in the capillary blood of children, nonpregnant and nonlactating women, and men. The hemoglobin distribution curves for women and children are shifted downward compared with the curve for men. As mentioned above, this pattern is characteristic of populations where iron deficiency is the main cause of anemia, and confirms suggestions that anemia among women and children in Kazakhstan is primarily due to negative iron balance.

12.7 Changes in the Prevalence of Anemia Since 1995

Table 12.5 presents the rates of moderate-to-severe anemia among women and children under age three in Kazakhstan based on the KDHS surveys conducted in 1995 and 1999. The results indicate there has been a decline in the prevalence of moderate-to-severe anemia among both women and children in the four-year period between the surveys. The rate of moderate-to-severe anemia has declined from 12 to 9 percent among women and from 39 to 26 percent among children

under age three. The most pronounced decline is observed in the South region, where the rate of moderate-to-severe anemia has declined from 11 to 7 percent among women and from 40 to 20 percent among children.

Figure 12.3 **Probability Plots of Cumulative Percent Distributions for Hemoglobin Concentrations in Children, Nonpregnant/nonlactating Women, and Men, 1999 KDHS**



Despite the overall decline in the anemia rates, demographic and socioeconomic differentials in the prevalence of moderate-to-severe anemia in the 1999 KDHS follow almost the same pattern as in the 1995 KDHS. For example, in both surveys, the rate of anemia was the highest among women and children living in the West region. It is also higher for Kazakh women and children than it is for women and children of Russian or other ethnicities. Women and children residing in rural areas are more likely to develop moderate-to-severe anemia than women and children residing in urban areas.

Figures 12.4 and 12.5 show probability plots of cumulative percent distributions for hemoglobin concentrations of women and children tested during the 1995 KDHS and the 1999 KDHS. There is some shift in hemoglobin distribution curves toward increased hemoglobin concentrations in women and children tested in 1999 compared with those who were tested in 1995. Whereas, in women, the shift occurs mostly in the hemoglobin concentrations that correspond to mild anemia (10-12 g/dl), the shift among children is more pronounced and affects all types of anemia, including moderate and severe.

It is important to note that the 1995 survey was conducted mostly during the period June through August when food consumption is more restricted with lower availability of essential vitamins and minerals, whereas the 1999 survey was conducted during the period July through late

September, which is the growing season in Kazakhstan when fresh fruits and vegetables are more available than in other seasons. Such availability of essential nutrients could lead to increased consumption of ascorbic acid and other promoters of the iron absorption. This seasonal difference in diet could be one explanation for the observed decline in the prevalence of anemia in both women and children between the 1995 KDHS and the 1999 KDHS.

Table 12.5 Moderate-to-severe anemia among women and children

Percentage of women age 15-49 and of children under age three with moderate-to-severe anemia, by background characteristics, 1995 KDHS and 1999 KDHS

	Moderate-to-severe anemia among women age 15-49				Moderate-to-severe anemia among children under age three			
	1995 KDHS		1999 KDHS		1995 KDHS		1999 KDHS	
Background characteristic	Percent ± SD	Number of women	Percent ± SD	Number of women	Percent ± SD	Number of children	Percent ± SD	Number of children
Age								
15-19	6.9±1.4	657	6.0±1.6	352	NA	NA	NA	NA
20-24	12.0±1.6	557	6.5±1.7	334	NA	NA	NA	NA
25-29	11.3±1.5	514	8.4±1.8	351	NA	NA	NA	NA
30-34	13.9±1.7	539	7.7±1.7	323	NA	NA	NA	NA
35-39	13.7±1.7	552	13.4±2.0	352	NA	NA	NA	NA
40-44	10.9±1.5	521	12.7±1.8	297	NA	NA	NA	NA
45-49	15.9±1.9	344	7.4±1.9	259	NA	NA	NA	NA
Residence								
Urban	9.7±1.5	2,058	8.1±1.8	1,256	31.4±1.7	293	18.9±2.1	137
Rural	14.3±1.7	1,626	9.8±1.8	1,012	44.3±1.7	422	29.9±1.9	222
Region								
Almaty City	10.5±1.7	249	6.9±1.6	127	*	29	*	13
South	11.4±1.6	1,177	6.8±1.7	731	40.3±1.7	319	19.8±1.9	171
West	18.9±1.7	459	14.2±2.0	285	54.9±1.7	93	41.9±2.0	51
North-East-Central	10.3±1.6	1,799	9.1±1.8	1,125	34.0±1.7	273	27.9±2.0	125
Education								
Primary/secondary	13.6±1.6	1,352	7.9±1.8	951	42.0±1.7	261	31.9±2.0	166
Secondary-special	11.7±1.6	1,681	11.0±1.9	867	38.2±1.7	340	21.5±1.8	141
Higher	9.3±1.6	651	6.8±1.7	451	34.7±1.7	113	17.4±1.9	52
Ethnicity								
Kazakh	16.2±1.7	1,654	11.2±1.8	1,250	49.4±1.7	420	29.9±2.1	258
Russian	7.9±1.5	1,283	5.2±1.7	664	27.5±1.5	159	10.0±1.5	61
Other	8.5±1.	747	7.6±1.7	354	20.2±1.5	135	22.9±1.8	40
Total	11.7±1.6	3,684	8.9±1.8	2,269	39.0±1.7	714	25.7±2.0	359

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
NA = Not applicable

Figure 12.4 **Probability Plots of Cumulative Percent Distributions for Hemoglobin Concentrations in Nonpregnant/ nonlactating Women, 1995 KDHS and 1999 KDHS**

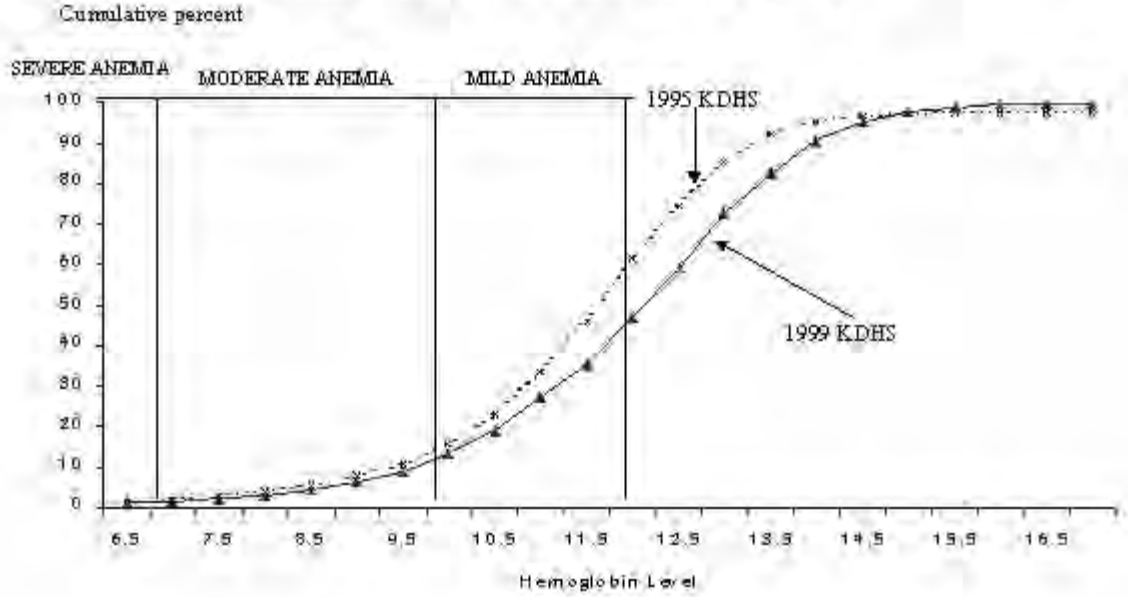
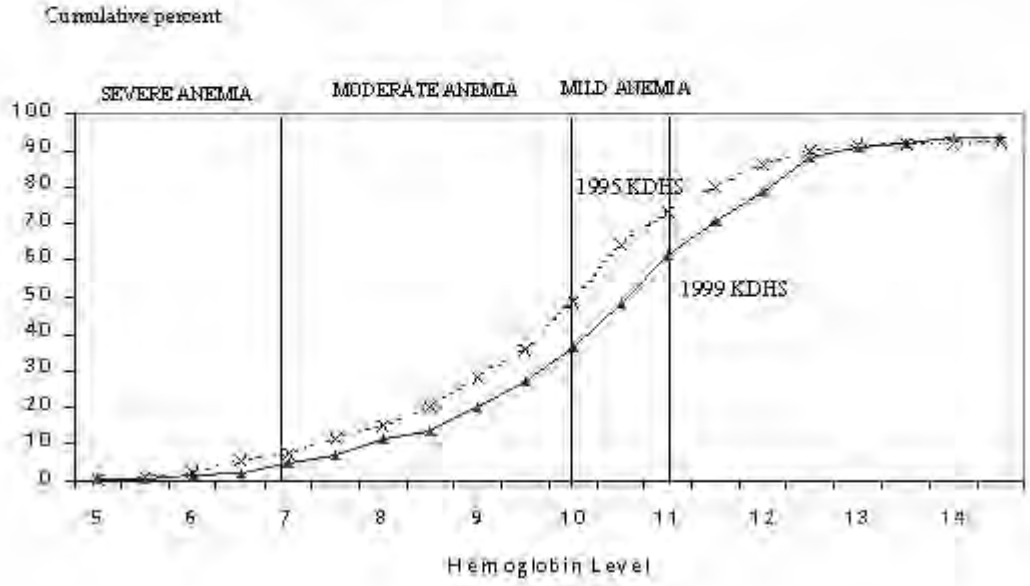


Figure 12.5 **Probability Plots of Cumulative Percent Distributions for Hemoglobin Concentrations in Children under Three Years of Age, 1995 KDHS and 1999 KDHS**



The decline in the prevalence of anemia could also be the result of the positive effects of the anemia control and prevention program. In particular, the intensive iron supplementation program, which has recently been implemented by UNICEF/CARK and the Kazakhstan National Nutrition Institute in Kyzylorda oblast (part of the 1999 KDHS South region), may benefit the overall iron status of women and children living in that area. Obviously, more research needs to be done to determine the real effects of iron supplementation and dietary modification on the prevalence of anemia among women and children in Kazakhstan.

HIV/AIDS AND OTHER SEXUALLY TRANSMITTED INFECTIONS 13

Almaz T. Sharman and Elnar Kurmangaliyeva

13.1 HIV/AIDS Situation in Kazakhstan

The acquired immune deficiency syndrome (AIDS) is a condition caused by a human immunodeficiency virus (HIV) and characterized by a spectrum ranging from primary infection (with or without the acute syndrome) to the asymptomatic stage, to advanced disease.

HIV/AIDS is a pandemic with cases reported from virtually every country. The current estimate of the number of cases of HIV infection among adults worldwide is approximately 32.2 million, and among children, it is approximately 1.2 million. The World Health Organization estimates that approximately 10.7 million adults and 3.2 million children infected with HIV have died since the beginning of the epidemic (Fauci and Lane, 2000).

According to the Guidelines for Second Generation HIV Surveillance, there are three different HIV epidemic states: low-level, concentrated, and generalized (UNAIDS/WHO, 2000). In the low-level epidemics, HIV infection has not increased to significant levels in any subpopulation. Recorded infection is mostly confined to people with high-risk behavior (e.g., sex workers, injecting drug users, and homosexual men). In concentrated epidemics, HIV is not well established in the general population, but has spread rapidly in a defined subpopulation. In generalized epidemics, HIV is firmly established in the general population and HIV prevalence is consistently more than 1 percent in pregnant women.

Compared with other parts of the world, Kazakhstan has a relatively low prevalence of HIV infection with an estimated cumulative number of 1,000 cases reported by the National AIDS Center of Kazakhstan in 1999. However, Kazakhstan's authorities estimate that the true figure is 10 times higher than what was reported. Because of the lack of proper diagnostic systems and the absence of an efficient surveillance system, Kazakhstan's official HIV reporting system tends to underestimate the prevalence or HIV. In Kazakhstan 84 percent of cases of HIV infection are among injecting drug users (IDUs), and the remaining 16 percent were transmitted mostly through heterosexual contact, hemotransfusion, and vertical transmission (National AIDS Center of Kazakhstan, 2000).

In 1999, the Kazakhstan Government reported 185 new cases of HIV infection, down from 437 in 1997 when the country experienced a large outbreak of HIV among IDUs in Temirtau City in the Karaganda Region. This area remains the most affected region of Kazakhstan, with 833 cases of HIV infection reported in 1999 (National AIDS Center of Kazakhstan, 2000). Although one area of Kazakhstan may be experiencing a concentrated epidemic (Temirtau City), the country as a whole is still in a state of low-level HIV/AIDS epidemic.

An alarming factor is the exponential rate of increase of syphilis, gonorrhea, trichomoniasis, and other sexually transmitted infections (STIs), which are known to be important predisposing factors for HIV epidemics. According to the National Institute of Skin and Venereal Diseases of Kazakhstan, the incidence rates of syphilis, gonorrhea, and chlamydia infections in 1999 were reported at 181.9, 81.7, and 31.2 per 100,000 population, respectively. The rate of syphilis, which

is, a key indicator of an STI epidemic according to WHO, has increased from 1.4 cases per 100,000 population in 1990 to 181.9 cases per 100,000 population in 1999. Despite a slight decrease in the incidence rate from 268.9 cases per 100,000 population in 1997 to 181.9 cases per 100,000 population in 1999, the prevalence rate of syphilis remains high and is currently estimated at 640 per 100,000 population (National Institute of Skin and Venereal Diseases of Kazakhstan, 2000). The dramatic increase in STIs since 1990 increases the potential for a slower, albeit more generalized heterosexual HIV epidemic than the current picture of the HIV epidemic in Kazakhstan, which is primarily limited to IDU transmission.

Current and future epidemic states of HIV/AIDS and other STIs in Kazakhstan are strongly related to dramatic socioeconomic changes in its population, increased poverty and income inequalities, labor migration, increased drug abuse and prostitution, and changes in sexual behavior and moral norms. For these reasons, to monitor the progress of the HIV/AIDS and other STI epidemic in Kazakhstan and to project its impact, it is necessary to collect background data on knowledge, attitudes, and preventive behavior related to HIV/AIDS and other STIs among various population groups.

In the 1999 KDHS, a questionnaire module on HIV/AIDS and other sexually transmitted infections has been implemented. The module collected information from women and men on their knowledge and practices regarding transmission of HIV and other STIs. This chapter summarizes information on the prevalence of relevant knowledge, perceptions, and behaviors at the national level and within geographic and socioeconomic subgroups of the population.

13.2 Knowledge of HIV/AIDS and Methods of HIV Prevention

In the 1999 KDHS, both women and men were asked whether they had heard of an illness called AIDS. The data (Table 13.1) show that knowledge of AIDS is almost universal among all population groups in Kazakhstan.

The respondents were also asked the following questions: "Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?" and "What can a person do?" These questions help to identify the percentage of respondents who know about the correct methods of preventing HIV infection. They also help to determine how common certain misconceptions about HIV/AIDS transmission are.

Table 13.1 Knowledge of AIDS

Percentage of women and men who have heard of AIDS, by background characteristics, Kazakhstan 1999

Background characteristic	Women		Men	
	Has heard of AIDS	Number of women	Has heard of AIDS	Number of men
Age				
15-19	94.9	791	97.2	226
20-24	96.8	666	97.6	182
25-29	99.1	692	99.5	176
30-39	98.6	1,448	99.8	401
40-49	98.0	1,203	99.5	286
50-59	NA	NA	97.5	170
Marital status				
Currently married	98.1	3,018	99.5	933
Formerly married	98.7	567	98.9	74
Never married	96.0	1,215	97.2	433
Residence				
Urban	99.1	2,668	99.6	790
Rural	95.8	2,132	97.8	650
Region				
Almaty City	100.0	291	100.0	90
South	97.4	1,455	97.5	426
West	92.5	628	98.6	182
Central	99.7	475	99.5	139
North	99.1	1,259	100.0	396
East	97.9	692	98.0	207
Education				
Primary/secondary	95.3	1,927	98.1	661
Secondary-special	99.0	1,908	99.0	581
Higher	99.7	965	100.0	198
Ethnicity				
Kazakh	96.8	2,587	97.8	747
Russian	99.1	1,454	99.7	460
Other	97.9	760	100.0	234
Total	97.7	4,800	98.8	1,440

Tables 13.2.1 and 13.2.2 show the percentage of women and men who know of specific ways to avoid getting HIV/AIDS. About 3 percent of women and 2 percent of men reported that there was no way to avoid getting HIV/AIDS. Fifty percent of women and 45 percent of men reported having only one sex partner as a way to prevent getting HIV/AIDS. By far, the most frequently cited way reported by men was use of condoms; 70 percent of men mentioned condoms as a way to avoid getting HIV/AIDS, whereas only 37 percent of women cited this method. Among other correct methods of HIV/AIDS prevention were the following: limiting sexual partners (cited by 12 percent of women and 15 percent of men); abstaining from sex (cited by 14 percent of women and 12 percent of men); avoiding sex with prostitutes (mentioned by 4 percent of women and 28 percent of men); and avoiding sex with homosexuals (cited by 2 percent of women and 3 percent of men).

Interestingly, a significant number of women and men in Kazakhstan are aware of the high risk of having sex with injecting drug users (8 percent of women and 12 percent of men). Many women and men are also aware of the possibility of contracting HIV/AIDS through hemotransfusions and regular injections. Avoiding hemotransfusions was mentioned by 11 percent of women and 21 percent of men, and avoiding injections was mentioned by 16 percent of women and 28 percent of men.

Misinformation about the ways of contracting HIV/AIDS is quite rare among women and men in Kazakhstan. Only 1 percent of women and 2 percent of men cited avoiding kissing as a way to protect against getting HIV/AIDS. Less than 1 percent of men and women mentioned avoiding mosquito bites, or seeking the care of traditional healer.

Knowledge of ways to avoid HIV/AIDS follows expected patterns by level of education and residence. For both women and men, safe patterns of sexual behavior (e.g., use of condoms, restricting sex to one partner) are more commonly reported by respondents who have a secondary-special or a higher education. These methods are also better known to Russian women and men than to Kazakh women and men.

Tables 13.3.1 and 13.3.2 summarize knowledge of ways to avoid getting HIV/AIDS by background characteristics. The tables show that 25 percent of women and 13 percent of men reported that they do not know any way to avoid HIV/AIDS. Percentages of such women and men are higher among those residing in rural areas, those with a primary-secondary education, and those living in the South region than among other population groups.

The tables also show that 31 percent of women and 19 percent of men reported knowledge of one valid way to avoid getting HIV/AIDS, such as abstaining from sex, using condoms, or having sex with only one faithful partner. Forty-two percent of women and 67 percent of men mentioned two or more valid ways to protect themselves from HIV/AIDS transmission. Knowledge of two or more valid ways to prevent HIV/AIDS transmission is most commonly reported by women in urban areas, those in Almaty City, those with a higher education, and those of Russian ethnicity. The pattern is somewhat different for men; knowledge of two or more ways to prevent HIV/AIDS transmission is most common among married men, those living in the West region, and those with a higher education.

One of the core HIV/AIDS prevention concepts is the knowledge that a person can contract HIV by having unprotected sex with an apparently healthy-looking person. In the 1999 KDHS, respondents were asked whether or not a healthy-looking person can have the AIDS virus. The results are presented in Table 13.4. Thirteen percent of women and 12 percent of men answered

Table 13.2.1 Knowledge of ways to avoid AIDS: women

Among women who have heard of AIDS, percentage who know of specific ways to avoid AIDS and percentage with misinformation, by background characteristics, Kazakhstan 1999

Background characteristic	Ways to avoid AIDS																
	No way to avoid AIDS	Abstain from sex	Use condoms	Have only one sexual partner	Limit number of sexual partners	Avoid sex with prostitutes	Avoid sex with homosexuals	Avoid sex with intrav. drug users	Avoid transfusions	Avoid injections	Avoid kissing	Avoid mosquito bites	Seek protection from traditional healer	Other	Don't know any way	Percentage with any misinformation[1]	Number of women
Age																	
15-19	2.8	12.3	38.5	35.5	9.6	4.0	2.2	9.5	7.9	11.6	0.9	0.1	0.2	16.5	30.8	1.1	751
20-24	3.3	13.5	40.2	40.5	11.8	2.9	2.5	6.9	11.5	17.3	0.8	0.0	0.2	16.2	24.4	1.1	645
25-29	3.1	14.9	40.6	48.8	11.5	4.6	2.2	7.8	9.8	14.7	1.6	0.3	0.3	19.0	21.8	1.7	685
30-39	2.4	16.3	35.9	55.1	13.8	5.5	2.2	8.3	12.9	16.0	1.4	0.6	0.6	20.1	17.4	1.9	1,428
40-49	2.8	13.9	33.2	56.5	13.4	3.7	1.7	6.3	10.7	16.8	0.7	0.1	0.2	17.4	19.0	0.8	1,179
Marital status																	
Currently married	2.7	14.1	34.5	53.6	12.5	4.2	1.9	6.7	11.2	15.3	1.1	0.3	0.3	19.1	20.3	1.3	2,962
Formerly married	2.7	16.0	42.0	48.1	12.7	4.7	1.3	9.2	10.0	16.6	0.6	0.1	0.3	13.0	20.5	1.0	559
Never married	3.1	14.6	40.6	39.2	12.2	4.4	3.1	9.7	10.5	15.5	1.3	0.2	0.5	18.1	25.3	1.6	1,167
Residence																	
Urban	2.6	13.0	43.7	52.2	14.7	5.1	3.0	10.9	14.2	18.3	0.9	0.3	0.4	19.6	16.2	1.3	2,646
Rural	3.0	16.3	28.1	45.7	9.5	3.2	1.0	3.7	6.6	11.9	1.3	0.2	0.3	16.3	28.5	1.5	2,043
Region																	
Almaty City	2.4	18.2	45.1	49.1	13.5	5.0	4.7	14.8	19.2	21.2	0.8	0.8	0.5	19.2	11.9	1.7	291
South	2.9	24.7	23.5	43.8	7.3	0.5	0.7	2.8	3.8	9.6	1.4	0.0	0.0	9.6	30.1	1.4	1,417
West	2.4	26.7	45.8	41.7	16.0	3.5	2.4	6.9	13.5	19.6	0.2	0.1	0.0	9.2	16.1	0.2	581
Central	1.8	7.7	44.3	53.7	10.9	3.1	0.6	10.2	13.6	12.2	0.2	0.1	1.3	16.1	14.9	1.5	474
North	2.0	1.2	39.7	55.5	13.3	7.5	1.9	8.6	13.5	19.0	1.5	0.6	0.6	37.7	16.7	1.7	1,248
East	5.2	9.9	43.6	53.4	19.1	7.3	5.2	12.4	13.5	17.6	1.3	0.2	0.1	8.9	26.0	1.4	678
Education																	
Primary/secondary	3.7	14.3	31.4	40.0	10.9	2.9	1.4	5.5	5.9	10.0	0.8	0.0	0.1	13.1	32.5	0.9	1,837
Secondary-special	2.4	13.1	39.4	54.1	12.8	4.8	1.9	8.3	12.9	17.2	0.9	0.1	0.1	19.5	16.4	1.0	1,888
Higher	1.9	17.4	42.6	58.0	14.5	6.0	3.8	10.9	16.4	22.6	2.2	1.2	1.3	25.2	10.7	3.0	963
Ethnicity																	
Kazakh	2.8	18.3	29.7	44.2	11.9	3.3	1.8	5.6	7.4	12.0	1.2	0.3	0.4	14.5	27.5	1.5	2,504
Russian	3.0	9.0	47.7	54.4	12.9	5.9	2.9	11.7	16.3	21.0	0.8	0.2	0.2	21.8	14.4	1.1	1,441
Other	2.4	12.1	40.2	56.9	13.3	4.5	1.7	7.3	12.1	16.5	1.3	0.2	0.4	23.3	15.5	1.4	743
Total	2.8	14.4	36.9	49.4	12.4	4.3	2.1	7.7	10.9	15.5	1.1	0.3	0.3	18.2	21.5	1.3	4,688

[1] Includes: avoiding kissing, mosquito bites, and other; seeking protection from traditional healer.

Table 13.2.2 Knowledge of ways to avoid AIDS: men

Among men who have heard of AIDS, percentage who know of specific ways to avoid AIDS and percentage with misinformation, by background characteristics, Kazakhstan 1999

Background characteristic	No way to avoid AIDS	Ways to avoid AIDS: Abstain from sex	Use condoms	Have only one sexual partner	Limit limit sexual partner	Avoid sex with prostitutes	Avoid sex with homosexuals	Avoid sex with intrav. drug users	Avoid transfusions	Avoid injections	Avoid kissing	Avoid mosquito bites	Seek protection from traditional healer	Other	Don't know any way	Percentage with any misinformation[1]	Number of men
Age																	
15-19	0.0	16.6	70.5	17.0	12.2	23.9	0.8	18.4	18.5	20.9	1.4	0.0	0.0	4.8	16.0	1.4	220
20-24	2.4	12.1	70.6	37.1	14.5	32.4	3.1	9.8	27.1	36.0	4.2	0.3	0.6	5.3	14.0	4.5	177
25-29	4.7	6.8	77.2	39.6	14.0	36.9	2.9	8.9	22.6	28.8	1.8	0.0	0.0	8.3	9.2	1.8	175
30-39	1.6	9.4	69.4	55.1	15.9	25.5	2.6	9.6	21.7	29.3	1.2	0.0	0.0	5.2	9.7	1.2	400
40-49	3.0	12.6	72.4	57.7	13.7	26.2	3.5	15.1	19.4	24.4	0.2	0.5	0.0	7.5	9.2	0.5	285
50-59	1.9	12.8	57.0	46.0	15.7	27.0	1.6	8.6	19.6	27.4	2.5	0.0	0.0	6.3	18.9	2.5	165
Marital status																	
Currently married	2.3	8.9	70.2	53.9	16.1	29.7	2.7	12.0	22.6	29.2	1.3	0.1	0.0	6.3	10.0	1.4	928
Formerly married	5.7	18.8	63.9	40.4	9.4	10.1	1.9	5.2	10.7	19.1	0.0	0.0	0.7	8.0	20.6	0.7	73
Never married	1.1	16.1	70.0	24.5	11.8	26.8	2.1	12.8	20.2	25.4	2.7	0.1	0.1	5.5	15.3	2.7	421
Residence																	
Urban	2.7	12.8	75.8	42.7	13.6	25.8	3.4	14.0	17.8	26.1	1.4	0.2	0.1	9.8	9.7	1.5	787
Rural	1.5	10.1	62.5	46.8	15.6	30.4	1.3	9.3	25.5	29.4	2.0	0.0	0.0	1.6	15.1	2.0	635
Region																	
Almaty City	2.4	19.0	63.7	40.5	13.7	22.0	8.9	7.7	11.3	30.4	1.2	0.6	0.0	19.0	10.1	1.2	90
South	1.6	18.0	47.7	39.7	11.9	48.2	1.4	1.8	53.5	48.5	4.5	0.0	0.0	4.9	17.8	4.5	415
West	0.8	3.9	87.1	47.9	0.9	58.3	4.1	24.4	13.2	40.2	0.8	0.5	0.0	0.9	6.9	1.3	180
Central	1.0	25.4	77.7	34.0	24.7	15.6	6.6	5.9	7.4	8.4	0.4	0.4	0.7	27.0	4.1	0.7	139
North	3.0	1.6	86.6	60.1	23.1	7.0	0.0	23.8	6.3	8.8	0.0	0.0	0.0	0.0	10.0	0.0	396
East	3.3	11.8	64.6	29.8	8.4	10.8	2.6	4.1	5.4	22.1	0.8	0.0	0.0	5.3	15.7	0.8	203
Education																	
Primary/secondary	1.5	13.6	65.5	37.7	10.4	29.5	1.5	10.5	21.7	25.1	1.7	0.0	0.1	4.8	15.9	1.7	649
Secondary-special	2.8	8.8	73.7	48.9	17.3	25.8	2.7	12.2	19.9	27.8	2.0	0.1	0.1	5.3	9.8	2.0	575
Higher	2.3	12.6	72.7	54.3	19.5	28.4	5.1	15.4	23.8	35.0	0.5	0.7	0.0	13.1	6.3	1.0	198
Ethnicity																	
Kazakh	2.2	14.3	62.8	42.0	11.6	37.7	2.2	8.4	27.3	34.1	2.1	0.1	0.0	5.1	14.8	2.2	730
Russian	2.7	6.2	76.9	46.0	18.4	15.4	3.0	13.9	11.7	18.7	0.6	0.1	0.1	7.7	9.3	0.6	458
Other	1.0	13.7	78.1	49.6	15.8	21.5	2.5	18.7	21.2	24.6	2.2	0.2	0.2	6.3	9.2	2.4	234
Total	2.1	11.6	69.8	44.5	14.5	27.8	2.5	11.9	21.3	27.6	1.6	0.1	0.1	6.1	12.1	1.7	1,422

[1] Includes: avoiding kissing, mosquito bites, and other; seeking protection from traditional healer.

Table 13.3.1 Knowledge of valid ways to avoid AIDS: women

Percent distribution of women by knowledge of valid ways to avoid HIV/AIDS, according to background characteristics, Kazakhstan, 1999

Background characteristic	Knowledge of valid ways to avoid HIV/AIDS: No way to avoid HIV/AIDS: Does not know of HIV/AIDS	Knowledge of valid ways to avoid HIV/AIDS: No way to avoid HIV/AIDS: Knows of HIV/AIDS but not how to avoid HIV/AIDS	Knowledge of valid ways to avoid HIV/AIDS: Ways to avoid HIV/AIDS: One way	Knowledge of valid ways to avoid HIV/AIDS: Ways to avoid HIV/AIDS: Two or more ways	Total	Number of women
Age						
15-19	5.1	33.0	26.8	35.1	100.0	791
20-24	3.2	27.7	28.5	40.6	100.0	666
25-29	0.9	25.5	28.0	45.5	100.0	692
30-39	1.4	21.4	33.2	44.0	100.0	1,448
40-49	2.0	22.7	33.2	42.1	100.0	1,203
Marital status						
Currently married	1.9	24.2	32.2	41.7	100.0	3,018
Formerly married	1.3	22.6	30.0	46.2	100.0	567
Never married	4.0	28.5	27.4	40.1	100.0	1,215
Residence						
Urban	0.9	19.5	31.6	48.1	100.0	2,668
Rural	4.2	32.1	29.7	34.0	100.0	2,132
Region						
Almaty City	0.0	13.7	29.4	56.9	100.0	291
South	2.6	33.9	32.2	31.3	100.0	1,455
West	7.5	20.2	28.4	44.0	100.0	628
Central	0.3	19.4	31.4	48.9	100.0	475
North	0.9	21.4	34.9	42.8	100.0	1,259
East	2.1	26.6	22.3	49.0	100.0	692
Education						
Primary/secondary	4.7	35.6	27.4	32.4	100.0	1,927
Secondary-special	1.0	19.8	33.3	45.9	100.0	1,908
Higher	0.3	14.8	32.4	52.6	100.0	965
Ethnicity						
Kazakh	3.2	31.7	30.2	34.8	100.0	2,587
Russian	0.9	17.0	30.4	51.7	100.0	1,454
Other	2.1	18.0	33.2	46.7	100.0	760
Total	2.3	25.1	30.7	41.8	100.0	4,800

this question incorrectly—i.e., no, a healthy-looking person cannot have the AIDS virus. Women living in Almaty City and the Central region and men living in the Central region are the most likely to be misinformed on this question; 18 percent of women and men in the Central region do not know that a healthy-looking person can be infected with HIV.

Table 13.3.2 Knowledge of valid ways to avoid AIDS: men

Percent distribution of men by knowledge of valid ways to avoid HIV/AIDS, according to background characteristics, Kazakhstan, 1999

Background characteristic	Knowledge of valid ways to avoid HIV/AIDS: No way to avoid HIV/AIDS: Does not know of HIV/AIDS	Knowledge of valid ways to avoid HIV/AIDS: No way to avoid HIV/AIDS: Knows of HIV/AIDS but not how to avoid HIV/AIDS	Knowledge of valid ways to avoid HIV/AIDS: Ways to avoid HIV/AIDS: One way	Knowledge of valid ways to avoid HIV/AIDS: Ways to avoid HIV/AIDS: Two or more ways	Total	Number of men
Age						
15-19	2.8	16.9	21.7	58.6	100.0	226
20-24	2.4	14.1	19.2	64.3	100.0	182
25-29	0.5	9.5	21.3	68.7	100.0	176
30-39	0.2	10.6	18.7	70.6	100.0	401
40-49	0.5	9.7	16.0	73.9	100.0	286
50-59	2.5	19.1	16.0	62.5	100.0	170
Marital status						
Currently married	0.5	10.4	17.3	71.8	100.0	933
Formerly married	1.1	20.4	19.2	59.3	100.0	74
Never married	2.8	16.4	21.6	59.2	100.0	433
Residence						
Urban	0.4	10.5	20.3	68.7	100.0	790
Rural	2.2	15.3	16.7	65.8	100.0	650
Region						
Almaty City	0.0	10.1	26.8	63.1	100.0	90
South	2.5	17.6	9.1	70.8	100.0	426
West	1.4	7.2	10.9	80.5	100.0	182
Central	0.5	6.8	34.5	58.2	100.0	139
North	0.0	10.7	15.4	73.9	100.0	396
East	2.0	16.4	37.4	44.2	100.0	207
Education						
Primary/secondary	1.9	16.4	16.0	65.7	100.0	661
Secondary-special	1.0	10.0	21.5	67.6	100.0	581
Higher	0.0	8.4	19.4	72.1	100.0	198
Ethnicity						
Kazakh	2.2	15.1	14.4	68.3	100.0	747
Russian	0.3	10.6	26.9	62.1	100.0	460
Other	0.0	9.2	16.3	74.6	100.0	234
Total	1.2	12.7	18.7	67.4	100.0	1,440

13.3 Social Aspects of HIV/AIDS Prevention and Mitigation

Social aspects of HIV/AIDS prevention and mitigation include, among others, the stigma regarding AIDS and people affected by AIDS, and negative attitudes toward people with AIDS. The stigma is related to the public's perception of HIV/AIDS as associated with marginalized groups such as injecting drug users, sex workers, and homosexuals. The stigma is sometimes expressed by open discrimination, which is of concern because it affects HIV/AIDS prevention efforts.

Table 13.4 Knowledge of AIDS related issues

Percent distribution of women and men who know of HIV/AIDS by response to the question "can a healthy-looking person have AIDS?" according to background characteristics, Kazakhstan 1999

Background characteristic	Women's response to question					Men's response to question				
	Yes	No	Don't know/ missing	Total	Number of women	Yes	No	Don't know/ missing	Total	Number of men
Age										
15-19	63.4	16.4	20.2	100.0	751	71.1	8.8	20.1	100.0	220
20-24	67.7	13.4	18.9	100.0	645	64.7	12.5	22.8	100.0	177
25-29	71.1	13.0	15.9	100.0	685	66.7	10.3	23.1	100.0	175
30-39	70.5	11.7	17.8	100.0	1,428	64.5	14.2	21.3	100.0	400
40-49	67.8	11.9	20.2	100.0	1,179	71.3	10.3	18.5	100.0	285
50-59	NA	NA	NA	NA	NA	61.3	17.2	21.5	100.0	165
Marital status										
Currently married	69.4	11.8	18.9	100.0	2,962	65.2	13.9	20.9	100.0	928
Formerly married	67.9	13.9	18.2	100.0	559	64.7	13.8	21.5	100.0	73
Never married	66.2	15.4	18.4	100.0	1,167	70.6	8.3	21.0	100.0	421
Residence										
Urban	73.2	12.4	14.5	100.0	2,646	71.1	12.0	16.9	100.0	787
Rural	62.2	13.7	24.1	100.0	2,043	61.4	12.5	26.0	100.0	635
Region										
Almaty City	65.3	18.1	16.7	100.0	291	65.5	12.5	22.0	100.0	90
South	62.0	14.7	23.3	100.0	1,417	63.4	13.4	23.2	100.0	415
West	73.3	9.9	16.8	100.0	581	64.4	8.8	26.8	100.0	180
Central	73.2	18.4	8.4	100.0	474	69.5	18.1	12.5	100.0	139
North	70.9	10.4	18.7	100.0	1,248	69.4	11.8	18.7	100.0	396
East	71.0	10.5	18.5	100.0	678	69.6	9.5	20.9	100.0	203
Education										
Primary/secondary	60.0	14.0	26.0	100.0	1,837	63.9	11.2	24.9	100.0	649
Secondary-special	71.4	13.0	15.6	100.0	1,888	69.4	14.5	16.1	100.0	575
Higher	78.6	10.7	10.7	100.0	963	68.8	9.1	22.1	100.0	198
Ethnicity										
Kazakh	63.0	14.2	22.7	100.0	2,504	63.7	11.2	25.0	100.0	730
Russian	76.6	11.1	12.3	100.0	1,441	70.2	13.2	16.7	100.0	458
Other	70.6	12.1	17.3	100.0	743	69.8	13.5	16.7	100.0	234
Total	68.4	12.9	18.7	100.0	4,688	66.8	12.2	21.0	100.0	1,422

NA = Not applicable

There are several measures of the stigma of AIDS and discrimination toward people with HIV/AIDS. For example, attitudes toward people with HIV/AIDS can be measured on the basis of answers to a series of hypothetical questions. Such questions include willingness of the respondent to care for a relative who became sick with the AIDS virus and whether or not the respondent thinks people with AIDS should be able to keep their HIV status private.

Tables 13.5.1 and 13.5.2 show that 40 percent of women and 26 percent of men in Kazakhstan believe that a person infected with HIV should be able to keep this information private. Such an attitude is more common among men and women living in urban areas, those with secondary-special or higher education, and those of Russian or other ethnicities than it is among other population subgroups.

Table 13.5.1 Social aspects of AIDS prevention and mitigation: women

Percent distribution of women who know of HIV/AIDS by responses to questions on various social aspects of AIDS prevention and mitigation, according to background characteristics, Kazakhstan 1999

Background characteristic	Believe person with AIDS should be allowed to keep info private			Willing to care for relative with AIDS at home			Number of women
	Yes	No	Don't know/ missing	Yes	No	Don't know/ missing	
Age							
15-19	30.9	57.4	11.8	34.9	34.8	30.3	751
20-24	36.7	53.0	10.3	39.0	34.6	26.5	645
25-29	37.1	52.2	10.7	45.0	31.1	23.9	685
30-39	40.5	49.7	9.7	40.2	30.5	29.4	1,428
40-49	47.9	44.8	7.3	44.1	27.0	28.9	1,179
Marital status							
Currently married	41.1	49.3	9.6	40.7	32.0	27.3	2,962
Formerly married	43.6	48.0	8.4	45.4	25.7	28.9	559
Never married	34.8	54.7	10.5	39.2	30.8	30.1	1,167
Residence							
Urban	42.3	47.5	10.2	42.8	27.3	29.9	2,646
Rural	36.6	54.5	9.0	38.4	35.6	26.1	2,043
Region							
Almaty City	38.5	50.2	11.3	49.4	20.6	30.0	291
South	31.2	61.8	7.1	31.7	46.3	22.0	1,417
West	33.6	59.5	6.8	33.7	36.1	30.2	581
Central	41.5	49.8	8.7	49.0	22.8	28.2	474
North	52.8	36.0	11.2	47.1	23.1	29.9	1,248
East	38.8	46.6	14.6	45.4	19.1	35.5	678
Education							
Primary/secondary	34.8	54.1	11.0	36.5	36.0	27.5	1,837
Secondary-special	43.9	47.0	9.1	44.3	28.0	27.6	1,888
Higher	41.3	50.5	8.2	42.3	27.0	30.6	963
Ethnicity							
Kazakh	33.9	57.4	8.7	34.4	38.7	27.0	2,504
Russian	47.1	42.6	10.3	50.2	19.0	30.8	1,441
Other	45.8	42.5	11.6	44.6	28.0	27.5	743
Total	39.8	50.5	9.7	40.9	30.9	28.2	4,688

Fifty-three percent of women living in the North region believe that this information should be kept private, compared with less than 42 percent living in other regions of Kazakhstan. Among men, approximately 50 percent of those living in the Central and East regions believe that information about having HIV/AIDS should be kept private, compared with only 8 percent among those living in the South and West regions.

Forty-one percent of women and 64 percent of men reported that they would be willing to care for a relative infected with HIV. No significant differences were observed between the attitudes of women and men in various population subgroups. About 31 percent of women and 15 percent of men reported that they would not be willing to provide such care for a relative infected with HIV.

Table 13.5.2 Social aspects of AIDS prevention and mitigation: men

Percent distribution of men who know of HIV/AIDS by responses to questions on various social aspects of AIDS prevention and mitigation, according to background characteristics, Kazakhstan 1999

Background characteristic	Believe person with AIDS should be allowed to keep info private			Willing to care for relative with AIDS at home			Number of men
	Yes	No	Don't know/ missing	Yes	No	Don't know/ missing	
Age							
15-19	25.3	63.8	10.9	55.6	18.7	25.8	220
20-24	21.4	74.3	4.3	69.7	12.7	17.6	177
25-29	24.9	66.5	8.6	60.8	18.1	21.2	175
30-39	29.7	60.9	9.4	67.1	15.0	17.9	400
40-49	24.5	67.2	8.4	63.2	12.4	24.4	285
50-59	27.4	62.0	10.6	66.9	13.1	20.0	165
Marital status							
Currently married	27.4	64.5	8.1	65.6	14.8	19.6	928
Formerly married	32.9	53.2	13.9	68.6	17.7	13.7	73
Never married	22.0	68.3	9.7	60.0	14.6	25.4	421
Residence							
Urban	31.9	58.4	9.7	65.4	18.0	16.6	787
Rural	18.9	73.3	7.8	62.5	11.0	26.5	635
Region							
Almaty City	31.0	53.6	15.5	56.5	20.8	22.6	90
South	8.3	81.2	10.5	59.4	13.6	27.0	415
West	7.5	84.8	7.7	67.7	1.6	30.8	180
Central	48.0	43.3	8.7	63.8	19.8	16.4	139
North	32.1	63.0	4.9	74.0	13.3	12.7	396
East	50.1	38.4	11.5	54.5	26.6	18.8	203
Education							
Primary/secondary	23.0	66.6	10.5	61.7	17.1	21.1	649
Secondary-special	28.1	65.0	7.0	66.9	13.7	19.4	575
Higher	30.6	60.4	8.9	63.5	11.0	25.5	198
Ethnicity							
Kazakh	17.4	73.1	9.5	63.0	14.5	22.5	730
Russian	35.5	55.3	9.2	65.4	16.6	18.0	458
Other	34.6	59.1	6.3	64.9	12.7	22.3	234
Total	26.1	65.1	8.8	64.1	14.9	21.0	1,422

Discussing HIV prevention with one's partner is an important aspect of preventive behavior. As seen in Table 13.6, 39 percent of currently married women and 27 percent of currently married men reported that they had talked about ways to prevent HIV infection with their spouses or partners. The level of communication is highest among women and men living in urban areas, those with a secondary-special or higher education, and those of Russian or other ethnicities.

13.4 Knowledge of Signs and Symptoms of Other Sexually Transmitted Infections

As mentioned above, sexually transmitted infections (STIs) other than HIV/AIDS are a major public health problem in Kazakhstan. The presence of STIs, such as syphilis, gonorrhea, and chlamydia, increases the likelihood that HIV is also present. Therefore, HIV/AIDS prevention

programs should also focus on preventing and treating other STIs. Improving knowledge of STIs and their symptoms, along with promotion of changes in sexual behavior, are important components of such programs.

Respondents to the 1999 KDHS were asked if they had heard of any sexually transmitted infections other than AIDS. If they answered yes, they were then asked which signs and symptoms of such infection they could identify in women and men. As presented in Table 13.7.1, 18 percent of women said that they had not heard of any STIs other than HIV/AIDS. The percentage of women lacking knowledge of STIs was highest among those who never married, the residing in rural areas, those living in the South and West regions, those with a lower level of education, and those of Kazakh ethnicity.

Table 13.6 Discussion with partner concerning HIV prevention

Percent distribution of women and men who are married or living together and who know about HIV/AIDS, by whether or not they discussed HIV prevention with their partner, according to background characteristics, Kazakhstan 1999

Background characteristic	Discussed HIV prevention with partner: women					Discussed HIV prevention with partner: men				
	Yes	No	Don't know/ missing	Total	Number of women	Yes	No	Don't know/ missing	Total	Number of men
Age										
20-24	36.1	63.9	0.0	100.0	343	16.6	78.8	4.5	100.0	57
25-29	42.5	57.1	0.4	100.0	501	26.0	74.0	0.0	100.0	118
30-39	42.1	57.5	0.4	100.0	1,147	34.2	65.3	0.5	100.0	343
40-49	33.8	65.8	0.4	100.0	913	29.1	70.5	0.4	100.0	253
50-59	NA	NA	NA	NA	NA	13.4	86.6	0.0	100.0	156
Residence										
Urban	41.8	57.9	0.4	100.0	1,584	32.1	67.2	0.7	100.0	529
Rural	34.7	64.9	0.4	100.0	1,378	20.7	78.8	0.5	100.0	399
Region										
Almaty City	47.4	52.3	0.3	100.0	159	31.2	67.9	0.9	100.0	58
South	44.3	55.2	0.5	100.0	907	21.1	78.4	0.5	100.0	262
West	31.8	68.0	0.2	100.0	368	35.4	64.2	0.5	100.0	122
Central	39.7	59.9	0.4	100.0	281	33.8	65.7	0.5	100.0	92
North	38.1	61.4	0.5	100.0	833	28.7	70.3	1.0	100.0	260
East	28.1	71.7	0.2	100.0	414	22.4	77.6	0.0	100.0	134
Education										
Primary/secondary	32.8	67.0	0.1	100.0	1,020	19.5	79.5	1.1	100.0	351
Secondary-special	39.1	60.6	0.4	100.0	1,355	29.8	69.8	0.4	100.0	421
Higher	47.0	52.2	0.9	100.0	586	37.6	62.4	0.0	100.0	156
Ethnicity										
Kazakh	36.9	62.6	0.5	100.0	1,566	22.4	77.1	0.5	100.0	454
Russian	38.9	60.7	0.4	100.0	897	33.3	66.5	0.2	100.0	304
Other	42.7	57.3	0.0	100.0	498	29.1	69.4	1.5	100.0	170
Total	38.5	61.1	0.4	100.0	2,962	27.2	72.2	0.6	100.0	928

NA = Not applicable

Table 13.7.1 Knowledge of signs and symptoms of STIs: women

Percent distribution of women by knowledge of signs and symptoms associated with sexually transmitted infections (STI) other than HIV/AIDS, by selected background characteristics, Kazakhstan 1999

Background characteristic	Knowledge of specific signs or symptoms of STIs: No knowledge of STIs	Does not know any STI symptoms	Knows one symptom	Knows two or more symptoms	Total	Number of women
Age						
15-19	36.0	42.2	4.2	17.6	100.0	791
20-24	17.7	37.8	5.8	38.7	100.0	666
25-29	14.6	36.6	5.2	43.6	100.0	692
30-39	12.4	35.0	4.4	48.2	100.0	1,448
40-49	13.4	37.2	6.3	43.2	100.0	1,203
Marital status						
Currently married	14.6	37.0	5.2	43.1	100.0	3,018
Formerly married	9.4	33.5	5.2	51.9	100.0	567
Never married	28.7	40.0	4.9	26.4	100.0	1,215
Residence						
Urban	10.5	35.4	5.8	48.3	100.0	2,668
Rural	26.4	39.8	4.3	29.4	100.0	2,132
Region						
Almaty City	5.0	32.1	8.8	54.1	100.0	291
South	32.0	31.9	4.7	31.4	100.0	1,455
West	23.2	37.8	3.7	35.2	100.0	628
Central	8.3	38.9	8.6	44.2	100.0	475
North	6.1	44.2	4.7	45.0	100.0	1,259
East	14.8	37.1	4.0	44.0	100.0	692
Education						
Primary/secondary	29.7	41.0	4.3	25.0	100.0	1,927
Secondary-special	11.1	36.6	5.2	47.2	100.0	1,908
Higher	6.2	31.5	6.8	55.5	100.0	965
Ethnicity						
Kazakh	26.6	37.1	4.4	31.9	100.0	2,587
Russian	4.3	38.2	5.9	51.6	100.0	1,454
Other	12.4	36.5	6.2	44.9	100.0	760
Total	17.6	37.3	5.1	39.9	100.0	4,800

Five percent of women in Kazakhstan know one symptom of STIs and 40 percent know two or more symptoms, such as abdominal pain, genital discharge, and burning pain on urination. Knowledge of symptoms is higher among older women; among currently or formerly married women; among women in urban areas, Almaty City, and the Central region; among women with a higher education; and among women of Russian ethnicity.

Information on knowledge of STIs and their symptoms among men is presented in Table 13.7.2. Such knowledge is higher among men than among women; only 7 percent of men in the 1999 KDHS had not heard of any STIs. Ten percent of men know one symptom of an STI, whereas 59 percent know two or more symptoms of STIs. Knowledge of symptoms of STIs is high in all subgroups of men. A remarkably high level of knowledge of STI symptoms was observed among men living in the North region, 90 percent of whom know two or more symptoms of STI.

Table 13.7.2 Knowledge of signs and symptoms of STIs: men

Percent distribution of men by knowledge of signs and symptoms associated with sexually transmitted infections (STI), by selected background characteristics, Kazakhstan 1999

Background characteristic	Knowledge of specific signs or symptoms of STIs: No knowledge of STIs	Does not know any STI symptoms	Knows one symptom	Knows two or more symptoms	Total	Number of men
Age						
15-19	15.9	31.7	9.0	43.4	100.0	226
20-24	6.1	19.4	10.0	64.5	100.0	182
25-29	2.7	21.4	13.1	62.8	100.0	176
30-39	4.4	22.4	10.1	63.0	100.0	401
40-49	3.5	21.8	10.1	64.6	100.0	286
50-59	9.5	35.1	5.9	49.6	100.0	170
Marital status						
Currently married	4.4	24.1	9.8	61.8	100.0	933
Formerly married	4.4	23.1	10.5	62.0	100.0	74
Never married	11.9	26.4	9.8	52.0	100.0	433
Residence						
Urban	5.4	25.8	10.3	58.5	100.0	790
Rural	8.1	23.5	9.2	59.2	100.0	650
Region						
Almaty City	4.2	32.1	9.5	54.2	100.0	90
South	8.0	25.9	6.5	59.6	100.0	426
West	2.6	46.5	10.9	39.9	100.0	182
Central	9.2	39.7	12.7	38.5	100.0	139
North	3.8	5.7	0.7	89.8	100.0	396
East	12.2	26.4	31.2	30.2	100.0	207
Education						
Primary/secondary	9.6	28.0	9.0	53.4	100.0	661
Secondary-special	4.6	21.8	11.0	62.5	100.0	581
Higher	2.6	22.3	9.0	66.1	100.0	198
Ethnicity						
Kazakh	9.2	29.6	8.6	52.5	100.0	747
Russian	3.4	19.7	13.2	63.7	100.0	460
Other	4.7	19.0	6.9	69.4	100.0	234
Total	6.6	24.7	9.8	58.8	100.0	1,440

A low level of knowledge of STIs and their symptoms was observed among young women and men age 15-19 compared with other population groups. Thirty-six percent of women in that age group said that they had not heard of any STI, and 42 percent reported no knowledge of STI symptoms. Among men 15-19 years of age, 16 percent reported that they had not heard of any STIs and 32 percent did not know any STI symptoms. Such a low level of knowledge of STIs and their symptoms among younger women and men raises concern because of the role young people play in determining the future of the HIV epidemic. Therefore, the HIV/AIDS prevention programs in Kazakhstan, besides focusing on the sexual behavior of young people, should work to persuade young people to improve their knowledge of STIs and STI symptoms.

13.5 Sexual Behavior

Promoting safe sexual behavior has been the most important area of HIV/AIDS prevention programs to date. This component of prevention programs includes encouraging lifelong, mutually monogamous relationships; reducing the overall number of sexual contacts outside marriage; and using condoms, especially with partners other than spouses. Since the HIV/AIDS epidemic in Kazakhstan is expected to grow as a result of heterosexual contacts, focusing on sexual behavior is envisioned as a key component of the HIV/AIDS prevention program. Information on sexual behavior is important in designing and monitoring a program that is aimed at preventing the spread of HIV/AIDS and other STIs.

The 1999 KDHS included questions about the sexual activity of respondents with their spouses and with other partners. These questions helped to determine the proportion of currently married and unmarried respondents who have had sex with a nonmarital, noncohabiting partner in the last 12 months. This information is an important indicator for prevention of HIV/AIDS and other STIs because the spread of such infections depends on unprotected sex with people who also have other partners. The results are presented in Tables 13.8.1 and 13.8.2.

On average, about 2 percent of currently married women reported having one or more sexual partners outside their marriage during the past 12 months. The percentage is slightly higher (4 percent) for women living in Almaty City. Men in Kazakhstan have more extramarital sexual relationships than women; on average, 10 percent of currently married men reported having sex with one or more women other than their spouse during the past 12 months. Twenty-two percent of currently married men age 20-24 reported having one or more extramarital relationships in the past 24 months. This percentage is also high among men residing in urban areas, men in Almaty City and the West and North regions, men with a secondary-special or higher education, and men of Russian ethnicity.

Tables 13.9.1 and 13.9.2 show the proportion of unmarried women and men who have had sex during the past 12 months by number of sexual partners and background characteristics. Partners who do not live together—who have sex only occasionally—are those who are most likely to have other partners during the course of a year. These relationships therefore carry a higher risk of transmission of HIV and other STIs than relationships that do not link into a wider sexual network.

Twenty-four percent of unmarried women and 29 percent of unmarried men have had sexual intercourse with one partner during the past 12 months. Having two or more sexual partners during the past 12 months was reported by 4 percent of unmarried women and 22 percent of unmarried men.

The 1999 KDHS respondents were also asked whether a condom was used the last time they had sexual intercourse with their spouse, cohabitating partner, or noncohabitating partner. The results are presented in Tables 13.10.1 and 13.10.2. About 5 percent of women and 8 percent of men reported using a condom the last time they had sexual intercourse with a spouse or cohabitating partner. A significantly higher percentage of men reported using a condom the last time they had sexual intercourse with a noncohabitating partner (58 percent) than did women (19 percent).

Table 13.8.1 Number of sexual partners: married women

Percent distribution of currently married women by number of persons with whom they had sexual intercourse in the past 12 months, including and excluding spouse of cohabitating partner, according to background characteristics, Kazakhstan 1999

Background characteristic	Number of partners including spouse				Number of partners excluding spouse				Number of women
	0	1	2+	Total	0	1	2+	Total	
Age									
15-19	0.0	98.6	1.4	100.0	93.9	6.1	0.0	100.0	63
20-24	0.6	98.0	1.4	100.0	96.9	3.0	0.2	100.0	353
25-29	0.3	98.4	1.3	100.0	97.8	2.0	0.2	100.0	506
30-39	0.4	98.7	0.9	100.0	98.4	1.5	0.0	100.0	1,163
40-49	2.5	97.0	0.5	100.0	98.7	1.0	0.3	100.0	933
Residence									
Urban	1.3	97.2	1.4	100.0	97.3	2.5	0.2	100.0	1,596
Rural	0.7	98.9	0.3	100.0	99.1	0.8	0.1	100.0	1,422
Region									
Almaty City	2.0	96.0	2.0	100.0	95.7	3.7	0.6	100.0	159
South	0.6	98.8	0.6	100.0	99.0	0.8	0.1	100.0	926
West	1.1	98.0	0.9	100.0	98.3	1.5	0.2	100.0	394
Central	0.7	99.1	0.2	100.0	98.2	1.8	0.0	100.0	281
North	1.4	97.4	1.2	100.0	97.9	2.1	0.0	100.0	837
East	1.2	97.7	1.1	100.0	97.5	2.1	0.3	100.0	422
Education									
Primary/secondary	1.0	98.4	0.6	100.0	98.5	1.4	0.1	100.0	1,064
Secondary-special	1.2	97.7	1.1	100.0	97.8	2.0	0.3	100.0	1,367
Higher	0.7	98.3	1.0	100.0	98.4	1.5	0.1	100.0	587
Ethnicity									
Kazakh	0.6	98.8	0.6	100.0	99.1	0.9	0.0	100.0	1,607
Russian	2.3	96.4	1.3	100.0	96.6	3.0	0.4	100.0	904
Other	0.3	98.6	1.1	100.0	98.1	1.8	0.1	100.0	507
Total	1.1	98.0	0.9	100.0	98.2	1.7	0.2	100.0	3,018

13.6 Summary

The current low level of the HIV epidemic in Kazakhstan provides a window of opportunity for early targeted interventions to prevent further spread of infection. However, the increase of cumulative incidences of HIV infection, as well as the exponential rate of increase of other STIs, suggests that such a window of opportunity is closing rapidly.

Development of programs to monitor HIV/AIDS and other STIs depends on the availability of background data on knowledge and attitudes towards HIV/AIDS and other STIs among various population groups. Such information can be used to identify weak links in the chain of HIV transmission and provide the means to develop targeted intervention programs to stop the spread of the disease.

Data collected during the 1999 KDHS show that the knowledge of HIV/AIDS among women and men in Kazakhstan is nearly universal and a large proportion of them know one or more valid ways to prevent HIV/AIDS infection, such as using condoms and limiting the number of sex partners.

Table 13.8.2 Number of sexual partners: married men

Percent distribution of currently married women by number of persons with whom they had sexual intercourse in the past 12 months, including and excluding spouse of cohabitating partner, according to background characteristics, Kazakhstan 1999

Background characteristic	Number of partners including spouse				Number of partners excluding spouse				Number of men
	0	1	2+	Total	0	1	2+	Total	
Age									
20-24	0.0	85.7	14.3	100.0	77.6	21.5	0.9	100.0	57
25-29	0.0	88.6	11.4	100.0	87.5	8.7	3.8	100.0	118
30-39	0.5	88.9	10.6	100.0	89.1	9.0	1.8	100.0	343
40-49	2.4	89.7	7.9	100.0	92.1	6.0	1.9	100.0	254
50-59	6.6	89.8	3.7	100.0	96.3	3.3	0.4	100.0	160
Residence									
Urban	1.0	88.2	10.8	100.0	88.1	10.0	1.8	100.0	529
Rural	3.4	90.0	6.6	100.0	93.0	5.2	1.8	100.0	404
Region									
Almaty City	2.8	84.4	12.8	100.0	86.2	11.9	1.8	100.0	58
South	2.0	93.0	5.0	100.0	93.7	3.2	3.0	100.0	266
West	0.5	83.3	16.3	100.0	83.7	14.0	2.3	100.0	122
Central	0.0	91.4	8.6	100.0	90.8	6.2	3.0	100.0	92
North	3.4	85.4	11.2	100.0	87.8	11.4	0.8	100.0	260
East	2.0	93.5	4.5	100.0	95.5	4.5	0.0	100.0	135
Education									
Primary/secondary	2.8	92.1	5.1	100.0	94.0	4.5	1.5	100.0	352
Secondary-special	1.4	87.6	10.9	100.0	89.1	9.3	1.7	100.0	425
Higher	2.0	85.6	12.4	100.0	85.1	12.1	2.8	100.0	156
Ethnicity									
Kazakh	2.2	89.9	7.9	100.0	91.9	6.8	1.3	100.0	458
Russian	2.1	87.1	10.8	100.0	89.2	8.1	2.7	100.0	304
Other	1.5	89.9	8.6	100.0	87.9	10.7	1.4	100.0	170
Total	2.0	89.0	9.0	100.0	90.3	7.9	1.8	100.0	933

In Kazakhstan there is some stigma associated with HIV/AIDS, which is evidenced by 40 percent of women and 26 percent of men preferring to keep information about HIV/AIDS private. The percentage of women and men who would not be willing to care for a relative with AIDS at home, which is an indicator of a discriminatory attitude towards such people, was 31 and 15 percent, respectively.

Despite the high prevalence of sexually transmitted infections (STIs) other than HIV/AIDS, 18 percent of women and 7 percent of men in Kazakhstan reported that they had not heard of such infections. Among those who know about STIs, more than 40 percent of women and more than 59 percent of men cited one or more symptoms such as abdominal pain, genital discharge, and burning pain on urination. The relatively low level of knowledge of STI symptoms among young women and men raises concern because of the potential contribution of young people to future epidemics of HIV/AIDS and other STIs in Kazakhstan.

Since the spread of HIV/AIDS and other STIs depends on unprotected sex with multiple partners, that 10 percent of married men reported having extramarital sexual relationships and that

Table 13.9.1 Number of sexual partners: unmarried women

Percent distribution of unmarried women by number of persons with whom they had sexual intercourse in the past 12 month, by selected background characteristics, Kazakhstan 1999

Background characteristic	Number of partners			Total	Number of women
	0	1	2+		
Age					
15-19	90.4	8.0	1.6	100.0	728
20-24	72.4	23.0	4.5	100.0	313
25-29	49.0	43.8	7.2	100.0	186
30-39	46.7	46.7	6.6	100.0	285
40-49	71.3	27.1	1.6	100.0	271
Residence					
Urban	65.8	29.7	4.5	100.0	1,073
Rural	84.0	14.0	2.0	100.0	709
Region					
Almaty City	57.6	34.0	8.3	100.0	132
South	82.5	15.0	2.5	100.0	529
West	77.5	20.2	2.4	100.0	234
Central	68.5	28.6	2.9	100.0	195
North	66.5	29.8	3.7	100.0	422
East	71.7	24.1	4.2	100.0	270
Education					
Primary/secondary	82.4	15.3	2.2	100.0	863
Secondary-special	61.4	34.0	4.6	100.0	541
Higher	68.2	27.0	4.7	100.0	378
Ethnicity					
Kazakh	84.7	13.2	2.0	100.0	979
Russian	55.4	38.9	5.7	100.0	550
Other	66.1	29.5	4.3	100.0	253
Total	73.0	23.5	3.5	100.0	1,782

22 percent of unmarried men have multiple sex partners further raises concern. The data also show that about 81 percent of women and 42 percent of men did not use a condom the last time they had sexual intercourse with a noncohabitating partner. Such behaviors carry a high risk of transmission of HIV and other STIs.

Background information on knowledge and attitudes toward HIV/AIDS and other STIs and the data on sexual behaviors can help to develop targeted programs that focus on those individuals and population groups most in need and most at risk of infection. The 1999 KDHS data show, for example, that educational programs to improve knowledge of STIs should target women and men in the age group 15-19, whereas programs promoting safe sexual behavior should be aimed at men of Russian ethnicity, men age 20-29, men in urban areas, especially Almaty City, and men in the North region.

Since the HIV/AIDS epidemic in Kazakhstan is characterized by pockets of infection in such regions as Temirtau City in Karaganda oblast, nationally based surveys, such as the 1999 KDHS should be complemented by in-depth assessment of sexual behavior and population-based HIV prevalence studies in the affected regions.

Table 13.9.2 Number of sexual partners: unmarried men

Percent distribution of unmarried men by number of persons with whom they had sexual intercourse in the past 12 month, by selected background characteristics, Kazakhstan 1999

Background characteristic	Number of partners			Total	Number of men
	0	1	2+		
Age					
15-19	73.5	14.4	12.1	100.0	225
20-24	29.2	40.8	30.0	100.0	124
25-29	17.3	36.9	45.8	100.0	58
30-39	34.1	37.4	28.5	100.0	58
40-49	29.1	56.6	14.3	100.0	32
Residence					
Urban	42.1	33.9	24.0	100.0	261
Rural	56.5	23.5	20.1	100.0	246
Region					
Almaty City	23.7	40.7	35.6	100.0	32
South	62.4	24.6	13.0	100.0	160
West	64.1	22.8	13.0	100.0	60
Central	36.8	46.3	16.9	100.0	47
North	41.0	20.3	38.7	100.0	136
East	41.1	42.9	16.0	100.0	72
Education					
Primary/secondary	61.0	24.7	14.3	100.0	309
Secondary-special	33.9	34.3	31.8	100.0	156
Higher	17.9	38.6	43.5	100.0	42
Ethnicity					
Kazakh	51.9	28.5	19.7	100.0	289
Russian	44.6	27.4	28.1	100.0	155
Other	47.3	34.2	18.5	100.0	63
Total	49.1	28.8	22.1	100.0	507

Table 13.10.1 Use of condoms: women

Percentage of women who have had sexual intercourse in the past year who used condoms during last sexual intercourse with spouse or cohabiting partner, with noncohabiting partner, and with any partner, by selected background characteristics, Kazakhstan 1999

Background characteristic	Spouse or cohabitating partner		Noncohabitating partner		Any partner	
	Used condom	Number of women	Used condom	Number of women	Used condom	Number of women
Age						
15-19	3.0	63	35.1	71	20.1	133
20-24	4.8	350	22.0	91	8.5	437
25-29	6.7	505	27.0	101	10.2	600
30-39	4.4	1,158	11.7	162	5.3	1,310
40-49	3.5	909	5.0	84	3.6	987
Marital status						
Currently married	4.5	2,986	0.0	28	4.5	2,986
Formerly married	-	0	9.1	281	9.1	281
Never married	-	0	35.0	200	35.0	200
Residence						
Urban	6.3	1,574	17.7	391	8.7	1,942
Rural	2.6	1,412	22.1	118	4.1	1,525
Region						
Almaty City	10.9	156	27.9	59	15.8	212
South	2.6	920	9.9	98	3.3	1,013
West	3.8	390	11.2	57	4.8	443
Central	3.2	278	14.2	62	5.2	340
North	5.5	825	23.2	151	8.3	967
East	6.3	417	23.2	81	9.2	493
Education						
Primary/secondary	3.4	1,053	12.2	158	4.6	1,205
Secondary-special	4.4	1,350	20.9	225	6.8	1,559
Higher	6.8	583	22.9	126	9.8	703
Ethnicity						
Kazakh	2.7	1,598	17.5	159	4.1	1,747
Russian	7.4	883	18.1	257	9.9	1,128
Other	5.3	505	22.5	92	8.1	591
Total	4.5	2,986	18.7	509	6.7	3,467

Table 13.10.2 Use of condoms: men

Percentage of men who have had sexual intercourse in the past year who used condoms during last sexual intercourse with spouse or cohabiting partner, with noncohabitating partner, and with any partner, by selected background characteristics, Kazakhstan 1999

Background characteristic	Spouse or cohabitating partner		Noncohabitating partner		Any partner	
	Used condom	Number of men	Used condom	Number of men	Used condom	Number of men
Age						
15-19	0.0	1	72.6	60	72.0	60
20-24	10.8	57	59.9	96	41.4	145
25-29	10.7	114	62.9	57	24.4	166
30-39	7.7	337	55.8	70	13.3	379
40-49	10.0	242	37.4	37	12.5	271
50-59	3.8	149	14.7	7	4.1	151
Marital status						
Currently married	8.2	899	46.5	69	8.3	914
Formerly married	-	0	45.7	56	45.7	56
Never married	-	0	65.7	202	65.7	202
Residence						
Urban	10.7	516	54.1	200	21.3	675
Rural	4.9	383	64.8	127	18.3	497
Region						
Almaty City	21.4	55	69.6	30	35.1	81
South	5.3	255	40.3	67	11.8	321
West	4.7	119	81.2	39	17.8	143
Central	5.0	90	36.5	35	13.2	122
North	10.7	249	66.1	107	27.2	331
East	9.1	132	56.4	49	20.7	174
Education						
Primary/secondary	8.7	337	52.8	133	19.5	463
Secondary-special	6.6	413	61.0	145	19.0	522
Higher	11.7	148	65.2	49	23.8	188
Ethnicity						
Kazakh	5.1	442	61.2	169	18.8	587
Russian	10.5	291	56.9	112	22.4	384
Other	12.4	166	50.9	45	19.0	201
Total	8.2	899	58.3	327	20.0	1,172

TUBERCULOSIS 14

Almaz T. Sharman and Dina Abitayeva

14.1 Tuberculosis: Epidemiology and Treatment Strategy

Tuberculosis (TB) is caused by bacteria called *Mycobacterium tuberculosis*. The disease usually affects the lungs, although in up to one-third of cases, other organs are involved. If properly treated, tuberculosis caused by drug-susceptible strains is curable in virtually all cases. If untreated, the disease may be fatal within 5 years in more than half of cases. Transmission is usually airborne through the spread of droplets produced by patients with infectious pulmonary tuberculosis.

Tuberculosis is a major global health problem; it kills 3 million people each year (WHO, 1998). The breakdown in health services, the spread of HIV/AIDS, and the emergence of multi-drug-resistant TB contribute to the worsening impact of this disease. In 1993, the World Health Organization (WHO, 1993) took an unprecedented step by declaring tuberculosis a global emergency. If control is not further strengthened, it is estimated that between the years 2000 and 2020, nearly one billion people will be newly infected, 200 million people will get sick, and 70 million people will die from TB (World Health Organization, 2000).

Tuberculosis is a major health problem in Kazakhstan: In 1999, TB prevalence was 323.0 per 100,000 population, while the morbidity and mortality rates were 141.0 and 30.7 per 100,000 population, respectively. Of great public health concern in Kazakhstan is the high prevalence of tuberculosis caused by strains of bacteria that are resistant to all major anti-TB drugs. Called multi-drug-resistant TB (MDR-TB), it is the result of inconsistent or partial treatment, patients not taking all their drugs regularly for the required period because they start to feel better, doctors and health workers prescribing the wrong treatment regimens, or the unreliable drug supply. While MDR-TB is treatable, it requires extensive chemotherapy (up to two years of treatment) that could be very expensive and is toxic to patients.

The WHO-recommended treatment strategy for detecting and curing TB is the Directly Observed Therapy Short Course (DOTS). DOTS combines five elements: political commitment, microscopy services, drug supplies, surveillance and monitoring systems, and use of highly efficacious regimes with direct observation of treatment. Kazakhstan has recently adopted DOTS, which has changed the procedures for diagnosis, classification, and treatment of the disease. The new standards should be a more cost-effective means for diagnosing and treating tuberculosis and should reduce the cost of treating the illness and ensure that in Kazakhstan the disease does not become an epidemic of multi-drug-resistant tuberculosis.

Effective TB prevention and successful implementation of a TB treatment strategy depend on many factors. Besides the main components of DOTS mentioned above, it is important to ensure public support of modern principles of TB treatment and proper TB preventive behavior, which are based on knowledge of symptoms of tuberculosis and mode of its transmission, as well as understanding that tuberculosis is a treatable disease that can be treated in an ambulatory setting outside the hospital if properly observed by a health worker. Background information on knowledge of TB prevention and treatment is important in the development of monitoring programs to assess the effectiveness of the TB treatment strategy.

In the 1999 KDHS, women and men were asked a series of questions about their knowledge of TB symptoms, its mode of transmission, and proper treatment of TB. This chapter summarizes the information at the national level and for geographic and socioeconomic subgroups of the population.

14.2 Exposure to Tuberculosis and Knowledge of Mode of Transmission

In the 1999 KDHS, women and men were asked questions on whether they had heard of an illness called tuberculosis. Respondents were also asked whether they, anyone in their family, or anyone with whom they have frequent contact, had ever had tuberculosis.

As seen from the data presented in Tables 14.1.1 and 14.1.2, knowledge of tuberculosis is nearly universal in Kazakhstan: 99 percent of women and men reported that they had heard of tuberculosis. Eleven percent of women and 9 percent of men told the interviewers someone in their family had had tuberculosis. This percentage was higher among people in rural areas, those living in the West and North regions, those who have a primary-secondary education, and those in the Kazakh ethnic group, than among other population groups.

Table 14.1.1 Knowledge of and exposure to tuberculosis: women

Percentage of women with knowledge of tuberculosis (TB) and the way it is transmitted, and exposure to tuberculosis; by background characteristics, Kazakhstan 1999

Background characteristic	Has heard of TB	Knows way TB is transmitted			Has family member who has had TB	Had frequent contact with someone who has had TB	Number of women
		Through the air when coughing	Other way	Does not know how TB spreads			
Age							
15-19	97.3	65.3	1.5	16.3	9.8	19.1	791
20-24	98.1	69.2	2.3	11.6	8.5	19.8	666
25-29	98.4	72.1	2.0	8.6	9.4	24.6	692
30-34	99.5	71.0	0.7	8.6	12.6	23.2	698
35-39	99.2	71.0	1.0	5.2	12.3	25.7	749
40-44	98.9	70.3	1.4	6.9	11.6	23.7	681
45-49	99.0	76.4	0.4	5.5	14.6	27.2	522
Residence							
Urban	99.1	77.7	1.1	6.8	9.9	23.1	2,668
Rural	97.9	61.3	1.6	12.1	12.7	23.2	2,132
Region							
Almaty City	99.4	83.2	1.4	4.6	7.1	18.4	291
South	98.4	65.3	2.2	14.6	11.1	16.1	1,455
West	97.7	75.8	0.8	5.6	15.4	31.5	628
Central	98.3	84.0	0.0	6.4	6.8	23.3	475
North	99.3	64.5	1.7	7.1	12.5	29.5	1,259
East	98.5	72.5	0.4	8.7	9.6	20.7	692
Education							
Primary/secondary	97.5	60.8	1.7	15.5	11.5	19.7	1,927
Secondary-special	99.0	74.3	1.1	6.2	11.6	25.5	1,908
Higher	99.8	82.1	1.0	2.4	9.6	25.3	965
Ethnicity							
Kazakh	98.2	68.2	1.2	10.5	12.8	22.1	2,587
Russian	99.2	75.9	1.4	6.4	9.7	24.8	1,454
Other	98.8	67.7	1.9	10.2	8.3	23.6	760
Total	98.6	70.5	1.3	9.2	11.1	23.2	4,800

Table 14.1.2 Knowledge of and exposure to tuberculosis: men

Percentage of men with knowledge of tuberculosis (TB) and the way it is transmitted, and exposure to tuberculosis, by background characteristics, Kazakhstan 1999

Background characteristic	Has heard of TB	Knows way TB is transmitted			Has family member who has had TB	Had frequent contact with someone who has had TB	Number of men
		Through the air when coughing	Other way	Does not know how TB spreads			
Age							
15-19	98.6	69.9	0.6	15.8	8.0	14.3	226
20-24	99.3	77.1	0.0	14.7	15.8	31.2	182
25-29	99.3	78.6	0.5	11.5	6.7	26.5	176
30-34	98.9	73.1	1.8	8.9	7.2	34.7	172
35-39	99.4	84.9	1.4	3.6	7.6	27.3	229
40-44	99.7	80.7	0.5	6.8	10.0	27.0	164
45-49	100.0	84.1	1.1	3.0	6.7	31.8	122
50-54	100.0	79.6	0.0	4.9	15.0	36.4	104
55-59	98.8	70.6	0.0	16.2	8.3	21.6	65
Residence							
Urban	99.4	82.5	0.6	7.0	8.3	26.8	790
Rural	99.1	72.1	0.9	12.5	10.5	27.8	650
Region							
Almaty City	98.8	81.5	0.6	9.5	5.4	18.5	90
South	99.7	63.4	1.7	18.8	7.1	29.8	426
West	100.0	98.5	0.0	1.5	14.1	8.0	182
Central	97.8	73.8	0.4	10.4	5.9	16.7	139
North	100.0	82.9	0.0	4.5	10.0	41.1	396
East	97.6	80.6	1.1	6.4	12.2	23.6	207
Education							
Primary/secondary	98.9	71.9	0.3	12.2	10.6	23.3	661
Secondary-special	99.5	79.7	1.5	8.8	8.5	30.6	581
Higher	99.7	92.2	0.0	2.5	7.4	30.8	198
Ethnicity							
Kazakh	99.0	75.1	0.8	11.8	12.1	26.2	747
Russian	99.6	81.9	0.7	6.0	4.9	26.9	460
Other	99.7	78.4	0.6	9.1	8.9	31.5	234
Total	99.3	77.8	0.7	9.5	9.3	27.3	1,440

Twenty-three percent of women and 27 percent of men have had someone other than a family member (neighbors, colleagues, or close friends) with whom they have had frequent contact who has had tuberculosis. The percentage of those who reported having had such frequent contacts was higher among women in the West and North regions and among men in the South and North regions.

The tables also show that 71 percent of women and 78 percent of men could correctly identify the way of transmitting tuberculosis (through the air when coughing). Nine percent of women and 10 percent of men did not know the way that TB is transmitted.

14.3 Treatment of Tuberculosis and Willingness to Care for a Person with Tuberculosis

The respondents in the 1999 KDHS were asked questions about treatment of tuberculosis. As seen from Tables 14.2.1 and 14.2.2, 68 percent of women and 62 percent of men knew that

Table 14.2.1 Knowledge of treatment of tuberculosis and willingness to provide home care: women

Percentage of women with knowledge that tuberculosis (TB) can be completely cured, percent distribution of women by perceived appropriate treatment for person with TB, and percentage willing to provide home care for a family member with tuberculosis, according to background characteristics, Kazakhstan 1999

Background characteristic	Knows that TB can be completely cured	Perceived appropriate treatment for person with TB: Hospitalized	Treated at home	Initially hospitalized followed by home treatment	Other	Don't know	Missing	Total	Willing to care for family member with TB	Number of women
Age										
15-19	54.3	81.3	1.3	12.0	0.9	1.8	2.7	100.0	78.8	791
20-24	65.5	79.5	1.9	13.6	0.9	2.3	1.9	100.0	83.7	666
25-29	64.4	81.9	1.2	13.0	1.5	0.9	1.6	100.0	84.9	692
30-34	69.0	83.1	2.1	12.6	0.9	0.6	0.6	100.0	89.5	698
35-39	71.2	81.3	1.8	14.5	0.9	0.6	0.9	100.0	93.4	749
40-44	74.7	82.6	2.0	12.3	1.2	0.7	1.1	100.0	92.6	681
45-49	77.2	81.1	2.8	12.8	1.2	0.9	1.2	100.0	92.8	522
Residence										
Urban	70.4	80.7	2.0	14.1	1.7	0.6	0.9	100.0	88.7	2,668
Rural	63.8	82.6	1.7	11.6	0.2	1.8	2.1	100.0	86.5	2,132
Region										
Almaty City	71.5	79.2	1.1	14.5	2.4	2.2	0.6	100.0	87.9	291
South	63.4	84.9	2.3	9.0	0.0	2.1	1.6	100.0	85.3	1,455
West	72.4	79.0	2.3	13.9	1.6	0.9	2.3	100.0	87.5	628
Central	77.6	88.6	0.7	5.7	2.5	0.6	1.9	100.0	92.6	475
North	66.7	80.6	1.1	16.2	1.3	0.2	0.7	100.0	88.5	1,259
East	64.4	74.8	2.8	19.0	0.9	0.9	1.6	100.0	88.0	692
Education										
Primary/secondary	59.6	84.9	1.2	9.2	0.5	1.7	2.5	100.0	83.4	1,927
Secondary-special	71.0	79.4	2.5	14.9	1.4	0.9	1.0	100.0	90.1	1,908
Higher	76.2	79.1	1.9	16.7	1.6	0.5	0.2	100.0	91.6	965
Ethnicity										
Kazakh	66.9	82.3	1.7	12.1	0.8	1.3	1.9	100.0	85.2	2,587
Russian	67.7	81.5	1.4	14.1	1.5	0.6	0.8	100.0	91.5	1,454
Other	68.8	79.1	3.1	13.8	1.1	1.6	1.2	100.0	89.1	760
Total	67.5	81.6	1.8	13.0	1.1	1.1	1.4	100.0	87.7	4,800

tuberculosis can be completely cured with proper medication. When asked whether a person should be hospitalized, treated at home, or both, when it is first discovered that he or she has tuberculosis, 82 percent of women and 88 percent of men responded that treatment should be given in a hospital. Thirteen percent of women and 9 percent of men believed that such a person should initially be treated in a hospital followed by home treatment. The percentage of women who believe that such a sequence of treatment is correct was high in Almaty City and the West, North and East regions, but relatively low in the South and Central regions. Only 2 percent of women and less than 1 percent of men cited the home as a place for TB treatment.

The tables also show that 88 percent of women and 95 percent of men would be willing to take home a family member for further treatment after completion of TB treatment at the hospital. This percentage was similarly high for all population subgroups.

Table 14.2.2 Knowledge of treatment of tuberculosis and willingness to provide home care: men

Percentage of men with knowledge that tuberculosis (TB) can be completely cured, percent distribution of men by perceived appropriate threatment for person with TB, and percentage willing to provide home care for a family member with tuberculosis, according to background characteristics, Kazakhstan 1999

Background characteristic	Knows that TB can be completely cured	Perceived appropriate treatment for person with TB							Willing to care for family member with TB	Number of men
		Hospi-talized	Treated at home	Initially hospitalized followed by home treatment	Other	Don't know	Missing	Total		
Age										
15-19	51.6	90.7	0.0	5.6	0.0	2.3	1.4	100.0	92.8	226
20-24	62.2	86.9	0.0	8.6	0.0	3.7	0.7	100.0	94.1	182
25-29	61.2	88.7	0.3	8.4	0.0	1.8	0.7	100.0	95.8	176
30-34	61.8	86.2	0.3	9.8	1.2	1.4	1.1	100.0	94.7	172
35-39	66.9	86.0	0.5	10.4	0.6	2.0	0.6	100.0	95.8	229
40-44	63.9	85.8	0.0	11.1	0.0	2.7	0.3	100.0	96.1	164
45-49	66.9	91.1	0.0	8.5	0.0	0.4	0.0	100.0	94.6	122
50-54	64.9	84.5	2.5	11.0	2.0	0.0	0.0	100.0	99.0	104
55-59	68.3	87.8	0.8	7.3	0.0	2.1	2.0	100.0	96.0	65
Residence										
Urban	63.7	87.5	0.7	9.5	0.5	1.2	0.7	100.0	95.5	790
Rural	60.3	87.8	0.0	8.2	0.2	2.9	0.9	100.0	94.8	650
Region										
Almaty City	63.7	81.5	0.6	11.9	0.0	4.2	1.8	100.0	88.7	90
South	70.5	85.6	0.5	7.6	1.3	4.8	0.3	100.0	96.7	426
West	20.1	98.9	0.0	0.6	0.0	0.5	0.0	100.0	96.3	182
Central	64.4	79.7	0.8	15.9	0.0	1.4	2.2	100.0	95.3	139
North	75.6	100.0	0.0	0.0	0.0	0.0	0.0	100.0	94.3	396
East	54.3	66.0	0.8	30.2	0.0	0.6	2.4	100.0	95.1	207
Education										
Primary/secondary	59.3	87.6	0.0	8.4	0.3	2.6	1.1	100.0	94.3	661
Secondary-special	60.8	88.9	0.2	8.4	0.6	1.5	0.5	100.0	95.7	581
Higher	75.9	84.0	2.1	12.2	0.0	1.2	0.5	100.0	96.2	198
Ethnicity										
Kazakh	59.9	87.0	0.2	9.0	0.2	2.7	1.0	100.0	96.3	747
Russian	65.3	86.7	0.7	9.4	0.9	1.7	0.6	100.0	93.7	460
Other	63.4	91.3	0.2	8.0	0.0	0.2	0.3	100.0	94.2	234
Total	62.2	87.6	0.4	8.9	0.4	2.0	0.7	100.0	95.2	1,440

14.4 Knowledge of Symptoms of Tuberculosis

In the 1999 KDHS, women and men were asked the following questions: "what signs or symptoms would lead you think that a person has tuberculosis" and "what are the symptoms of tuberculosis that would convince you to seek medical assistance"? The results showing knowledge of symptoms of tuberculosis are presented in Tables 14.3.1 and 14.3.2.

Without prompting, 56 percent of women and 47 percent of men correctly identified coughing for more than 3 weeks as a symptom of tuberculosis. Among other symptoms of tuberculosis, 21 percent of women and 41 percent of men cited fever, 13 percent of women and 14 percent of men cited blood in sputum, and 9 percent of women and 20 percent of men cited night sweating.

Table 14.3.1 Knowledge of symptoms of tuberculosis: women

Percentage of women with knowledge of symptoms of tuberculosis, by background characteristics, Kazakhstan 1999

Background characteristic	Symptoms of tuberculosis											Number of women
	Coughing more than 3 weeks	Fever	Blood in sputum	Loss of appetite	Night-sweating	Pain in chest	Tired-ness/ fatigue	Weight loss	Lethargy	Other	Missing	
Age												
15-19	50.2	13.5	6.4	12.1	4.2	4.8	4.3	7.2	8.5	7.3	0.0	791
20-24	53.1	19.9	10.3	17.6	9.7	4.9	4.5	10.1	12.9	5.6	0.0	666
25-29	59.3	17.5	14.5	18.1	9.8	6.9	9.3	9.9	18.7	6.7	0.0	692
30-34	57.3	23.1	15.2	20.8	8.8	9.1	11.4	10.3	15.9	8.5	0.0	698
35-39	57.6	23.8	14.9	21.0	9.3	6.6	9.9	10.8	19.5	4.4	0.1	749
40-44	57.0	24.2	12.5	18.5	10.2	6.2	9.5	9.7	18.2	6.7	0.0	681
45-49	55.2	23.6	14.7	20.8	9.1	7.5	9.8	8.5	19.8	7.8	0.2	522
Residence												
Urban	58.9	21.6	13.1	19.7	10.5	7.9	10.7	9.6	18.5	7.2	0.1	2,668
Rural	51.5	19.4	11.6	16.4	6.3	4.7	5.3	9.3	12.8	6.0	0.0	2,132
Region												
Almaty City	64.9	22.3	12.3	18.7	13.4	10.1	13.5	8.0	19.7	7.7	0.0	291
South	56.7	15.3	5.4	17.9	5.9	4.9	5.8	9.5	10.4	7.9	0.0	1,455
West	62.3	30.0	7.0	28.9	12.4	10.0	9.2	17.0	17.9	5.3	0.0	628
Central	49.0	18.8	24.6	19.4	17.2	5.9	6.4	11.9	13.3	2.3	0.1	475
North	54.7	21.1	17.9	13.8	7.1	6.4	9.8	7.0	20.6	9.7	0.0	1,259
East	49.5	22.7	14.2	16.3	5.9	5.7	9.0	6.3	17.9	2.5	0.1	692
Education												
Primary/secondary	49.9	16.5	9.1	13.8	5.1	4.9	4.1	9.0	9.8	5.4	0.0	1,927
Secondary-special	57.9	21.4	13.7	20.4	9.2	6.3	9.8	9.1	18.0	7.0	0.1	1,908
Higher	62.5	27.3	16.5	22.7	14.5	10.2	13.6	11.3	24.3	8.6	0.0	965
Ethnicity												
Kazakh	53.9	19.8	10.9	17.9	7.8	7.1	7.1	10.7	13.5	5.4	0.0	2,587
Russian	57.9	23.4	14.7	18.4	10.6	5.9	10.3	8.2	19.0	7.5	0.1	1,454
Other	57.0	17.7	13.6	19.0	7.7	5.6	8.4	7.7	18.7	9.4	0.0	760
Total	55.6	20.6	12.5	18.2	8.6	6.5	8.3	9.5	16.0	6.7	0.0	4,800

Identification of correct symptoms of tuberculosis correlated with the respondent's level of education and was higher among women and men in urban areas and among those in Almaty City than among other population groups.

The percentage of respondents who cited specific symptoms of tuberculosis that would convince them to seek medical assistance is presented in Tables 14.4.1 and 14.4.2. The listing of such symptoms follows the same pattern as the listing of symptoms that are known to the respondents. For example, coughing for more than 3 weeks was cited by 55 percent of women and 51 percent of men as a symptom convincing the respondents to seek medical assistance. Fever was cited in this context by 21 percent of women and 42 percent of men; blood in sputum was cited by 21 percent of women and 16 percent of men; and night sweating was cited by 8 percent of women and 20 percent of men.

Table 14.3.2 Knowledge of symptoms of tuberculosis: men

Percentage of men with knowledge of symptoms of tuberculosis, by background characteristics, Kazakhstan 1999

Background characteristic	Symptoms of tuberculosis											Number of men
	Coughing more than 3 weeks	Fever	Blood in sputum	Loss of appetite	Night-sweating	Pain in chest	Tired-ness/ fatigue	Weight loss	Lethargy	Other	Missing	
Age												
15-19	40.0	34.0	7.4	7.7	16.9	2.9	8.4	5.2	8.9	3.5	26.1	226
20-24	49.6	40.6	15.5	9.6	20.8	10.4	5.4	9.5	16.0	4.4	16.3	182
25-29	46.2	37.4	15.6	9.4	15.7	6.6	17.9	10.2	17.4	2.4	16.6	176
30-34	53.6	34.2	9.6	10.4	21.5	8.1	11.5	7.5	17.5	5.1	11.7	172
35-39	46.5	40.5	18.8	12.5	27.0	8.1	10.6	9.1	20.0	3.7	8.2	229
40-44	48.0	48.5	18.7	10.1	22.1	10.4	19.1	8.6	18.4	1.6	7.4	164
45-49	45.8	49.3	9.7	8.5	22.5	5.9	9.5	16.9	15.2	5.4	10.1	122
50-54	52.1	51.6	13.2	11.0	13.1	3.5	16.7	14.2	24.1	9.3	7.6	104
55-59	41.0	39.1	11.3	14.4	16.0	13.0	13.4	7.7	26.4	3.7	23.8	65
Residence												
Urban	45.4	41.2	18.3	9.5	22.5	9.0	12.5	10.9	19.0	4.3	11.8	790
Rural	48.8	40.2	7.8	10.8	17.4	5.4	11.5	7.6	14.8	3.8	17.1	650
Region												
Almaty City	62.5	29.8	13.7	8.3	26.2	9.5	10.1	10.7	13.7	4.2	11.3	90
South	77.5	26.1	3.3	16.3	11.3	5.8	8.7	12.4	21.3	9.1	19.7	426
West	7.7	72.5	5.1	11.7	23.9	11.7	14.9	10.7	11.5	3.4	17.6	182
Central	67.1	16.8	8.2	4.5	10.5	3.2	2.0	4.1	4.3	4.9	18.6	139
North	15.4	57.6	21.6	4.0	30.0	8.3	20.0	0.7	23.8	0.0	9.0	396
East	58.8	31.6	30.4	12.2	20.0	6.6	8.8	21.8	10.7	1.5	8.3	207
Education												
Primary/secondary	46.0	38.2	10.3	10.2	17.7	5.4	9.0	9.6	14.8	4.2	18.7	661
Secondary-special	46.2	41.5	14.4	10.1	21.2	8.9	16.0	9.6	18.5	2.6	12.3	581
Higher	52.3	47.1	22.0	9.8	25.1	9.2	10.5	8.3	20.8	7.9	5.1	198
Ethnicity												
Kazakh	50.4	39.2	11.2	13.2	17.9	8.6	10.4	11.1	17.8	4.5	16.3	747
Russian	42.7	44.4	18.0	7.1	24.5	5.2	11.9	8.1	15.0	3.7	10.4	460
Other	44.4	38.8	12.5	6.0	18.9	7.7	17.5	6.7	19.1	3.5	15.1	234
Total	47.0	40.8	13.6	10.1	20.2	7.4	12.0	9.4	17.1	4.1	14.2	1,440

14.5 Seeking Treatment for Tuberculosis at Health Facility

Tables 14.5.1 and 14.5.2. show the percentage of women and men who would seek treatment at a health facility in the case of TB in their family by type of health facility and background characteristics. Approximately 50 percent of women and 62 percent of men would seek treatment at a hospital; 16 percent of women and 18 percent of men would go to a polyclinic; and 10 percent of women and 2 percent of men would seek treatment at Family Group Practices.

Seeking treatment at a hospital is more likely among women and men who reside in rural areas, live in the South and North regions, and have a primary-secondary education, than it is among other population groups.

In Kazakhstan, an important component of TB treatment and the prophylaxis system is a network of so-called TB dispensaries that are involved in screening, early diagnosis, and drug treatment of patients with tuberculosis. Tables 14.5.1 and 14.5.2 show that 19 percent of women and 16 percent of men would seek treatment at a TB dispensary. Reliance on TB dispensaries is

Table 14.4.1 Tuberculosis symptoms that convince women to seek medical assistance

Among women who know one or more symptoms of tuberculosis, the percentage who report specific symptoms that would convince them to seek medical care, by background characteristics, Kazakhstan 1999

Background characteristic	Symptoms of tuberculosis											Number of women
	Coughing more than 3 weeks	Fever	Blood in sputum	Loss of appetite	Night-sweating	Pain in chest	Tiredness/ fatigue	Weight loss	Lethargy	Other	Missing	
Age												
15-19	59.0	16.7	16.0	17.8	4.9	6.2	4.9	11.1	11.9	8.8	0.0	526
20-24	52.4	22.5	21.2	24.3	8.3	5.9	5.4	14.4	14.7	8.7	0.0	510
25-29	53.3	19.2	24.2	23.9	7.7	5.5	7.3	15.6	15.9	6.5	0.2	574
30-34	57.5	20.5	25.0	24.7	6.8	7.5	9.2	13.3	15.0	7.9	0.2	591
35-39	56.9	22.9	22.0	26.4	7.9	6.8	9.2	16.1	20.8	6.2	0.0	639
40-44	56.0	23.0	18.9	27.1	8.7	7.0	9.9	18.2	19.5	6.8	0.0	578
45-49	50.5	23.2	20.8	30.2	7.9	9.5	9.3	13.7	24.5	4.9	0.0	435
Residence												
Urban	55.2	22.1	22.0	26.0	8.6	7.6	9.5	15.4	18.8	6.6	0.1	2,279
Rural	55.3	19.7	20.2	23.2	5.8	5.8	5.7	13.7	15.4	7.9	0.0	1,575
Region												
Almaty City	56.6	21.9	23.7	25.2	10.4	9.8	10.5	11.6	22.3	7.3	0.3	265
South	60.4	15.1	9.5	24.3	5.5	4.3	5.6	12.1	11.4	5.0	0.0	1,036
West	66.5	28.4	11.8	37.5	9.5	10.1	8.2	23.2	18.0	4.6	0.0	532
Central	47.2	21.4	29.3	20.9	11.2	5.5	4.7	14.5	8.3	1.9	0.1	424
North	52.0	22.4	26.4	20.2	7.3	7.5	9.9	13.1	21.2	14.5	0.0	1,088
East	46.0	22.5	36.0	25.7	5.2	6.9	9.6	16.5	25.8	2.7	0.1	510
Education												
Primary/secondary	56.9	19.2	17.5	20.1	5.4	5.9	4.9	14.3	13.4	6.2	0.0	1,336
Secondary-special	54.3	21.0	22.4	27.7	7.5	7.1	9.0	14.9	18.0	7.4	0.1	1,625
Higher	54.5	24.3	24.8	26.8	10.6	7.7	10.5	15.2	22.4	8.0	0.0	893
Ethnicity												
Kazakh	57.4	20.6	18.9	25.1	7.2	7.6	7.7	15.8	16.0	6.1	0.1	1,964
Russian	51.6	22.9	23.8	24.7	8.5	6.2	8.9	14.1	19.5	8.5	0.0	1,262
Other	55.9	19.3	23.5	24.3	6.2	5.7	6.8	12.8	17.6	7.7	0.0	628
Total	55.3	21.1	21.3	24.9	7.5	6.9	7.9	14.7	17.4	7.1	0.1	3,854

more common among women and men in urban areas and those with a higher education than it is among other population groups. Surprisingly, none of the men in the North region cited a TB dispensary as a place to seek treatment for TB; 86 percent of them would seek treatment at a hospital and 13 percent would go to a polyclinic. Private health facilities were rarely mentioned by respondents; only about 1 percent said they would seek treatment at a private facility in case of tuberculosis in their family.

14.6 Summary

Tuberculosis has been of great public health concern in Kazakhstan for decades. Recently, because of dramatic socioeconomic changes, increased poverty, and income inequalities, the rates of tuberculosis, especially of its drug-resistant forms, have increased. In order to prevent further spread of infection, Kazakhstan has adopted the DOTS program (recommended by the WHO), which has changed the procedures for diagnosis, classification, and treatment of the disease.

Table 14.4.2 Tuberculosis symptoms that convince men to seek medical assistance

Among men who know one or more symptoms of tuberculosis, the percentage who report the symptoms that would convince them to seek medical care, by background characteristics, Kazakhstan 1999

Background characteristic	Symptoms of tuberculosis: Coughing more than 3 weeks	Fever	Blood in sputum	Loss of appetite	Night-sweating	Pain in chest	Tiredness/ fatigue	Weight loss	Lethargy	Other	Missing	Number of men
Age												
15-19	52.0	43.7	9.8	4.4	22.6	4.3	10.1	6.6	7.5	1.3	2.0	164
20-24	57.0	40.6	19.8	6.2	17.8	6.3	5.6	13.3	11.9	1.6	1.1	150
25-29	48.4	38.2	18.1	8.4	15.9	5.2	15.4	9.5	16.1	1.2	4.3	146
30-34	55.1	36.5	10.7	8.4	20.8	7.6	10.4	6.9	15.2	2.0	3.8	150
35-39	49.0	37.5	20.4	9.9	23.2	5.9	8.5	10.0	14.3	1.0	1.4	206
40-44	48.6	48.1	21.3	7.8	21.6	7.7	15.8	10.0	14.2	1.4	1.2	151
45-49	48.1	47.1	12.1	7.1	23.7	5.7	8.1	14.3	15.1	1.8	0.7	108
50-54	51.9	49.1	15.7	11.3	11.5	4.4	18.1	11.3	17.8	1.6	0.6	97
55-59	53.7	44.1	15.6	18.7	16.5	11.0	18.9	13.7	32.1	2.3	1.1	49
Residence												
Urban	47.2	42.1	21.8	9.8	21.5	7.6	11.9	13.9	15.4	1.6	1.8	690
Rural	56.8	42.0	9.1	6.3	17.9	4.2	10.9	5.3	13.3	1.4	2.0	531
Region												
Almaty City	63.9	34.7	20.4	11.6	27.9	9.5	10.2	17.0	17.0	2.0	2.7	79
South	92.4	20.8	3.2	9.0	6.2	0.0	2.2	7.1	6.9	1.0	3.2	337
West	9.2	88.6	5.1	15.1	30.1	13.6	19.2	13.6	14.6	4.6	0.0	150
Central	64.0	19.3	23.7	7.6	13.0	5.4	2.7	16.3	6.7	5.5	3.8	110
North	17.7	62.5	23.7	4.3	33.0	9.1	22.0	1.4	26.2	0.0	0.0	361
East	63.5	19.5	28.5	8.3	12.1	4.4	7.2	23.3	8.8	0.0	3.4	185
Education												
Primary/secondary	55.1	40.7	12.8	7.3	19.6	3.9	7.8	10.0	14.0	1.4	1.8	529
Secondary-special	48.1	43.2	16.7	8.2	19.8	7.9	15.6	10.2	14.7	1.8	2.4	506
Higher	49.6	42.5	24.9	11.3	21.2	7.7	10.5	10.6	15.1	0.6	0.9	186
Ethnicity												
Kazakh	59.1	39.0	13.3	9.3	17.0	6.2	7.8	9.4	13.1	1.0	1.5	616
Russian	41.7	45.7	21.6	7.5	24.6	5.6	12.8	10.8	13.9	2.5	3.2	409
Other	47.3	43.9	14.4	6.8	19.4	7.1	20.2	11.1	19.8	0.7	0.4	195
Total	51.4	42.0	16.3	8.3	19.9	6.1	11.5	10.1	14.5	1.5	1.9	1,221

Population-based data collected during the 1999 KDHS showed that more than 9 percent of women and men in Kazakhstan reported that someone in their family had had TB, and more than 23 percent reported being frequently exposed to a person with TB. This information confirms the high prevalence of tuberculosis in different regions of Kazakhstan reported by government statistics.

The survey showed that almost all women and men have heard of tuberculosis and more than 71 percent of them correctly identified the way TB is transmitted (through the air when coughing). Approximately half of the respondents mentioned without prompting the main symptom of tuberculosis (coughing for more than 3 weeks). A significant percentage of the respondents also cited other important symptoms of tuberculosis, such as fever, blood in sputum, and night sweating.

However, despite the high level of knowledge of TB symptoms and the mode of transmission, only 68 percent of women and 62 percent of men knew that tuberculosis could be completely cured with proper medication. Complete curability of tuberculosis with a properly selected drug-treatment regimen is an important concept of DOTS strategy. Another important

Table 14.5.1 Seeking treatment for tuberculosis at health facility: women

Percentage of women who report that they would seek treatment at a health facility if they thought that they or their child had tuberculosis (TB), by the type of health facility and background characteristics, Kazakhstan 1999

Background characteristic	Hospital	Poly-clinic	FGP	TB dispensary	Private hospital/ clinic	Private doctor	Other private medical	Other	Don't know	Number of women
Age										
15-19	59.4	12.4	8.4	13.6	0.6	0.1	0.0	0.1	1.4	791
20-24	54.1	16.9	8.8	14.3	0.6	0.3	0.1	0.2	1.0	666
25-29	46.3	18.1	10.5	20.3	0.3	0.5	0.0	0.3	0.5	692
30-34	47.3	17.0	10.4	20.1	0.9	0.4	0.0	0.0	0.3	698
35-39	43.2	15.9	12.7	23.2	0.6	0.1	0.2	0.2	0.4	749
40-44	47.7	16.5	10.3	21.6	0.2	0.0	0.2	0.0	0.4	681
45-49	42.9	19.3	12.2	21.3	0.7	0.0	0.0	0.6	0.1	522
Residence										
Urban	39.5	24.5	11.2	22.1	0.4	0.3	0.0	0.2	0.3	2,668
Rural	61.0	6.3	9.4	15.3	0.8	0.1	0.2	0.2	1.0	2,132
Region										
Almaty City	30.7	42.0	0.9	21.5	1.3	0.3	0.2	0.6	0.8	291
South	54.5	10.8	12.7	15.0	1.2	0.4	0.1	0.2	1.1	1,455
West	46.8	21.4	11.0	16.1	0.3	0.0	0.0	0.1	0.7	628
Central	50.2	13.0	17.7	15.9	0.1	0.0	0.0	0.2	0.1	475
North	51.0	15.5	4.2	25.0	0.0	0.2	0.1	0.2	0.3	1,259
East	42.7	16.8	15.4	20.7	0.6	0.1	0.0	0.0	0.5	692
Education										
Primary/secondary	58.8	11.9	9.1	14.3	0.4	0.0	0.0	0.2	1.0	1,927
Secondary-special	45.6	17.4	11.9	20.1	0.5	0.3	0.1	0.0	0.5	1,908
Higher	36.3	23.3	10.0	26.6	1.0	0.3	0.2	0.3	0.1	965
Ethnicity										
Kazakh	52.4	12.9	10.5	17.9	0.8	0.2	0.1	0.2	0.8	2,587
Russian	42.7	22.5	10.4	21.1	0.4	0.2	0.1	0.1	0.3	1,454
Other	49.7	16.5	10.0	19.3	0.1	0.4	0.1	0.2	0.8	760
Total	49.0	16.4	10.4	19.1	0.6	0.2	0.1	0.2	0.6	4,800

concept is the possibility of followup home treatment under close observation of a health professional after the initial phase of intensive drug therapy in the hospital. In the 1999 KDHS, only 13 percent of women and 9 percent of men cited such a sequence of TB treatment. Most of the respondents, more than 82 percent, believe that the entire TB treatment should be carried out in a hospital. More than half of the respondents would seek treatment at a hospital in the case of TB in their family, compared with less than 19 percent who would seek treatment in TB dispensaries and less than 18 percent who would rely on an ambulatory care setting, such as a polyclinic or FGP.

Thus, there is room for improvement in the level of knowledge about how TB should be treated. Since personal (patient) involvement and public support for TB treatment are as important as other key components of the DOTS strategy, including political commitment and availability of drugs, increases in such knowledge could be helpful in promoting further implementation of the DOTS strategy in Kazakhstan.

Table 14.5.2 Seeking treatment for tuberculosis at health facility: men

Percentage of men who report that they would seek treatment at a health facility if they thought that they or their child had tuberculosis (TB), by type of health facility and background characteristics, Kazakhstan 1999

Background characteristic	Hospital	Poly-clinic	FGP	TB dispensary	Private hospital/ clinic	Private doctor	Other	Don't know	Number of men
Age									
15-19	72.5	15.1	1.2	9.0	0.0	0.0	0.0	0.6	226
20-24	68.3	16.6	1.5	12.6	0.0	0.0	0.0	0.0	182
25-29	56.3	17.7	2.7	18.9	1.8	0.3	0.0	0.3	176
30-34	58.2	16.5	5.0	18.9	0.3	0.0	0.0	0.0	172
35-39	60.8	17.2	2.0	17.0	0.8	0.0	0.8	0.0	229
40-44	58.1	22.8	3.6	14.1	0.5	0.0	0.0	0.0	164
45-49	59.6	21.4	1.1	17.5	0.0	0.0	0.0	0.0	122
50-54	63.8	14.4	3.1	16.7	0.0	0.0	0.0	0.0	104
55-59	46.3	23.9	0.8	23.7	0.0	0.0	0.0	3.3	65
Residence									
Urban	49.3	23.2	3.4	21.8	0.8	0.1	0.1	0.2	790
Rural	77.2	11.4	1.2	8.1	0.0	0.0	0.2	0.3	650
Region									
Almaty City	39.9	31.0	0.6	23.8	1.2	0.6	0.0	0.6	90
South	77.5	6.7	1.6	12.2	0.0	0.0	0.3	0.3	426
West	11.2	54.4	0.8	32.0	0.0	0.0	0.0	0.5	182
Central	59.9	2.7	4.4	30.2	0.0	0.0	0.0	0.4	139
North	85.9	13.4	0.7	0.0	0.0	0.0	0.0	0.0	396
East	39.2	21.7	8.3	24.9	2.6	0.0	0.3	0.4	207
Education									
Primary/secondary	67.4	16.3	1.7	12.2	0.3	0.1	0.0	0.6	661
Secondary-special	59.6	20.0	2.8	15.7	0.5	0.0	0.2	0.0	581
Higher	49.9	17.0	3.5	26.8	0.7	0.0	0.3	0.0	198
Ethnicity									
Kazakh	61.0	17.6	1.9	17.1	0.1	0.0	0.2	0.4	747
Russian	60.2	19.5	3.6	14.5	1.2	0.1	0.0	0.3	460
Other	67.9	15.5	1.7	13.1	0.0	0.0	0.0	0.0	234
Total	61.9	17.9	2.4	15.6	0.4	0.0	0.1	0.3	1,440

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SAMPLE DESIGN

APPENDIX A

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A.1 Introduction

The second Kazakhstan Demographic and Health Survey (1999 KDHS), calls for a national sample of women between the ages of 15 and 49. It is designed to produce reliable estimates of fertility and childhood mortality rates, of contraceptive knowledge and use, and of maternal and child health indicators. Six main survey regions composed of provinces were defined as follows:

(1) Almaty City	
(2) South region:	Almatinskaya, Zhambylskaya, Kyzylordinskaya, and South-Kazakhstanskaya
(3) West region:	Aktyubinskaya, Atyrauskaya, Mangistauskaya, and West-Kazakhstanskaya
(4) North region:	Akmolinskaya, Kostnaiskaya, Pavlodarskaya, and North-Kazakhstanskaya
(5) Central region:	Karagandinskaya.
(6) East region:	East-Kazakhstanskaya

As the result of USAID/Almaty, the cities of Zhezkazgan and Semipalatinsk located in Karagandinskaya and East-Kazakhstanskaya, respectively, were oversampled.

In addition to the main sample of women, a subsample of men between the ages of 15 and 59 were interviewed in one-third of the households to allow the study of men's knowledge and attitudes about HIV/AIDS and sexually transmitted infections.

A.2 Sampling Frame

Kazakhstan is divided into 14 provinces called *oblasts*. The *oblast* is divided into urban and rural areas. In urban areas, the city is divided into the *urban raions* (districts), and the *urban raion* into health blocks called *therapeutic uchastoks*. In rural areas, the *rural raion* is divided into *selsovets*, and the *selsovet* into villages.

The sampling frame for the 1999 KDHS consisted of the lists of health blocks obtained from local health care departments and the National Committee on Health, and the lists of villages obtained from the National Statistical Agency. Health blocks and villages are listed with their respective population count.

A.3 Characteristics of the Sample

The 1999 KDHS sample is a stratified two-stage sample. Stratification was achieved by dividing every survey region into urban and rural areas. In the first stage of selection, health blocks and villages were selected as primary sampling units (PSUs) in urban and rural areas, respectively. Because of the substantial variation in the size of blocks and villages PSUs were selected with

probability proportional to size, the size being the population count. A complete listing of the households residing in the selected blocks and villages was carried out. The lists of households obtained served as sampling frame for the selection of households in the second stage.

A.4 Sample Allocation

Tables A.1 and A.2 show the distribution of the population according to the lists of health blocks and villages used as the sampling frame.

Table A.1 Population distribution

Survey region	Urban	Rural	Total
Almaty City	866,848	-	866,848
South	1,575,179	3,029,975	4,605,154
West	1,087,871	893,189	1,981,060
North	1,830,865	1,722,782	3,553,647
Central	967,355	257,778	1,225,133
East	952,029	633,905	1,585,934
Zhezkazgan City	162,085	-	162,085
Semipalatinsk City	305,136	-	305,136
Kazakhstan	7,280,147	6,537,629	13,817,776

Table A.2 Percent distribution of the population

Survey region	Urban	Rural	Total
Almaty City	100.0	-	6.3
South	34.2	65.8	33.3
West	54.9	45.1	14.3
North	51.5	48.5	25.7
Central	79.0	21.0	8.9
East	60.0	40.0	11.5
Zhezkazgan City	100.0	-	-
Semipalatinsk City	100.0	-	-
Kazakhstan	52.7	47.3	100.0

A proportional allocation of the target sample size to the survey regions would give a self-weighting sample but would not allow a reliable estimation of health indicators. Past experience with similar surveys has shown that the minimum sample size is 800-1000 women per survey region. Table A.3 gives the proposed allocation of the target sample size.

Table A.3 Proposed allocation of the sample of women

Survey region	Urban	Rural	Total
Almaty City	800	-	800
South	274	526	800
West	439	361	800
North	412	388	800
Central	632	168	800
East	480	320	800
Zhezkazgan City	400	-	400
Semipalatinsk City	400	-	400
Kazakhstan	3,837	1,763	5,600

The number of households selected in order to obtain the desired sample size was calculated as follows:

$$\textit{Number of households} = \frac{\textit{Number of women}}{\textit{Number of women per household} \times \textit{Overall response rate}}$$

According to the 1995 KDHS, there was 0.93 women 15- 49 per household and the overall response rate was 95 percent (98.5 percent for households and 96.7 percent for women). Using these results in the above formula yields the numbers of households that were selected (Table A.4).

Table A.4 Number of households

Survey region	Urban	Rural	Total
Almaty City	905	-	905
South	310	595	905
West	497	408	905
North	466	439	905
Central	715	190	905
East	543	362	905
Zhezkazgan City	453	-	453
Semipalatinsk City	453	-	453
Kazakhstan	4,342	1,994	6,336

As in the previous survey, the 1999 KDHS selected 20 women per urban cluster and 30 women per rural cluster (i.e., 23 households per urban cluster and 34 per rural cluster) for a total of 251 sample points. The allocation of these 251 sample points is as shown below:

Table A.5 Proposed number of sample points

Survey region	Urban	Rural	Total
Almaty City	40	-	40
South	14	18	32
West	22	12	34
North	20	13	33
Central	31	6	37
East	24	11	35
Zhezkazgan City	20	-	20
Semipalatinsk City	20	-	20
Kazakhstan	191	60	251

A.5 Segmentation

Some health blocks and villages that were selected have very large populations and would have required substantial time and effort to be listed. Therefore, any large block or village that was selected was divided into segments, one of which was retained in the sample. The rule for segmentation was:

Number of households	401 - 600	segment into 2
Number of households	601 - 800	segment into 3
Number of households	801 - 1000	segment into 4
etc.		

Segmentation was carried out in the field during the mapping and household listing operation.

A.6 Sampling Probabilities

Sampling probabilities were calculated separately for each sampling stage, and independently for every stratum. The notations are:

P_{1i} : first-stage sampling probability of the i^{th} health block or village
P_{2i} : second-stage sampling probability (households) within the i^{th} health block or village

Let a be the number of health blocks or villages that were selected in a given stratum, M_i the population count (according to the sampling frame) of the i^{th} health block or village in the stratum, and ΣM_i the total population count of the stratum (according to the sampling frame). Let t_{ik} be the estimated proportion of the selected k^{th} segment within the i^{th} health block or village. Note that $t_{ik} = 1$ if no segmentation was done, and that $\Sigma t_{ik} = 1$.

The probability of inclusion of the i^{th} health block or village in the sample was calculated as follows:

$$P_{1i} = \frac{aM_i}{\sum_i M_i} . t_{ik}$$

In the second stage, a number b_i of households were selected from the number L_i of households newly listed in the i^{th} health block or village (or segment) by the 1999 KDHS team. Then:

$$P_{2i} = \frac{b_i}{L_i}$$

In order for the sample to be self-weighting within the stratum, the overall probability must be the same for every household within the stratum, i.e. $f = P_{1i}.P_{2i}$, where f is the sampling fraction calculated separately for every stratum as follows:

$$f = \frac{n}{N}$$

in which n is the number of households selected in the stratum, and N is the number of households that existed in the stratum in 1999 at the time of fieldwork.

The selection of the households is systematic with equal probability and the selection interval was calculated as follows:

$$I_i = \frac{1}{P_{2i}} = \frac{P_{1i}}{f}$$

Because of the nonproportional distribution of the sample to the different strata, sampling weights were required to ensure the actual representativeness of the sample at the national level.

A.7 Response Rates by Region and Urban-Rural Residence

Tables A.6.1 and A.6.2 provide detailed information on the results of the household and individual interviews, according to region and urban-rural residence. Overall, the household response rates are high in most of the regions, except for Almaty City (89 percent) and urban regions (91 percent). This could be attributed to the longer hours urbanites spend away from home.

Response rates are slightly lower for individual men than women. Individual rates for men are lower in Almaty City and North Region than in any other survey regions of Kazakhstan.

A.6.1 Sample implementation: women

Percent distribution of households and eligible women in the 1999 KDHS sample by results of the household and individual interviews and response rates, according to region and urban-rural residence, Kazakhstan 1999

Result of interview and response rate	Region						Residence		Total
	Almaty City	South	West	Central	North	East	Urban	Rural	
Selected households									
Completed (C)	89.0	93.8	91.5	93.2	94.4	93.8	91.4	95.7	92.7
Household present but no competent respondent at home (HP)	1.4	1.1	1.5	0.5	0.6	0.4	0.9	0.8	0.9
Refused (R)	3.0	0.4	0.7	0.6	0.6	0.7	1.4	0.0	1.0
Dwelling not found (DNF)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Household absent (HA)	4.0	2.1	3.5	1.1	1.5	1.3	2.5	1.2	2.1
Dwelling vacant/address not a dwelling (DV)	2.6	2.4	2.7	4.1	2.7	3.6	3.7	2.0	3.1
Dwelling destroy (DD)	0.0	0.0	0.2	0.5	0.1	0.1	0.1	0.3	0.2
Other (O)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	899	906	892	1,331	925	1,348	4,311	1,990	6,301
Household response rate (HRR)[1]	95.2	98.3	97.7	98.8	98.6	98.8	97.5	99.1	98.1
Eligible women									
Completed (EWC)	96.7	98.1	95.7	98.9	97.9	99.2	97.9	97.7	97.8
Not at home (EWNH)	1.7	0.9	2.5	0.2	1.8	0.5	1.0	1.4	1.2
Postponed (EWP)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refused (EWR)	0.6	0.2	0.3	0.5	0.1	0.1	0.4	0.1	0.3
Partly completed (EWPC)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incapacitated (EWI)	0.3	0.6	1.1	0.3	0.1	0.0	0.3	0.6	0.4
Other (EWO)	0.5	0.2	0.4	0.1	0.0	0.2	0.3	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	658	940	787	885	669	967	2,989	1,917	4,906
Eligible woman response rate (EWRR)[2]	96.7	98.1	95.7	98.9	97.9	99.2	97.9	97.7	97.8
Overall response rate (ORR)[3]	92.1	96.4	93.5	97.7	96.6	98.0	95.5	96.8	95.9

Note: The household response rate is calculated for completed households as a proportion of completed, no competent respondent, refused, and dwelling not found. The eligible woman response rate is calculated for completed interviews as a proportion of completed, not at home, postponed, refused, partially completed, incapacitated and "other." The overall response rate is the product of the household and eligible woman response rates.

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{C}{C + HP + R + DNF} * 100$$

[2] Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{EWC}{EWC + EWNH + EWP + EWR + EWPC + EWI + EWO} * 100$$

[3] The overall response rate (ORR) is calculated as: $ORR = (HRR * EWRR) \div 100$

A.6.2 Sample implementation: men

Percent distribution of households and eligible men in the 1999 KDHS sample by results of the household and individual interviews and response rates, according to region and urban-rural residence, sample domain and urban rural area, Kazakhstan 1999

Result of interview and response rate	Region						Residence		Total
	Almaty City	South	West	Central	North	East	Urban	Rural	
Selected households									
Completed (C)	94.1	92.1	89.7	98.4	100.0	96.1	93.7	96.3	94.7
Household present but no competent respondent at home (HP)	0.0	1.4	1.0	0.0	0.0	0.0	0.4	0.5	0.5
Refused (R)	3.9	0.3	0.0	0.8	0.0	0.3	1.3	0.0	0.8
Household absent (HA)	1.5	2.4	6.2	0.4	0.0	0.6	2.4	1.4	2.0
Dwelling vacant/address not a dwelling (DV)	0.5	3.8	2.7	0.4	0.0	2.7	2.1	1.7	1.9
Dwelling destroy (DD)	0.0	0.0	0.3	0.0	0.0	0.3	0.1	0.2	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	203	290	292	248	183	334	959	591	1,550
Household response rate (HRR)[1]	96.0	98.2	98.9	99.2	100.0	99.7	98.3	99.5	98.7
Eligible men									
Completed (EMC)	89.8	96.2	95.0	96.2	89.1	94.9	94.8	93.1	94.1
Not at home (EMNH)	3.7	2.7	2.5	1.4	6.7	3.1	2.3	4.3	3.1
Refused (EMR)	3.2	0.0	0.7	0.3	1.0	2.0	1.2	0.9	1.1
Incapacitated (EMI)	0.0	0.0	0.4	0.7	1.6	0.0	0.3	0.5	0.4
Other (EWO)	3.2	1.0	1.4	1.4	1.6	0.0	1.3	1.3	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	187	292	278	286	193	295	897	634	1,531
Eligible man response rate (EMRR)[2]	89.8	96.2	95.0	96.2	89.1	94.9	94.8	93.1	94.1
Overall response rate (ORR)[3]	86.2	94.5	93.9	95.4	89.1	94.6	93.1	92.6	92.9

Note: The household response rate is calculated for completed households as a proportion of completed, no competent respondent, refused, and dwelling not found. The eligible man response rate is calculated for completed interviews as a proportion of completed, not at home, refused, partially completed, incapacitated and "other." The overall response rate is the product of the household and eligible man response rates.

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{C}{C + HP + R} * 100$$

[2] Using the number of eligible men falling into specific response categories, the eligible man response rate (EMRR) is calculated as:

$$\frac{EMC}{EMC + EMNH + EMR + EMI + EMO} * 100$$

[3] The overall response rate (ORR) is calculated as: $ORR = (HRR * EMRR) \div 100$

ESTIMATES OF SAMPLING ERRORS

APPENDIX B

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the second Kazakhstan Demographic and Health Survey (KDHS) in 1999 to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 1999 KDHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 1999 KDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 1999 KDHS is the ISSA Sampling Error Module. This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$var(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - r \cdot x_{hi} \text{ , and } z_h = y_h - r \cdot x_h$$

where h represents the stratum which varies from 1 to H,
m_h is the total number of clusters selected in the h^{th} stratum,
y_{hi} is the sum of the weighted values of variable y in the i^{th} cluster in the h^{th} stratum,
x_{hi} is the sum of the weighted number of cases in the i^{th} cluster in the h^{th} stratum, and
f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the 1999 KDHS, there were 251 non-empty clusters. Hence, 251 replications were created. The variance of a rate r is calculated as follows:

$$SE^2(R) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_{(i)} - r)^2$$

in which

$$r_{(i)} = kr - (k-1) r_{(i)}$$

where r is the estimate computed from the full sample of 251 clusters,
$r_{(i)}$ is the estimate computed from the reduced sample of 250 clusters (i^{th} cluster excluded), and
k is the total number of clusters.

In addition to the standard error, ISSA computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSA also computes the relative error and confidence limits for the estimates.

Sampling errors for the 1999 KDHS are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole, for urban and rural areas, for six survey regions, and for three ethnic groups (Kazakh, Russian, and other ethnic groups). For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.13 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R±2SE), for each variable. The DEFT is considered undefined when the standard error considering simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of unweighted cases is not relevant, as there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for *children ever born to women age 15-49*) can be interpreted as follows: the overall average from the national sample is 2.924 and its standard error is 0.079. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., $2.924 \pm 2 \times 0.079$. There is a high probability (95 percent) that the *true* average number of children ever born to all women age 15 to 49 is between 2.765 and 3.082.

Sampling errors are analyzed for the national woman sample and for two separate groups of estimates: (1) means and proportions, and (2) complex demographic rates. The relative standard errors (SE/R) for the means and proportions range between 0.1 and 32.3 percent with an average of 6.8 percent; the highest relative standard errors are for estimates of very low values (e.g., *women currently using pills*). If estimates of very low values (less than 10 percent) were removed, than the average would drop to 3.6 percent. So, in general, the relative standard errors for most estimates for the country as a whole are small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small, 6.2 percent. However, for mortality rates, the average relative standard error is much higher, 18.3 percent.

There are differentials in the relative standard error for estimates of subpopulations. For example, for the variable *children ever born to women over 40*, the relative standard errors as a percent of the estimated mean for the whole country, for the urban areas, and for the South region are 2.7 percent, 5.0 percent, and 5.9 percent, respectively.

For the total sample, the value of the design effect (DEFT), averaged over all variables, is 1.21, which means that due to multistage clustering of the sample the average standard error is increased by a factor of 1.1 over that in an equivalent simple random sample.

Table B.1 List of selected variables for sampling errors, Kazakhstan 1999

Variable	Estimate	Base Population
WOMEN		
Urban residence	Proportion	All women 15-49
Primary/secondary education	Proportion	All women 15-49
Secondary-special education	Proportion	All women 15-49
Higher education	Proportion	All women 15-49
Never married (in union)	Proportion	All women 15-49
Currently married (in union)	Proportion	All women 15-49
Married before age 20	Proportion	Women 25-49
Had first sexual intercourse before 18	Proportion	Women 25-49
Children ever born	Mean	All women 15-49
Children ever born to women over 40	Mean	Women 40-49
Children surviving	Mean	All women 15-49
Knowing any contraceptive method	Proportion	Currently married women 15-49
Knowing any modern contraceptive method	Proportion	Currently married women 15-49
Ever used any contraceptive method	Proportion	Currently married women 15-49
Currently using any method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Currently using pill	Proportion	Currently married women 15-49
Currently using IUD	Proportion	Currently married women 15-49
Currently using condom	Proportion	Currently married women 15-49
Currently using periodic abstinence	Proportion	Currently married women 15-49
Currently using withdrawal	Proportion	Currently married women 15-49
Using public sector source	Proportion	Current users of modern method
Want no more children	Proportion	Currently married women 15-49
Want to delay at least 2 years	Proportion	Currently married women 15-49
Ideal number of children	Mean	All women 15-49
BMI < 18.5	Proportion	Women 15-49 who were measured
BMI between 18.5 and 30.0	Proportion	Women 15-49 who were measured
BMI > 30.0	Proportion	Women 15-49 who were measured
Weight-for-height (< -2 SD)	Proportion	Women 15-49 who were measured
Severe anemia	Proportion	Women 15-49 who were tested
Moderate anemia	Proportion	Women 15-49 who were tested
Mild anemia	Proportion	Women 15-49 who were tested
Mother received medical care at birth	Proportion	Births in last 5 years
Had diarrhea in the last 2 weeks	Proportion	Children under 5
Treated with ORS packets	Proportion	Children under 5 with diarrhea in last 2 weeks
Consulted medical personnel	Proportion	Children under 5 with diarrhea in last 2 weeks
Received BCG vaccination	Proportion	Children 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Received polio vaccination (3 doses)	Proportion	Children 12-23 months
Received measles vaccination	Proportion	Children 12-23 months
Fully immunized	Proportion	Children 12-23 months
Weight-for-height (< -2 SD)	Proportion	Children under 5 who were measured
Height-for-age (< -2 SD)	Proportion	Children under 5 who were measured
Weight-for-age (< -2 SD)	Proportion	Children under 5 who were measured
Children with severe anemia	Proportion	Children under 5 who were tested
Children with moderate anemia	Proportion	Children under 5 who were tested
Children with mild anemia	Proportion	Children under 5 who were tested
Total fertility rate (3 years)	Rate	Woman-years of exposure to child-bearing
Neonatal mortality rate (10 years)[1]	Rate	Number of births
Infant mortality rate (10 years)[1]	Rate	Number of births
Child mortality rate (10 years)[1]	Rate	Number of births
Under-five mortality rate(10 years) [1]	Rate	Number of births
Postneonatal mortality rate(10 years) [1]	Rate	Number of births
MEN		
Urban residence	Proportion	All men 15-54
Primary/secondary education	Proportion	All men 15-54
Secondary-special education	Proportion	All men 15-54
Higher education	Proportion	All men 15-54
Never married (in union)	Proportion	All men 15-54
Currently married (in union)	Proportion	All men 15-54
Knowing any contraceptive method	Proportion	Currently married men 15-54
Knowing any modern contraceptive method	Proportion	Currently married men 15-54
Ever used any contraceptive method	Proportion	Currently married men 15-54
Currently using any method	Proportion	Currently married men 15-54
Currently using a modern method	Proportion	Currently married men 15-54
Currently using pill	Proportion	Currently married men 15-54
Currently using IUD	Proportion	Currently married men 15-54
Currently using injectables	Proportion	Currently married men 15-54
Currently using Norplant	Proportion	Currently married men 15-54
Currently using condom	Proportion	Currently married men 15-54
Currently using female sterilization	Proportion	Currently married men 15-54
Currently using male sterilization	Proportion	Currently married men 15-54
Currently using periodic abstinence	Proportion	Currently married men 15-54
Currently using withdrawal	Proportion	Currently married men 15-54
Want no more children	Proportion	Currently married men 15-54
Want to delay at least 2 years	Proportion	Currently married men 15-54
Ideal number of children	Mean	All men 15-54

[1]Five years for the total rate

Table B.2 Sampling errors for women - Total sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.556	0.011	4800	4800	1.465	0.019	0.535	0.577
Primary/secondary education	0.401	0.010	4800	4800	1.369	0.024	0.382	0.421
Secondary-special education	0.397	0.009	4800	4800	1.270	0.023	0.379	0.415
Higher education	0.201	0.007	4800	4800	1.246	0.036	0.187	0.216
Never married (in union)	0.253	0.008	4800	4800	1.207	0.030	0.238	0.268
Currently married (in union)	0.629	0.008	4800	4800	1.152	0.013	0.613	0.645
Married before age 20	0.334	0.009	3360	3343	1.062	0.026	0.317	0.351
Had first sexual intercourse before 18	0.108	0.006	3360	3343	1.049	0.052	0.096	0.119
Children ever born	1.764	0.030	4800	4800	1.245	0.017	1.703	1.825
Children ever born to women over 40	2.924	0.079	1213	1203	1.484	0.027	2.765	3.082
Children surviving	1.629	0.026	4800	4800	1.206	0.016	1.577	1.682
Knowing any contraceptive method	0.996	0.001	2950	3018	1.085	0.001	0.994	0.999
Knowing any modern contraceptive method	0.995	0.001	2950	3018	1.110	0.001	0.993	0.998
Ever used any contraceptive method	0.882	0.008	2950	3018	1.305	0.009	0.866	0.897
Currently using any method	0.661	0.013	2950	3018	1.488	0.020	0.635	0.687
Currently using a modern method	0.527	0.015	2950	3018	1.599	0.028	0.498	0.557
Currently using pill	0.024	0.003	2950	3018	1.114	0.130	0.018	0.031
Currently using IUD	0.420	0.013	2950	3018	1.450	0.031	0.393	0.446
Currently using condom	0.045	0.004	2950	3018	1.139	0.097	0.036	0.053
Currently using periodic abstinence	0.046	0.005	2950	3018	1.258	0.106	0.036	0.056
Currently using withdrawal	0.029	0.004	2950	3018	1.383	0.148	0.020	0.037
Using public sector source	0.895	0.008	1927	1853	1.201	0.009	0.878	0.911
Want no more children	0.554	0.012	2950	3018	1.285	0.021	0.530	0.577
Want to delay at least 2 years	0.129	0.007	2950	3018	1.112	0.053	0.115	0.142
Ideal number of children	2.768	0.028	4522	4471	1.426	0.010	2.712	2.824
BMI < 18.5	0.074	0.007	2209	2238	1.308	0.099	0.059	0.088
BMI between 18.5 and 30.0	0.799	0.010	2209	2238	1.213	0.013	0.778	0.820
BMI > 30.0	0.127	0.009	2209	2238	1.319	0.073	0.109	0.146
Weight-for-height (< -2 SD)	0.030	0.003	2207	2235	0.928	0.112	0.023	0.037
Severe anemia	0.012	0.002	2216	2269	0.845	0.162	0.008	0.016
Moderate anemia	0.077	0.006	2216	2269	1.037	0.077	0.065	0.088
Mild anemia	0.266	0.013	2216	2269	1.355	0.048	0.241	0.292
Mother received medical care at birth	0.990	0.003	1345	1449	1.179	0.003	0.984	0.997
Had diarrhea in the last 2 weeks	0.134	0.013	1266	1354	1.346	0.096	0.108	0.160
Treated with ORS packets	0.320	0.042	166	181	1.146	0.131	0.236	0.404
Consulted medical personnel	0.266	0.042	166	181	1.226	0.157	0.183	0.350
Received BCG vaccination	0.991	0.005	232	244	0.877	0.005	0.980	1.000
Received DPT vaccination (3 doses)	0.977	0.011	232	244	1.158	0.011	0.955	0.999
Received polio vaccination (3 doses)	0.916	0.021	232	244	1.156	0.022	0.875	0.957
Received measles vaccination	0.865	0.023	232	244	1.028	0.026	0.820	0.910
Fully immunized	0.805	0.024	232	244	0.962	0.030	0.757	0.854
Weight-for-height (< -2 SD)	0.018	0.005	566	612	0.958	0.283	0.008	0.028
Height-for-age (< -2 SD)	0.097	0.015	566	612	1.188	0.155	0.067	0.128
Weight-for-age (< -2 SD)	0.042	0.010	566	612	1.122	0.228	0.023	0.062
Children with severe anemia	0.014	0.004	574	620	0.954	0.323	0.005	0.023
Children with moderate anemia	0.170	0.016	574	620	1.020	0.092	0.139	0.201
Children with mild anemia	0.179	0.017	574	620	1.109	0.096	0.145	0.213
Total fertility rate (3 years)	2.047	0.127	NA	13810	1.908	0.062	1.794	2.300
Neonatal mortality rate (10 years)[1]	33.597	6.357	1390	1498	1.207	0.189	20.882	46.312
Infant mortality rate (10 years)[1]	61.941	8.300	1393	1501	1.239	0.134	45.341	78.542
Child mortality rate (10 years)[1]	10.060	2.963	1395	1504	1.182	0.294	4.135	15.986
Under-five mortality rate(10 years)[1]	71.378	8.799	1398	1507	1.259	0.123	53.781	88.976
Postneonatal mortality rate(10 years)[1]	28.344	5.004	1393	1501	1.158	0.177	18.335	38.353

[1]Five years for the total rate
NA = Not applicable

Table B.3 Sampling errors for women - Urban sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	1.000	0.000	2927	2668	NA	0.000	1.000	1.000
Primary/secondary education	0.322	0.015	2927	2668	1.717	0.046	0.293	0.352
Secondary-special education	0.415	0.013	2927	2668	1.469	0.032	0.389	0.442
Higher education	0.262	0.011	2927	2668	1.348	0.042	0.241	0.284
Never married (in union)	0.261	0.010	2927	2668	1.259	0.039	0.240	0.281
Currently married (in union)	0.598	0.011	2927	2668	1.218	0.018	0.576	0.620
Married before age 20	0.313	0.011	2102	1902	1.127	0.036	0.291	0.336
Had first sexual intercourse before 18	0.116	0.006	2102	1902	0.929	0.056	0.103	0.129
Children ever born	1.507	0.042	2927	2668	1.587	0.028	1.423	1.592
Children ever born to women over 40	2.401	0.119	788	724	2.148	0.050	2.163	2.640
Children surviving	1.408	0.033	2927	2668	1.383	0.024	1.341	1.475
Knowing any contraceptive method	0.998	0.001	1720	1596	0.828	0.001	0.997	1.000
Knowing any modern contraceptive method	0.998	0.001	1720	1596	0.712	0.001	0.996	0.999
Ever used any contraceptive method	0.897	0.009	1720	1596	1.273	0.010	0.879	0.916
Currently using any method	0.674	0.015	1720	1596	1.293	0.022	0.645	0.704
Currently using a modern method	0.541	0.018	1720	1596	1.521	0.034	0.505	0.578
Currently using pill	0.037	0.005	1720	1596	1.177	0.144	0.027	0.048
Currently using IUD	0.400	0.018	1720	1596	1.494	0.044	0.365	0.435
Currently using condom	0.063	0.007	1720	1596	1.211	0.113	0.049	0.077
Currently using periodic abstinence	0.061	0.008	1720	1596	1.360	0.128	0.046	0.077
Currently using withdrawal	0.017	0.004	1720	1596	1.248	0.229	0.009	0.025
Using public sector source	0.863	0.011	1230	1058	1.096	0.012	0.842	0.885
Want no more children	0.559	0.016	1720	1596	1.316	0.028	0.527	0.590
Want to delay at least 2 years	0.124	0.009	1720	1596	1.147	0.074	0.106	0.142
Ideal number of children	2.549	0.043	2821	2554	1.976	0.017	2.463	2.636
BMI < 18.5	0.079	0.010	1331	1247	1.324	0.124	0.060	0.099
BMI between 18.5 and 30.0	0.799	0.015	1331	1247	1.360	0.019	0.769	0.829
BMI > 30.0	0.122	0.013	1331	1247	1.403	0.103	0.097	0.147
Weight-for-height (< -2 SD)	0.032	0.004	1329	1244	0.926	0.140	0.023	0.041
Severe anemia	0.009	0.003	1323	1256	0.985	0.282	0.004	0.014
Moderate anemia	0.072	0.009	1323	1256	1.212	0.120	0.055	0.089
Mild anemia	0.259	0.016	1323	1256	1.351	0.063	0.227	0.292
Mother received medical care at birth	0.984	0.006	620	612	1.293	0.006	0.972	0.997
Had diarrhea in the last 2 weeks	0.148	0.017	597	583	1.132	0.112	0.115	0.181
Treated with ORS packets	0.422	0.070	83	86	1.276	0.165	0.283	0.562
Consulted medical personnel	0.178	0.048	83	86	1.201	0.268	0.083	0.274
Received BCG vaccination	0.986	0.010	107	106	0.923	0.010	0.966	1.000
Received DPT vaccination (3 doses)	0.961	0.022	107	106	1.209	0.022	0.918	1.000
Received polio vaccination (3 doses)	0.932	0.029	107	106	1.223	0.031	0.875	0.989
Received measles vaccination	0.901	0.033	107	106	1.180	0.036	0.836	0.966
Fully immunized	0.829	0.038	107	106	1.086	0.046	0.753	0.904
Weight-for-height (< -2 SD)	0.024	0.011	239	242	1.220	0.474	0.001	0.046
Height-for-age (< -2 SD)	0.058	0.022	239	242	1.359	0.374	0.015	0.102
Weight-for-age (< -2 SD)	0.048	0.022	239	242	1.448	0.450	0.005	0.091
Children with severe anemia	0.009	0.005	241	245	0.919	0.600	0.000	0.019
Children with moderate anemia	0.114	0.024	241	245	1.262	0.215	0.065	0.163
Children with mild anemia	0.178	0.029	241	245	1.231	0.162	0.120	0.236
Total fertility rate (3 years)	1.524	0.127	NA	7625	1.770	0.083	1.271	1.778
Neonatal mortality rate (10 years)[1]	25.491	5.268	1600	1541	1.324	0.207	14.955	36.027
Infant mortality rate (10 years)[1]	43.718	8.211	1602	1542	1.512	0.188	27.296	60.140
Child mortality rate (10 years)[1]	6.657	2.087	1601	1542	1.075	0.314	2.482	10.831
Under-five mortality rate(10 years)[1]	50.084	8.212	1603	1543	1.404	0.164	33.659	66.508
Postneonatal mortality rate(10 years)[1]	18.227	5.085	1602	1542	1.624	0.279	8.058	28.396

[1]Five years for the total rate
NA = Not applicable

Table B.4 Sampling errors for women - Rural sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.000	0.000	1873	2132	NA	NA	0.000	0.000
Primary/secondary education	0.501	0.013	1873	2132	1.159	0.027	0.474	0.527
Secondary-special education	0.375	0.012	1873	2132	1.035	0.031	0.352	0.398
Higher education	0.124	0.009	1873	2132	1.241	0.076	0.105	0.143
Never married (in union)	0.244	0.011	1873	2132	1.120	0.046	0.222	0.266
Currently married (in union)	0.667	0.012	1873	2132	1.085	0.018	0.644	0.691
Married before age 20	0.361	0.013	1258	1441	0.977	0.037	0.335	0.387
Had first sexual intercourse before 18	0.096	0.010	1258	1441	1.175	0.101	0.077	0.116
Children ever born	2.085	0.051	1873	2132	1.154	0.024	1.983	2.187
Children ever born to women over 40	3.712	0.107	425	479	1.106	0.029	3.498	3.927
Children surviving	1.906	0.048	1873	2132	1.230	0.025	1.810	2.002
Knowing any contraceptive method	0.995	0.002	1230	1422	1.109	0.002	0.990	0.999
Knowing any modern contraceptive method	0.993	0.003	1230	1422	1.167	0.003	0.987	0.999
Ever used any contraceptive method	0.864	0.012	1230	1422	1.266	0.014	0.839	0.889
Currently using any method	0.646	0.022	1230	1422	1.614	0.034	0.602	0.690
Currently using a modern method	0.511	0.023	1230	1422	1.630	0.045	0.465	0.558
Currently using pill	0.010	0.003	1230	1422	0.992	0.284	0.004	0.015
Currently using IUD	0.442	0.020	1230	1422	1.421	0.046	0.401	0.482
Currently using condom	0.024	0.005	1230	1422	1.155	0.208	0.014	0.035
Currently using periodic abstinence	0.029	0.006	1230	1422	1.158	0.192	0.018	0.040
Currently using withdrawal	0.042	0.008	1230	1422	1.353	0.184	0.027	0.058
Using public sector source	0.937	0.014	697	795	1.481	0.015	0.909	0.964
Want no more children	0.548	0.018	1230	1422	1.245	0.032	0.513	0.583
Want to delay at least 2 years	0.134	0.010	1230	1422	1.064	0.077	0.113	0.155
Ideal number of children	3.060	0.041	1701	1917	1.174	0.013	2.978	3.142
BMI < 18.5	0.067	0.011	878	991	1.292	0.163	0.045	0.089
BMI between 18.5 and 30.0	0.799	0.014	878	991	1.024	0.017	0.771	0.826
BMI > 30.0	0.134	0.014	878	991	1.214	0.104	0.106	0.162
Weight-for-height (< -2 SD)	0.028	0.005	878	991	0.922	0.185	0.017	0.038
Severe anemia	0.016	0.003	893	1012	0.720	0.191	0.010	0.022
Moderate anemia	0.082	0.008	893	1012	0.833	0.093	0.067	0.098
Mild anemia	0.276	0.020	893	1012	1.340	0.073	0.235	0.316
Mother received medical care at birth	0.995	0.003	725	837	0.905	0.003	0.990	1.000
Had diarrhea in the last 2 weeks	0.123	0.019	669	771	1.439	0.152	0.085	0.160
Treated with ORS packets	0.226	0.049	83	95	1.073	0.217	0.128	0.324
Consulted medical personnel	0.346	0.071	83	95	1.310	0.204	0.205	0.487
Received BCG vaccination	0.995	0.005	125	138	0.810	0.005	0.984	1.000
Received DPT vaccination (3 doses)	0.990	0.010	125	138	1.091	0.010	0.970	1.000
Received polio vaccination (3 doses)	0.904	0.029	125	138	1.076	0.032	0.846	0.962
Received measles vaccination	0.837	0.030	125	138	0.901	0.036	0.776	0.897
Fully immunized	0.788	0.032	125	138	0.851	0.040	0.724	0.851
Weight-for-height (< -2 SD)	0.015	0.004	327	371	0.588	0.268	0.007	0.022
Height-for-age (< -2 SD)	0.123	0.020	327	371	1.051	0.163	0.083	0.163
Weight-for-age (< -2 SD)	0.039	0.007	327	371	0.708	0.193	0.024	0.053
Children with severe anemia	0.017	0.006	333	376	0.901	0.374	0.004	0.030
Children with moderate anemia	0.206	0.021	333	376	0.914	0.101	0.165	0.248
Children with mild anemia	0.180	0.021	333	376	0.996	0.117	0.137	0.222
Total fertility rate (3 years)	2.664	0.213	NA	6031	1.832	0.080	2.237	3.091
Neonatal mortality rate (10 years)[1]	30.723	5.776	1732	1961	1.158	0.188	19.170	42.276
Infant mortality rate (10 years)[1]	63.763	7.319	1733	1962	1.087	0.115	49.125	78.401
Child mortality rate (10 years)[1]	10.082	3.253	1737	1965	1.320	0.323	3.576	16.589
Under-five mortality rate(10 years)[1]	73.203	9.044	1738	1967	1.295	0.124	55.115	91.290
Postneonatal mortality rate(10 years)[1]	33.040	4.582	1733	1962	0.951	0.139	23.877	42.203

[1]Five years for the total rate
NA = Not applicable

Table B.5 Sampling errors for women - Almaty City sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	1.000	0.000	636	291	NA	0.000	1.000	1.000
Primary/secondary education	0.255	0.024	636	291	1.383	0.094	0.207	0.303
Secondary-special education	0.307	0.018	636	291	0.979	0.058	0.271	0.342
Higher education	0.439	0.030	636	291	1.504	0.067	0.379	0.498
Never married (in union)	0.283	0.020	636	291	1.119	0.071	0.243	0.323
Currently married (in union)	0.547	0.024	636	291	1.197	0.043	0.500	0.594
Married before age 20	0.287	0.021	450	206	1.005	0.075	0.244	0.330
Had first sexual intercourse before 18	0.109	0.014	450	206	0.941	0.127	0.081	0.137
Children ever born	1.230	0.043	636	291	0.962	0.035	1.143	1.316
Children ever born to women over 40	1.942	0.095	173	79	1.111	0.049	1.753	2.131
Children surviving	1.173	0.043	636	291	0.994	0.036	1.088	1.258
Knowing any contraceptive method	0.991	0.005	348	159	0.935	0.005	0.982	1.000
Knowing any modern contraceptive method	0.991	0.005	348	159	0.935	0.005	0.982	1.000
Ever used any contraceptive method	0.914	0.024	348	159	1.561	0.026	0.867	0.961
Currently using any method	0.701	0.030	348	159	1.240	0.043	0.640	0.762
Currently using a modern method	0.583	0.029	348	159	1.110	0.050	0.525	0.642
Currently using pill	0.057	0.008	348	159	0.632	0.137	0.042	0.073
Currently using IUD	0.351	0.032	348	159	1.255	0.092	0.286	0.415
Currently using condom	0.106	0.021	348	159	1.267	0.197	0.064	0.148
Currently using periodic abstinence	0.043	0.008	348	159	0.690	0.174	0.028	0.058
Currently using withdrawal	0.014	0.005	348	159	0.774	0.344	0.004	0.024
Using public sector source	0.857	0.026	286	131	1.262	0.031	0.804	0.909
Want no more children	0.534	0.023	348	159	0.852	0.043	0.489	0.580
Want to delay at least 2 years	0.175	0.015	348	159	0.745	0.087	0.145	0.206
Ideal number of children	2.443	0.047	621	284	1.002	0.019	2.349	2.537
BMI < 18.5	0.087	0.019	298	136	1.140	0.214	0.050	0.125
BMI between 18.5 and 30.0	0.789	0.029	298	136	1.220	0.037	0.731	0.846
BMI > 30.0	0.124	0.019	298	136	1.011	0.156	0.085	0.163
Weight-for-height (< -2 SD)	0.030	0.011	297	136	1.113	0.366	0.008	0.052
Severe anemia	0.007	0.005	277	127	0.992	0.700	0.000	0.017
Moderate anemia	0.061	0.016	277	127	1.110	0.261	0.029	0.093
Mild anemia	0.170	0.016	277	127	0.712	0.095	0.138	0.202
Mother received medical care at birth	1.000	0.000	98	45	NA	0.000	1.000	1.000
Had diarrhea in the last 2 weeks	0.156	0.033	96	44	0.919	0.211	0.090	0.222
Treated with ORS packets	0.200	0.100	15	7	0.965	0.499	0.000	0.400
Consulted medical personnel	0.067	0.056	15	7	0.861	0.833	0.000	0.178
Received BCG vaccination	1.000	0.000	17	8	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	1.000	0.000	17	8	NA	0.000	1.000	1.000
Received polio vaccination (3 doses)	1.000	0.000	17	8	NA	0.000	1.000	1.000
Received measles vaccination	0.882	0.069	17	8	0.883	0.078	0.744	1.000
Fully immunized	0.882	0.069	17	8	0.883	0.078	0.744	1.000
Weight-for-height (< -2 SD)	0.023	0.022	44	20	0.978	0.970	0.000	0.067
Height-for-age (< -2 SD)	0.068	0.052	44	20	1.349	0.756	0.000	0.171
Weight-for-age (< -2 SD)	0.045	0.027	44	20	0.852	0.591	0.000	0.099
Children with severe anemia	0.000	0.000	44	20	NA	NA	0.000	0.000
Children with moderate anemia	0.136	0.059	44	20	1.000	0.436	0.018	0.255
Children with mild anemia	0.273	0.076	44	20	1.161	0.280	0.120	0.426
Total fertility rate (3 years)	1.001	0.164	NA	832	1.200	0.163	0.674	1.328
Neonatal mortality rate (10 years)[1]	24.518	7.963	289	132	0.883	0.325	8.592	40.444
Infant mortality rate (10 years)[1]	27.848	8.454	289	132	0.886	0.304	10.940	44.755
Child mortality rate (10 years)[1]	5.682	4.020	289	132	1.002	0.707	0.000	13.721
Under-five mortality rate(10 years)[1]	33.371	9.868	289	132	0.977	0.296	13.634	53.108
Postneonatal mortality rate(10 years)[1]	3.329	3.379	289	132	1.019	1.015	0.000	10.088

[1]Five years for the total rate
NA = Not applicable

Table B.6 Sampling errors for women - South sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.374	0.033	922	1455	2.101	0.090	0.307	0.441
Primary/secondary education	0.489	0.021	922	1455	1.245	0.042	0.448	0.530
Secondary-special education	0.327	0.018	922	1455	1.174	0.055	0.291	0.363
Higher education	0.184	0.017	922	1455	1.331	0.092	0.150	0.218
Never married (in union)	0.260	0.017	922	1455	1.152	0.064	0.226	0.293
Currently married (in union)	0.636	0.017	922	1455	1.082	0.027	0.602	0.671
Married before age 20	0.344	0.017	603	957	0.892	0.050	0.310	0.379
Had first sexual intercourse before 18	0.088	0.013	603	957	1.130	0.148	0.062	0.114
Children ever born	2.121	0.057	922	1455	0.844	0.027	2.008	2.234
Children ever born to women over 40	3.812	0.223	197	316	1.381	0.059	3.366	4.258
Children surviving	1.895	0.044	922	1455	0.751	0.023	1.808	1.983
Knowing any contraceptive method	1.000	0.000	590	926	NA	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	590	926	NA	0.000	1.000	1.000
Ever used any contraceptive method	0.836	0.019	590	926	1.260	0.023	0.797	0.874
Currently using any method	0.596	0.032	590	926	1.587	0.054	0.531	0.660
Currently using a modern method	0.498	0.035	590	926	1.721	0.071	0.427	0.569
Currently using pill	0.023	0.007	590	926	1.143	0.306	0.009	0.037
Currently using IUD	0.418	0.031	590	926	1.550	0.075	0.355	0.481
Currently using condom	0.022	0.007	590	926	1.200	0.332	0.007	0.036
Currently using periodic abstinence	0.029	0.009	590	926	1.276	0.304	0.011	0.047
Currently using withdrawal	0.023	0.007	590	926	1.178	0.315	0.009	0.038
Using public sector source	0.949	0.014	325	515	1.110	0.014	0.922	0.976
Want no more children	0.520	0.022	590	926	1.067	0.042	0.476	0.564
Want to delay at least 2 years	0.135	0.013	590	926	0.906	0.094	0.110	0.161
Ideal number of children	3.242	0.062	817	1294	1.294	0.019	3.119	3.366
BMI < 18.5	0.076	0.015	452	716	1.163	0.191	0.047	0.105
BMI between 18.5 and 30.0	0.826	0.023	452	716	1.296	0.028	0.780	0.872
BMI > 30.0	0.097	0.016	452	716	1.140	0.163	0.066	0.129
Weight-for-height (< -2 SD)	0.042	0.007	452	716	0.720	0.163	0.028	0.055
Severe anemia	0.002	0.002	461	731	0.936	1.003	0.000	0.006
Moderate anemia	0.066	0.008	461	731	0.732	0.128	0.049	0.083
Mild anemia	0.185	0.022	461	731	1.230	0.120	0.141	0.230
Mother received medical care at birth	0.986	0.006	432	660	0.977	0.006	0.975	0.997
Had diarrhea in the last 2 weeks	0.139	0.021	393	602	1.113	0.153	0.096	0.181
Treated with ORS packets	0.389	0.071	53	84	0.984	0.183	0.246	0.531
Consulted medical personnel	0.306	0.076	53	84	1.141	0.248	0.154	0.457
Received BCG vaccination	1.000	0.000	59	92	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	0.985	0.015	59	92	0.925	0.015	0.955	1.000
Received polio vaccination (3 doses)	0.932	0.030	59	92	0.902	0.032	0.873	0.992
Received measles vaccination	0.880	0.025	59	92	0.595	0.029	0.829	0.931
Fully immunized	0.842	0.030	59	92	0.628	0.036	0.782	0.902
Weight-for-height (< -2 SD)	0.023	0.009	196	300	0.809	0.378	0.006	0.040
Height-for-age (< -2 SD)	0.078	0.020	196	300	0.994	0.260	0.037	0.119
Weight-for-age (< -2 SD)	0.039	0.011	196	300	0.793	0.279	0.017	0.061
Children with severe anemia	0.014	0.007	198	303	0.886	0.538	0.000	0.028
Children with moderate anemia	0.121	0.022	198	303	0.949	0.186	0.076	0.166
Children with mild anemia	0.143	0.022	198	303	0.897	0.155	0.099	0.188
Total fertility rate (3 years)	2.858	0.307	NA	4108	1.821	0.107	2.244	3.472
Neonatal mortality rate (10 years)[1]	35.747	8.056	947	1457	1.092	0.225	19.634	51.860
Infant mortality rate (10 years)[1]	77.229	10.384	948	1458	1.005	0.134	56.461	97.998
Child mortality rate (10 years)[1]	12.336	4.587	947	1457	1.209	0.372	3.162	21.510
Under-five mortality rate(10 years)[1]	88.613	11.687	948	1458	1.100	0.132	65.238	111.987
Postneonatal mortality rate(10 years)[1]	41.483	5.977	948	1458	0.829	0.144	29.528	53.438

[1]Five years for the total rate
NA = Not applicable

Table B.7 Sampling errors for women - West sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.568	0.022	753	628	1.211	0.038	0.525	0.612
Primary/secondary education	0.494	0.023	753	628	1.235	0.046	0.449	0.539
Secondary-special education	0.346	0.019	753	628	1.074	0.054	0.309	0.383
Higher education	0.160	0.018	753	628	1.319	0.110	0.124	0.195
Never married (in union)	0.268	0.012	753	628	0.716	0.043	0.245	0.291
Currently married (in union)	0.627	0.016	753	628	0.919	0.026	0.595	0.660
Married before age 20	0.284	0.027	516	435	1.343	0.094	0.230	0.337
Had first sexual intercourse before 18	0.066	0.009	516	435	0.838	0.138	0.048	0.085
Children ever born	1.894	0.078	753	628	1.182	0.041	1.738	2.050
Children ever born to women over 40	3.216	0.173	193	163	1.235	0.054	2.870	3.562
Children surviving	1.743	0.068	753	628	1.129	0.039	1.608	1.878
Knowing any contraceptive method	0.981	0.009	472	394	1.399	0.009	0.964	0.999
Knowing any modern contraceptive method	0.977	0.010	472	394	1.495	0.011	0.957	0.998
Ever used any contraceptive method	0.817	0.026	472	394	1.476	0.032	0.765	0.870
Currently using any method	0.602	0.028	472	394	1.251	0.047	0.546	0.659
Currently using a modern method	0.480	0.020	472	394	0.874	0.042	0.440	0.521
Currently using pill	0.012	0.004	472	394	0.862	0.356	0.004	0.021
Currently using IUD	0.419	0.019	472	394	0.848	0.046	0.380	0.458
Currently using condom	0.040	0.008	472	394	0.915	0.207	0.023	0.056
Currently using periodic abstinence	0.044	0.009	472	394	0.919	0.197	0.027	0.062
Currently using withdrawal	0.013	0.002	472	394	0.466	0.184	0.008	0.018
Using public sector source	0.916	0.022	253	215	1.248	0.024	0.872	0.959
Want no more children	0.574	0.027	472	394	1.187	0.047	0.520	0.628
Want to delay at least 2 years	0.118	0.018	472	394	1.191	0.150	0.082	0.153
Ideal number of children	2.932	0.052	692	581	0.944	0.018	2.829	3.036
BMI < 18.5	0.088	0.014	336	279	0.873	0.153	0.061	0.115
BMI between 18.5 and 30.0	0.795	0.020	336	279	0.902	0.025	0.755	0.835
BMI > 30.0	0.117	0.018	336	279	1.041	0.156	0.080	0.153
Weight-for-height (< -2 SD)	0.040	0.010	336	279	0.956	0.254	0.020	0.061
Severe anemia	0.031	0.009	343	285	0.973	0.295	0.013	0.049
Moderate anemia	0.111	0.017	343	285	1.029	0.158	0.076	0.146
Mild anemia	0.315	0.024	343	285	0.955	0.076	0.267	0.363
Mother received medical care at birth	0.991	0.006	239	193	0.983	0.006	0.979	1.000
Had diarrhea in the last 2 weeks	0.159	0.026	226	183	1.029	0.165	0.107	0.211
Treated with ORS packets	0.329	0.111	35	29	1.356	0.337	0.108	0.551
Consulted medical personnel	0.220	0.069	35	29	0.903	0.313	0.082	0.359
Received BCG vaccination	1.000	0.000	50	40	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	0.976	0.023	50	40	1.049	0.024	0.929	1.000
Received polio vaccination (3 doses)	0.856	0.059	50	40	1.156	0.069	0.738	0.974
Received measles vaccination	0.891	0.051	50	40	1.121	0.057	0.790	0.993
Fully immunized	0.772	0.070	50	40	1.154	0.091	0.631	0.912
Weight-for-height (< -2 SD)	0.018	0.017	100	78	1.249	0.956	0.000	0.053
Height-for-age (< -2 SD)	0.179	0.050	100	78	1.184	0.278	0.079	0.278
Weight-for-age (< -2 SD)	0.067	0.022	100	78	0.874	0.336	0.022	0.112
Children with severe anemia	0.028	0.016	107	84	0.982	0.576	0.000	0.061
Children with moderate anemia	0.299	0.044	107	84	0.943	0.147	0.211	0.388
Children with mild anemia	0.267	0.053	107	84	1.212	0.199	0.161	0.373
Total fertility rate (3 years)	2.261	0.189	NA	1776	1.163	0.083	1.884	2.638
Neonatal mortality rate (10 years)[1]	17.930	6.589	574	466	1.189	0.367	4.752	31.109
Infant mortality rate (10 years)[1]	45.659	9.989	575	467	1.123	0.219	25.681	65.637
Child mortality rate (10 years)[1]	8.162	3.236	576	468	0.874	0.397	1.689	14.635
Under-five mortality rate(10 years)[1]	53.448	11.603	577	469	1.203	0.217	30.242	76.655
Postneonatal mortality rate(10 years)[1]	27.729	7.482	575	467	1.101	0.270	12.765	42.692

[1]Five years for the total rate
NA = Not applicable

Table B.8 Sampling errors for women - Central sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.864	0.021	875	475	1.796	0.024	0.822	0.905
Primary/secondary education	0.293	0.013	875	475	0.853	0.045	0.266	0.319
Secondary-special education	0.471	0.015	875	475	0.871	0.031	0.442	0.501
Higher education	0.236	0.015	875	475	1.069	0.065	0.205	0.267
Never married (in union)	0.257	0.019	875	475	1.318	0.076	0.218	0.296
Currently married (in union)	0.590	0.019	875	475	1.164	0.033	0.552	0.629
Married before age 20	0.345	0.026	632	343	1.396	0.077	0.292	0.398
Had first sexual intercourse before 18	0.131	0.016	632	343	1.216	0.125	0.098	0.163
Children ever born	1.487	0.044	875	475	0.977	0.030	1.398	1.576
Children ever born to women over 40	2.254	0.087	230	125	0.956	0.039	2.079	2.428
Children surviving	1.399	0.041	875	475	0.978	0.029	1.317	1.480
Knowing any contraceptive method	1.000	0.000	523	281	NA	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	523	281	NA	0.000	1.000	1.000
Ever used any contraceptive method	0.911	0.009	523	281	0.747	0.010	0.892	0.930
Currently using any method	0.715	0.017	523	281	0.873	0.024	0.680	0.750
Currently using a modern method	0.588	0.020	523	281	0.947	0.035	0.547	0.629
Currently using pill	0.037	0.009	523	281	1.106	0.248	0.019	0.055
Currently using IUD	0.471	0.023	523	281	1.035	0.048	0.426	0.516
Currently using condom	0.039	0.010	523	281	1.146	0.249	0.020	0.058
Currently using periodic abstinence	0.077	0.013	523	281	1.089	0.165	0.051	0.102
Currently using withdrawal	0.011	0.005	523	281	1.039	0.424	0.002	0.021
Using public sector source	0.941	0.013	383	208	1.042	0.013	0.916	0.966
Want no more children	0.601	0.020	523	281	0.914	0.033	0.562	0.640
Want to delay at least 2 years	0.152	0.015	523	281	0.941	0.097	0.122	0.181
Ideal number of children	2.394	0.034	846	459	1.049	0.014	2.326	2.463
BMI < 18.5	0.082	0.015	383	206	1.106	0.190	0.051	0.113
BMI between 18.5 and 30.0	0.840	0.022	383	206	1.165	0.026	0.797	0.884
BMI > 30.0	0.081	0.019	383	206	1.356	0.233	0.043	0.119
Weight-for-height (< -2 SD)	0.031	0.007	383	206	0.826	0.236	0.016	0.046
Severe anemia	0.011	0.006	386	207	1.062	0.515	0.000	0.022
Moderate anemia	0.063	0.011	386	207	0.905	0.178	0.041	0.086
Mild anemia	0.300	0.033	386	207	1.431	0.111	0.233	0.366
Mother received medical care at birth	0.993	0.007	224	118	0.876	0.007	0.979	1.000
Had diarrhea in the last 2 weeks	0.101	0.023	215	114	1.038	0.224	0.056	0.146
Treated with ORS packets	0.433	0.077	22	11	0.673	0.177	0.280	0.587
Consulted medical personnel	0.099	0.075	22	11	1.150	0.759	0.000	0.250
Received BCG vaccination	0.967	0.033	35	18	1.066	0.034	0.901	1.000
Received DPT vaccination (3 doses)	0.938	0.043	35	18	1.044	0.046	0.852	1.000
Received polio vaccination (3 doses)	0.877	0.056	35	18	0.989	0.064	0.765	0.988
Received measles vaccination	0.889	0.047	35	18	0.873	0.053	0.795	0.983
Fully immunized	0.799	0.056	35	18	0.819	0.070	0.687	0.912
Weight-for-height (< -2 SD)	0.055	0.019	82	43	0.728	0.340	0.018	0.093
Height-for-age (< -2 SD)	0.125	0.039	82	43	0.984	0.308	0.048	0.202
Weight-for-age (< -2 SD)	0.034	0.018	82	43	0.887	0.527	0.000	0.070
Children with severe anemia	0.033	0.015	83	43	0.765	0.453	0.003	0.063
Children with moderate anemia	0.211	0.050	83	43	1.063	0.236	0.112	0.311
Children with mild anemia	0.341	0.048	83	43	0.955	0.141	0.245	0.436
Total fertility rate (3 years)	1.593	0.173	NA	1372	1.268	0.109	1.247	1.940
Neonatal mortality rate (10 years)[1]	15.863	5.233	548	287	0.901	0.330	5.398	26.328
Infant mortality rate (10 years)[1]	39.734	8.939	549	287	1.065	0.225	21.855	57.612
Child mortality rate (10 years)[1]	10.589	5.002	549	287	1.183	0.472	0.586	20.592
Under-five mortality rate(10 years)[1]	49.902	9.846	550	288	1.041	0.197	30.209	69.595
Postneonatal mortality rate(10 years)[1]	23.871	6.604	549	287	1.024	0.277	10.662	37.080

[1]Five years for the total rate
NA = Not applicable

Table B.9 Sampling errors for women - North sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.480	0.022	655	1259	1.109	0.045	0.437	0.523
Primary/secondary education	0.360	0.017	655	1259	0.912	0.048	0.326	0.394
Secondary-special education	0.470	0.016	655	1259	0.825	0.034	0.438	0.502
Higher education	0.170	0.011	655	1259	0.734	0.063	0.148	0.191
Never married (in union)	0.232	0.017	655	1259	1.058	0.075	0.197	0.267
Currently married (in union)	0.665	0.018	655	1259	0.982	0.027	0.628	0.701
Married before age 20	0.373	0.015	471	905	0.653	0.039	0.344	0.403
Had first sexual intercourse before 18	0.132	0.010	471	905	0.618	0.073	0.113	0.152
Children ever born	1.642	0.064	655	1259	1.148	0.039	1.513	1.770
Children ever born to women over 40	2.618	0.094	178	344	0.885	0.036	2.430	2.807
Children surviving	1.554	0.065	655	1259	1.260	0.042	1.424	1.683
Knowing any contraceptive method	1.000	0.000	437	837	NA	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	437	837	NA	0.000	1.000	1.000
Ever used any contraceptive method	0.927	0.011	437	837	0.844	0.011	0.906	0.948
Currently using any method	0.697	0.023	437	837	1.067	0.034	0.650	0.744
Currently using a modern method	0.505	0.031	437	837	1.300	0.062	0.443	0.567
Currently using pill	0.009	0.005	437	837	0.998	0.495	0.000	0.018
Currently using IUD	0.401	0.027	437	837	1.141	0.067	0.347	0.455
Currently using condom	0.047	0.010	437	837	0.952	0.206	0.028	0.066
Currently using periodic abstinence	0.060	0.012	437	837	1.058	0.200	0.036	0.084
Currently using withdrawal	0.060	0.012	437	837	1.068	0.202	0.036	0.085
Using public sector source	0.792	0.024	247	473	0.918	0.030	0.744	0.839
Want no more children	0.543	0.029	437	837	1.204	0.053	0.485	0.600
Want to delay at least 2 years	0.122	0.016	437	837	0.998	0.129	0.090	0.153
Ideal number of children	2.541	0.055	613	1180	1.110	0.022	2.431	2.651
BMI < 18.5	0.069	0.019	305	588	1.282	0.271	0.032	0.106
BMI between 18.5 and 30.0	0.749	0.021	305	588	0.840	0.028	0.707	0.791
BMI > 30.0	0.183	0.026	305	588	1.186	0.144	0.130	0.235
Weight-for-height (< -2 SD)	0.013	0.007	304	586	1.018	0.506	0.000	0.027
Severe anemia	0.019	0.005	314	605	0.603	0.248	0.009	0.028
Moderate anemia	0.083	0.016	314	605	1.027	0.193	0.051	0.115
Mild anemia	0.392	0.030	314	605	1.086	0.076	0.332	0.452
Mother received medical care at birth	0.993	0.007	149	284	1.014	0.007	0.979	1.000
Had diarrhea in the last 2 weeks	0.114	0.037	141	268	1.389	0.321	0.041	0.187
Treated with ORS packets	0.126	0.069	16	31	0.825	0.544	0.000	0.264
Consulted medical personnel	0.247	0.083	16	31	0.768	0.337	0.081	0.413
Received BCG vaccination	1.000	0.000	29	55	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	0.963	0.035	29	55	1.006	0.037	0.893	1.000
Received polio vaccination (3 doses)	0.900	0.060	29	55	1.072	0.067	0.780	1.000
Received measles vaccination	0.827	0.071	29	55	1.008	0.086	0.684	0.969
Fully immunized	0.757	0.072	29	55	0.902	0.096	0.612	0.901
Weight-for-height (< -2 SD)	0.000	0.000	56	106	NA	NA	0.000	0.000
Height-for-age (< -2 SD)	0.092	0.049	56	106	1.110	0.532	0.000	0.189
Weight-for-age (< -2 SD)	0.057	0.042	56	106	1.085	0.743	0.000	0.142
Children with severe anemia	0.000	0.000	56	106	NA	NA	0.000	0.000
Children with moderate anemia	0.244	0.053	56	106	0.909	0.215	0.139	0.349
Children with mild anemia	0.144	0.053	56	106	0.966	0.367	0.038	0.249
Total fertility rate (3 years)	1.719	0.178	NA	3590	1.116	0.103	1.363	2.074
Neonatal mortality rate (10 years)[1]	26.401	8.194	387	737	0.933	0.310	10.012	42.790
Infant mortality rate (10 years)[1]	39.017	8.211	387	737	0.811	0.210	22.595	55.438
Child mortality rate (10 years)[1]	2.231	2.270	388	739	0.996	1.018	0.000	6.771
Under-five mortality rate(10 years)[1]	41.160	9.188	388	739	0.896	0.223	22.784	59.536
Postneonatal mortality rate(10 years)[1]	12.615	4.811	387	737	0.861	0.381	2.993	22.238

[1]Five years for the total rate
NA = Not applicable

Table B.10 Sampling errors for women - East sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.668	0.018	959	692	1.210	0.028	0.631	0.705
Primary/secondary education	0.345	0.020	959	692	1.293	0.058	0.305	0.384
Secondary-special education	0.447	0.019	959	692	1.176	0.042	0.410	0.485
Higher education	0.208	0.017	959	692	1.314	0.083	0.174	0.243
Never married (in union)	0.249	0.012	959	692	0.861	0.048	0.225	0.273
Currently married (in union)	0.610	0.016	959	692	1.004	0.026	0.578	0.641
Married before age 20	0.298	0.024	688	497	1.379	0.081	0.249	0.346
Had first sexual intercourse before 18	0.120	0.015	688	497	1.194	0.123	0.090	0.149
Children ever born	1.533	0.046	959	692	0.976	0.030	1.441	1.624
Children ever born to women over 40	2.569	0.121	242	175	1.162	0.047	2.328	2.810
Children surviving	1.453	0.040	959	692	0.931	0.028	1.372	1.534
Knowing any contraceptive method	0.995	0.002	580	422	0.729	0.002	0.991	0.999
Knowing any modern contraceptive method	0.992	0.002	580	422	0.544	0.002	0.988	0.996
Ever used any contraceptive method	0.921	0.013	580	422	1.145	0.014	0.895	0.946
Currently using any method	0.738	0.022	580	422	1.197	0.030	0.694	0.781
Currently using a modern method	0.618	0.026	580	422	1.284	0.042	0.566	0.670
Currently using pill	0.048	0.011	580	422	1.250	0.232	0.026	0.070
Currently using IUD	0.453	0.024	580	422	1.177	0.054	0.404	0.502
Currently using condom	0.076	0.011	580	422	1.033	0.149	0.054	0.099
Currently using periodic abstinence	0.037	0.008	580	422	0.990	0.210	0.021	0.052
Currently using withdrawal	0.011	0.004	580	422	0.869	0.347	0.003	0.018
Using public sector source	0.932	0.011	433	312	0.940	0.012	0.909	0.955
Want no more children	0.607	0.021	580	422	1.024	0.034	0.565	0.648
Want to delay at least 2 years	0.105	0.016	580	422	1.245	0.151	0.073	0.137
Ideal number of children	2.507	0.055	933	674	1.340	0.022	2.396	2.617
BMI < 18.5	0.054	0.008	435	313	0.752	0.151	0.037	0.070
BMI between 18.5 and 30.0	0.813	0.013	435	313	0.721	0.017	0.786	0.840
BMI > 30.0	0.133	0.011	435	313	0.660	0.081	0.112	0.155
Weight-for-height (< -2 SD)	0.025	0.007	435	313	0.867	0.257	0.012	0.039
Severe anemia	0.009	0.004	435	313	0.951	0.476	0.000	0.018
Moderate anemia	0.073	0.011	435	313	0.874	0.149	0.052	0.095
Mild anemia	0.186	0.022	435	313	1.186	0.119	0.142	0.230
Mother received medical care at birth	0.996	0.004	203	149	0.864	0.004	0.989	1.000
Had diarrhea in the last 2 weeks	0.136	0.028	195	143	1.176	0.205	0.081	0.192
Treated with ORS packets	0.287	0.097	25	20	1.118	0.339	0.093	0.482
Consulted medical personnel	0.362	0.129	25	20	1.390	0.355	0.105	0.620
Received BCG vaccination	0.947	0.036	42	31	1.060	0.038	0.875	1.000
Received DPT vaccination (3 doses)	1.000	0.000	42	31	NA	0.000	1.000	1.000
Received polio vaccination (3 doses)	0.976	0.021	42	31	0.923	0.022	0.933	1.000
Received measles vaccination	0.835	0.061	42	31	1.077	0.073	0.713	0.957
Fully immunized	0.811	0.054	42	31	0.909	0.067	0.703	0.920
Weight-for-height (< -2 SD)	0.000	0.000	88	65	NA	NA	0.000	0.000
Height-for-age (< -2 SD)	0.090	0.026	88	65	0.883	0.292	0.037	0.142
Weight-for-age (< -2 SD)	0.008	0.008	88	65	0.842	0.974	0.000	0.024
Children with severe anemia	0.008	0.008	86	64	0.849	0.982	0.000	0.025
Children with moderate anemia	0.092	0.021	86	64	0.703	0.231	0.050	0.135
Children with mild anemia	0.153	0.036	86	64	0.988	0.237	0.080	0.226
Total fertility rate (3 years)	1.417	0.161	NA	1977	1.293	0.114	1.094	1.740
Neonatal mortality rate (10 years)[1]	27.979	7.011	587	423	0.949	0.251	13.957	42.002
Infant mortality rate (10 years)[1]	36.333	9.430	587	423	1.075	0.260	17.474	55.192
Child mortality rate (10 years)[1]	8.087	3.490	589	424	0.958	0.432	1.108	15.067
Under-five mortality rate(10 years)[1]	44.126	11.456	589	424	1.153	0.260	21.215	67.038
Postneonatal mortality rate(10 years)[1]	8.354	4.750	587	423	1.287	0.569	0.000	17.854

[1]Five years for the total rate
NA = Not applicable

Table B.11 Sampling errors for women - Kazak sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.452	0.023	2545	2587	2.339	0.051	0.406	0.498
Primary/secondary education	0.437	0.014	2545	2587	1.441	0.032	0.409	0.465
Secondary-special education	0.354	0.014	2545	2587	1.456	0.039	0.326	0.382
Higher education	0.209	0.012	2545	2587	1.464	0.056	0.185	0.232
Never married (in union)	0.295	0.011	2545	2587	1.194	0.037	0.273	0.316
Currently married (in union)	0.621	0.011	2545	2587	1.102	0.017	0.600	0.643
Married before age 20	0.270	0.012	1722	1732	1.141	0.045	0.246	0.295
Had first sexual intercourse before 18	0.059	0.008	1722	1732	1.351	0.130	0.044	0.075
Children ever born	1.950	0.044	2545	2587	1.154	0.023	1.862	2.038
Children ever born to women over 40	3.715	0.126	532	539	1.363	0.034	3.463	3.966
Children surviving	1.774	0.038	2545	2587	1.123	0.021	1.698	1.850
Knowing any contraceptive method	0.995	0.002	1553	1607	0.872	0.002	0.992	0.998
Knowing any modern contraceptive method	0.994	0.002	1553	1607	0.826	0.002	0.991	0.997
Ever used any contraceptive method	0.847	0.013	1553	1607	1.379	0.015	0.822	0.872
Currently using any method	0.640	0.020	1553	1607	1.682	0.032	0.599	0.681
Currently using a modern method	0.537	0.021	1553	1607	1.621	0.038	0.496	0.578
Currently using pill	0.013	0.003	1553	1607	1.176	0.262	0.006	0.019
Currently using IUD	0.465	0.018	1553	1607	1.408	0.038	0.430	0.501
Currently using condom	0.031	0.005	1553	1607	1.182	0.168	0.021	0.041
Currently using periodic abstinence	0.030	0.005	1553	1607	1.113	0.160	0.020	0.040
Currently using withdrawal	0.017	0.004	1553	1607	1.263	0.241	0.009	0.026
Using public sector source	0.932	0.012	997	962	1.525	0.013	0.907	0.956
Want no more children	0.528	0.017	1553	1607	1.379	0.033	0.493	0.563
Want to delay at least 2 years	0.149	0.010	1553	1607	1.073	0.065	0.129	0.168
Ideal number of children	3.094	0.037	2336	2340	1.316	0.012	3.020	3.169
BMI < 18.5	0.085	0.010	1176	1223	1.285	0.123	0.064	0.106
BMI between 18.5 and 30.0	0.828	0.015	1176	1223	1.339	0.018	0.798	0.857
BMI > 30.0	0.088	0.010	1176	1223	1.243	0.117	0.068	0.109
Weight-for-height (< -2 SD)	0.040	0.005	1175	1223	0.890	0.128	0.029	0.050
Severe anemia	0.014	0.003	1192	1250	0.870	0.208	0.008	0.021
Moderate anemia	0.097	0.008	1192	1250	0.879	0.078	0.082	0.112
Mild anemia	0.286	0.018	1192	1250	1.350	0.062	0.250	0.321
Mother received medical care at birth	0.988	0.004	916	1002	1.100	0.004	0.980	0.996
Had diarrhea in the last 2 weeks	0.137	0.015	858	933	1.251	0.109	0.107	0.167
Treated with ORS packets	0.352	0.050	110	128	1.101	0.143	0.252	0.453
Consulted medical personnel	0.283	0.052	110	128	1.220	0.182	0.180	0.386
Received BCG vaccination	1.000	0.000	158	170	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	0.986	0.010	158	170	1.085	0.010	0.967	1.000
Received polio vaccination (3 doses)	0.907	0.024	158	170	1.061	0.026	0.860	0.955
Received measles vaccination	0.882	0.025	158	170	1.002	0.028	0.832	0.932
Fully immunized	0.837	0.027	158	170	0.963	0.033	0.782	0.892
Weight-for-height (< -2 SD)	0.021	0.008	382	417	1.111	0.368	0.006	0.037
Height-for-age (< -2 SD)	0.112	0.020	382	417	1.183	0.177	0.073	0.152
Weight-for-age (< -2 SD)	0.050	0.013	382	417	1.141	0.260	0.024	0.077
Children with severe anemia	0.020	0.006	395	427	0.941	0.320	0.007	0.033
Children with moderate anemia	0.200	0.017	395	427	0.865	0.086	0.166	0.234
Children with mild anemia	0.183	0.021	395	427	1.112	0.115	0.141	0.225
Total fertility rate (3 years)	2.499	0.177	NA	7164	1.731	0.071	2.145	2.853
Neonatal mortality rate (10 years)[1]	26.546	4.778	2195	2307	1.174	0.180	16.989	36.103
Infant mortality rate (10 years)[1]	58.200	6.678	2198	2309	1.171	0.115	44.845	71.556
Child mortality rate (10 years)[1]	10.426	2.812	2198	2308	1.292	0.270	4.802	16.049
Under-five mortality rate(10 years)[1]	68.019	7.915	2201	2311	1.318	0.116	52.190	83.849
Postneonatal mortality rate(10 years)[1]	31.654	4.312	2198	2309	1.109	0.136	23.030	40.279

[1]Five years for the total rate
NA = Not applicable

Table B.12 Sampling errors for women - Russian sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			R-2SE	R+2SE
Urban residence	0.752	0.019	1595	1454	1.762	0.025	0.714	0.790
Primary/secondary education	0.325	0.015	1595	1454	1.242	0.045	0.296	0.354
Secondary-special education	0.467	0.015	1595	1454	1.238	0.033	0.436	0.498
Higher education	0.207	0.012	1595	1454	1.159	0.057	0.184	0.231
Never married (in union)	0.207	0.010	1595	1454	0.960	0.047	0.188	0.227
Currently married (in union)	0.622	0.012	1595	1454	1.016	0.020	0.597	0.647
Married before age 20	0.396	0.018	1145	1047	1.219	0.045	0.361	0.431
Had first sexual intercourse before 18	0.158	0.010	1145	1047	0.908	0.062	0.138	0.177
Children ever born	1.405	0.032	1595	1454	1.085	0.023	1.341	1.468
Children ever born to women over 40	2.118	0.061	503	468	1.221	0.029	1.996	2.240
Children surviving	1.334	0.030	1595	1454	1.098	0.022	1.275	1.394
Knowing any contraceptive method	0.998	0.001	969	904	0.832	0.001	0.996	1.000
Knowing any modern contraceptive method	0.997	0.002	969	904	1.059	0.002	0.994	1.000
Ever used any contraceptive method	0.927	0.008	969	904	0.904	0.008	0.912	0.942
Currently using any method	0.701	0.016	969	904	1.103	0.023	0.669	0.734
Currently using a modern method	0.537	0.019	969	904	1.191	0.036	0.499	0.575
Currently using pill	0.044	0.007	969	904	1.003	0.150	0.031	0.057
Currently using IUD	0.375	0.018	969	904	1.178	0.049	0.339	0.412
Currently using condom	0.072	0.008	969	904	0.975	0.113	0.056	0.088
Currently using periodic abstinence	0.070	0.012	969	904	1.445	0.169	0.046	0.094
Currently using withdrawal	0.033	0.006	969	904	1.098	0.191	0.020	0.045
Using public sector source	0.852	0.015	671	606	1.108	0.018	0.821	0.882
Want no more children	0.600	0.019	969	904	1.211	0.032	0.562	0.639
Want to delay at least 2 years	0.098	0.010	969	904	0.995	0.097	0.079	0.117
Ideal number of children	2.288	0.038	1560	1419	1.368	0.017	2.212	2.363
BMI < 18.5	0.071	0.014	745	670	1.469	0.194	0.044	0.099
BMI between 18.5 and 30.0	0.766	0.019	745	670	1.218	0.025	0.729	0.804
BMI > 30.0	0.162	0.016	745	670	1.161	0.097	0.131	0.194
Weight-for-height (< -2 SD)	0.022	0.007	745	670	1.272	0.314	0.008	0.035
Severe anemia	0.011	0.005	734	664	1.213	0.419	0.002	0.021
Moderate anemia	0.041	0.008	734	664	1.148	0.206	0.024	0.058
Mild anemia	0.231	0.020	734	664	1.272	0.086	0.192	0.271
Mother received medical care at birth	0.992	0.008	271	251	1.468	0.008	0.976	1.000
Had diarrhea in the last 2 weeks	0.139	0.026	257	236	1.195	0.184	0.088	0.190
Treated with ORS packets	0.187	0.081	38	33	1.242	0.432	0.026	0.349
Consulted medical personnel	0.225	0.091	38	33	1.308	0.405	0.043	0.407
Received BCG vaccination	0.957	0.025	52	52	0.917	0.026	0.908	1.000
Received DPT vaccination (3 doses)	0.940	0.039	52	52	1.250	0.042	0.861	1.000
Received polio vaccination (3 doses)	0.960	0.024	52	52	0.933	0.025	0.911	1.000
Received measles vaccination	0.796	0.067	52	52	1.262	0.084	0.662	0.930
Fully immunized	0.715	0.058	52	52	0.973	0.081	0.599	0.831
Weight-for-height (< -2 SD)	0.008	0.006	117	104	0.682	0.698	0.000	0.020
Height-for-age (< -2 SD)	0.079	0.026	117	104	1.013	0.323	0.028	0.131
Weight-for-age (< -2 SD)	0.030	0.021	117	104	1.293	0.695	0.000	0.071
Children with severe anemia	0.000	0.000	111	101	NA	NA	0.000	0.000
Children with moderate anemia	0.089	0.034	111	101	1.229	0.378	0.022	0.156
Children with mild anemia	0.219	0.045	111	101	1.113	0.207	0.129	0.310
Total fertility rate (3 years)	1.384	0.117	NA	4664	1.197	0.085	1.150	1.618
Neonatal mortality rate (10 years)[1]	33.454	9.158	696	650	1.277	0.274	15.139	51.769
Infant mortality rate (10 years)[1]	39.808	9.734	696	650	1.239	0.245	20.341	59.275
Child mortality rate (10 years)[1]	3.816	1.888	697	651	0.839	0.495	0.040	7.592
Under-five mortality rate(10 years)[1]	43.473	9.901	697	651	1.225	0.228	23.670	63.276
Postneonatal mortality rate(10 years)[1]	6.354	2.515	696	650	0.855	0.396	1.324	11.384

[1]Five years for the total rate
NA = Not applicable

Table B.13 Sampling errors for women - Others sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.534	0.041	660	760	2.119	0.077	0.452	0.616
Primary/secondary education	0.426	0.025	660	760	1.309	0.059	0.375	0.476
Secondary-special education	0.411	0.021	660	760	1.079	0.050	0.370	0.452
Higher education	0.163	0.014	660	760	0.955	0.084	0.136	0.191
Never married (in union)	0.200	0.015	660	760	0.980	0.076	0.169	0.230
Currently married (in union)	0.667	0.021	660	760	1.126	0.031	0.626	0.709
Married before age 20	0.413	0.025	493	564	1.117	0.060	0.364	0.463
Had first sexual intercourse before 18	0.163	0.017	493	564	1.037	0.106	0.128	0.197
Children ever born	1.818	0.067	660	760	1.112	0.037	1.683	1.952
Children ever born to women over 40	2.672	0.142	178	196	1.197	0.053	2.389	2.956
Children surviving	1.701	0.058	660	760	1.071	0.034	1.584	1.818
Knowing any contraceptive method	0.998	0.002	428	507	0.715	0.002	0.994	1.000
Knowing any modern contraceptive method	0.996	0.002	428	507	0.742	0.002	0.992	1.000
Ever used any contraceptive method	0.910	0.017	428	507	1.246	0.019	0.875	0.944
Currently using any method	0.655	0.025	428	507	1.065	0.037	0.606	0.704
Currently using a modern method	0.477	0.028	428	507	1.163	0.059	0.421	0.533
Currently using pill	0.026	0.007	428	507	0.936	0.277	0.012	0.041
Currently using IUD	0.354	0.029	428	507	1.238	0.081	0.296	0.411
Currently using condom	0.040	0.010	428	507	1.040	0.246	0.020	0.060
Currently using periodic abstinence	0.054	0.012	428	507	1.119	0.227	0.029	0.078
Currently using withdrawal	0.059	0.016	428	507	1.440	0.280	0.026	0.091
Using public sector source	0.862	0.027	259	285	1.263	0.031	0.808	0.916
Want no more children	0.551	0.025	428	507	1.059	0.046	0.501	0.602
Want to delay at least 2 years	0.119	0.018	428	507	1.135	0.150	0.083	0.154
Ideal number of children	2.654	0.067	626	713	1.366	0.025	2.520	2.789
BMI < 18.5	0.040	0.012	288	344	1.075	0.311	0.015	0.065
BMI between 18.5 and 30.0	0.761	0.024	288	344	0.958	0.032	0.713	0.810
BMI > 30.0	0.199	0.023	288	344	0.997	0.118	0.152	0.246
Weight-for-height (< -2 SD)	0.013	0.007	287	342	1.068	0.557	0.000	0.027
Severe anemia	0.005	0.005	290	354	1.211	0.986	0.000	0.015
Moderate anemia	0.071	0.017	290	354	1.115	0.237	0.037	0.105
Mild anemia	0.265	0.030	290	354	1.154	0.113	0.205	0.325
Mother received medical care at birth	1.000	0.000	158	196	NA	0.000	1.000	1.000
Had diarrhea in the last 2 weeks	0.112	0.035	151	185	1.434	0.316	0.041	0.183
Treated with ORS packets	0.328	0.113	18	21	1.020	0.344	0.102	0.554
Consulted medical personnel	0.229	0.104	18	21	1.050	0.454	0.021	0.437
Received BCG vaccination	1.000	0.000	22	21	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	1.000	0.000	22	21	NA	0.000	1.000	1.000
Received polio vaccination (3 doses)	0.879	0.093	22	21	1.225	0.106	0.693	1.000
Received measles vaccination	0.895	0.061	22	21	0.863	0.069	0.772	1.000
Fully immunized	0.774	0.099	22	21	1.019	0.128	0.576	0.972
Weight-for-height (< -2 SD)	0.015	0.013	67	91	0.932	0.847	0.000	0.041
Height-for-age (< -2 SD)	0.050	0.026	67	91	1.088	0.524	0.000	0.103
Weight-for-age (< -2 SD)	0.020	0.013	67	91	0.828	0.651	0.000	0.046
Children with severe anemia	0.000	0.000	68	92	NA	NA	0.000	0.000
Children with moderate anemia	0.120	0.042	68	92	1.143	0.346	0.037	0.203
Children with mild anemia	0.119	0.027	68	92	0.782	0.225	0.065	0.172
Total fertility rate (3 years)	1.633	0.249	NA	2198	1.638	0.153	1.134	2.132
Neonatal mortality rate (10 years)[1]	30.371	9.157	441	546	1.211	0.302	12.057	48.686
Infant mortality rate (10 years)[1]	59.031	13.744	441	546	1.211	0.233	31.543	86.519
Child mortality rate (10 years)[1]	6.565	3.795	443	548	1.104	0.578	0.000	14.156
Under-five mortality rate(10 years)[1]	65.208	14.008	443	548	1.175	0.215	37.191	93.225
Postneonatal mortality rate(10 years)[1]	28.660	8.964	441	546	1.053	0.313	10.732	46.587

[1]Five years for the total rate
NA = Not applicable

Table B.14 Sampling errors for men - Total sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.549	0.020	1440	1440	1.497	0.036	0.510	0.588
Primary/secondary education	0.459	0.016	1440	1440	1.205	0.034	0.427	0.491
Secondary-special education	0.403	0.016	1440	1440	1.256	0.040	0.371	0.436
Higher education	0.138	0.009	1440	1440	1.030	0.068	0.119	0.157
Never married (in union)	0.301	0.016	1440	1440	1.344	0.054	0.268	0.334
Currently married (in union)	0.648	0.016	1440	1440	1.277	0.025	0.616	0.680
Knowing any contraceptive method	0.998	0.001	938	933	0.743	0.001	0.995	1.000
Knowing any modern contraceptive method	0.995	0.002	938	933	0.687	0.002	0.992	0.998
Ever used any contraceptive method	0.841	0.017	938	933	1.386	0.020	0.807	0.874
Currently using any method	0.630	0.020	938	933	1.247	0.031	0.591	0.669
Currently using a modern method	0.546	0.021	938	933	1.311	0.039	0.503	0.589
Currently using pill	0.026	0.006	938	933	1.106	0.221	0.015	0.038
Currently using IUD	0.382	0.019	938	933	1.216	0.051	0.343	0.420
Currently using injectables	0.001	0.001	938	933	1.153	1.005	0.000	0.004
Currently using Norplant	0.000	0.000	938	933	NA	NA	0.000	0.000
Currently using condom	0.107	0.015	938	933	1.486	0.141	0.077	0.136
Currently using female sterilization	0.028	0.008	938	933	1.431	0.275	0.013	0.044
Currently using male sterilization	0.002	0.002	938	933	1.450	0.999	0.000	0.007
Currently using periodic abstinence	0.034	0.007	938	933	1.206	0.210	0.020	0.048
Currently using withdrawal	0.027	0.007	938	933	1.370	0.270	0.012	0.041
Want no more children	0.557	0.018	938	933	1.125	0.033	0.521	0.594
Want to delay at least 2 years	0.133	0.011	938	933	1.000	0.084	0.110	0.155
Ideal number of children	3.233	0.068	1116	1091	1.300	0.021	3.097	3.368

NA = Not applicable

Table B.15 Sampling errors for men - Urban sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	1.000	0.000	850	790	NA	0.000	1.000	1.000
Primary/secondary education	0.384	0.018	850	790	1.069	0.046	0.349	0.420
Secondary-special education	0.431	0.020	850	790	1.166	0.046	0.392	0.471
Higher education	0.185	0.015	850	790	1.125	0.081	0.155	0.215
Never married (in union)	0.271	0.021	850	790	1.395	0.078	0.229	0.314
Currently married (in union)	0.669	0.021	850	790	1.278	0.031	0.628	0.711
Knowing any contraceptive method	0.997	0.002	565	529	0.762	0.002	0.993	1.000
Knowing any modern contraceptive method	0.992	0.003	565	529	0.701	0.003	0.987	0.997
Ever used any contraceptive method	0.879	0.017	565	529	1.259	0.020	0.845	0.914
Currently using any method	0.659	0.022	565	529	1.083	0.033	0.615	0.702
Currently using a modern method	0.573	0.027	565	529	1.286	0.047	0.519	0.626
Currently using pill	0.040	0.009	565	529	1.125	0.233	0.021	0.058
Currently using IUD	0.364	0.026	565	529	1.272	0.071	0.313	0.416
Currently using injectables	0.000	0.000	565	529	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	565	529	NA	NA	0.000	0.000
Currently using condom	0.143	0.022	565	529	1.481	0.152	0.100	0.187
Currently using female sterilization	0.026	0.008	565	529	1.236	0.322	0.009	0.042
Currently using male sterilization	0.000	0.000	565	529	NA	NA	0.000	0.000
Currently using periodic abstinence	0.042	0.010	565	529	1.199	0.242	0.022	0.062
Currently using withdrawal	0.021	0.008	565	529	1.364	0.394	0.004	0.037
Want no more children	0.604	0.024	565	529	1.159	0.039	0.557	0.652
Want to delay at least 2 years	0.138	0.017	565	529	1.159	0.122	0.104	0.171
Ideal number of children	3.026	0.081	735	660	1.394	0.027	2.864	3.189

NA = Not applicable

Table B.16 Sampling errors for men - Rural sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.000	0.000	590	650	NA	NA	0.000	0.000
Primary/secondary education	0.550	0.028	590	650	1.362	0.051	0.494	0.606
Secondary-special education	0.369	0.027	590	650	1.346	0.073	0.315	0.423
Higher education	0.081	0.010	590	650	0.929	0.129	0.060	0.102
Never married (in union)	0.337	0.026	590	650	1.326	0.077	0.285	0.389
Currently married (in union)	0.622	0.026	590	650	1.289	0.041	0.570	0.673
Knowing any contraceptive method	0.999	0.001	373	404	0.718	0.001	0.996	1.000
Knowing any modern contraceptive method	0.999	0.001	373	404	0.718	0.001	0.996	1.000
Ever used any contraceptive method	0.790	0.032	373	404	1.495	0.040	0.727	0.853
Currently using any method	0.593	0.036	373	404	1.411	0.061	0.521	0.664
Currently using a modern method	0.511	0.035	373	404	1.333	0.068	0.441	0.580
Currently using pill	0.008	0.005	373	404	1.183	0.680	0.000	0.019
Currently using IUD	0.404	0.029	373	404	1.147	0.072	0.346	0.463
Currently using injectables	0.003	0.003	373	404	1.113	1.012	0.000	0.010
Currently using Norplant	0.000	0.000	373	404	NA	NA	0.000	0.000
Currently using condom	0.058	0.020	373	404	1.612	0.336	0.019	0.097
Currently using female sterilization	0.031	0.014	373	404	1.573	0.452	0.003	0.060
Currently using male sterilization	0.005	0.005	373	404	1.388	0.997	0.000	0.016
Currently using periodic abstinence	0.024	0.010	373	404	1.292	0.425	0.004	0.045
Currently using withdrawal	0.035	0.013	373	404	1.346	0.368	0.009	0.060
Want no more children	0.495	0.027	373	404	1.040	0.054	0.441	0.549
Want to delay at least 2 years	0.126	0.013	373	404	0.762	0.104	0.100	0.152
Ideal number of children	3.548	0.123	381	431	1.253	0.035	3.301	3.795

NA = Not applicable

Table B.17 Sampling errors for men - Almaty City sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	1.000	0.000	168	90	NA	0.000	1.000	1.000
Primary/secondary education	0.351	0.028	168	90	0.752	0.079	0.296	0.407
Secondary-special education	0.310	0.031	168	90	0.873	0.101	0.247	0.372
Higher education	0.339	0.042	168	90	1.139	0.123	0.256	0.423
Never married (in union)	0.268	0.036	168	90	1.050	0.134	0.196	0.340
Currently married (in union)	0.649	0.037	168	90	1.007	0.057	0.574	0.723
Knowing any contraceptive method	1.000	0.000	109	58	NA	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	109	58	NA	0.000	1.000	1.000
Ever used any contraceptive method	0.908	0.029	109	58	1.046	0.032	0.850	0.966
Currently using any method	0.679	0.050	109	58	1.112	0.074	0.579	0.779
Currently using a modern method	0.633	0.041	109	58	0.893	0.065	0.550	0.716
Currently using pill	0.046	0.020	109	58	1.011	0.444	0.005	0.087
Currently using IUD	0.284	0.040	109	58	0.928	0.142	0.204	0.365
Currently using injectables	0.000	0.000	109	58	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	109	58	NA	NA	0.000	0.000
Currently using condom	0.294	0.045	109	58	1.030	0.154	0.203	0.384
Currently using female sterilization	0.009	0.009	109	58	0.976	0.976	0.000	0.027
Currently using male sterilization	0.000	0.000	109	58	NA	NA	0.000	0.000
Currently using periodic abstinence	0.028	0.015	109	58	0.984	0.563	0.000	0.059
Currently using withdrawal	0.000	0.000	109	58	NA	NA	0.000	0.000
Want no more children	0.523	0.045	109	58	0.935	0.086	0.433	0.613
Want to delay at least 2 years	0.211	0.043	109	58	1.094	0.204	0.125	0.297
Ideal number of children	2.695	0.133	151	81	1.275	0.049	2.430	2.961

NA = Not applicable

Table B.18 Sampling errors for men - South sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.373	0.056	281	426	1.941	0.150	0.261	0.485
Primary/secondary education	0.533	0.034	281	426	1.155	0.065	0.464	0.602
Secondary-special education	0.360	0.037	281	426	1.286	0.103	0.286	0.433
Higher education	0.107	0.017	281	426	0.895	0.154	0.074	0.140
Never married (in union)	0.341	0.036	281	426	1.258	0.105	0.269	0.412
Currently married (in union)	0.625	0.036	281	426	1.248	0.058	0.552	0.697
Knowing any contraceptive method	1.000	0.000	175	266	NA	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	175	266	NA	0.000	1.000	1.000
Ever used any contraceptive method	0.801	0.039	175	266	1.286	0.049	0.723	0.879
Currently using any method	0.530	0.040	175	266	1.052	0.075	0.450	0.610
Currently using a modern method	0.460	0.041	175	266	1.073	0.088	0.379	0.541
Currently using pill	0.015	0.011	175	266	1.160	0.701	0.000	0.037
Currently using IUD	0.367	0.035	175	266	0.968	0.096	0.296	0.437
Currently using injectables	0.005	0.005	175	266	0.945	1.018	0.000	0.015
Currently using Norplant	0.000	0.000	175	266	NA	NA	0.000	0.000
Currently using condom	0.048	0.020	175	266	1.233	0.417	0.008	0.088
Currently using female sterilization	0.025	0.018	175	266	1.497	0.704	0.000	0.061
Currently using male sterilization	0.000	0.000	175	266	NA	NA	0.000	0.000
Currently using periodic abstinence	0.023	0.014	175	266	1.206	0.603	0.000	0.050
Currently using withdrawal	0.032	0.012	175	266	0.914	0.379	0.008	0.057
Want no more children	0.393	0.032	175	266	0.878	0.083	0.328	0.458
Want to delay at least 2 years	0.150	0.022	175	266	0.810	0.146	0.106	0.194
Ideal number of children	3.899	0.245	119	188	1.297	0.063	3.408	4.390

NA = Not applicable

Table B.19 Sampling errors for men - West sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.571	0.037	264	182	1.210	0.065	0.498	0.645
Primary/secondary education	0.514	0.024	264	182	0.777	0.047	0.466	0.562
Secondary-special education	0.368	0.028	264	182	0.946	0.076	0.312	0.424
Higher education	0.118	0.026	264	182	1.329	0.224	0.065	0.171
Never married (in union)	0.304	0.023	264	182	0.824	0.077	0.257	0.351
Currently married (in union)	0.670	0.021	264	182	0.721	0.031	0.628	0.711
Knowing any contraceptive method	0.995	0.005	178	122	0.909	0.005	0.986	1.000
Knowing any modern contraceptive method	0.995	0.005	178	122	0.909	0.005	0.986	1.000
Ever used any contraceptive method	0.853	0.028	178	122	1.049	0.033	0.798	0.909
Currently using any method	0.654	0.047	178	122	1.317	0.072	0.559	0.748
Currently using a modern method	0.592	0.045	178	122	1.229	0.077	0.501	0.683
Currently using pill	0.014	0.010	178	122	1.118	0.709	0.000	0.034
Currently using IUD	0.444	0.041	178	122	1.086	0.091	0.363	0.526
Currently using injectables	0.000	0.000	178	122	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	178	122	NA	NA	0.000	0.000
Currently using condom	0.115	0.019	178	122	0.778	0.162	0.078	0.152
Currently using female sterilization	0.018	0.010	178	122	1.021	0.560	0.000	0.039
Currently using male sterilization	0.000	0.000	178	122	NA	NA	0.000	0.000
Currently using periodic abstinence	0.014	0.010	178	122	1.162	0.743	0.000	0.034
Currently using withdrawal	0.000	0.000	178	122	NA	NA	0.000	0.000
Want no more children	0.571	0.043	178	122	1.145	0.075	0.486	0.656
Want to delay at least 2 years	0.103	0.026	178	122	1.121	0.249	0.052	0.154
Ideal number of children	3.757	0.235	171	117	1.399	0.063	3.286	4.228

NA = Not applicable

Table B.20 Sampling errors for men - Central sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.865	0.022	275	139	1.048	0.025	0.821	0.908
Primary/secondary education	0.388	0.027	275	139	0.930	0.071	0.333	0.443
Secondary-special education	0.435	0.032	275	139	1.060	0.073	0.372	0.498
Higher education	0.177	0.029	275	139	1.258	0.164	0.119	0.235
Never married (in union)	0.254	0.033	275	139	1.264	0.131	0.187	0.320
Currently married (in union)	0.662	0.034	275	139	1.181	0.051	0.595	0.730
Knowing any contraceptive method	0.988	0.008	182	92	1.051	0.008	0.972	1.000
Knowing any modern contraceptive method	0.960	0.014	182	92	0.958	0.014	0.933	0.988
Ever used any contraceptive method	0.908	0.018	182	92	0.817	0.019	0.873	0.943
Currently using any method	0.495	0.035	182	92	0.948	0.071	0.425	0.566
Currently using a modern method	0.435	0.039	182	92	1.065	0.090	0.357	0.514
Currently using pill	0.046	0.018	182	92	1.185	0.401	0.009	0.083
Currently using IUD	0.301	0.040	182	92	1.163	0.132	0.222	0.381
Currently using injectables	0.000	0.000	182	92	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	182	92	NA	NA	0.000	0.000
Currently using condom	0.072	0.021	182	92	1.067	0.284	0.031	0.114
Currently using female sterilization	0.016	0.009	182	92	0.981	0.578	0.000	0.034
Currently using male sterilization	0.000	0.000	182	92	NA	NA	0.000	0.000
Currently using periodic abstinence	0.025	0.015	182	92	1.278	0.595	0.000	0.054
Currently using withdrawal	0.035	0.011	182	92	0.833	0.325	0.012	0.058
Want no more children	0.577	0.043	182	92	1.171	0.074	0.491	0.663
Want to delay at least 2 years	0.155	0.023	182	92	0.862	0.149	0.109	0.202
Ideal number of children	2.993	0.090	265	135	0.907	0.030	2.813	3.174

NA = Not applicable

Table B.21 Sampling errors for men - North sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.466	0.043	172	396	1.122	0.092	0.380	0.551
Primary/secondary education	0.441	0.032	172	396	0.839	0.072	0.377	0.504
Secondary-special education	0.442	0.034	172	396	0.894	0.077	0.375	0.510
Higher education	0.117	0.017	172	396	0.704	0.148	0.082	0.152
Never married (in union)	0.287	0.035	172	396	1.004	0.121	0.218	0.357
Currently married (in union)	0.656	0.036	172	396	0.977	0.054	0.585	0.727
Knowing any contraceptive method	1.000	0.000	112	260	NA	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	112	260	NA	0.000	1.000	1.000
Ever used any contraceptive method	0.817	0.040	112	260	1.084	0.049	0.738	0.897
Currently using any method	0.719	0.044	112	260	1.020	0.061	0.632	0.806
Currently using a modern method	0.590	0.054	112	260	1.155	0.091	0.483	0.698
Currently using pill	0.018	0.012	112	260	0.964	0.675	0.000	0.042
Currently using IUD	0.400	0.045	112	260	0.974	0.113	0.309	0.490
Currently using injectables	0.000	0.000	112	260	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	112	260	NA	NA	0.000	0.000
Currently using condom	0.112	0.044	112	260	1.478	0.394	0.024	0.201
Currently using female sterilization	0.052	0.020	112	260	0.932	0.377	0.013	0.092
Currently using male sterilization	0.008	0.008	112	260	0.948	0.998	0.000	0.024
Currently using periodic abstinence	0.056	0.019	112	260	0.858	0.334	0.019	0.094
Currently using withdrawal	0.044	0.021	112	260	1.100	0.486	0.001	0.087
Want no more children	0.670	0.041	112	260	0.928	0.062	0.588	0.753
Want to delay at least 2 years	0.098	0.020	112	260	0.721	0.207	0.058	0.139
Ideal number of children	3.070	0.113	172	396	0.953	0.037	2.845	3.295

NA = Not applicable

Table B.22 Sampling errors for men - East sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: Value-R-2SE	Confidence intervals: Value+R+2SE
Urban residence	0.642	0.024	280	207	0.822	0.037	0.595	0.689
Primary/secondary education	0.388	0.032	280	207	1.098	0.083	0.324	0.452
Secondary-special education	0.468	0.023	280	207	0.773	0.049	0.422	0.514
Higher education	0.144	0.028	280	207	1.341	0.196	0.087	0.200
Never married (in union)	0.289	0.032	280	207	1.185	0.111	0.225	0.353
Currently married (in union)	0.651	0.030	280	207	1.036	0.045	0.592	0.710
Knowing any contraceptive method	0.996	0.004	182	135	0.846	0.004	0.988	1.000
Knowing any modern contraceptive method	0.996	0.004	182	135	0.846	0.004	0.988	1.000
Ever used any contraceptive method	0.878	0.029	182	135	1.170	0.032	0.821	0.935
Currently using any method	0.706	0.043	182	135	1.285	0.062	0.620	0.793
Currently using a modern method	0.625	0.044	182	135	1.225	0.071	0.537	0.713
Currently using pill	0.051	0.017	182	135	1.018	0.327	0.018	0.084
Currently using IUD	0.416	0.056	182	135	1.515	0.133	0.305	0.527
Currently using injectables	0.000	0.000	182	135	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	182	135	NA	NA	0.000	0.000
Currently using condom	0.146	0.027	182	135	1.019	0.183	0.093	0.199
Currently using female sterilization	0.013	0.009	182	135	1.061	0.700	0.000	0.030
Currently using male sterilization	0.000	0.000	182	135	NA	NA	0.000	0.000
Currently using periodic abstinence	0.042	0.016	182	135	1.048	0.371	0.011	0.074
Currently using withdrawal	0.013	0.009	182	135	1.083	0.715	0.000	0.030
Want no more children	0.651	0.043	182	135	1.227	0.067	0.564	0.738
Want to delay at least 2 years	0.142	0.035	182	135	1.345	0.246	0.072	0.212
Ideal number of children	2.964	0.133	238	174	1.450	0.045	2.697	3.231

NA = Not applicable

Table B.23 Sampling errors for men - Kazak sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.440	0.036	761	747	1.972	0.081	0.369	0.511
Primary/secondary education	0.514	0.023	761	747	1.243	0.044	0.469	0.559
Secondary-special education	0.342	0.022	761	747	1.253	0.063	0.298	0.385
Higher education	0.144	0.015	761	747	1.140	0.101	0.115	0.173
Never married (in union)	0.345	0.021	761	747	1.223	0.061	0.303	0.388
Currently married (in union)	0.614	0.021	761	747	1.178	0.034	0.572	0.655
Knowing any contraceptive method	0.998	0.002	483	458	0.776	0.002	0.994	1.000
Knowing any modern contraceptive method	0.994	0.002	483	458	0.679	0.002	0.989	0.999
Ever used any contraceptive method	0.785	0.020	483	458	1.084	0.026	0.744	0.826
Currently using any method	0.580	0.025	483	458	1.122	0.043	0.530	0.631
Currently using a modern method	0.509	0.027	483	458	1.184	0.053	0.455	0.563
Currently using pill	0.018	0.008	483	458	1.307	0.445	0.002	0.033
Currently using IUD	0.403	0.027	483	458	1.207	0.067	0.349	0.457
Currently using injectables	0.003	0.003	483	458	1.187	1.010	0.000	0.009
Currently using Norplant	0.000	0.000	483	458	NA	NA	0.000	0.000
Currently using condom	0.068	0.012	483	458	1.084	0.183	0.043	0.092
Currently using female sterilization	0.017	0.010	483	458	1.727	0.591	0.000	0.038
Currently using male sterilization	0.000	0.000	483	458	NA	NA	0.000	0.000
Currently using periodic abstinence	0.041	0.013	483	458	1.395	0.307	0.016	0.066
Currently using withdrawal	0.014	0.007	483	458	1.217	0.459	0.001	0.028
Want no more children	0.487	0.026	483	458	1.147	0.054	0.435	0.539
Want to delay at least 2 years	0.154	0.015	483	458	0.900	0.096	0.124	0.183
Ideal number of children	3.864	0.125	509	467	1.425	0.032	3.613	4.115

NA = Not applicable

Table B.24 Sampling errors for men - Russian sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.728	0.039	468	460	1.914	0.054	0.649	0.807
Primary/secondary education	0.353	0.025	468	460	1.138	0.071	0.303	0.404
Secondary-special education	0.510	0.028	468	460	1.204	0.055	0.454	0.565
Higher education	0.137	0.019	468	460	1.169	0.136	0.100	0.174
Never married (in union)	0.281	0.027	468	460	1.286	0.095	0.228	0.335
Currently married (in union)	0.662	0.028	468	460	1.293	0.043	0.605	0.718
Knowing any contraceptive method	0.997	0.002	307	304	0.726	0.002	0.992	1.000
Knowing any modern contraceptive method	0.993	0.003	307	304	0.721	0.003	0.987	1.000
Ever used any contraceptive method	0.886	0.025	307	304	1.399	0.029	0.835	0.937
Currently using any method	0.684	0.032	307	304	1.218	0.047	0.619	0.749
Currently using a modern method	0.553	0.041	307	304	1.428	0.073	0.472	0.634
Currently using pill	0.035	0.010	307	304	0.997	0.300	0.014	0.056
Currently using IUD	0.338	0.040	307	304	1.464	0.117	0.259	0.417
Currently using injectables	0.000	0.000	307	304	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	307	304	NA	NA	0.000	0.000
Currently using condom	0.151	0.023	307	304	1.105	0.150	0.106	0.196
Currently using female sterilization	0.029	0.005	307	304	0.552	0.182	0.018	0.040
Currently using male sterilization	0.000	0.000	307	304	NA	NA	0.000	0.000
Currently using periodic abstinence	0.037	0.015	307	304	1.409	0.412	0.007	0.067
Currently using withdrawal	0.049	0.020	307	304	1.595	0.402	0.010	0.088
Want no more children	0.666	0.030	307	304	1.118	0.045	0.606	0.727
Want to delay at least 2 years	0.105	0.018	307	304	1.055	0.176	0.068	0.142
Ideal number of children	2.604	0.066	423	423	1.155	0.025	2.473	2.736

NA = Not applicable

Table B.25 Sampling errors for men - Others sample: Kazakhstan 1999

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals: R-2SE	Confidence intervals: R+2SE
Urban residence	0.543	0.053	211	234	1.551	0.098	0.437	0.650
Primary/secondary education	0.491	0.043	211	234	1.254	0.088	0.404	0.577
Secondary-special education	0.390	0.044	211	234	1.293	0.111	0.303	0.478
Higher education	0.119	0.025	211	234	1.122	0.211	0.068	0.169
Never married (in union)	0.198	0.034	211	234	1.254	0.174	0.129	0.267
Currently married (in union)	0.730	0.039	211	234	1.262	0.053	0.653	0.807
Knowing any contraceptive method	1.000	0.000	148	170	NA	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	148	170	NA	0.000	1.000	1.000
Ever used any contraceptive method	0.910	0.032	148	170	1.355	0.035	0.846	0.974
Currently using any method	0.668	0.051	148	170	1.325	0.077	0.565	0.771
Currently using a modern method	0.633	0.051	148	170	1.290	0.081	0.531	0.736
Currently using pill	0.033	0.017	148	170	1.125	0.500	0.000	0.067
Currently using IUD	0.400	0.045	148	170	1.118	0.113	0.310	0.491
Currently using injectables	0.000	0.000	148	170	NA	NA	0.000	0.000
Currently using Norplant	0.000	0.000	148	170	NA	NA	0.000	0.000
Currently using condom	0.132	0.041	148	170	1.482	0.313	0.049	0.215
Currently using female sterilization	0.055	0.030	148	170	1.570	0.536	0.000	0.114
Currently using male sterilization	0.012	0.012	148	170	1.345	0.994	0.000	0.037
Currently using periodic abstinence	0.011	0.008	148	170	0.944	0.744	0.000	0.027
Currently using withdrawal	0.021	0.015	148	170	1.291	0.729	0.000	0.051
Want no more children	0.551	0.054	148	170	1.306	0.097	0.444	0.658
Want to delay at least 2 years	0.125	0.036	148	170	1.309	0.286	0.053	0.196
Ideal number of children	3.088	0.131	184	200	1.093	0.043	2.825	3.350

NA = Not applicable

DATA QUALITY TABLES

APPENDIX C

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Kazakhstan 1999

	Males		Females			Males		Females	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
0	153	1.6	154	1.4	37	180	1.9	184	1.7
1	144	1.5	153	1.4	38	142	1.5	121	1.1
2	173	1.8	162	1.5	39	143	1.5	183	1.7
3	125	1.3	173	1.6	40	155	1.6	169	1.6
4	192	2.0	171	1.6	41	107	1.1	165	1.5
5	189	2.0	188	1.8	42	133	1.4	129	1.2
6	194	2.0	205	1.9	43	140	1.5	150	1.4
7	248	2.6	219	2.1	44	115	1.2	104	1.0
8	239	2.5	234	2.2	45	91	1.0	141	1.3
9	252	2.6	233	2.2	46	101	1.1	121	1.1
10	234	2.5	210	2.0	47	109	1.1	110	1.0
11	244	2.6	247	2.3	48	78	0.8	87	0.8
12	225	2.4	243	2.3	49	106	1.1	95	0.9
13	242	2.5	221	2.1	50	93	1.0	155	1.5
14	248	2.6	222	2.1	51	97	1.0	108	1.0
15	230	2.4	176	1.7	52	90	0.9	120	1.1
16	179	1.9	198	1.9	53	60	0.6	90	0.8
17	190	2.0	190	1.8	54	38	0.4	71	0.7
18	139	1.5	167	1.6	55	28	0.3	40	0.4
19	119	1.2	156	1.5	56	36	0.4	53	0.5
20	144	1.5	196	1.8	57	82	0.9	81	0.8
21	119	1.2	139	1.3	58	82	0.9	107	1.0
22	134	1.4	139	1.3	59	93	1.0	109	1.0
23	144	1.5	130	1.2	60	93	1.0	143	1.3
24	149	1.6	133	1.2	61	75	0.8	111	1.0
25	141	1.5	146	1.4	62	85	0.9	98	0.9
26	125	1.3	129	1.2	63	72	0.8	109	1.0
27	172	1.8	169	1.6	64	59	0.6	87	0.8
28	152	1.6	127	1.2	65	52	0.5	59	0.6
29	121	1.3	171	1.6	66	37	0.4	46	0.4
30	144	1.5	168	1.6	67	40	0.4	67	0.6
31	146	1.5	153	1.4	68	32	0.3	61	0.6
32	143	1.5	182	1.7	69	48	0.5	70	0.7
33	142	1.5	133	1.3	70+	310	3.2	630	5.9
34	128	1.3	120	1.1	Don't know, missing	0	0.0	0	0.0
35	151	1.6	151	1.4					
36	145	1.5	160	1.5	Total	9,562	100.0	10,641	100.0

Note: The de facto population includes all residents and nonresidents (visitors) who slept in the household the night before the interview.

Table C.2.1 Age distribution of eligible and interviewed women

Percent distribution of the de facto household population of women age 10-54, and of interviewed women age 15-49, and percentage of eligible women who were interviewed (weighted) by five-year groups, Kazakhstan 1999

Age	Household population of women		Interviewed women		Percentage of eligible women interviewed (weighted)
	Number	Percent	Number	Percent	
10-14	1,142	NA	NA	NA	NA
15-19	888	17.1	862	17.0	97.1
20-24	737	14.2	715	14.1	97.1
25-29	743	14.3	731	14.4	98.5
30-34	756	14.6	747	14.7	98.9
25-39	798	15.4	780	15.4	97.7
40-44	717	13.8	702	13.8	97.9
45-49	553	10.7	540	10.6	97.7
50-54	545	NA	NA	NA	NA
15-49	5,192	NA	5,079	NA	97.8

Note: The de facto population includes all residents and nonresidents (visitors) who slept in the household the night before the interview.
NA = Not applicable

Table C.2.2 Age distribution of eligible and interviewed men

Percent distribution of the de facto household population of men age 10-65+, and of interviewed men age 15-59, and percentage of eligible men who were interviewed (weighted) by five-year groups, Kazakhstan 1999

Age	Household population of men		Interviewed men		Percentage of eligible men interviewed (weighted)
	Number	Percent	Number	Percent	
10-14	363	NA	NA	NA	NA
15-19	254	15.0	243	16.1	95.8
20-24	208	12.3	195	12.9	93.9
25-29	204	12.0	188	12.4	92.1
30-34	200	11.8	186	12.3	93.2
25-39	244	14.4	231	15.2	94.7
40-44	181	10.7	169	11.2	93.5
45-49	141	8.3	127	8.4	89.9
50-54	107	6.3	103	6.8	96.7
55-59	74	4.4	71	4.7	96.9
60-64	82	4.8	0	0.0	0.0
65+	46	NA	NA	NA	NA
15-65+	1,692	NA	1,513	NA	89.4

Note: The de facto population includes all residents and nonresidents (visitors) who slept in the household the night before the interview.
NA = Not applicable

Table C.3 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions, Kazakhstan 1999

Subject	Reference group	Percentage missing information	Number of cases
Birth Date	Birth in past 15 years		
Month only		0.13	5,517
Month and year		0.01	5,517
Age at death	Deaths to births in past 15 years	0.17	353
Age at/date of first union[1]	Ever-married women	0.17	3,585
Respondent's education	All women	0.01	4,800
Anthropometry[2]	Living children 0-59 months	1.79	1,431
Height		53.7	1,354
Weight		53.6	1,354
Height or weight		53.8	1,354
Diarrhea in last 2 weeks	Living children 0-59 months	1.32	1,354

[1] Both year and age missing
[2] Child not measured

C.4 Births by calendar years

Distribution of births by calendar years for living (L), dead (D), and all (T) children, according to reporting completeness, sex ratio at birth, and ratio of births by calendar year, Kazakhstan 1999

	Number of births			Percentage with complete birth date[1]			Sex ratio at birth[2]			Calendar ratio[3]			Male			Female		
Year	(L)	(D)	(T)	(L)	(D)	(T)	(L)	(D)	(T)	(L)	(D)	(T)	(L)	(D)	(T)	(L)	(D)	(T)
99	166	4	170	100.0	100.0	100.0	106.2	NA	111.4	NA	NA	NA	86	4	90	81	0	81
98	260	15	275	100.0	100.0	100.0	84.1	88.0	84.3	116.2	145.6	117.5	119	7	126	141	8	149
97	281	16	297	100.0	100.0	100.0	100.9	110.0	101.3	105.1	79.9	103.3	141	8	150	140	8	148
96	275	25	301	100.0	100.0	100.0	101.0	149.4	104.4	100.4	116.7	101.6	138	15	154	137	10	147
95	267	28	295	100.0	100.0	100.0	118.9	101.0	117.1	87.0	112.4	88.9	145	14	159	122	14	136
94	339	24	363	100.0	100.0	100.0	100.3	195.6	104.6	107.7	75.9	104.8	170	16	185	169	8	177
93	362	35	397	100.0	100.0	100.0	96.1	134.3	98.9	108.1	137.3	110.2	177	20	197	185	15	199
92	331	27	358	99.8	100.0	99.8	111.8	228.8	117.6	83.5	98.4	84.5	175	19	193	156	8	164
91	430	20	450	100.0	100.0	100.0	112.2	92.7	111.3	115.3	86.3	113.6	228	10	237	203	10	21
90	416	19	435	100.0	100.0	100.0	115.0	218.4	118.2	NA	NA	NA	222	13	236	193	6	199
95-99	1,249	88	1,337	100.0	100.0	100.0	101.3	123.3	102.6	NA	NA	NA	629	49	677	620	39	660
90-94	1,878	125	2,003	100.0	100.0	100.0	107.2	162.6	110.0	NA	NA	NA	972	77	1,049	906	47	954
85-89	1,921	134	2,054	99.9	96.4	99.7	102.3	157.7	105.2	NA	NA	NA	971	82	1,053	949	52	1,001
80-84	1,492	123	1,615	99.9	97.8	99.7	96.6	164.1	100.5	NA	NA	NA	733	77	809	759	47	806
< 80	1,280	177	1,457	99.8	96.6	99.4	88.9	183.4	96.9	NA	NA	NA	602	115	717	678	63	740
All	7,820	647	8,467	99.9	97.9	99.8	99.9	160.8	103.5	NA	NA	NA	3,907	399	4,306	3,913	248	4,161

NA = Not applicable

[1]Both year and month of birth given

[2]$(B_m/B_f)*100$, where B_m and B_f are the numbers of male and female births, respectively

[3]$[2B_x/(B_{x-1}+B_{x+1})]*100$, where B_x is the number births in calendar year x

Table C.5 Reporting of age at death in days

Distribution of reported deaths under 1 month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods preceding the survey, Kazakhstan 1999

Age at death (in days)	Number of years preceding survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	17	17	26	11	71
1	6	7	14	10	37
2	4	6	1	7	18
3	7	7	7	5	26
4	1	2	2	0	5
5	3	3	0	0	6
6	2	2	0	0	4
7	2	0	1	1	5
8	0	2	1	0	3
9	0	0	1	0	1
10	3	0	2	3	7
11	0	0	1	0	1
12	0	1	1	0	2
15	0	0	2	1	3
17	0	1	1	0	1
18	0	1	0	0	1
19	0	1	0	1	1
20	2	3	0	0	5
21	0	0	0	1	1
24	0	1	0	0	1
29	0	1	0	0	1
30	2	2	0	1	5
31+	2	0	1	0	2
Total 0-30[1]	49	54	60	41	203
Percent early neonatal[2]	83.0	79.5	84.2	82.3	82.3

[1] Includes cases for which age at death (in exact days) is not known
[2] (0-6 days/0-3 days) * 100

Table C.6 Reporting of age at death in months

Distribution of reported deaths under 2 years of age by age at death in months and the percentage of infant deaths reported to occur at ages under one month, for five-year periods preceding the survey, Kazakhstan 1999

Age at deaths (in months)	Number of years preceding the survey				Total
	0-4	5-9	10-14	15-19	0-19
<1[a]	49	54	60	41	203
1	4	3	6	4	18
2	3	6	3	9	22
3	6	8	13	13	39
4	6	3	3	3	15
5	3	6	1	3	13
6	6	5	6	4	20
7	1	7	5	3	17
8	5	3	6	4	18
9	0	2	0	3	5
10	3	5	3	2	13
11	0	1	4	4	9
12	2	4	0	0	6
13	0	0	1	1	2
15	0	1	0	0	1
17	1	1	0	0	2
18	1	2	6	2	12
22	1	0	0	0	1
1 Year	2	2	3	6	13
Total 0-11[b]	86	104	110	94	393
Percent neonatal[c]	57.0	51.9	54.2	43.6	51.7

[a] Includes deaths under 1 month reported in days
[b] Includes cases for which age at death in exact months is not known
[c] (under 1 month/under 1 year) * 100

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APPENDIX **E**

1999 KAZAKHSTAN DEMOGRAPHIC AND HEALTH SURVEY
HOUSEHOLD QUESTIONNAIRE

REPUBLIC OF KAZAKHSTAN
ACADEMY OF PREVENTIVE MEDICINE

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NAME OF HOUSEHOLD HEAD _____

CLUSTER NUMBER .....

HOUSEHOLD NUMBER .....

LARGE CITY/SMALL CITY/TOWN/COUNTRYSIDE (LARGE CITY=1, SMALL CITY=2, TOWN=3, COUNTRYSIDE=4) .....

URBAN/RURAL (URBAN=1, RURAL=2) .....

HOUSEHOLD ELIGIBLE FOR MEN'S INTERVIEW (YES = 1, NO = 2) .....

HOUSEHOLD ELIGIBLE FOR WOMEN'S ANTHROPOMETRY AND ANEMIA TESTING (YES = 1, NO = 2) .....

HOUSEHOLD ELIGIBLE FOR MEN'S ANEMIA TESTING (YES = 1, NO = 2) .....

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY / MONTH / YEAR (1999)
INTERVIEWER'S NAME				NAME
RESULT*				RESULT
NEXT VISIT: DATE				TOTAL NO. OF VISITS
TIME				

*RESULT CODES:

1 COMPLETED
2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT
3 *ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME*
4 POSTPONED
5 REFUSED
6 DWELLING VACANT OR ADDRESS NOT A DWELLING
7 DWELLING DESTROYED
8 *DWELLING NOT FOUND*
9 OTHER _____ (SPECIFY)

TOTAL PERSONS IN HOUSEHOLD

TOTAL ELIGIBLE WOMEN

TOTAL *ELIGIBLE* MEN

LINE NO. OF RESP. TO *HOUSEHOLD* SCHEDULE

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		
DATE _____	DATE _____		

HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	ELIGIBILITY	
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	What is the relationship of (NAME) to the head of the household?*	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?	CIRCLE LINE NUMBER OF ALL WOMEN AGE 15-49	CIRCLE LINE NUMBER OF ALL MEN AGE 15 - 59
-1	-2	-3	-4	-5	-6	-7	-8	-9
			M F	YES NO	YES NO	IN YEARS		
1			1 2	1 2	1 2		1	1
2			1 2	1 2	1 2		2	2
3			1 2	1 2	1 2		3	3
4			1 2	1 2	1 2		4	4
5			1 2	1 2	1 2		5	5
6			1 2	1 2	1 2		6	6
7			1 2	1 2	1 2		7	7
8			1 2	1 2	1 2		8	8
9			1 2	1 2	1 2		9	9
10			1 2	1 2	1 2		10	10

* CODES FOR Q.3
RELATIONSHIP TO HEAD OF HOUSEHOLD:
01 = HEAD
02 = WIFE OR HUSBAND
03 = SON OR DAUGHTER
04 = SON-IN-LAW OR DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER OR SISTER
10 = OTHER RELATIVE
11 = ADOPTED/FOSTER/ STEPCHILD
12 = NOT RELATED
98 = DON'T KNOW

LINE NO.	PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 15 YEARS OLD**				EDUCATION					
	Is (NAME)'s natural mother alive?	IF ALIVE	Is (NAME)'s natural father alive?	IF ALIVE	IF AGE 6 YEARS OR OLDER		IF AGE 6-24 YEARS			
		Does (NAME)'s natural mother live in this household? IF YES: What is her name? RECORD MOTHER'S LINE NUMBER		Does (NAME)'s natural father live in this household? IF YES: What is his name? RECORD FATHER'S LINE NUMBER	Has (NAME) ever attended school?	What is the highest level of school (NAME) has attended?*** What is the highest grade (NAME) completed at that level?***	During the school year ended in May 1999, did (NAME) attend school at any time?	During that school year, what level and grade [was] (NAME) attending?	During the previous school year ended in May 1998, did (NAME) attend school at any time?	During that school year, what level and grade did (NAME) attend?
	-10	-11	-12	-13	-14	-15	-17	-18	-19	-20
	YES NO DK		YES NO DK		YES NO	LEVEL GRADE	YES NO	LEVEL GRADE	YES NO	LEVEL GRADE
1	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
2	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
3	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
4	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
5	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
6	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
7	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
8	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
9	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	
10	1 2 8 ↓ GO TO 12		1 2 8 ↓ GO TO 14		1 2 NEXT LINE ↵		1 2 GO TO ↵ 19		1 2 NEXT LINE ↵	

** Q.10 THROUGH Q.13
THESE QUESTIONS REFER TO THE BIOLOGICAL PARENTS OF THE CHILD.
IN Q.11 AND Q.13, RECORD '00' IF PARENT NOT LISTED IN HOUSEHOLD SCHEDULE.

***CODES FOR Qs. 15, 18 AND 20
EDUCATION LEVEL:
1 = PRIMARY/SECONDARY
2 = SECONDARY SPECIAL
3 = HIGHER
8 = DON'T KNOW

EDUCATION GRADE:
00 = LESS THAN 1 YEAR COMPLETED
98 = DON'T KNOW

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	ELIGIBILITY	
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	What is the relationship of (NAME) to the head of the household?*	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?	CIRCLE LINE NUMBER OF ALL WOMEN AGE 15-49	CIRCLE LINE NUMBER OF ALL MEN AGE 15 - 59
-1	-2	-3	-4	-5	-6	-7	-8	-9
			M F	YES NO	YES NO	IN YEARS		
11			1 2	1 2	1 2		11	11
12			1 2	1 2	1 2		12	12
13			1 2	1 2	1 2		13	13
14			1 2	1 2	1 2		14	14
15			1 2	1 2	1 2		15	15
16			1 2	1 2	1 2		16	16
17			1 2	1 2	1 2		17	17
18			1 2	1 2	1 2		18	18
19			1 2	1 2	1 2		19	19
20			1 2	1 2	1 2		20	20

* CODES FOR Q.3
RELATIONSHIP TO HEAD OF HOUSEHOLD:
01 = HEAD
02 = WIFE OR HUSBAND
03 = SON OR DAUGHTER
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IN Q.11 AND Q.13, RECORD '00' IF PARENT NOT LISTED IN HOUSEHOLD SCHEDULE.

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EDUCATION LEVEL:
1 = PRIMARY
2 = SECONDARY
3 = HIGHER
8 = DON'T KNOW

EDUCATION GRADE:
00 = LESS THAN 1 YEAR COMPLETED
98 = DON'T KNOW

LINE NO.	PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 15 YEARS OLD**				EDUCATION					
	Is (NAME)'s natural mother alive?	IF ALIVE	Is (NAME)'s natural father alive?	IF ALIVE	IF AGE 6 YEARS OR OLDER		IF AGE 6-24 YEARS			
		Does (NAME)'s natural mother live in this household? IF YES: What is her name? RECORD MOTHER'S LINE NUMBER		Does (NAME)'s natural father live in this household? IF YES: What is his name? RECORD FATHER'S LINE NUMBER	Has (NAME) ever attended school?	What is the highest level of school (NAME) has attended?*** What is the highest grade (NAME) completed at that level?***	During the school year ended in May 1999, did (NAME) attend school at any time?	During that school year, what level and grade [was] (NAME) attending?	During the previous school year ended in May 1998, did (NAME) attend school at any time?	During that school year, what level and grade did (NAME) attend?
	-10	-11	-12	-13	-14	-15	-17	-18	-19	-20
	YES NO DK		YES NO DK		YES NO	LEVEL GRADE	YES NO	LEVEL GRADE	YES NO	LEVEL GRADE
11	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
12	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
13	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
14	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
15	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
16	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
17	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
18	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
19	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	
20	1 2 8		1 2 8		1 2 NEXT LINE		1 2 GO TO 19		1 2 NEXT LINE	

TICK HERE IF CONTINUATION SHEET USED ☐

Just to make sure that I have a complete listing:

1) Are there any other persons such as small children or infants that we have not listed? YES ☐ → ENTER EACH IN TABLE NO ☐

2) In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here? YES ☐ → ENTER EACH IN TABLE NO ☐

3) Are there any guests or temporary visitors staying here, or anyone else who slept here last night, who have not been listed? YES ☐ → ENTER EACH IN TABLE NO ☐

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
21	What is the main source of drinking water for members of your household?[1]	PIPED WATER PIPED INTO DWELLING ..... 11 → 23 PIPED INTO YARD/PLOT ..... 12 → 23 PUBLIC TAP ..... 13 WATER FROM OPEN WELL OPEN WELL IN DWELLING ..... 21 → 23 OPEN WELL IN YARD/PLOT ..... 22 → 23 OPEN PUBLIC WELL ..... 23 TANKER TRUCK ..... 61 BOTTLED WATER ..... 71 → 23 OTHER _____ 96 (SPECIFY)	
22	How long does it take you to go there, get water, and come back?	MINUTES ..... [ ][ ][ ] ON PREMISES 996	
23	What kind of toilet facility do most members of your household use?	FLUSH TOILET ..... 11 PIT TOILET/LATRINE ..... 21 NO FACILITY ..... 31 → 25 OTHER _____ 96 (SPECIFY)	
24	Do you share this facility with other households?	YES ..... 1 NO 2	
25	Does your household have: Electricity? A radio? A television? A telephone? A refrigerator?	YES NO ELECTRICITY ..... 1 2 RADIO ..... 1 2 TELEVISION ..... 1 2 TELEPHONE ..... 1 2 REFRIGERATOR 1 2	
26	What type of fuel does your household mainly use for cooking?	ELECTRICITY ..... 01 LPG/NATURAL GAS ..... 02 BIOGAS ..... 03 KEROSENE ..... 04 COAL, LIGNITE ..... 05 CHARCOAL ..... 06 FIREWOOD, STRAW ..... 07 TEZEK ..... 08 OTHER _____ 96 (SPECIFY)	
27	MAIN MATERIAL OF THE FLOOR. RECORD OBSERVATION.	NATURAL FLOOR EARTH/SAND ..... 11 RUDIMENTARY FLOOR WOOD PLANKS ..... 21 FINISHED FLOOR PARQUET OR POLISHED WOOD .... 31 LYNOLEUM ..... 32 CEMENT ..... 34 CARPET ..... 35 OTHER _____ 96 (SPECIFY)	
28	Does any member of your household own: A bicycle? A motorcycle or motor scooter? A car or truck?	YES NO BICYCLE ..... 1 2 MOTORCYCLE/SCOOTER ..... 1 2 CAR/TRUCK 1 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
33	Does your household have any place which is used for hand washing?	YES ..... 1 NO 2	→ 35
34	ASK TO SEE THE PLACE USED MOST OFTEN AND OBSERVE IF THE FOLLOWING ITEMS ARE PRESENT.	YES NO WATER/TAP ..... 1 2 SOAP, ASH OR OTHER CLEANSING AGENT ..... 1 2 BASIN 1 2	
34A	Ask respondent to bring the package of salt and note: Type of package _____ (Name of producer)	PLASTIC ..... 1 PAPER ..... 2 NO PACKAGE ..... 3 NO SALT 4	→ 35 → 35
34B	Salt iodized or not iodized	IODIZED SALT ..... 1 NOT IODIZED SALT ..... 2 NOT WRITTEN 3	
35	ASK RESPONDENT FOR A TEASPOONFUL OF SALT. TEST SALT FOR IODINE. RECORD PPM (PARTS PER MILLION).	0 PPM (NO IODINE) ..... 1 7 PPM ..... 2 15 PPM ..... 3 30 PPM ..... 4 75 PPM 5	
35A	Where do you usually keep your salt?	IN THE CLOSED PACKAGE/AWAY FROM PLACE OF COOKING/ IN THE DARK PLACE ..... 1 IN THE OPENED PACKAGE/NEAR TO PLACE OF COOKING/ IN THE LIGHT 2	
35B	Do you know, that it is necessary to include into ration iodized salt to reduce risk of getting the number of deceases	YES ..... 1 NO 2	
36	Does anybody in your household own dacha, or have access to a garden from which you obtain fruits and vegetables during the growing season?	YES ..... 1 NO ..... 2 OTHER _____ 6 (SPECIFY)	
37	Does anybody in your household have animal husbandry?	YES ..... 1 NO ..... 2 OTHER _____ 6 (SPECIFY)	

1999 KAZAKHSTAN DEMOGRAPHIC AND HEALTH SURVEY
INDIVIDUAL WOMAN'S QUESTIONNAIRE

REPUBLIC OF KAZAKHSTAN
ACADEMY OF PREVENTIVE MEDICINE

IDENTIFICATION

PLACE NAME

NAME OF HOUSEHOLD HEAD

CLUSTER NUMBER .....

HOUSEHOLD NUMBER .....

LARGE CITY/SMALL CITY/TOWN/COUNTRYSIDE (LARGE CITY=1, SMALL CITY=2, TOWN=3, COUNTRYSIDE=4) .....

URBAN/RURAL (URBAN=1, RURAL=2) .....

NAME AND LINE NUMBER OF WOMAN_____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY MONTH YEAR 1 9 9 9
INTERVIEWER'S NAME	_____	_____	_____	NAME
RESULT*	_____	_____	_____	RESULT
NEXT VISIT: DATE	_____	_____		TOTAL NO. OF VISITS
TIME	_____	_____		

* RESULT CODES:

1 COMPLETED
2 NOT AT HOME
3 POSTPONED
4 REFUSED
5 PARTLY COMPLETED
6 INCAPACITATED
7 OTHER _____ (SPECIFY)

	KAZAKH	RUSSIAN	OTHER
1. LANGUAGE OF INTERVIEW	1	2	3
2. NATIVE LANGUAGE OF RESPONDENT	1	2	3
	YES	NO	
3. WHETHER TRANSLATOR USED	1	2	

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		
DATE _____	DATE _____		

SECTION 1. RESPONDENT'S BACKGROUND

INFORMED CONSENT

Hello. My name is_____ and I am working with the Academy of Preventive Medicine of Kazakhstan. We are conducting a national survey about the health of women and children. We would very much appreciate your participation in this survey. I would like to ask you about your health (and the health of your children). This information will help the government of Kazakhstan to plan health services. The survey usually takes between 20 and 45 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

Participation in this survey is voluntary and you can choose not to answer any individual question or all of the questions. However, we hope that you will participate in this survey since your views are important.[1]

At this time, do you want to ask me anything about the survey?
May I begin the interview now?

Signature of interviewer: _____ Date: _____ 1999

RESPONDENT AGREES TO BE INTERVIEWED.....1 RESPONDENT DOES NOT AGREE TO BE INTERVIEWED ..... 2 →END

101	RECORD THE TIME.	HOUR ..... ☐☐ MINUTES ..... ☐☐	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, in a town, or in the countryside?	CITY ..... 1 TOWN ..... 2 COUNTRYSIDE 3	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS ..... ☐☐ ALWAYS ..... 95 VISITOR 96	→105

104	Just before you moved here, did you live in a city, in a town, or in the countryside?	CITY . . . . . 1 TOWN . . . . . 2 COUNTRYSIDE 3	
105	In what month and year were you born?	MONTH . . . . . ☐☐ DON'T KNOW MONTH . . . . . 98 YEAR . . . . . ☐☐☐☐ DON'T KNOW YEAR 9998	
106	How old were you at your last birthday? *COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.*	AGE IN COMPLETED YEARS . ☐☐	
107	Have you ever attended school?	YES . . . . . 1 NO 2	→110
108	What is the highest level of school you attended: primary, secondary, secondary-special or higher?	PRIMARY/SECONDARY . . . . . 1 SECONDARY-SPECIAL . . . . . 2 HIGHER 3	
109	What is the highest (grade/form/year) you completed at that level?	GRADE . . . . . ☐☐	
110	Do you read a newspaper or magazine almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
111	Do you listen to the radio almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
112	Do you watch television almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
113	What is your religion: Are you Muslim, Christian,, another religion, or do you not practice any religion?	MUSLIM . . . . . 1 CHRISTIAN . . . . . 2 OTHER _____ 6 (SPECIFY) NOT RELIGIOUS . . . . . 7 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS		CODING
114	What is your nationality? Are you Kazakh? Russian? Ukrainian? German? Korean? Other?	KAZAKH ..... 1 RUSSIAN ..... 2 UKRAINIAN ..... 3 GERMAN ..... 4 KOREAN ..... 5 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	
115	The next questions are about places people go for their health problems. Is there a place that you usually go to when you are sick or need advice about your health?	YES ..... 1 NO ..... 2 →118 OTHER __ _____ 6 →119 DON'T KNOW ..... 8 →119	
116	What kind of place is it - a Family Group Practice, a Polyclinic, a Women Counseling Center, FAP, Hospital, or some other place? _____ (RECORD NAME OF FACILITY)	FGP ..... 1 POLYCLINIC ..... 2 WCC ..... 3 FAP ..... 4 HOSPITAL ..... 5 OTHER _____ 6 DON'T KNOW 8	
117	Do you have a choice of changing place you usually go to for health care?	YES ..... 1 NO ..... 2 →119 DON'T KNOW 8	
118	What is the reason why you do not have a usual source of care?	NO SOURCE IS AVAILABLE ..... 1 NO REASON TO HAVE BECAUSE SELDOM OR NEVER SICK ..... 2 RECENTLY MOVED INTO THE AREA . 3 OTHER _____ 6 DON'T KNOW 8	
119	During the past 12 months did you visit a doctor because of an illness or for preventive health care, including visits for prenatal care?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8 →123	

120	In what month and year was your most recent visit to a doctor for health care?	MONTH . . . . . ☐☐ YEAR . . . . . 1 9 9 ☐ DON'T KNOW YEAR 9998	
121	At that visit, was the doctor you saw a family doctor, who treats a variety of illnesses and gives preventive care, or was he or she a specialist who mainly treats just one type of problem?	FAMILY DOCTOR. . . . . 1 SPECIALIST . . . . . 2 OTHER _____ 6 DON'T KNOW 8	
122	Was this visit in (MONTH OF VISIT) to the place you usually go to when you are sick or need advice about your health?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
123	During the past 12 months has a doctor or nurse visited you at home for a health check?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	▸125
123A	Who has visited: doctor, or nurse or someone else?	DOCTOR . . . . . 1 DOCTOR'S.ASSISTANT . . . . . 2 NURSE . . . . . 3 OTHER _____ 6 DON'T KNOW 8	▸125
124	At that visit, was the doctor you saw a family doctor, who treats a variety of illnesses and gives preventive care, or was he or she a specialist who mainly treats just one type of problem?	FAMILY DOCTOR. . . . . 1 SPECIALIST . . . . . 2 OTHER_____6 DON'T KNOW 8	
125	During the past 12 months, about how much did you spend out-of-pocket for medical care: less than 1000 tenge, between 1000 and 10000 tenge, more than 10000 tenge or did not spend any money?	NO SPENDING. . . . . 1 LESS THAN 1000TENGE. . . . . 2 BETWEEN 1000 AND 10 000. . . . . 3 MORE THAN 10 000 TENGE. . . . . 4 DON'T KNOW 8	
126	Are you aware of a new national health reform program which promotes primary health care and particularly family group practices?	YES . . . . . 1 NO 2	
127	Have you heard of illness called tuberculosis?	YES . . . . . 1 NO 2	▸ 138

NO.	QUESTIONS AND FILTERS		CODING
127A	Did you know that tuberculosis can be completely cured with proper medication?	YES ..... 1 NO 2	
128	Have you or has anyone in your family ever had tuberculosis?	YES ..... 1 NO 2	
131	Other than your family, is there anyone with whom you have frequent contact (neighbors, colleagues, or close friends) who has ever had tuberculosis?	YES ..... 1 NO 2	
132	What signs or symptoms would lead you think that a person has tuberculosis?	COUGHING ..... A COUGHING WITH SPUTUM ..... B COUGHING MORE THAN 3 WEEKS ..... C FEVER ..... D BLOOD IN SPUTUM ..... E LOSS OF APPETITE ..... F NIGHTSWEATING ..... G PAIN IN A CHEST ..... H TIREDNESS/FATIGUE ..... I WEIGHT LOSS ..... K LETHARGY ..... L OTHER _____ X (SPECIFY) DON'T KNOW ..... Y	▸ 134
133	What are the symptoms of tuberculosis which would convince you to seek medical assistance?	COUGHING ..... A COUGHING WITH SPUTUM ..... B COUGHING MORE THAN 3 WEEKS ..... C FEVER ..... D BLOOD IN SPUTUM ..... E LOSS OF APPETITE ..... F NIGHTSWEATING ..... G PAIN IN A CHEST ..... H TIREDNESS/FATIGUE ..... I WEIGHT LOSS ..... K LETHARGY ..... L OTHER _____ X (SPECIFY) DON'T KNOW ..... Y	
134	When a person first discovers that he or she has tuberculosis, how should that person be treated initially: hospitalized, treated at home, or both?	HOSPITALIZED ..... 1 TREATED AT HOME ..... 2 INITIALLY HOSPITALIZED FOLLOWED BY HOME TREATMENT ..... 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	

135	How does tuberculosis spread from one person to another?	THROUGH THE AIR WHEN COUGHING ..... 1 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	
136	Where would you go for help if you thought you or your child had tuberculosis?	PUBLIC SECTOR HOSPITAL ..... 11 POLYCLINIC ..... 12 FGP ..... 13 TB DISPENSARY ..... 14 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE. HOSPITAL/CLINIC ..... 21 PRIVATE. DOCTOR ..... 23 OTHER PRIVATE MEDICAL_____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
137	After a family member has completed the hospital treatment for tuberculosis, would you be willing to take him or her at home during further treatment?	YES ..... 1 NO 2	
138	Have you ever drank an alcoholic beverage?	YES ..... 1 NO 2	→ 142
139	Have you ever been intoxicated from drinking an alcoholic beverage?	YES ..... 1 NO 2	
140	In the last 3 months, on how many days did you drink an alcoholic beverage?	NUMBER OF TIMES ..... ☐☐ NONE/NEVER 00	→ 142
141	In the last 3 months, on how many occasions have you been intoxicated?	NUMBER OF TIMES ..... ☐☐ NONE/NEVER 00	
142	Have you had any kind of injection in the last 3 months?	YES ..... 1 NO 2	→ 201
143	How many times did you have an injection in the last 3 months?	NUMBER OF INJECTIONS ..... ☐☐ EVERY DAY 98	
144	The last time you had an injection, who was the person who gave you the injection?	HEALTH PROFESSIONAL ..... 1 PHARMACIST ..... 2 TRADITIONAL HEALER ..... 3 FRIEND/RELATIVE ..... 4 SELF ..... 5 OTHER_____ 6	

SECTION 2: REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES ..... 1 NO 2	→206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES ..... 1 NO 2	→204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME ..... DAUGHTERS AT HOME	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES ..... 1 NO 2	→206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE ..... DAUGHTERS ELSEWHERE	
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but survived only a few hours or days?	YES ..... 1 NO 2	→208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD ..... GIRLS DEAD	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL ____ births during your life. Is that correct? YES ↓ NO → PROBE AND CORRECT 201-208 AS NECESSARY.		

209A	*Women sometime have pregnancies which do not result in a live born child. That is, a pregnancy can ended very early by a mini abortion or by an induced abortion, a* miscarriage or a stillbirth. In total how many mini abortions, and induced abortions have you had?	TOTAL ABORTIONS ..... ☐☐	
209B	*How many miscarriages?*	TOTAL MISCARRIAGES ..... ☐☐	
209C	*How many stillbirths?*	TOTAL STILLBIRTHS ..... ☐☐	
209D	SUM ANSWERS TO 208, 209A, 209B,209C, AND ENTER TOTAL. IF NO PREGNANCIES, RECORD '00'	TOTAL PREGNANCIES ..... ☐☐	
210	CHECK 209D: ONE OR MORE PREGNANCIES ☐	NO PREGNANCIES ☐	→228

211 Now I want to talk to you about each of your pregnancies, including those which ended in a live birth, an induced abortion, mini abortion, a miscarriage, and a stillbirth. Starting with your last pregnancy, please tell me the following information

212 When did your (last/next-to-last/etc.) pregnancy end? In what month and year?	213 Did this pregnancy end in a live birth, an induced abortion, mini abortion, a miscarriage, or a stillbirth?	214 WAS THERE ANY OTHER PREGNANCY BETWEEN THIS AND THE PREVIOUS PREGNANCY?	215 CHECK 213: RECORD SAME RESPONSE	216 Was this a single or a multiple birth?	217 What name was given to this child?	218 Is (NAME) a boy or girl?	219 Is (NAME) still alive?	220 How old was (NAME) on his/her last birthday? RECORD AGE IN COMPLETED YEARS	221 Is (NAME) living with you?	222 RECORD HOUSEHOLD LINE NUMBER OF CHILD. RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD	223 How old was (NAME) when he/she died? If '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS.
01 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5		LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO .... 2 → 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ → NEXT PREGNANCY	DAYS ..... 1 ☐☐ MONTHS ..... 2 ☐☐ YEARS ..... 3 ☐☐ → NEXT PREGNANCY
02 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO .... 2 → 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ → NEXT PREGNANCY	DAYS ..... 1 ☐☐ MONTHS ..... 2 ☐☐ YEARS ..... 3 ☐☐ → NEXT PREGNANCY
03 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO .... 2 → 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ → NEXT PREGNANCY	DAYS ..... 1 ☐☐ MONTHS ..... 2 ☐☐ YEARS ..... 3 ☐☐ → NEXT PREGNANCY

04 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
05 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
06 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
07 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY

08 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
09 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MINI ABORTION .... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING .. 1 MULT .. 2	NAME _____	BOY ..... 1 GIRL 2	YES ... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
10 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MINI ABORTION ..... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING ... 1 MULT ... 2	NAME _____	BOY ..... 1 GIRL 2	YES .... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
11 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MINI ABORTION ..... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING ... 1 MULT ... 2	NAME _____	BOY ..... 1 GIRL 2	YES .... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY

12 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION ..... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING ... 1 MULT ... 2	NAME _____	BOY ..... 1 GIRL 2	YES .... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
13 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION ..... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING ... 1 MULT ... 2	NAME _____	BOY ..... 1 GIRL 2	YES .... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
14 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION ..... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING ... 1 MULT ... 2	NAME _____	BOY ..... 1 GIRL 2	YES .... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
15 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION ..... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING ... 1 MULT ... 2	NAME _____	BOY ..... 1 GIRL 2	YES .... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY
16 MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	LIVE BIRTH ..... 1 INDUCED ABORTION ..... 2 MIINI ABORTION ..... 3 MISCARRIAGE ..... 4 STILLBIRTH 5	YES ..... 1 NO 2	LIVE BIRTH ..... 1 ABORTION ..... 2 MISCARRIAGE ..... 3 STILLBIRTH ..... 4 NEXT PREGNANCY	SING ... 1 MULT ... 2	NAME _____	BOY ..... 1 GIRL 2	YES .... 1 NO 2 223	AGE IN YEARS ☐☐	YES ..... 1 NO 2	LINE NUMBER ☐☐ NEXT PREGNANCY	DAYS ..... 1 MONTHS ..... 2 YEARS ..... 3 ☐☐☐ NEXT PREGNANCY

225	COMPARE 209D WITH NUMBER OF PREGNANCIES IN HISTORY ABOVE AND MARK: NUMBERS ARE SAME ☐ NUMBERS ARE DIFFERENT ☐→ (PROBE AND RECONCILE) CHECK: FOR EACH PREGNANCY: YEAR OF PREGNANCY ENDED IS RECORDED. FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED. FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED. FOR AGE AT DEATH 12 MONTHS OR 1 YR.: PROBE TO DETERMINE EXACT NUMBER OF MONTHS. ☐☐☐☐
226	CHECK 212 AND 213, AND ENTER THE NUMBER OF BIRTHS IN JANUARY 1994 OR LATER. IF NONE, RECORD '0'. ☐
227	FOR EACH PREGNANCY THAT ENDED IN JANUARY 1994 OR LATER IN COLUMN 1 OF THE CALENDAR ENTER THE CODE OF THE PREGNANCY OUTCOME IN THE MONTH OF PREGNANCY ENDED: • 'B' FOR LIVE BIRTHS, • 'S' FOR STILLBIRTH , • 'M' FOR MISCARRIAGE, • 'D' INDUCED ABORT BY D&C, • 'V' INDUCED ABORT BY VACUUM ASPIRATION. THEN ASK THE NUMBER OF MONTHS THAT EACH PREGNANCY LASTED. RECORD "P" IN EACH OF THE PRECEDING MONTHS OF CALENDAR ACCORDING TO THE DURATION OF PREGNANCY. (NOTE: THE NUMBER OF 'P's MUST BE ONE LESS THAN THE NUMBER OF MONTHS THAT THE PREGNANCY LASTED.) FINALLY, FOR EACH BIRTH **WRITE THE NAME OF THE CHILD** TO THE LEFT OF THE 'B' CODE.. FOR EACH ABORTION ASK: WHERE ABORTION WAS PERFORMED AND IN COLUMN 5 ENTER THE CODE FOR THE FACILITY.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
228	Are you pregnant now?	YES ..... 1 NO ..... 2 UNSURE 8	→231
229	How many months pregnant are you? RECORD NUMBER OF COMPLETED MONTHS. ENTER 'P's IN COLUMN 1 OF CALENDAR, BEGINNING WITH THE MONTH OF INTERVIEW AND FOR TOTAL NUMBER OF COMPLETED MONTHS.	MONTHS ..... [ ][ ]	
229A	During this pregnancy, were you given or did you buy any iron tablets for prevention and treatment of anemia? SHOW TABLET.	YES ..... 1 NO ..... 2 DON'T KNOW 8	→229C
229B	During the whole pregnancy, for how many days did you take the tablets?	NUMBER DAYS ..... [ ][ ][ ] DON'T KNOW 998	
229C	Are you currently taking the tablets	YES ..... 1 NO 2	
230	At the time you became pregnant did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all?	THEN ..... 1 LATER ..... 2 NOT AT ALL 3	
231	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO ..... 1 [ ][ ] WEEKS AGO ..... 2 [ ][ ] MONTHS AGO ..... 3 [ ][ ] YEARS AGO ..... 4 [ ][ ] IN MENOPAUSE ..... 994 BEFORE LAST BIRTH ..... 995 NEVER MENSTRUATED 996	
232	From one menstrual period to the next, is there a time when a woman is more likely to become pregnant if she has sexual relations?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→301
233	Is this time just before her period begins, during her period, right after her period has ended, or half way between two periods?	JUST BEFORE HER PERIOD BEGINS ..... 1 *DURING HER PERIOD* ..... 2 RIGHT AFTER HER PERIOD HAS ENDED ..... 3 HALF WAY BETWEEN PERIODS ..... 4 OTHER _____ (SPECIFY) 6 DON'T KNOW 8	

SECTION 3. CONTRACEPTION

Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.
CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNIZED, AND CODE 2 IF NOT RECOGNIZED. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 301, ASK 302.

301	Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)?		302 Have you ever used (METHOD)?
01	FEMALE STERILIZATION Women can have an operation to avoid having any more children.	YES ..... 1 NO ..... 2 ▼	Have you ever had an operation to avoid having any more children? YES ..... 1 NO 2
02	MALE STERILIZATION Men can have an operation to avoid having any more children.	YES ..... 1 NO ..... 2 ▼	Have you ever had a partner who had an operation to avoid having children? YES ..... 1 NO 2
03	PILL Women can take a pill to avoid pregnancy.	YES ..... 1 NO ..... 2 ▼	YES ..... 1 NO 2
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES ..... 1 NO ..... 2 ▼	YES ..... 1 NO 2
05	INJECTIONS Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months.	YES ..... 1 NO ..... 2 ▼	YES ..... 1 NO 2
06	IMPLANTS Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for several years.	YES ..... 1 NO ..... 2 ▼	YES ..... 1 NO 2
07	CONDOM Men can put a rubber sheath on their penis before sexual intercourse.	YES ..... 1 NO ..... 2 ▼	YES ..... 1 NO 2
08	FEMALE CONDOM. Women can place a rubber sheath in their vagina before intercourse	YES ..... 1 NO ..... 2 ▼	YES ..... 1 NO 2
09	DIAPHRAGM,. Women can place a diaphragm in their vagina before intercourse.	YES ..... 1 NO ..... 2 ▼	YES ..... 1 NO 2

10	FOAM AND GELLY,. Women can place a suppository, jelly or cream in their vagina before intercourse.	YES ..... 1 NO 2	YES ..... 1 NO 2
11	LACTATIONAL AMENORRHEA METHOD (LAM) Women can use a specially taught method of pregnancy avoidance to delay the return of the menstrual period by feeding their child nothing but breast milk for up to six months after a birth.	YES ..... 1 NO 2	YES ..... 1 NO 2
12	RHYTHM OR PERIODIC ABSTINENCE Every month that a woman is sexually active she can avoid having sexual intercourse on the days of the month she is most likely to get pregnant.	YES ..... 1 NO 2	YES ..... 1 NO 2
13	WITHDRAWAL Men can be careful and pull out before climax.	YES ..... 1 NO 2	YES ..... 1 NO 2
14	EMERGENCY CONTRACEPTION Women can take pills the day after sexual intercourse to avoid becoming pregnant.	YES ..... 1 NO 2	YES ..... 1 NO 2
15	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES ..... 1 _____ (SPECIFY) _____ (SPECIFY) NO 2	YES ..... 1 NO ..... 2 YES ..... 1 NO 2

303	CHECK 302: NOT A SINGLE "YES"(NEVER USED) ☐	AT LEAST ONE "YES" (EVER USED) ☐	→307
304	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES ..... 1 NO 2	→306
305	ENTER '0' IN COLUMN 1 OF CALENDAR IN EACH BLANK MONTH.		→327
306	What have you used or done? CORRECT 302 AND 303 (AND 301 IF NECESSARY).		
307	Now I would like to ask you about the first time that you did something or used a method to avoid getting pregnant. How many living children did you have at that time, if any? IF NONE, RECORD '00'.	NUMBER OF CHILDREN ..... ☐☐	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
308	CHECK 302 (01): WOMAN STERILIZED ☐ ▼	WOMAN NOT STERILIZED ☐ _____	→309
308A	Was the sterilization done with purpose of medical indications or family planning ?	MEDICAL INDICATIONS ..... 1 FAMILY PLANNING ..... 2 DON'T KNOW 8	→311A
309	CHECK 228: NOT PREGNANT OR UNSURE ☐ ▼	PREGNANT ☐ _____	→319
310	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES ..... 1 NO 2	→319
311	Which method are you using?	FEMALE STERILIZATION ..... A MALE STERILIZATION ..... B PILL ..... C IUD ..... D INJECTIONS ..... E IMPLANTS ..... F CONDOM ..... G FEMALE CONDOM ..... H DIAPHRAGM ..... I FOAM/JELLY ..... J LACT. AMEN. METHOD ..... K PERIODIC ABSTINENCE ..... L WITHDRAWAL ..... M OTHER _____ X (SPECIFY)	→313 →318 →312C →318
311A	CIRCLE 'A' FOR FEMALE STERILIZATION. IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD.		
312	May I see the package of pills you are now using? RECORD NAME OF BRAND IF PACKAGE IS SEEN	PACKAGE SEEN ..... 1 BRAND NAME _____ ☐☐ PACKAGE NOT SEEN 2	→312B

312A	Do you know the brand name of the pills you are now using? RECORD NAME OF BRAND.	BRAND NAME _____ ☐☐ DON'T KNOW 98	
312B	How much does one packet of pills cost you?	COST ..... ☐☐☐ FREE ..... 9996 DON'T KNOW 9998	→318
312C	May I see the package of condoms you are now using? RECORD NAME OF BRAND IF PACKAGE IS SEEN	PACKAGE SEEN ..... 1 BRAND NAME _____ ☐☐ PACKAGE NOT SEEN 2	→312E
312D	Do you know the brand name of the condoms you are now using? RECORD NAME OF BRAND.	BRAND NAME _____ ☐☐ DON'T KNOW 98	
312E	How much does one packet of condoms cost you?	COST ..... ☐☐☐ FREE ..... 9996 DON'T KNOW 9998	→318

313	Where did the sterilization take place? IF SOURCE IS HOSPITAL, POLYCLINIC, FGP OR WOMEN'S CONSULTING CENTER, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR HOSPITAL ..... 11 POLYCLINIC ..... 12 FGP ..... 13 WOMEN'S CONSULTING CENTER ..... 14 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRV. HOSPITAL/CLINIC ..... 21 PRV. DOCTOR ..... 23 OTHER PRIVATE MEDICAL _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW 98
314	Before the sterilization operation, were (you/your husband/your partner) told that you would not be able to have any (more) children?	YES ..... 1 NO 2
316	In what month and year was the sterilization performed?	MONTH ..... YEAR 1 9
317	CHECK 316: STERILIZED BEFORE JANUARY 1994 ENTER CODE FOR STERILIZATION IN MONTH OF INTERVIEW IN COLUMN 1 OF THE CALENDAR AND EACH MONTH BACK TO JANUARY 1994 THEN SKIP TO ——→320	STERILIZED IN JANUARY 1994 OR LATER ENTER CODE FOR STERILIZATION IN MONTH OF INTERVIEW IN COLUMN 1 OF THE CALENDAR AND IN EACH MONTH BACK TO THE DATE OF THE OPERATION. ENTER METHOD SOURCE CODE IN COLUMN 2 OF CALENDAR IN MONTH OF DATE OF OPERATION. THEN SKIP TO ——→319

318	ENTER METHOD CODE FROM 311 IN CURRENT MONTH IN COLUMN 1 OF CALENDAR. THEN DETERMINE WHEN SHE STARTED USING METHOD THIS TIME. ENTER METHOD CODE IN EACH MONTH OF USE. IF CURRENT METHOD STARTED IN JANUARY 1994 OR LATER, ENTER METHOD SOURCE CODE IN COLUMN 2 OF CALENDAR IN THE SAME MONTH THAT USE OF CURRENT METHOD BEGAN. ILLUSTRATIVE QUESTIONS: • When did you start using this method continuously? • How long have you been using this method continuously? • When you started using this method, where did you obtain it?
319	*I would like to ask you some questions about the times you or your partner may have used a method to avoid getting pregnant during the last few years.* USE CALENDAR TO PROBE FOR EARLIER PERIODS OF USE AND NONUSE, STARTING WITH MOST RECENT USE, BACK TO JANUARY 1994. USE NAMES OF CHILDREN, DATES OF BIRTH, AND PERIODS OF PREGNANCY AS REFERENCE POINTS. **IN COLUMN 1**, ENTER METHOD USE CODE OR '0' FOR NONUSE IN EACH BLANK MONTH. ILLUSTRATIVE QUESTIONS: COLUMN 1: • When was the last time you used a method? Which method was that? • When did you start using that method? How long after the birth of (NAME)? • How long did you use the method then? **IN COLUMN 2**, ENTER METHOD SOURCE CODE IN FIRST MONTH OF EACH USE. ILLUSTRATIVE QUESTIONS: COLUMN 2: • Where did you obtain the method when you started using it? • Where did you get advice on how to use the method [for LAM, rhythm, or withdrawal]? **IN COLUMN 3**, ENTER CODES FOR DISCONTINUATION NEXT TO LAST MONTH OF USE. NUMBER OF CODES IN COLUMN 3 MUST BE SAME AS NUMBER OF INTERRUPTIONS OF METHOD USE IN COLUMN 1. ASK WHY SHE STOPPED USING THE METHOD. IF A PREGNANCY FOLLOWED, ASK WHETHER SHE BECAME PREGNANT UNINTENTIONALLY WHILE USING THE METHOD OR DELIBERATELY STOPPED TO GET PREGNANT. ILLUSTRATIVE QUESTIONS: COLUMN 3: • Why did you stop using the (METHOD)? • Did you become pregnant while using (METHOD), or did you stop to get pregnant, or did you stop for some other reason? IF DELIBERATELY STOPPED TO BECOME PREGNANT, ASK: • How many months did it take you to get pregnant after you stopped using (METHOD)? AND ENTER '0' IN EACH SUCH MONTH IN COLUMN 1.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
320	CHECK 311/311A: CIRCLE METHOD CODE:	NOT ASKED ..... 00 FEMALE STERILIZATION ..... 01 MALE STERILIZATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM ..... 09 FOAM/JELLY ..... 10 LACTATIONAL AMEN. METHOD ..... 11 PERIODIC ABSTINENCE ..... 12 WITHDRAWAL ..... 13 OTHER METHOD 96	→327 →325 →325 →324 →324 →324 →324 →325 →325 →325
321	CHECK COLUMN 1 OF CALENDAR FOR LENGTH OF USE OF CURRENT METHOD: STARTED USING AFTER JANUARY 1994 ☐ ▼ STARTED USING IN JANUARY 1994 OR BEFORE ☐		→325
322	You first obtained (CURRENT METHOD) from (SOURCE OF METHOD FROM CALENDAR) on (DATE). At that time, were you told about side effects or problems you might have with the method?	YES ..... 1 NO 2	 →324
323	Were you told what to do if you experienced side effects?	YES ..... 1 NO 2	
324	When you were given the (CURRENT METHOD), were you told about other methods of family planning which you could use?	YES ..... 1 NO 2	
325	CHECK 311/311A: CIRCLE METHOD CODE:	NOT ASKED ..... 00 FEMALE STERILIZATION ..... 01 MALE STERILIZATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM ..... 09 FOAM/JELLY ..... 10 LACTATIONAL AMEN. METHOD ..... 11 PERIODIC ABSTINENCE ..... 12 WITHDRAWAL ..... 13 OTHER METHOD 96	→327 →401 →401 →329 →329 →329 →329

326	Where did you obtain (CURRENT METHOD) the last time? IF SOURCE IS HOSPITAL, POLYCLINIC, FGP, OR WOMEN'S CONSULTING CENTER, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR HOSPITAL ..... 11 POLYCLINIC ..... 12 FGP ..... 13 WOMEN'S CONSULTING CENTER ..... 14 PHARMACY ..... 15 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRV. HOSPITAL/CLINIC ..... 21 PHARMACY ..... 22 PRV. DOCTOR ..... 23 OTHER PRIVATE MEDICAL _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→329
327	Do you know of a place where you can obtain a method of family planning?	YES ..... 1 NO 2	→329
328	Where is that? IF SOURCE IS HOSPITAL, POLYCLINIC, FGP, OR WOMEN'S CONSULTING CENTER, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR HOSPITAL ..... 11 POLYCLINIC ..... 12 FGP ..... 13 WOMEN'S CONSULTING CENTER ..... 14 PHARMACY ..... 15 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRV. HOSPITAL/CLINIC ..... 21 PHARMACY ..... 22 PRV. DOCTOR ..... 23 OTHER PRIVATE MEDICAL _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW 98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
329	In the last 12 months, were you visited by a field worker who talked to you about family planning?	YES ..... 1 NO 2	
330	In the last 12 months, have you attended a health facility for care for yourself (or your children)?	YES ..... 1 NO 2	→333
331	Did any staff member at the health facility speak to you about family planning methods?	YES ..... 1 NO 2	
333	CHECK 301 KNOWS IUD ☐ ▼	DOESN'T KNOWS IUD ☐	→338
334	Women see advantages and disadvantages of different methods of birth control. Please tell me whether you think that each of these methods of birth control is a problem is not a problem		
	Let's begin with the IUD. How easy is to get an IUD? Is it to problem to get it?	PROBLEM ..... 1 NO PROBLEM ..... 2 DON'T KNOW 8	
335	Do you think that the IUD is a reliable method of contraception ?	RELIABLE ..... 1 NO RELIABLE ..... 2 DON'T KNOW 8	
336	Are any health problems or side effects with the IUD that would make you reluctant to use it?	PROBLEM ..... 1 NO PROBLEM ..... 2 DON'T KNOW 8	
337	Is the monetary cost to having an IUD inserted a problem for you?	PROBLEM ..... 1 NO PROBLEM ..... 2 DON'T KNOW 8	
338	CHECK 301AND 302 KNOWS PILLS ☐ ▼	DOESN'T KNOWS PILLS ☐	→346
339	Could you tell me the brand name of any contraceptive pills? RECORD NAME OF BRAND	_____ ☐☐ DON'T KNOW 98	

340	To be protected from getting pregnant does a woman need to take pills Every day Once in a week Once in a month?	EVERY DAY ..... 1 ONCE IN A WEEK ..... 2 ONCE IN A MONTH ..... 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
341	How easy is it to get pills? Is it a problem to get them ?	PROBLEM ..... 1 NO PROBLEM ..... 2 DON'T KNOW 8	
342	Do you think that pills are a reliable method of contraception ?	RELIABLE ..... 1 NO RELIABLE ..... 2 DON'T KNOW 8	
343	Are any health problems or side effects with pills that would make you relucatant to use them ?	PROBLEM ..... 1 NO PROBLEM ..... 2 DON'T KNOW 8	
344	Is the monetary cost of pills a problem for you?	PROBLEM ..... 1 NO PROBLEM ..... 2 DON'T KNOW 8	
346	Now let's talk about induced abortion during the first few weeks or months of pregnancy which as you know is one of the methods of controlling fertility.		
	If a woman decided to have an abortion, how easy would it be for her to get one ? Would it be easy or difficult?	DIFFICULT ..... 1 EASY ..... 2 DON'T KNOW 8	▸348
347	What would be the main difficulty ?	_____ _____ _____ _____	
348	Do you think that there are health problems or side effects with induced abortion?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
349	Is there any monetary cost to having an abortion that would be a problem?	PROBLEM ..... 1 NO PROBLEM ..... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
350	Do you approve or disapprove of a woman having an abortion ?	APPROVE ..... 1 DISAPPROVE ..... 2 DEPENDS ON SITUATION ..... 3 DON'T KNOW 8	
351	Would you have an abortion if you unintentionally become pregnant sometimes in the future ?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
352	Would you prefer to use a method in the future or rely on abortion, or do neither ?	PREFER TO USE A METHOD ..... 1 RELY ON ABORTION ..... 2 PREFER TO DO NEITHER ..... 3 DON'T KNOW 8	
353	(SHOW RED APPLE LOGO) Have you ever seen this symbol?	YES ..... 1 NO 2	→ 357
354	What does this symbol mean?	FAMILY PLANNING ..... A REPRODUCTIVE HEALTH ..... B CONDOMS/PILLS/FAMILY PLANNING METHODS ..... C WOMEN'S ISSUES ..... D HEALTH CLINICS ..... E PRIVATE HEALTH CLINICS ..... F OTHER HEALTH RELATED ..... G OTHER NOT RELATED TO HEALTH ..... H DON'T KNOW ..... Z	
355	Where have you seen this logo? AFTER RECORDING SPONTANEOUS RESPONSE, PROBE FOR EACH LOCATION NOT SPONTANEOUSLY MENTIONED	SPONTANEOUS RESPONSE / PROBED RECOGNITION / NOT SEEN	
	Pharmacy	1 / 2 / 3	
	Women's consulting center	1 / 2 / 3	
	Polyclinic	1 / 2 / 3	
	Hospital	1 / 2 / 3	
	Family Group Practice	1 / 2 / 3	
	Private clinic	1 / 2 / 3	
	Television	1 / 2 / 3	
	Posters	1 / 2 / 3	
357	Have you ever heard of the Red Apple hotline; this is a phone number you can call to get advice on reproductive health issues?	YES ..... 1 NO 2	→ 401

358	Have you ever made a phone call to the Red Apple Hotline?	YES ..... 1 NO 2	→ 360
359	Were you satisfied with the information you received when you called the Red Apple Hotline?	YES ..... 1 NO 2	→ 401 → 401
360	Have you ever considered making a call to Red Apple Hotline?	YES ..... 1 NO 2	

SECTION 4A. PREGNANCY, POSTNATAL CARE AND BREASTFEEDING

401	CHECK 226: ONE OR MORE BIRTHS IN JAN. 1994 OR LATER ☐ NO BIRTHS IN JAN. 1994 OR LATER ☐ → 486			
402	ENTER THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH SINCE JANUARY 1994 IN THE TABLE. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. Now I would like to ask you some questions about the health of all your children born in the last five years. (We will talk about each separately)			
403	LINE NUMBER FROM 212	LAST BIRTH LINE NUMBER ..... ☐☐	NEXT-TO-LAST BIRTH LINE NUMBER ..... ☐☐	NEXT-TO-NEXT-TO-LAST BIRTH LINE NUMBER ..... ☐☐
404	FROM 217 AND 219	NAME _____ ALIVE ☐ DEAD ☐	NAME _____ ALIVE ☐ DEAD ☐	NAME _____ ALIVE ☐ DEAD ☐
405	*At the time you became pregnant with (NAME), did you want to become pregnant then, did you want to wait until later, or did you want no (more) children at all?*	*THEN* ..... 1 (SKIP TO 407) LATER ..... 2 NO MORE ..... 3 (SKIP TO 407)	THEN ..... 1 (SKIP TO 422) LATER ..... 2 NO MORE ..... 3 (SKIP TO 422)	THEN ..... 1 (SKIP TO 422) LATER ..... 2 NO MORE ..... 3 (SKIP TO 422)
406	How much longer would you like to have waited?	MONTHS ..... 1 ☐☐ YEARS ..... 2 DON'T KNOW 998	MONTHS ..... 1 ☐☐ YEARS ..... 2 DON'T KNOW ..... 998 ALL CATEGORIES SHOULD (SKIP TO 422)	MONTHS ..... 1 ☐☐ YEARS ..... 2 DON'T KNOW ..... 998 ALL CATEGORIES SHOULD (SKIP TO 422)

407	Did you see anyone for antenatal care for this pregnancy? IF YES: Whom did you see? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR ..... A DOCTOR'S ASSISTANT ..... B NURSE/MIDWIFE ..... C OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... D OTHER _____ X (SPECIFY) NO ONE ..... Y (SKIP TO 416)
408	How many months pregnant were you when you first received antenatal care for this pregnancy?	MONTHS ..... ☐☐ DON'T KNOW 98
409	How many times did you receive antenatal care during this pregnancy?	NO. OF TIMES ..... ☐☐ DON'T KNOW 98
410	CHECK 409: NUMBER OF TIMES RECEIVED ANTENATAL CARE	ONCE (SKIP TO 412) MORE THAN ONCE OR DON'T KNOW

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	NEXT-TO-NEXT-TO-LAST BIRTH NAME _____
411	How many months pregnant were you the last time you received antenatal care?	MONTHS ..... ☐☐ DON'T KNOW 98		
412	During this pregnancy, were any of the following done at least once? Were you weighed? Was your height measured? Was your blood pressure measured? Did you give a urine sample? Did you give a blood sample?	YES NO WEIGHT ..... 1 2 HEIGHT ..... 1 2 BLOOD PRESSURE ..... 1 2 URINE SAMPLE ..... 1 2 BLOOD SAMPLE 1 2		
413	Were you told about the signs of pregnancy complications?	YES ..... 1 NO ..... 2 (SKIP TO 416) DON'T KNOW 8		
414	Were you told where to go if you had these problems?	YES ..... 1 NO ..... 2 DON'T KNOW 8		
416	During this pregnancy, were you given or did you buy any iron tablets? SHOW TABLET.	YES ..... 1 NO ..... 2 (SKIP TO 422) DON'T KNOW 8		
417	During the whole pregnancy, for how many days did you take the tablets?	NUMBER OF DAYS ..... ☐☐☐ DON'T KNOW 998		

422	When (NAME) was born, was he/she: very large, larger than average, average, smaller than average, or very small?	VERY LARGE ..... 1 LARGER THAN AVERAGE ..... 2 AVERAGE ..... 3 SMALLER THAN AVERAGE ..... 4 VERY SMALL ..... 5 DON'T KNOW 8	VERY LARGE ..... 1 LARGER THAN AVERAGE ..... 2 AVERAGE ..... 3 SMALLER THAN AVERAGE ..... 4 VERY SMALL ..... 5 DON'T KNOW 8	VERY LARGE ..... 1 LARGER THAN AVERAGE ..... 2 AVERAGE ..... 3 SMALLER THAN AVERAGE ..... 4 VERY SMALL ..... 5 DON'T KNOW 8
423	Was (NAME) weighed at birth?	YES ..... 1 NO ..... 2 (SKIP TO 425)← DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 425)← DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 425)← DON'T KNOW 8
424	How much did (NAME) weigh? RECORD WEIGHT FROM HEALTH CARD, IF AVAILABLE.	GRAMS FROM CARD ..... 1 [ ][ ][ ][ ] GRAMS FROM RECALL ..... 2 [ ][ ][ ][ ] DON'T KNOW 99998	GRAMS FROM CARD ..... 1 [ ][ ][ ][ ] GRAMS FROM RECALL ..... 2 [ ][ ][ ][ ] DON'T KNOW 99998	GRAMS FROM CARD ..... 1 [ ][ ][ ][ ] GRAMS FROM RECALL ..... 2 [ ][ ][ ][ ] DON'T KNOW 99998
425	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS ASSISTING.	HEALTH PROFESSIONAL DOCTOR ..... A DOCTOR'S ASSISTANT ..... B NURSE/MIDWIFE ..... C OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... D RELATIVE/FRIEND ..... E OTHER ______ X (SPECIFY) NO ONE ..... Y	HEALTH PROFESSIONAL DOCTOR ..... A DOCTOR'S ASSISTANT ..... B NURSE/MIDWIFE ..... C OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... D RELATIVE/FRIEND ..... E OTHER ______ X (SPECIFY) NO ONE ..... Y	HEALTH PROFESSIONAL DOCTOR ..... A DOCTOR'S ASSISTANT ..... B NURSE/MIDWIFE ..... C OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... D RELATIVE/FRIEND ..... E OTHER ______ X (SPECIFY) NO ONE ..... Y

		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	NEXT-TO-NEXT-TO-LAST BIRTH NAME ________
426	Where did you give birth to (NAME)?	HOME YOUR HOME .... 11 (SKIP TO 428) OTHER HOME .... 12 PUBLIC SECTOR HOSPITAL .... 21 DELIVERY HOSPITAL .... 22 FAP .... 23 OTHER PUBLIC ________ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC .... 31 OTHER PVT. MEDICAL ________ 36 (SPECIFY) OTHER ________ 96 (SPECIFY) (SKIP TO 428)	HOME YOUR HOME .... 11 (SKIP TO 428) OTHER HOME .... 12 PUBLIC SECTOR HOSPITAL .... 21 DELIVERY HOSPITAL .... 22 FAP .... 23 OTHER PUBLIC ________ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC .... 31 OTHER PVT. MEDICAL ________ 36 (SPECIFY) OTHER ________ 96 (SPECIFY) (SKIP TO 428)	HOME YOUR HOME .... 11 (SKIP TO 428) OTHER HOME .... 12 PUBLIC SECTOR HOSPITAL .... 21 DELIVERY HOSPITAL .... 22 FAP .... 23 OTHER PUBLIC ________ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC .... 31 OTHER PVT. MEDICAL ________ 36 (SPECIFY) OTHER ________ 96 (SPECIFY) (SKIP TO 428)
426A	When you delivered (NAME) how many nights did you stay in the hospital?	NIGHTS .... [ ][ ]	NIGHTS .... [ ][ ]	NIGHTS .... [ ][ ]
427	Was (NAME) delivered by caesarian section?	YES .... 1 (SKIP TO 433) NO 2	YES .... 1 (SKIP TO 434) NO 2	YES .... 1 (SKIP TO 434) NO 2
428	After (NAME) was born, did anyone check on your health?	YES .... 1 NO .... 2 (SKIP TO 433)	YES .... 1 (SKIP TO 434) NO 2	YES .... 1 (SKIP TO 434) NO 2
429	How many days or weeks after the delivery did the first check take place? RECORD '00' DAYS IF SAME DAY.	DAYS AFTER DELIVERY .... 1 [ ][ ] WEEKS AFTER DELIVERY .... 2 [ ][ ] DON'T KNOW 998		

430	Who checked on your health at that time? PROBE FOR MOST QUALIFIED PERSON.	HEALTH PROFESSIONAL DOCTOR ..... 1 DOCTOR'S ASSISTANT ..... 2 NURSE/MIDWIFE ..... 3 OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... 4 OTHER_____ 6 (SPECIFY)		
431	Where did this first check take place?	HOME YOUR HOME ..... 11 OTHER HOME ..... 12 PUBLIC SECTOR HOSPITAL/DELIVERY HOSPITAL ..... 21 POLYCLINIC ..... 22 FGP ..... 23 WOMEN'S CONSULTING CENTER ..... 24 FAP ..... 25 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... 31 OTHER PVT. MEDICAL _____ 36 (SPECIFY) OTHER_____ 96 (SPECIFY)		
433	Has your period returned since the birth of (NAME)?	YES ..... 1 (SKIP TO 435) NO ..... 2 (SKIP TO 436)		
434	Did your period return between the birth of (NAME) and your next pregnancy?		YES ..... 1 NO ..... 2 (SKIP TO 438)	YES ..... 1 NO ..... 2 (SKIP TO 438)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	NEXT-TO-NEXT-TO-LAST BIRTH NAME _____
435	For how many months after the birth of (NAME) did you not have a period?	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98
436	CHECK 226: RESPONDENT PREGNANT?	NOT PREGNANT ☐ ▼ PREGNANT OR UNSURE ☐ (SKIP TO 438)		
437	Have you resumed sexual relations since the birth of (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 439)		
438	For how many months after the birth of (NAME) did you not have sexual relations?	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98
439	Did you ever breastfeed (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 444)	YES ..... 1 NO ..... 2 (SKIP TO 444)	YES ..... 1 NO ..... 2 (SKIP TO 444)
440	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY ..... 000 MINUTES ..... 0 ☐☐ HIOURS ..... 1 ☐☐ DAYS ..... 2 ☐☐	IMMEDIATELY ..... 000 MINUTES ..... 0 ☐☐ HIOURS ..... 1 ☐☐ DAYS ..... 2 ☐☐	IMMEDIATELY ..... 000 MINUTES ..... 0 ☐☐ HIOURS ..... 1 ☐☐ DAYS ..... 2 ☐☐
441	CHECK 404: CHILD ALIVE?	ALIVE ☐ ▼ DEAD ☐ (SKIP TO 443)	ALIVE ☐ ▼ DEAD ☐ (SKIP TO 443)	ALIVE ☐ ▼ DEAD ☐ (SKIP TO 443)
442	Are you still breastfeeding (NAME)?	YES ..... 1 (SKIP TO 445) NO 2	YES ..... 1 (SKIP TO 445) NO 2	YES ..... 1 (SKIP TO 445) NO 2
443	For how many months did you breastfeed (NAME)?	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98

444	CHECK 404: CHILD ALIVE?	ALIVE → (SKIP TO 447) DEAD → (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 451)	ALIVE → (SKIP TO 447) DEAD → (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 451)	ALIVE → (SKIP TO 447) DEAD → (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 451)
445	How many times did you breastfeed last night between sunset and sunrise? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF NIGHTTIME FEEDINGS ..... ☐☐	NUMBER OF NIGHTTIME FEEDINGS ..... ☐☐	NUMBER OF NIGHTTIME FEEDINGS ..... ☐☐
446	How many times did you breastfeed yesterday during the daylight hours? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF DAYLIGHT FEEDINGS ..... ☐☐	NUMBER OF DAYLIGHT FEEDINGS ..... ☐☐	NUMBER OF DAYLIGHT FEEDINGS ..... ☐☐
447	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8

		LAST BIRTH NAME _____		NEXT-TO-LAST BIRTH NAME _____		NEXT-TO-NEXT-TO-LAST BIRTH NAME _____	
448	Now I would like to ask you about the types of foods [NAME] has been fed over the last seven days, including yesterday. How many days during last seven days was [NAME] given each of the following? FOR EACH ITEM GIVEN AT LEAST ONCE IN LAST SEVEN DAYS, ASK: How many times yesterday or last night was [NAME] given [ITEM]?	LAST 7 DAYS NUMBER OF DAYS	YESTERDAY/ LAST NIGHT NUMBER OF TIMES	LAST 7 DAYS NUMBER OF DAYS	YESTERDAY/ LAST NIGHT NUMBER OF TIMES	LAST 7 DAYS NUMBER OF DAYS	YESTERDAY/ LAST NIGHT NUMBER OF TIMES
	Plain water?						
	Tea?						
	Commercially prepared baby formula?						
	Any other milk such as tinned, powdered, or fresh animal milk?						
	Fruit juice?						
	Any other liquids such as sugar water, tea, coffee, or thin soup?						
	Bred, Food made of flower?						
	Any food made from grains [e.g. wheat, porridge, rice, millet]?						
	Pumpkin, squash, red or yellow yams, carrots, or red potatoes?						
	Candies, sweets?						
	Any green leafy vegetables?						
	Any other fruits and vegetables [e.g. apples/sauce, pears, tomatoes]?						
	Meat, poultry, or eggs?						
	Fish, shellfish and other séafood?						
	Any food made from legumes [e.g. lentils, beans, soybeans, pulses, or peanuts]?						
	Cheese, kefir, kumys or yoghurt?						
	IF 7 OR MORE TIMES, RECORD '7'. IF DON'T KNOW, RECORD '8'.						
449	How many times was (NAME) fed solid or semi-solid (mashed or pureed) food yesterday or last night? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES ..... ☐ DON'T KNOW 8		NUMBER OF TIMES ..... ☐ DON'T KNOW 8		NUMBER OF TIMES ..... ☐ DON'T KNOW 8	

450		GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 451.	GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 451.	GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 451.

SECTION 4B. IMMUNIZATION AND HEALTH

451	ENTER THE NAME AND LINE NUMBER OF EACH LIVING CHILD BORN SINCE JANUARY 1994 IN THE TABLE. ASK THE QUESTIONS ABOUT ALL OF THESE CHILDREN. BEGIN WITH THE YOUNGEST CHILD.			
452	LINE NUMBER FROM 212	LAST BIRTH LINE NUMBER ..... ☐☐	NEXT-TO-LAST BIRTH LINE NUMBER ..... ☐☐	NEXT-TO- NEXT-TO-LAST BIRTH LINE NUMBER ..... ☐☐
453	FROM 212 AND 216	NAME _____ ALIVE ☐ → DEAD ☐ (GO TO 453 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 481)	NAME _____ ALIVE ☐ → DEAD ☐ (GO TO 453 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 481)	NAME _____ ALIVE ☐ → DEAD ☐ (GO TO 453 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 481)
454	Did (NAME) receive a Vitamin A/polyvitamins dose like this during the last 6 months? SHOW AMPULE/CAPSULE OR TABLETS	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8
455	Do you have a card where (NAME'S) vaccinations are written down? IF YES: May I see it please?	YES, SEEN ..... 1 (SKIP TO 457) YES, NOT SEEN ..... 2 (SKIP TO 463) NO CARD 3	YES, SEEN ..... 1 (SKIP TO 457) YES, NOT SEEN ..... 2 (SKIP TO 463) NO CARD 3	YES, SEEN ..... 1 (SKIP TO 457) YES, NOT SEEN ..... 2 (SKIP TO 463) NO CARD 3
456	Did you ever have a vaccination card for (NAME)?	YES ..... 1 (SKIP TO 463) NO 2	YES ..... 1 (SKIP TO 463) NO 2	YES ..... 1 (SKIP TO 463) NO 2

457	(1) COPY VACCINATION DATE FOR EACH VACCINE FROM THE CARD. (2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED.			
		DAY MONTH YEAR	DAY MONTH YEAR	DAY MONTH YEAR
A	BCG	BCG 1 9 9	BCG 1 9 9	BCG 1 9 9
B	POLIO 0 (POLIO GIVEN AT BIRTH)	P0 ..... 1 9 9	P0 ..... 1 9 9	P0 ..... 1 9 9
C	POLIO 1	P1 ..... 1 9 9	P1 ..... 1 9 9	P1 ..... 1 9 9
D	POLIO 2	P2 ..... 1 9 9	P2 ..... 1 9 9	P2 ..... 1 9 9
E	POLIO 3	P3 ..... 1 9 9	P3 ..... 1 9 9	P3 ..... 1 9 9
G	DPT 1	D1 ..... 1 9 9	D1 ..... 1 9 9	D1 ..... 1 9 9
H	DPT 2	D2 ..... 1 9 9	D2 ..... 1 9 9	D2 ..... 1 9 9
I	DPT 3	D3 ..... 1 9 9	D3 ..... 1 9 9	D3 ..... 1 9 9
K	DPT 4	D4 ..... 1 9 9	D4 ..... 1 9 9	D4 ..... 1 9 9
L	MEASLES	MEA 1 9 9	MEA 1 9 9	MEA 1 9 9
	PARTUSIS	PRT 1 9 9	PRT 1 9 9	PRT 1 9 9
	HEPATITIS B (B1) VACCINE	HEP B (B1) 1 9 9	HEP B (B1) 1 9 9	HEP B (B1) 1 9 9
	HEPATITIS B (B2) VACCINE	HEP B (B2) 1 9 9	HEP B (B2) 1 9 9	HEP B (B2) 1 9 9
	HEPATITIS B (B3) VACCINE	HEP B (B3) 1 9 9	HEP B (B3) 1 9 9	HEP B (B3) 1 9 9
458	Has (NAME) received any vaccinations that are not recorded on this card, including vaccinations received in a national *immunization day campaign*? RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, POLIO 0-3, DPT 1-3, AND/OR MEASLES VACCINE(S).	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 457) ↵ NO ..... 2 DON'T KNOW 8	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 457) ↵ NO ..... 2 DON'T KNOW 8	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 457) ↵ NO ..... 2 DON'T KNOW 8
463	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8
464	Has (NAME) had an illness with a cough at any time in the last 2 weeks?	YES ..... 1 NO ..... 2 (SKIP TO 466) ← DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 466) ← DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 466) ← DON'T KNOW 8

465	When (NAME) had an illness with a cough, did he/she breathe faster than usual with short, fast breaths?	YES .... 1 NO .... 2 DON'T KNOW 8	YES .... 1 NO .... 2 DON'T KNOW 8	YES .... 1 NO .... 2 DON'T KNOW 8
		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	NEXT-TO-NEXT-TO-LAST BIRTH NAME ________
466	CHECK 463 AND 464: FEVER OR COUGH?	"YES" IN 463 OR 464 ☐ ▼ NO OR DK ☐ ▼ (SKIP TO 472)	"YES" IN 463 OR 464 ☐ ▼ NO OR DK ☐ ▼ (SKIP TO 472)	"YES" IN 463 OR 464 ☐ ▼ NO OR DK ☐ ▼ (SKIP TO 472)
467	Did you seek advice or treatment for the illness?	YES .... 1 NO .... 2 (SKIP TO 472)◄	YES .... 1 NO .... 2 (SKIP TO 472)◄	YES .... 1 NO .... 2 (SKIP TO 472)◄
467A	What signs or symptoms led you to seek advice or treatment?	WHEN HE/SHE: HAS BLOCKED NOSE .... A HAS TROUBLE SLEEPING/EATING .... B HAS A FEVER .... C IS BREATHING FAST .... D IS ILL FOR A LONG TIME .... E OTHER ________ X (SPECIFY) DON'T KNOW .... Z	WHEN HE/SHE: HAS BLOCKED NOSE .... A HAS TROUBLE SLEEPING/EATING .... B HAS A FEVER .... C IS BREATHING FAST .... D IS ILL FOR A LONG TIME .... E OTHER ________ X (SPECIFY) DON'T KNOW .... Z	WHEN HE/SHE: HAS BLOCKED NOSE .... A HAS TROUBLE SLEEPING/EATING .... B HAS A FEVER .... C IS BREATHING FAST .... D IS ILL FOR A LONG TIME .... E OTHER ________ X (SPECIFY) DON'T KNOW .... Z
468	Where did you seek advice or treatment? Anywhere else? RECORD ALL MENTIONED.	PUBLIC SECTOR HOSPITAL .... A POLYCLINIC .... B FGP .... C FAP .... D PHARMACY .... E OTHER PUBLIC ________ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC .... G PHARMACY .... H PVT. DOCTOR .... I OTHER PVT. MEDICAL ________ J (SPECIFY) OTHER SOURCE TRAD. PRACTITIONER .... K OTHER ________ X (SPECIFY)	PUBLIC SECTOR HOSPITAL .... A POLYCLINIC .... B FGP .... C FAP .... D PHARMACY .... E OTHER PUBLIC ________ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC .... G PHARMACY .... H PVT. DOCTOR .... I OTHER PVT. MEDICAL ________ J (SPECIFY) OTHER SOURCE TRAD. PRACTITIONER .... K OTHER ________ X	PUBLIC SECTOR HOSPITAL .... A POLYCLINIC .... B FGP .... C FAP .... D PHARMACY .... E OTHER PUBLIC ________ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC .... G PHARMACY .... H PVT. DOCTOR .... I OTHER PVT. MEDICAL ________ J (SPECIFY) OTHER SOURCE TRAD. PRACTITIONER .... K OTHER ________ X

472	*Has (NAME) had diarrhea in the last 2 weeks?*	YES ... 1 NO ... 2 (SKIP TO 480) DON'T KNOW ... 8	YES ... 1 NO ... 2 (SKIP TO 480) DON'T KNOW ... 8	YES ... 1 NO ... 2 (SKIP TO 480) DON'T KNOW ... 8
473	When (NAME) had diarrhea, was he/she given less than usual to drink, about the same amount, or more than usual to drink?	LESS ... 1 SAME ... 2 MORE ... 3 DON'T KNOW ... 8	LESS ... 1 SAME ... 2 MORE ... 3 DON'T KNOW ... 8	LESS ... 1 SAME ... 2 MORE ... 3 DON'T KNOW ... 8
474	Was he/she given less than usual to eat, about the same amount, or more than usual to eat?	LESS ... 1 SAME ... 2 MORE ... 3 DON'T KNOW ... 8	LESS ... 1 SAME ... 2 MORE ... 3 DON'T KNOW ... 8	LESS ... 1 SAME ... 2 MORE ... 3 DON'T KNOW ... 8
475	Was he/she given any of the following to drink: A fluid, made from a special packet called REHYDRON? Water? Milk or Infant formula? Soup? Kefir, airan? Coca cola/Pepsi Cola/Sprite/Fanta? Other fluids?	YES NO DK REHYDRON ... 1 2 8 WATER ... 1 2 8 MILK/INFANT FORMULA ... 1 2 8 SOUP ... 1 2 8 KEFIR/AIRAN ... 1 2 8 SOFT DRINK ... 1 2 8 OTHER FLUIDS ... 1 2 8	YES NO DK REHYDRON ... 1 2 8 WATER ... 1 2 8 MILK/INFANT FORMULA ... 1 2 8 SOUP ... 1 2 8 KEFIR/AIRAN ... 1 2 8 SOFT DRINK ... 1 2 8 OTHER FLUIDS ... 1 2 8	YES NO DK REHYDRON ... 1 2 8 WATER ... 1 2 8 MILK/INFANT FORMULA ... 1 2 8 SOUP ... 1 2 8 KEFIR/AIRAN ... 1 2 8 SOFT DRINK ... 1 2 8 OTHER FLUIDS ... 1 2 8
476	Was anything (else) given to treat the diarrhea?	YES ... 1 NO ... 2 (SKIP TO 478) DON'T KNOW ... 8	YES ... 1 NO ... 2 (SKIP TO 478) DON'T KNOW ... 8	YES ... 1 NO ... 2 (SKIP TO 478) DON'T KNOW ... 8
477	What was given to treat the diarrhea? Anything else? RECORD ALL MENTIONED	PILL OR SYRUP ... A INJECTION ... B (I.V.) INTRAVENOUS ... C HOME REMEDIES/HERBAL MEDICINE ... D OTHER ___ X (SPECIFY)	PILL OR SYRUP ... A INJECTION ... B (I.V.) INTRAVENOUS ... C HOME REMEDIES/HERBAL MEDICINE ... D OTHER ___ X (SPECIFY)	PILL OR SYRUP ... A INJECTION ... B (I.V.) INTRAVENOUS ... C HOME REMEDIES/HERBAL MEDICINE .. D OTHER ___ X (SPECIFY)
478	Did you seek advice or treatment for the diarrhea?	YES ... 1 NO ... 2 (SKIP TO 480)	YES ... 1 NO ... 2 (SKIP TO 480)	YES ... 1 NO ... 2 (SKIP TO 480)

479	Where did you seek advice or treatment? Anywhere else? RECORD ALL MENTIONED.	PUBLIC SECTOR HOSPITAL ..... A POLYCLINIC ..... B FGP ..... C FAP ..... D PHARMACY ..... E OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... G PHARMACY ..... H PVT. DOCTOR ..... I OTHER PVT. MEDICAL _____ J (SPECIFY) OTHER SOURCE TRAD. PRACTITIONER ..... K OTHER _____ X (SPECIFY)	PUBLIC SECTOR HOSPITAL ..... A POLYCLINIC ..... B FGP ..... C FAP ..... D PHARMACY ..... E OTHERPUBLIC_ _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... G PHARMACY ..... H PVT. DOCTOR ..... I OTHER PVT. MEDICAL _____ J (SPECIFY) OTHER SOURCE TRAD. PRACTITIONER ..... K OTHER _____ X (SPECIFY)	PUBLIC SECTOR HOSPITAL ..... A POLYCLINIC ..... B FGP ..... C FAP ..... D PHARMACY ..... E OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... G PHARMACY ..... H PVT. DOCTOR ..... I OTHER PVT. MEDICAL _____ J (SPECIFY) OTHER SOURCE TRAD. PRACTITIONER ..... K OTHER _____ X (SPECIFY)
480		GO BACK TO 453 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481.	GO BACK TO 453 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481.	GO BACK TO 453 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
481	CHECK 453, ALL COLUMNS: NUMBER OF LIVING CHILDREN BORN SINCE JANUARY 1994 ONE OR MORE ☐ ▼	NONE ☐	→486
482	The last time you fed your children, did you wash your hands immediately before feeding them?	YES ..... 1 NO 2	
483	The last time you had to clean (your child/one of your children) after (he/she) defecated, did you wash your hands immediately afterwards?	YES ..... 1 NO 2	
484	What usually happens with your child(ren)'s stools when they do not use any toilet facility?	ALWAYS USE TOILET/LATRINE ..... 01 THROW IN THE TOILET/LATRINE ..... 02 THROW OUTSIDE THE DWELLING ..... 03 THROW OUTSIDE THE YARD ..... 04 BURY IN THE YARD ..... 05 NOT DISPOSED OF ..... 06 OTHER _____ 96 (SPECIFY)	
485	CHECK 475, ALL COLUMNS: NO CHILD RECEIVED ORS *FROM PACKET* ☐ ▼	ANY CHILD RECEIVED ORS *FROM PACKET* ☐	→487
486	Have you ever heard of a special product called [REHYDRON] you can get for the treatment of diarrhea?	YES ..... 1 NO 2	
487	CHECK 221: HAS ONE OR MORE CHILDREN LIVING WITH HER ☐ ▼	HAS NO CHILDREN LIVING WITH HER ☐	→491
488	When (your child/one of your children) is seriously ill, can you decide by yourself whether the child should be taken for medical treatment?	YES ..... 1 NO ..... 2 DEPENDS 3	
491	Do you currently smoke cigarettes or tobacco? IF YES: What type of tobacco do you smoke?	YES, CIGARETTES ..... A YES, PIPE ..... B YES, OTHER TOBACCO ..... C NO ..... D	→501
492	In the last 24 hours, how many times did you smoke?	TIMES ..... ☐☐	

SECTION 5. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	Are you currently married or living with a man?	YES, CURRENTLY MARRIED ..... 1 YES, LIVING WITH A MAN ..... 2 NO, NOT IN UNION 3	→505
502	Have you ever been married or lived with a man?	YES, FORMERLY MARRIED ..... 1 YES, LIVED WITH A MAN ..... 2 NO 3	→504 →509
503	ENTER '0' IN COLUMN 4 OF CALENDAR IN THE MONTH OF INTERVIEW, AND IN EACH MONTH BACK TO JANUARY 1994		→516
504	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED ..... 1 DIVORCED ..... 2 SEPARATED 3	→509
505	Is your husband/partner living with you now or is he staying elsewhere?	LIVING WITH HER ..... 1 STAYING ELSEWHERE 2	
506	RECORD THE HUSBAND'S LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE. IF HE IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.	☐☐	
509	Have you been married or lived with a man only once, or more than once?	ONCE ..... 1 MORE THAN ONCE 2	
510	CHECK 509: MARRIED/LIVED WITH A MAN ONLY ONCE → In what month and year did you start living with your husband/partner? MARRIED/LIVED WITH A MAN MORE THAN ONLY ONCE → Now we will talk about your first husband/partner. In what month and year did you start living with him?	MONTH ..... ☐☐ DON'T KNOW MONTH ..... 98 YEAR ..... 1 9 ☐☐ DON'T KNOW YEAR 9998	→512
511	How old were you when you started living with him?	AGE ..... ☐☐	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
512	DETERMINE MONTHS MARRIED OR LIVING WITH A MAN SINCE JANUARY 1994. ENTER 'X' IN COLUMN 4 OF CALENDAR FOR EACH MONTH MARRIED OR LIVING WITH A MAN, AND ENTER '0' FOR EACH MONTH NOT MARRIED/NOT LIVING WITH A MAN, SINCE JANUARY 1994. FOR WOMEN WITH MORE THAN ONE UNION: PROBE FOR DATE WHEN CURRENT UNION STARTED AND, IF APPROPRIATE, FOR STARTING AND TERMINATION DATES OF ANY PREVIOUS UNIONS. FOR WOMEN NOT CURRENTLY IN UNION: PROBE FOR DATE WHEN LAST UNION STARTED AND FOR TERMINATION DATE AND, IF APPROPRIATE, FOR THE STARTING AND TERMINATION DATES OF ANY PREVIOUS UNIONS.		
513	CHECK 501: CURRENTLY *MARRIED OR* LIVING WITH A MAN ☐ NOT CURRENTLY *MARRIED AND NOT* CURRENTLY LIVING WITH A MAN ☐		→516
514	CHECK 311/311A: ANY CODE CIRCLED ☐ NOT ASKED (NO CODE CIRCLED) ☐		→516
515	You have told me that you are using contraception. Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision or did you both decide together?	RESPONDENT ..... 1 HUSBAND/PARTNER ..... 2 JOINT DECISION ..... 3 OTHER _____ 6 (SPECIFY)	
516	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family life issues. How old were you when you first had sexual intercourse (if ever)?	NEVER ..... 00 AGE IN YEARS ..... ☐☐ FIRST TIME WHEN MARRIED 96	→526
517	When was the last time you had sexual intercourse?	DAYS AGO ..... 1 ☐☐ WEEKS AGO ..... 2 ☐☐ MONTHS AGO ..... 3 ☐☐ YEARS AGO ..... 4 ☐☐	→526

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
518	The last time you had sexual intercourse, was a condom used?	YES ..... 1 NO ..... 2 DON'T KNOW/NOT SURE 8	→519
518A	What was the main reason you used a condom on that occasion?	OWN CONCERN, TO PREVENT STD/HIV ..... 1 OWN CONCERN, TO PREVENT PREGNANCY ..... 2 OWN CONCERN TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNER/FEELS PARTNER HAS OTHER PARTNERS .. 4 PARTNER INSISTED ..... 5 DON'T KNOW ..... 6 OTHER_____ 7	
519	What is your relationship to the man with whom you last had sex?	SPOUSE ..... 1 GIRL FRIEND/FIANCEE ..... 2 OTHER FRIEND ..... 3 CASUAL ACQUAINTANCE ..... 4 RELATIVE ..... 5 OTHER_____ 6 (SPECIFY)	→521
520	For how long have you had a sexual relationship with this man?	DAYS ..... 1 ☐☐ WEEKS ..... 2 ☐☐ MONTHS ..... 3 ☐☐ YEARS ..... 4 ☐☐	
521	Have you had sex with anyone else in the last 12 months?	YES ..... 1 NO 2	→526
522	The last time you had sexual intercourse with this other man, was a condom used?	YES ..... 1 NO ..... 2 DON'T KNOW/NOT SURE 8	→523

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
522A	What was the main reason you used a condom on that occasion?	OWN CONCERN, TO PREVENT STD/HIV ..... 1 OWN CONCERN, TO PREVENT PREGNANCY ..... 2 OWN CONCERN TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNER/FEELS PARTNER HAS OTHER PARTNERS .. 4 PARTNER INSISTED ..... 5 DON'T KNOW ..... 6 OTHER_____ 7 (SPECIFY)	
523	What is your relationship to this man?	SPOUSE ..... 1 GIRL FRIEND/FIANCEE ..... 2 OTHER FRIEND ..... 3 CASUAL ACQUAINTANCE ..... 4 RELATIVE ..... 5 OTHER_____6 (SPECIFY)	→525
524	For how long have you had a sexual relationship with this man?	DAYS ..... 1 ☐☐ WEEKS ..... 2 ☐☐ MONTHS ..... 3 ☐☐ YEARS ..... 4 ☐☐	
525	Altogether, with how many different men have you had sex in the last 12 months?	NUMBER OF PARTNERS ..... ☐☐	
526	Do you know of a place where one can get condoms?	YES ..... 1 NO 2	→529

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
527	Where is that? IF SOURCE IS POLYCLINIC, FGP, FAP, WOMEN'S CONSULTING CENTER (WCC), WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR POLYCLINIC ..... 11 FGP ..... 12 FAP ..... 13 WCC ..... 14 PHARMACY ..... 15 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... 20 PHARMACY ..... 21 PVT. DOCTOR ..... 22 OTHER PVT. MEDICAL _____ 26 (SPECIFY) OTHER SOURCE SHOP ..... 30 RELIGIOUS ORGANIZATION ..... 31 FRIENDS/RELATIVES ..... 32 OTHER _____ 36 (SPECIFY)	
528	If you wanted to, could you yourself get a condom?	YES ..... 1 NO ..... 2 DON'T KNOW/UNSURE 8	
529	Do you know of a place where one can get female condoms?	YES ..... 1 NO 2	→601

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
530	Where is that? IF SOURCE IS POLYCLINIC, FGP, FAP, WOMEN'S CONSULTING CENTER (WCC0, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR POLYCLINIC ..... 11 FGP ..... 12 FAP ..... 13 WCC ..... 14 PHARMACY ..... 15 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... 20 PHARMACY ..... 21 PVT. DOCTOR ..... 22 OTHER PVT. MEDICAL _____ 26 (SPECIFY) OTHER SOURCE SHOP ..... 30 RELIGIOUS ORGANIZATION ..... 31 FRIENDS/RELATIVES ..... 32 OTHER _____ 36 (SPECIFY)	
531	If you wanted to, could you yourself get a female condom?	YES ..... 1 NO ..... 2 DON'T KNOW/UNSURE 8	

SECTION 6. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	CHECK 311/311A: NEITHER STERILIZED ☐ HE OR SHE STERILIZED ☐		→614
602	CHECK 226: NOT PREGNANT OR UNSURE ☐ Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children? PREGNANT ☐ Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD ..... 1 NO MORE/NONE ..... 2 SAYS SHE CAN'T GET PREGNANT ..... 3 UNDECIDED/DON'T KNOW 8	→604 →609 →608
603	CHECK 226: NOT PREGNANT OR UNSURE ☐ How long would you like to wait from now before the birth of (a/another) child? PREGNANT ☐ After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS ..... 1 ☐☐ YEARS ..... 2 ☐☐ SOON/NOW ..... 993 SAYS SHE CAN'T GET PREGNANT ..... 994 AFTER MARRIAGE ..... 995 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	→609
604	CHECK 228: NOT PREGNANT OR UNSURE ☐	PREGNANT ☐	→610
605	CHECK 310: USING A METHOD? NOT ASKED ☐ NOT CURRENTLY USING ☐	CURRENTLY USING ☐	→608

606	CHECK 603: NOT ASKED ☐ ▼ 24 OR MORE MONTHS OR 02 OR MORE YEARS ☐ ▼ 00-23 MONTHS OR 00-01 YEAR ☐		→610
607	CHECK 602: WANTS A/ANOTHER CHILD ☐ ▼ You have said that you do not want (a/another) child soon, but you are not using any method to avoid pregnancy. Can you tell me why? WANTS NO (MORE) CHILDREN ☐ ▼ You have said that you do not want any (more) children, but you are not using any method to avoid pregnancy. Can you tell me why?	NOT MARRIED ..... A FERTILITY-RELATED REASONS NOT HAVING SEX ..... B INFREQUENT SEX ..... C MENOPAUSAL/HYSTERECTOMY. ..... D SUBFECUND/INFECUND ..... E POSTPARTUM AMENORRHEIC ..... F BREASTFEEDING ..... G FATALISTIC ..... H OPPOSITION TO USE RESPONDENT OPPOSED ..... I HUSBAND OPPOSED ..... J OTHERS OPPOSED ..... K RELIGIOUS PROHIBITION ..... L LACK OF KNOWLEDGE KNOWS NO METHOD ..... M KNOWS NO SOURCE ..... N METHOD-RELATED REASONS HEALTH CONCERNS ..... O FEAR OF SIDE EFFECTS ..... P LACK OF ACCESS/TOO FAR ..... Q COST TOO MUCH ..... R INCONVENIENT TO USE ..... S INTERFERES WITH BODY'S NATURAL PROCESSES ..... T OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
608	In the next few weeks, if you discovered that you were pregnant, would that be a big problem, a small problem, or no problem for you?	BIG PROBLEM ..... 1 SMALL PROBLEM ..... 2 NO PROBLEM ..... 3 SAYS SHE CAN'T GET PREGNANT 4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
609	CHECK 310: USING A METHOD? NOT ASKED ☐ NOT CURRENTLY USING ☐ CURRENTLY USING ☐		→614
610	Do you think you will use a method to delay or avoid pregnancy at any time in the future?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→612
611	Which method would you prefer to use?	FEMALE STERILIZATION ..... 01 MALE STERILIZATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM ..... 09 FOAM/JELLY ..... 10 LACT. AMEN. METHOD ..... 11 PERIODIC ABSTINENCE ..... 12 WITHDRAWAL ..... 13 OTHER _____ 96 (SPECIFY) UNSURE 98	→614

612	What is the main reason that you think you will not use a method at any time in the future?	NOT CURRENTLY MARRIED ..... 11 FERTILITY-RELATED REASONS INFREQUENT SEX ..... 22 MENOPAUSAL/HYSTERECTOMY ..... 23 SUBFECUND/INFECUND ..... 24 WANTS AS MANY CHILDREN AS POSSIBLE 26 OPPOSITION TO USE RESPONDENT OPPOSED ..... 31 HUSBAND OPPOSED ..... 32 OTHERS OPPOSED ..... 33 RELIGIOUS PROHIBITION ..... 34 LACK OF KNOWLEDGE KNOWS NO METHOD ..... 41 KNOWS NO SOURCE ..... 42 METHOD-RELATED REASONS HEALTH CONCERNS ..... 51 FEAR OF SIDE EFFECTS ..... 52 LACK OF ACCESS/TOO FAR ..... 53 COST TOO MUCH ..... 54 INCONVENIENT TO USE ..... 55 INTERFERES WITH BODY'S NORMAL PROCESSES ..... 56 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→614
613	Would you ever use a method if you were married?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
614	CHECK 219: HAS LIVING CHILDREN ☐ If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would thet be? NO LIVING CHILDREN ☐ If you could choose exactly the number of children to have in your whole life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NUMBER ..... ☐☐ OTHER _____ 96 (SPECIFY)	→616

615	How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter?	BOYS NUMBER ..... [ ][ ] OTHER _____ 96 (SPECIFY) GIRLS NUMBER ..... [ ][ ] OTHER _____ 96 (SPECIFY) EITHER NUMBER ..... [ ][ ] OTHER _____ 96 (SPECIFY)	
616	Would you say that you approve or disapprove of couples using a method to avoid getting pregnant?	APPROVE ..... 1 DISAPPROVE ..... 2 DON'T KNOW/UNSURE 8	
617	In the last few months have you heard about family planning: On the radio? On the television? In a newspaper or magazine?	YES NO RADIO ..... 1 2 TELEVISION ..... 1 2 NEWSPAPER OR MAGAZINE 1 2	
619	In the last few months, have you discussed the practice of family planning with your friends, neighbors, or relatives?	YES ..... 1 NO 2	→621
620	With whom? Anyone else? RECORD ALL MENTIONED.	HUSBAND/PARTNER ..... A MOTHER ..... B FATHER ..... C SISTER(S) ..... D BROTHER(S) ..... E DAUGHTER ..... F SON ..... G MOTHER-IN-LAW ..... H FRIENDS/NEIGHBORS ..... I OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
621	CHECK 501: YES, CURRENTLY MARRIED ☐▼ YES, LIVING WITH A MAN ☐▼ NO, NOT IN UNION ☐		→625
622	Now I want to ask you about your husband's/partner's views on family planning. Do you think that your husband/partner approves or disapproves of couples using a method to avoid pregnancy?	APPROVES ..... 1 DISAPPROVES ..... 2 DON'T KNOW 8	
623	How often have you talked to your husband/partner about family planning in the past year?	NEVER ..... 1 ONCE OR TWICE ..... 2 MORE OFTEN 3	
624	Do you think your husband/partner wants the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER ..... 1 MORE CHILDREN ..... 2 FEWER CHILDREN ..... 3 DON'T KNOW 8	
625	Husbands and wives do not always agree on everything. Please tell me if you think a wife is justified in refusing to have sex with her husband when:	YES NO DK	
	She is tired or not in the mood?	TIRED/MOOD 1 2 8	
	She has recently given birth?	RECENT BIRTH 1 2 8	
	She knows he has sex with other women?[1]	OTHER WOMEN 1 2 8	
	She knows he has the AIDS virus?	*HAS THE AIDS VIRUS* 1 2 8	

SECTION 7. HUSBAND'S BACKGROUND AND WOMAN'S WORK

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	CHECK 501 AND 502: CURRENTLY MARRIED/ LIVING WITH A MAN ☐	FORMERLY MARRIED/ LIVED WITH A MAN ☐	→703
		NEVER MARRIED AND NEVER LIVED WITH A MAN ☐	→707
702	How old was your husband/partner on his last birthday?	AGE IN COMPLETED YEARS ..... ☐☐	
703	Did your (last) husband/partner ever attend school?	YES ..... 1 NO 2	→706
704	What was the highest level of school he attended: primary, secondary, secondary-special, or higher?	PRIMARY/SECONDARY ..... 1 SECONDARY-SPECIAL ..... 2 HIGHER ..... 3 DON'T KNOW 8	→706
705	What was the highest (grade/form/year) he completed at that level?	GRADE ..... ☐☐ DON'T KNOW 98	
706	CHECK 701: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ What is your husband's/partner's occupation? That is, what kind of work does he mainly do?	FORMERLY MARRIED/ LIVED WITH A MAN ☐ What was your (last) husband's/ partner's occupation? That is, what kind of work did he mainly do?	☐☐
707	Aside from your own housework, are you currently working?	YES ..... 1 NO 2	→710
708	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. Are you currently doing any of these things or any other work?	YES ..... 1 NO 2	→710

709	Have you done any work in the last 12 months?	YES ..... 1 NO 2	→719
710	What is your occupation, that is, what kind of work do you mainly do?		
711	CHECK 710: WORKS IN AGRICULTURE ☐ DOES NOT WORK IN AGRICULTURE ☐		→713
712	Do you work mainly on your own land or on family land, or do you rent land or do you work on someone else's land?	OWN LAND ..... 1 FAMILY LAND ..... 2 RENTED LAND ..... 3 SOMEONE ELSE'S LAND 4	
713	Do you do this work for a member of your family, for someone else, or are you *self-employed*?	FOR FAMILY MEMBER ..... 1 FOR SOMEONE ELSE ..... 2 SELF-EMPLOYED 3	
714	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR ..... 1 SEASONALLY/PART OF THE YEAR ..... 2 ONCE IN A WHILE 3	
715	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY ..... 1 CASH AND KIND ..... 2 *IN KIND ONLY* ..... 3 NOT PAID 4	→718
716	Who mainly decides how the money you earn will be used?	RESPONDENT ..... 1 HUSBAND/PARTNER ..... 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY ..... 3 SOMEONE ELSE ..... 4 RESPONDENT AND SOMEONE ELSE JOINTLY 5	

717	On average, how much of your household's expenditures do your earnings pay for: almost none, less than half, about half, more than half, or all?	ALMOST NONE ..... 1 LESS THAN HALF ..... 2 ABOUT HALF ..... 3 MORE THAN HALF ..... 4 ALL ..... 5 NONE, HER INCOME IS ALL SAVED. 6	
718	Do you usually work at home or away from home?	HOME ..... 1 AWAY 2	
719	Who in your family usually has the final say on the following decisions:	RESPONDENT = 1 HUSBAND/PARTNER = 2 RESP. & HUSBAND/PARTNER JOINTLY = 3 SOMEONE ELSE = 4 RESPONDENT & SOMEONE ELSE JOINTLY = 5	
	Your own health?	1 2 3 4 5	
	Large household purchases?	1 2 3 4 5	
	Daily household purchases?	1 2 3 4 5	
	Visits to family, friends, or relatives?	1 2 3 4 5	
	What food should be cooked each day?	1 2 3 4 5	
720	PRESENCE OF OTHERS AT THIS POINT (PRESENT AND LISTENING, PRESENT BUT NOT LISTENING OR NOT PRESENT)	PRES/ LISTEN. / PRES/ NOT LISTEN. / NOT PRS CHILDREN <10 ..... 1 2 3 HUSBAND ..... 1 2 3 OTHER MALES ..... 1 2 3 OTHER FEMALES 1 2 3	
721	Sometimes a husband is annoyed or angered by things which his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:	YES / NO / DK	
	If she goes out without telling him?	GOES OUT 1 2 8	
	If she neglects the children?	NEGL. CHILDREN 1 2 8	
	If she argues with him?	ARGUES 1 2 8	
	If she refuses sex with him?	REFUSES SEX 1 2 8	
	If she burns the food?	BURNS FOOD 1 2 8	

SECTION 8: AIDS AND OTHER SEXUALLY TRANSMITTED DISEASES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES ..... 1 NO 2	→818
802	Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→810
803	What can a person do? Anything else? RECORD ALL MENTIONED.	ABSTAIN FROM SEX ..... A USE CONDOMS ..... B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER ..... C LIMIT NUMBER OF SEXUAL PARTNERS D AVOID SEX WITH PROSTITUTES ..... E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS ..... F AVOID SEX WITH HOMOSEXUALS .... G AVOID SEX WITH PERSONS WHO INJECT DRUGS INTRAVENOUSLY ..... H AVOID BLOOD TRANSFUSIONS ..... I AVOID INJECTIONS .....J AVOID KISSING ..... K AVOID MOSQUITO BITES ..... L SEEK PROTECTION FROM TRADITIONAL HEALER ..... M AVOID SHARING RAZORS, BLADES ... N OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
804	Is it possible to avoid AIDS by having only one not infected sexual partner who doesn't have other sexual partners?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
805	Is it possible to get AIDS through mosquito bite?	YES ..... 1 NO ..... 2 DON'T KNOW 8	

806	Is it possible to avoid AIDS using condom during every sexual intercourse?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
807	Can a person get AIDS through eating together with sick person?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
808	Is it possible to prevent AIDS by abstain from sexual intercourses at all?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
810	Is it possible for a healthy-looking person to have the AIDS virus?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
811	Do you know someone personally who has the virus that causes AIDS or someone who died from AIDS?	YES ..... 1 NO 2	
812	Can the virus that causes AIDS be transmitted from a mother to a child?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→814
813	When can the virus that causes AIDS be transmitted from a mother to a child? Can it be transmitted...	YES NO DK	
	During pregnancy?	1 2 8	
	During delivery?	1 2 8	
	During breastfeeding?	1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
814	CHECK 501: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ NOT CURRENTLY MARRIED/ NOT LIVING WITH A MAN ☐		→815A

815	Have you ever talked about ways to prevent getting the virus that causes AIDS with (your husband/the man you are living with)?	YES ..... 1 NO 2	
815A	In your opinion, is it acceptable or unacceptable for AIDS to be discussed: on the radio? on the TV? In newspapers?	ACCEPT. UNACCEPT. DK/NOT SURE 1 2 8 1 2 8 1 2 8	
816	If a person learns that he/she is infected with the virus that causes AIDS, should the person be allowed to keep this fact private or should this information be available to the community?	CAN BE KEPT PRIVATE ..... 1 AVAILABLE TO COMMUNITY ..... 2 *DK/NOT SURE* 8	
817	If a relative of yours became sick with the virus that causes AIDS, would you be willing to care for her or him in your own household?	YES ..... 1 NO ..... 2 *DK/NOT SURE/DEPENDS* 8	
817b	Should persons with the AIDS virus who works with other persons such as in a shop, office, or farm be allowed to continue their work or not?	CAN CONTINUE WORK ..... 1 SHOULD NOT CONTINUE WORK ..... 2 *DK/NOT SURE/DEPENDS* 8	
817c	Should children aged 12-14 be taught about using a condom to avoid AIDS?	YES ..... 1 NO ..... 2 *DK/NOT SURE/DEPENDS* 8	
817d	Have you ever been tested to see if you have the AIDS virus?	YES ..... 1 NO 2	→817gx
817e	Would you want to be tested for the AIDS virus?	YES ..... 1 NO ..... 2 DON'T KNOW/UNSURE 3	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
817f	Do you know a place where you could go to get an AIDS test?	YES ..... 1 NO 2	→818
817g 817gx	Where can you go for the test? Where did you go for the test? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR HOSPITAL ..... 11 POLYCLINIC ..... 12 FGP CLINIC ..... 13 DIAGNOSTIC CENTER ..... 14 VENERIC DISEASE CLINIC .... 15 OTHER PUBLIC ..... 16 _____ (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC ... 21 PHARMACY ..... 22 PRIVATE DOCTOR..... 23 OTHER PRIVATE MEDICAL_____ 26 (SPECIFY) OTHER SOURCE SHOP ..... 31 CHURCH ..... 32 FRIENDS/RELATIVES ..... 33 OTHER_____ 96 (SPECIFY)	
818	(Apart from AIDS), have you heard about (other) infections that can be transmitted through sexual contact?	YES ..... 1 NO 2	→831
819	In a man, what signs and symptoms would lead you to think that he has such an infection? Any others? RECORD ALL MENTIONED.	ABDOMINAL PAIN ..... A GENITAL DISCHARGE/DRIPPING. B FOUL SMELLING DISCHARGE ... C BURNING PAIN ON URINATION.. D REDNESS/INFLAMMATION IN GENITAL AREA ..... E SWELLING IN GENITAL AREA ... F GENITAL SORES/ULCERS ..... G GENITAL WARTS ..... H BLOOD IN URINE ..... I LOSS OF WEIGHT ..... J IMPOTENCE ..... K NO SYMPTOMS ..... L OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	

820	How do you think, what symptoms represent weather a woman is been infected or not?	ABDOMINAL PAIN ..... A GENITAL DISCHARGE/DRIPPING. B FOUL SMELLING DISCHARGE ... C BURNING PAIN ON URINATION.. D REDNESS/INFLAMMATION IN GENITAL AREA ..... E SWELLING IN GENITAL AREA ... F GENITAL SORES/ULCERS ..... G GENITAL WARTS ..... H BLOOD IN URINE ..... I LOSS OF WEIGHT ..... J IMPOTENCE ..... K NO SYMPTOMS ..... L OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
822	During the last 12 months, have you had a sexually-transmitted disease?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→831
823	Now I would like to ask you some questions about your health in the last 12 months. Sometimes, women experience a genital discharge. During the last 12 months, have you had a genital discharge?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
824	Sometimes, women experience a genital sore or ulcer. During the last 12 months, have you had a genital sore or ulcer?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
825	CHECK 822, 823, and 824: HAS HAD AN INFECTION HAS NOT HAD AN INFECTION		→831
826	The last time you had (INFECTION FROM 822/823/824), did you seek any kind of advice or treatment?	YES ..... 1 NO 2	→828

827	The last time you had (INFECTION FROM 822/823/824) did you do any of the following? Did you....	YES / NO	
	Seek advice from a health worker in a clinic or hospital?	1 / 2	
	Seek advice or medicine from a traditional healer?	1 / 2	
	Seek advice or buy medicines in a shop or pharmacy?	1 / 2	
	Ask for advice from friends or relatives?	1 / 2	
828	When you had (INFECTION FROM 822/823/824), did you inform the persons with whom you were having sex?	YES ..... 1 NO ..... 2 SOME/ NOT ALL 3	
829	When you had (INFECTION FROM 822/823/824) did you do something to avoid infecting your sexual partner(s)?	YES ..... 1 NO ..... 2 PARTNER ALREADY INFECTED 3	→831
830	What did you do to avoid infecting your partner? Did you....	YES / NO	
	Stop having sex?	1 / 2	
	Used a condom when having sex?	1 / 2	
	Take medicine?	1 / 2	
831	RECORD THE TIME OF THE END OF THE INTERVIEW	HOUR ..... MINUTES	

SECTION 9. HEIGHT AND WEIGHT

IN 901 AND 902, RECORD THE HEIGHT AND WEIGHT OF THE RESPONDENT.

NO.	QUESTIONS AND FILTERS		CODING CATEGORIES
901	RESPONDENT'S HEIGHT (IN CENTIMETERS)	☐☐☐.☐	
902	RESPONDENT'S WEIGHT (IN KILOGRAMS)	☐☐☐.☐	
903	RESULT	MEASURED ..... 1 NOT PRESENT ..... 2 REFUSED ..... 3 OTHER ..... 6 (SPECIFY)	
904	CHECK 215 AND 219: ONE OR MORE LIVING CHILDREN BORN IN JAN. 1994 OR LATER ☐ ▼ NO LIVING CHILDREN BORN IN JAN. 1994 OR LATER ☐ → 1001		

IN 905 AND 906 RECORD THE LINE NUMBER AND NAME OF EACH CHILD BORN SINCE JANUARY 1994 AND STILL ALIVE. IN 907 RECORD THE BIRTH DATE FOR ALL LIVING CHILDREN BORN SINCE JANUARY 1994. IN 908 AND 910 RECORD HEIGHT AND WEIGHT OF THE LIVING CHILDREN.

		1) YOUNGEST LIVING CHILD	2) NEXT-TO-YOUNGEST LIVING CHILD	3) NEXT-TO-NEXT-TO-YOUNGEST LIVING CHILD
905	LINE NO. FROM 212	☐☐	☐☐	☐☐
906	NAME FROM 217	(NAME) _____	(NAME) _____	(NAME) _____
908	HEIGHT (IN CENTIMETERS)	☐☐☐.☐	☐☐☐.☐	☐☐☐.☐
909	WAS LENGTH/HEIGHT OF CHILD MEASURED LYING DOWN OR STANDING UP?	LYING ..... 1 STANDING 2	LYING ..... 1 STANDING 2	LYING ..... 1 STANDING 2

910	WEIGHT (IN KILOGRAMS)	[ ][ ].[ ]	[ ][ ].[ ]	[ ][ ].[ ]
911	DATE WEIGHED AND MEASURED	DAY .... [ ][ ] MONTH .... [ ][ ] YEAR 1 9 9 9	DAY .... [ ][ ] MONTH .... [ ][ ] YEAR 1 9 9 9	DAY .... [ ][ ] MONTH .... [ ][ ] YEAR 1 9 9 9
912	RESULT OF WEIGHING AND MEASURING	MEASURED .... 1 CHILD SICK .... 2 CHILD NOT PRESENT .... 3 CHILD REFUSED .... 4 MOTHER REFUSED .... 5 OTHER ______ 6 (SPECIFY)	MEASURED .... 1 CHILD SICK .... 2 CHILD NOT PRESENT .... 3 CHILD REFUSED .... 4 MOTHER REFUSED .... 5 OTHER ______ 6 (SPECIFY)	MEASURED .... 1 CHILD SICK .... 2 CHILD NOT PRESENT .... 3 CHILD REFUSED .... 4 MOTHER REFUSED .... 5 OTHER ______ 6 (SPECIFY)
913	NAME OF MEASURER : ______ [ ][ ]	NAME OF ASSISTANT : ______ [ ][ ]		

SECTION 10. HEMOGLOBIN MEASUREMENT IN THE BLOOD

READ TO THE RESPONDENT THE FOLLOWING INFORMATION ABOUT ANEMIA AND REQUEST HER PARTICIPATION IN THE ANEMIA TESTING PART OF THE SURVEY. IF THE RESPONDENT AGREES TO PARTICIPATE, ASK HER TO SIGN AND DATE THE RESPONDENT CONSENT FORM. THEN RECORD THE OUTCOME OF THIS REQUEST BY CIRCLING THE APPROPRIATE CODE ON THE NEXT PAGE.

ҚАЗАҚСТАННЫҢ
ПРОФИЛАКТИКАЛЫҚ
МЕДИЦИНА
АКАДЕМИЯСЫ

KAZAKHSTAN
ACADEMY
OF PREVENTIVE
MEDICINE

Dear Respondent:

The Academy of Preventive Medicine is conducting Demographic and Health Survey in Kazakhstan. As part of this program we study the prevalence of anemia among the women and their children. We ask you to participate in this program, which will assist the Committee of Health of The Ministry of health, Education and Sport of Kazakhstan to develop the specific measures to prevent and treat anemia.

Anemia is a disease, which is characterized by a low count of red blood cells. It results from poor nutrition and can be especially damaging to the health of pregnant and breastfeeding women.

Today, it is possible to rapidly (within a few minutes) diagnose this disease. A low level of hemoglobin can be determined by a Hemocue machine on the basis of a single drop of blood.

If you decide to participate in this program, we will ask you to provide a drop of blood from your finger for the analysis. Also, if you have a child of age 5 or less, please let our nurse to obtain drop of blood from him. The procedure will be done by sterile instruments. The blood will be analysed using the new sophisticated American equipment, Hemocue. The result of analysis will be available to you right after the blood is taken and assessed by Hemocue. We will also keep the results confidential.

If you decide to participate in this program , please sign at the bottom of this form that you agree to provide a drop of blood from your child.

If you decide not to participate , it is your right, and we will respect your choice.

I am _____

Last name, First name Middle name

agree to donate a drop of blood for the purpose of anemia diagnosis. I also allow a drop of blood to be taken from my child(children) for the purposes of anemia diagnosis.

Signature: _____ Date: ____ _____1999

1001	RESPONDENT AGREES TO TESTING OF HERSELF AND/OR HER CHILD(REN) .... 1 → 1002		RESPONDENT DOES NOT AGREE TO TESTING .... 2 → END	
1002	RESPONDENT'S HEMOGLOBIN LEVEL (G/DL)	☐☐.☐		
1003	RESULT	MEASURED .... 1 NOT PRESENT .... 2 REFUSED .... 3 OTHER ________ 6 (SPECIFY)		
1004	CHECK 212 AND 219: ONE OR MORE LIVING CHILDREN BORN IN JAN. 1994 OR LATER ☐ ↓		NO LIVING CHILDREN BORN IN JAN. 1994 OR LATER ☐ → 1009	
	IN 1005 AND1006 RECORD THE LINE NUMBER AND NAME OF EACH CHILD BORN IN JANUARY 1994 OR LATER AND STILL ALIVE. IN 1007 RECORD THE HEMOGLOBIN LEVEL IN THE BLOOD OF THE LIVING CHILDREN.			
		1) YOUNGEST LIVING CHILD	2) NEXT-TO-YOUNGEST LIVING CHILD	3) NEXT-TO-NEXT-TO-YOUNGEST LIVING CHILD
1005	LINE NO. FROM 212	☐☐	☐☐	☐☐
1006	NAME FROM 217	(NAME) ________	(NAME) ________	(NAME) ________
1007	HEMOGLOBIN LEVEL IN THE BLOOD (G/DL)	☐☐.☐	☐☐.☐	☐☐.☐
1008	RESULT	MEASURED .... 1 CHILD SICK .... 2 CHILD NOT PRESENT .... 3 CHILD REFUSED .... 4 MOTHER REFUSED .... 5 OTHER ________ 6 (SPECIFY)	MEASURED .... 1 CHILD SICK .... 2 CHILD NOT PRESENT .... 3 CHILD REFUSED .... 4 MOTHER REFUSED .... 5 OTHER ________ 6 (SPECIFY)	MEASURED .... 1 CHILD SICK .... 2 CHILD NOT PRESENT .... 3 CHILD REFUSED .... 4 MOTHER REFUSED .... 5 OTHER ________ 6 (SPECIFY)

1009	NAME OF HEMOGLOBIN MEASURER: _____ ☐☐
1010	CHECK 1002 AND 1007: NO VALUES BELOW 7 G/DL ☐ → GIVE MOTHER RESULT OF HEMOGLOBIN MEASUREMENT AND END THE INTERVIEW ONE OR MORE VALUES BELOW 7 G/DL ☐ → GIVE MOTHER RESULT OF HEMOGLOBIN MEASUREMENT AND CONTINUE WITH 1011.
1011	CHECK HOUSEHOLD QUESTIONNAIRE Q5: *RESPONDENT IS USUAL RESIDENT* ☐ *RESPONDENT IS VISITOR* ☐ → END

1012 **Dear Respondent:**

We detected the low level of hemoglobin in your (your child's) blood. This indicates that you (your child) have developed severe anemia, which is serious health problem. We would like to inform about this the doctor at health care facility in your area. That would help you to meet appropriate further diagnosis and treatment of your (your child's) condition.

If you agree with this please sign at the bottom of this form.

Thank you for your cooperation.

I am _____
Last name, First name Middle name
agree that the information about the level of hemoglobin in my (my child's) blood will be disclosed to the doctor at the local health care facility.

Signature _____

Date "____" _____1999

	RESPONDENT AGREES TO REFERRAL OF HERSELF AND/OR HER CHILD(REN) 1
	RESPONDENT DOES NOT AGREE TO REFERRAL ..... 2 → END
1013	RECORD NAMES OF WOMEN AND CHILD(REN) WITH HEMOGLOBIN LEVEL LESS THAN 7G/DL ON REFERRAL FORM

ACADEMY OF PREVENTIVE MEDICINE
RESULTS OF HEMOGLOBIN MEASUREMENTS IN THE BLOOD

Date _____ _____ 1999

Name / Hemoglobin level in the blood (G//Dl)	Respondent	Last childt	Next-to-youngest child
	_____	_____	_____
	☐☐☐	☐☐☐	☐☐☐
	You have	Your child has	Your child has
WHO CLASSIFICATION OF ANEMIA Normal level — Hb level above 11 G/DL Mild anemia — Hb (10-11 G/DL) Moderate anemia — Hb (7- 10 G/DL) Severe anemia — Hb (less than 7 G/DL)	Normal level Mild anemia Moderate anemia Severe anemia	Normal level Mild anemia Moderate anemia Severe anemia	Normal level Mild anemia Moderate anemia Severe anemia

In case of severe anemia (Hb level less than 7 G/DL), we recommend you to immediately contact your doctor.

If you have any question about hemoglobin measurement procedure, please call us at (3272)42-92-03, or write to: Academy of Preventive Medicine, 66 Klotchkov St., Almaty, Kazakhstan, 480008

CALENDAR

INSTRUCTIONS: ONLY ONE CODE SHOULD APPEAR IN ANY BOX. FOR COLUMNS 1 AND 4, ALL MONTHS SHOULD BE FILLED IN. INFORMATION TO BE CODED FOR EACH COLUMN

COL.1: BIRTHS, PREGNANCIES, PREGNANCY TERMINATIONS, CONTRACEPTIVE USE

- B BIRTHS
- P PREGNANCIES
- S STILLBIRTH
- M MISCARRIAGE
- D INDUCED ABORTIONS BY D&C
- V INDUCED ABORTION BY VACUUM ASPIRATION

- 0 NO METHOD
- 1 FEMALE STERILIZATION
- 2 MALE STERILIZATION
- 3 PILL
- 4 IUD
- 5 INJECTIONS
- 6 IMPLANTS
- 7 CONDOM
- 8 FEMALE CONDOM
- 9 DIAPHRAGM
- F FOAM OR JELLY
- L LACTATIONAL AMENORRHEA METHOD
- A PERIODIC ABSTINENCE
- W WITHDRAWAL
- X OTHER _____ (SPECIFY)

COL 2: SOURCE OF CONTRACEPTION

- 1 HOSPITAL
- 2 POLYCLINIC
- 3 WOMEN'S CONSULTING CENTER
- 4 FGP
- 5 FAP
- 6 OTHER PUBLIC
- 7 PVT. HOSPITAL/CLINIC
- 8 PHARMACY
- 9 PRIVATE DOCTOR
- A NON GOVT. MOBILE CLINIC
- B NON GOVT. FIELD WORKER
- C OTHER PRIVATE MEDICAL
- D SHOP
- E CHURCH
- F FRIENDS/RELATIVES
- X OTHER _____ (SPECIFY)

NAME OF CHILD	DATA		1	2	3	4	5	DATA		
	12 DEC	01						01	12 DEC	
	11 NOV	02						02	11 NOV	
	10 OCT	03						03	10 OCT	
	09 SEP	04						04	09 SEP	
	08 AUG	05						05	08 AUG	1
	07 JUL	06						06	07 JUL	9
	06 JUN	07						07	06 JUN	9
	05 MAY	08						08	05 MAY	9
	04 APR	09						09	04 APR	
	03 MAR	10						10	03 MAR	
	02 FEB	11						11	02 FEB	
	01 JAN	12						12	01 JAN	
	12 DEC	13						13	12 DEC	
	11 NOV	14						14	11 NOV	
	10 OCT	15						15	10 OCT	
	09 SEP	16						16	09 SEP	
	08 AUG	17						17	08 AUG	1
	07 JUL	28						28	07 JUL	9
	06 JUN	29						29	06 JUN	9
	05 MAY	20						20	05 MAY	8
	04 APR	21						21	04 APR	
	03 MAR	22						22	03 MAR	
	02 FEB	23						23	02 FEB	
	01 JAN	24						24	01 JAN	
	12 DEC	25						25	12 DEC	
	11 NOV	26						26	11 NOV	
	10 OCT	27						27	10 OCT	
	09 SEP	28						28	09 SEP	
	08 AUG	29						29	08 AUG	1
	07 JUL	30						30	07 JUL	9
	06 JUN	31						31	06 JUN	9
	05 MAY	32						32	05 MAY	7
	04 APR	33						33	04 APR	
	03 MAR	34						34	03 MAR	
	02 FEB	35						35	02 FEB	
	01 JAN	36						36	01 JAN	

COL 3: DISCONTINUATION OF CONTRACEPTIVE USE

0	INFREQUENT SEX/HUSBAND AWAY
1	BECAME PREGNANT WHILE USING
2	WANTED TO BECOME PREGNANT
3	HUSBAND DISAPPROVED
4	WANTED MORE EFFECTIVE METHOD
5	HEALTH CONCERNS
6	SIDE EFFECTS
7	LACK OF ACCESS/TOO FAR
8	COST TOO MUCH
9	INCONVENIENT TO USE
F	FATALISTIC
A	DIFFICULT TO GET PREGNANT/MENOPAUSAL
D	MARITAL DISSOLUTION/SEPARATION
X	OTHER _____ (SPECIFY)
Z	DON'T KNOW

COL.4: MARRIAGE/UNION

X	IN UNION (MARRIED OR LIVING TOGETHER)
0	NOT IN UNION

Col 5 PLACE OF ABORTION

1	DELIVERY HOSPITAL
2	GOVERNMENT HOSPITAL
3	FEE-FOR SERVICE DEPARTMENT OF HOSPITAL
4	PRIVATE CLINIC
5	WOMEN'S CONSULTING CENTER
6	FAMILY GROUP PRACTICE
7	OTHER _____ (SPECIFY)

NAME OF CHILD	DATA		1	2	3	4	5	DATA		
	12 DEC	37						37	12 DEC	
	11 NOV	38						38	11 NOV	
	10 OCT	39						39	10 OCT	
	09 SEP	40						40	09 SEP	
_____	1 08 AUG	41						41	08 AUG	1
	9 07 JUL	42						42	07 JUL	9
	9 06 JUN	43						43	06 JUN	9
	6 05 MAY	44						44	05 MAY	6
	04 APR	45						45	04 APR	
	03 MAR	46						46	03 MAR	
	02 FEB	47						47	02 FEB	
	01 JAN	48						48	01 JAN	
	12 DEC	49						49	12 DEC	
	11 NOV	50						50	11 NOV	
	10 OCT	51						51	10 OCT	
	09 SEP	52						52	09 SEP	
_____	1 08 AUG	53						53	08 AUG	1
	9 07 JUL	54						54	07 JUL	9
	9 06 JUN	55						55	06 JUN	9
	5 05 MAY	56						56	05 MAY	5
	04 APR	57						57	04 APR	
	03 MAR	58						58	03 MAR	
	02 FEB	59						59	02 FEB	
	01 JAN	60						60	01 JAN	
	12 DEC	61						61	12 DEC	
	11 NOV	62						62	11 NOV	
	10 OCT	63						63	10 OCT	
	09 SEP	64						64	09 SEP	
_____	1 08 AUG	65						65	08 AUG	1
	9 07 JUL	66						66	07 JUL	9
	9 06 JUN	67						67	06 JUN	9
	4 05 MAY	68						68	05 MAY	4
	04 APR	69						69	04 APR	
	03 MAR	70						70	03 MAR	
	02 FEB	71						71	02 FEB	
	01 JAN	72						72	01 JAN	

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF THE SUPERVISOR:_____ DATE:_____

EDITOR'S OBSERVATIONS

NAME OF EDITOR:_____ DATE:_____

1999 KAZAKHSTAN DEMOGRAPHIC AND HEALTH SURVEY
MALE QUESTIONNAIRE

REPUBLIC OF KAZAKHSTAN
ACADEMY OF PREVENTIVE MEDICINE

IDENTIFICATION[1]

PLACE NAME

NAME OF HOUSEHOLD HEAD

CLUSTER NUMBER .....

HOUSEHOLD NUMBER .....

LARGE CITY/SMALL CITY/TOWN/COUNTRYSIDE (LARGE CITY=1, SMALL CITY=2, TOWN=3, COUNTRYSIDE=4) .....

URBAN/RURAL (URBAN=1, RURAL=2) .....

NAME AND LINE NUMBER OF MEN_____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY / MONTH / YEAR
INTERVIEWER'S NAME				NAME
RESULT*				RESULT
NEXT VISIT: DATE				TOTAL NO. OF VISITS
TIME				

*RESULT CODES:

1	COMPLETED	4	REFUSED		
2	NOT AT HOME	5	PARTLY COMPLETED	7	OTHER _____ (SPECIFY)
3	POSTPONED	6	INCAPACITATED		

	KAZAKH	RUSSIAN	OTHER
1. LANGUAGE OF INTERVIEW	1	2	3
2. NATIVE LANGUAGE OF RESPONDENT	1	2	3
	YES	NO	
3. WHETHER TRANSLATOR USED	1	2	

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		
DATE _____	DATE _____		

INFORMED CONSENT

Hello. My name is _____ and I am working with The Academy of Preventive Medicine of Kazakhstan. We are conducting a national survey about the health of men, women and children. We would very much appreciate your participation in this survey. I would like to ask you about your health (and the health of your children). This information will help the government of Kazakhstan to plan health services. The survey usually takes between 10 and 20 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

Participation in this survey is voluntary and you can choose not to answer any individual question or all of the questions. However, we hope that you will participate in this survey since your views are important.

At this time, do you want to ask me anything about the survey?
May I begin the interview now?

Signature of interviewer: _____ Date: _____

RESPONDENT AGREES TO BE INTERVIEWED ..... 1 ▼

RESPONDENT DOES NOT AGREE TO BE INTERVIEWED ..... 2 —▸END

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR ..... ☐☐ MINUTES ..... ☐☐	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, in a town, or in the countryside?	CITY ..... 1 TOWN ..... 2 COUNTRYSIDE 3	
103	In the last 12 months, how many times have you traveled away from your home community and slept away?	NUMBER OF TRIPS AWAY ☐☐ NONE 00	> 105
104	In the last 12 months, have you been away from your home community for more than 1 month at a time?	YES ..... 1 NO 2	
105	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? IF LESS THAN ONE YEAR, RECORD "00" YEARS	YEARS ..... ☐☐ ALWAYS ..... 95 ▸107 VISITOR ..... 96 ▸107	
106	Just before you moved here, did you live in a city, in a town, or in the countryside?	CITY ..... 1 TOWN ..... 2 COUNTRYSIDE 3	
107	In what month and year were you born?	MONTH ..... ☐☐ DON'T KNOW MONTH ..... 98 YEAR ..... ☐☐☐☐ DON'T KNOW YEAR 9998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
108	How old were you at your last birthday? COMPARE AND CORRECT 107 AND/OR 108 IF INCONSISTENT.	AGE IN COMPLETED YEARS ... ☐☐	
109	Have you ever attended school?	YES ..... 1 NO 2	→116
110	What is the highest level of school you attended: primary, secondary, or higher?[1]	PRIMARY/SECONDARY ..... 1 SECONDARY-SPECIAL ..... 2 HIGHER 3	
111	What is the highest (grade/form/year) you completed at that level?[1]	GRADE ..... ☐☐	
116	Do you read a newspaper or magazine almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY ..... 1 AT LEAST ONCE A WEEK ..... 2 LESS THAN ONCE A WEEK ..... 3 NOT AT ALL 4	
117	Do you listen to the radio almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY ..... 1 AT LEAST ONCE A WEEK ..... 2 LESS THAN ONCE A WEEK ..... 3 NOT AT ALL 4	
118	Do you watch television almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY ..... 1 AT LEAST ONCE A WEEK ..... 2 LESS THAN ONCE A WEEK ..... 3 NOT AT ALL 4	
119	Are you currently working?	YES ..... 1 NO 2	→122
120	Have you done any work in the last 12 months	YES ..... 1 NO 2	→122
121	What have you been doing over the last 12 months?	GOING TO SCHOOL/STUDYING ..... 1 LOOKING FOR WORK ..... 2 INACTIVE ..... 3 COULD NOT WORK/HANDICAPPED .. 4 OTHER_____ 6 (SPECIFY)	→131
122	What is you occupation, that is, what kind of work do you mainly do?	☐☐ _____ _____ _____	
123	CHECK 122: WORKS IN AGRICULTURE ☐ ▼ DOES NOT WORK IN AGRICULTURE ☐		→127
124	Do you work mainly on your own land or on family land, or do you rent land or work on someone else's land?	OWN LAND ..... 1 FAMILY LAND ..... 2 RENTED LAND ..... 3 SOMEONE ELSE'S LAND 4	
125	Do you do this work for a member of your family, for someone else, or are you self-employed?	FOR FAMILY MEMBER ..... 1 FOR SOMEONE ELSE ..... 2 SELF-EMPLOYED 3	
126	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR ..... 1 SEASONALLY/PART OF THE YEAR ... 2 ONCE IN A WHILE 3	→128

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
127	During the last 12 months, how many months did you work?	NUMBER OF MONTHS ..... ☐☐	
128	Do you think that what you earn is sufficient to provide for your family's basic needs?	YES ..... 1 NO 2	→130
129	What do you think is the reason your earnings are insufficient? Is it because you cannot WORK as much as you would like to, or is it because you work enough but what you earn from your work is insufficient, or is a combination of the two?	CANNOT WORK AS MUCH ..... 1 EARNINGS ARE INSUFFICIENT ..... 2 BOTH ..... 3 OTHER_____ 6 (SPECIFY)	
130	On average, how much of your household's expenditures do your earnings pay for: almost none, less than half, about half, more than half, or all?	ALMOST NONE ..... 1 LESS THAN HALF ..... 2 ABOUT HALF ..... 3 MORE THAN HALF ..... 4 ALL ..... 5 NONE, HIS INCOME IS ALL SAVED ... 6	
131	Have you ever drunk an alcohol-containing beverage?	YES ..... 1 NO 2	→135
132	Have you ever gotten "drunk" from drinking an alcohol-containing beverage?	YES ..... 1 NO 2	
133	In the last 3 months, on how many days did you drink an alcohol-containing beverage?	NUMBER OF DAYS ..... ☐☐ NONE 0 0	→135
134	In the last 3 months, on how many occasions did you get "drunk"?	NUMBER OF TIMES ..... ☐☐ NONE 0 0	
135	Have you had any kind of injection in the last 3 months?	YES ..... 1 NO 2	→138
136	How many times did you have an injection in the last 3 months?	NUMBER OF INJECTIONS .... ☐☐ EVERY DAY 90	
137	The last time you had an injection, who was the person who gave you the injection?	HEALTH PROFESSIONAL ..... 1 PHARMACIST ..... 2 TRADITIONAL HEALER ..... 3 FRIEND/RELATIVE ..... 4 SELF ..... 5 OTHER_____ 6 (SPECIFY)	
138	What is your religion: Are you Muslim, Christian,, another religion, or do you not practice any religion?	MUSLIM ..... 1 CHRISTIAN ..... 2 OTHER_____ 6 (SPECIFY) NOT RELIGIOUS ..... 7 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
139	What is your nationality? Are you Kazakh? Russian? Ukrainian? German? Korean? Other?	KAZAKH ..... 1 RUSSIAN ..... 2 UKRAINIAN ..... 3 GERMAN ..... 4 KOREAN ..... 5 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	
140	Have you heard of illness called tuberculosis?	YES ..... 1 NO 2	▸ 201
140 a	Did you know that TB can be totally cured with the help of medicines?	YES ..... 1 NO 2	
141	Did you or anyone in your family suffer from tuberculosis?	YES ..... 1 NO 2	
142	Do you know people from other families with whom you have a frequent contact (neighbors, collogues or close friends) who are suffering or suffered in the past from TB.	YES ..... 1 NO 2	
143	What are the symptoms of tuberculosis which lead you to think that a person has tuberculosis?	COUGHING ..... A COUGHING WITH PHLEGM ..... B COUGHING MORE THAN 3 WEEKS ..... C FEVER ..... D BLOOD IN SPUTUM ..... E LOSS OF APPETITE ..... F NIGHTSWEATING ..... G PAIN IN CHEST ..... H TIREDNESS ..... I FATIGUE ..... K LETHARGY ..... L OTHER_____ X (SPECIFY) DON'T KNOW ..... Y	
144	What are the symptoms of tuberculosis which would convince you to seek medical assistance?	COUGHING ..... A COUGHING WITH PHLEGM ..... B COUGHING MORE THAN 3 WEEKS ..... C FEVER ..... D BLOOD IN SPUTUM ..... E LOSS OF APPETITE ..... F NIGHTSWEATING ..... G PAIN IN CHEST ..... H TIREDNESS ..... I FATIGUE ..... K LETHARGY ..... L OTHER_____ X (SPECIFY) DON'T KNOW ..... Y	
145	When a person first discovers that he or she has tuberculosis, how should that person be treated initially: hospitalized, treated at home, or both?	HOSPITALIZED ..... 1 TREATED AT HOME ..... 2 INITIALLY HOSPITALIZED FOLLOWED BY HOME TREATMENT ..... 3 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	
146	How does tuberculosis spread from one person to another?	THROUGH THE AIR WHEN COUGHING ..... 1 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
147	Where would you go for help if you thought you or your child had tuberculosis?	PUBLIC SECTOR HOSPITAL ..... 11 POLYCLINIC ..... 12 FGP ..... 13 TB DISPENSARY ..... 14 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE. HOSPITAL/CLINIC ..... 21 PRIVATE. DOCTOR ..... 22 OTHER PRIVATE POLYCLINIC ..... 23 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
148	Would you be willing to take your family member at home for part of his/her treatment?	YES ..... 1 NO 2	

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKI
201	Now I would like to ask about your children. I am interested only in the children that are biologically yours. Have you ever had children?	YES ..... 1 NO 2	→206
202	Do you have any sons or daughters who are now living with you?	YES ..... 1 NO 2	→204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME ..... DAUGHTERS AT HOME	
204	Do you have any sons or daughters who are alive but do not live with you?	YES ..... 1 NO 2	→206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE ..... DAUGHTERS ELSEWHERE	
206	Have you ever had a son or a daughter who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but survived only a few hours or days?	YES ..... 1 NO 2	→208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD ..... GIRLS DEAD	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL	
209	CHECK 208: Just to make sure that I have this right: you have had in **TOTAL** ____ children during your life. Is that correct? ***IF HE HAS NOT HAD CHILDREN (208 IS "00")*** Just to make sure that I have this right: you have not had any children during your life. Is that correct? YES ☐ NO ☐ → PROBE AND CORRECT 201-208 AS NECESSARY.		
210	CHECK 208: HAS HAD CHILDREN ☐ HAS NOT HAD ANY CHILDREN ☐		→212
211	In what month and year was your last child born?	MONTH ..... YEAR	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
212	Now I would like to ask you about the risk of pregnancy. Do you know if from one menstrual period to the next, is there a time when a woman is more likely to become pregnant if she has sexual relations?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→301
213	Is this time just before her period begins, during her period, right after her period has ended, or half way between two periods?	JUST BEFORE HER PERIOD BEGINS ..... 1 DURING HER PERIOD ..... 2 RIGHT AFTER HER PERIOD HAS ENDED ..... 3 HALFWAY BETWEEN TWO PERIODS ..... 4 OTHER 6 (SPECIFY) DON'T KNOW 8	

SECTION 3. CONTRACEPTION

Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.
CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNIZED, AND CODE 2 IF NOT RECOGNIZED. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 301, ASK 303.

301	Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)?		302 Have you ever had a partner who used (METHOD)?
1	FEMALE STERILIZATION Women can have an operation to avoid having any more children.	YES ..... 1 NO 2	Heve you ever had a partner who had an operation to avoid having any more children? YES ..... 1 NO, DOES NOT KNOW 2
2	MALE STERILIZATION Men can have an operation to avoid having any more children.	YES ..... 1 NO 2	Have you ever had an operation to avoid having any more children? YES ..... 1 NO, DOES NOT KNOW 2
3	PILL[1] Women can take a pill every day	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
4	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
5	INJECTIONS Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months.	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
6	IMPLANTS Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for several years.	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
7	CONDOM Men can put a rubber sheath on their penis during sexual intercourse.	YES ..... 1 NO 2	Have you ever used a condom? YES ..... 1 NO 2
8	FEMALE CONDOM[2] : Women can place a rubber sheath in their vagina to prevent pregnancy.	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
9	DIAPHRAGM, FOAM, JELLY Women can place a sponge, suppository, diaphragm, jelly, or cream in their vagina before intercourse.	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
10	*LACTATIONAL AMENORRHEA METHOD (LAM)[3] Up to 6 months after childbirth, a woman can use a method that requires that she breastfeeds frequently, day end night, end that her menstrual period has not returned.* [USE LOCAL NAME OF LAM]	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
11	RHYTHM OR PERIODIC ABSTINENCE Every month that a woman is sexually active she can avoid having sexual intercourse on the days of the month she is most likely to get pregnant.	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
12	WITHDRAWAL Men can be careful and pull out before climax.	YES ..... 1 NO 2	YES ..... 1 NO, DOES NOT KNOW 2
13	EMERGENCY CONTRACEPTION Women can take pills the day after sexual intercourse to avoid becoming pregnant.	YES ..... 1 NO 2	YES ..... 1 NO 2
14	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES ..... 1 _____ (SPECIFY) _____ (SPECIFY) NO 2	YES ..... 1 NO, DOES NOT KNOW ..... 2 YES ..... 1 NO, DOES NOT KNOW 2

303	CHECK 302:
	NOT A SINGLE "YES" (NEVER USED) ☐ ▼ AT LEAST ONE "YES" (EVER USED) ☐ → SKIP TO 306

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
304	Have you or any of your sex partners ever used anything or tried in any way to delay or avoid pregnancy?	YES ..... 1 NO 2	→3
305	What have you used or done? **CORRECT 303 AND 304 (AND 302 IF NECESSARY).**		
306	CHECK 302 (2): RESPONDENT NOT STERILIZED ☐ RESPONDENT STERILIZED ☐ → 308A		
307	Are you, your wife (wives), or any other partner with whom you have sex doing something or using a method to delay or avoid a pregnancy?	YES ..... 1 NO, DOES NOT KNOW 2	→3
308 308A	Which method are you using?[1] CIRCLE 'B' FOR MALE STERILIZATION IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD ON LIST	FEMALE STERILIZATION ..... A MALE STERILIZATION ..... B PILL ..... C IUD ..... D INJECTIONS ..... E IMPLANTS ..... F CONDOM ..... G FEMALE CONDOM ..... H DIAPHRAGM/FOAM/JELLY ..... I LACTATIONAL AMENORRHEA ..... J RHYTHM/PERIODIC ABSTINENCE ..... K WITHDRAWAL ..... L EMERGENCY CONTRACEPTION ..... M OTHER _____ X (SPECIFY)	→311
309	What is the main reason you are not using a method of contraception to avoid pregnancy?	NOT MARRIED ..... 11 FERTILITY-RELATED REASONS NOT HAVING SEX ..... 21 INFREQUENT SEX ..... 22 WIFE/PRTNER MENOPA./HYSTEREC. ..... 23 COUPLE SUBFECUND/INFECUND ..... 24 WIFE/PARTNER POSTP./BREASTF. ..... 25 WANTS (MORE) CHILDREN ..... 26 WIFE PREGNANT ..... 27 OPPOSITION TO USE RESPONDENT OPPOSED ..... 31 WIFE OPPOSED ..... 32 OTHERS OPPOSED ..... 33 RELIGIOUS PROHIBITION ..... 34 LACK OF KNOWLEDGE KNOWS NO METHOD ..... 41 KNOWS NO SOURCE ..... 42 METHOD-RELATED REASONS HEALTH CONCERNS ..... 51 FEAR OF SIDE EFFECTS ..... 52 LACK OF ACCESS/TOO FAR ..... 53 COST TOO MUCH ..... 54 INCONVENIENT TO USE ..... 55 INTERFERES WITH BODY'S NATURAL PROCESSES .. 56 UP TO WOMAN TO USE ..... 61 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→401
310	CHECK 308 - 308A WIFE/PARTNER IS USING ANY MODERN FEMALE METHOD – FEMALE STERILIZATION, PILL, IUD, INJECTIONS, IMPLANTS, FEMALE CONDOM OR DIAPHRAGM/FOAM/JELLY YES ☐ NO ☐		→314

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
311	CHECK 308: WIFE/PARTNER WAS STERILIZED ☐ You mentioned that your wife/partner had an operation to stop having children. Did you and your wife/partner discuss the different family planning methods available before she had this operation? WIFE/PARTNER IS USING A FEMALE METHOD OTHER THAN STERILIZATION ☐ You mentioned that your wife/partner is currently using (METHOD RECORDED IN 310). Did you and your wife/partner discuss the different family planning methods available before she started using this method?	YES ..... 1 NO 2	→314
312	CHECK 308: WIFE/PARTNER WAS STERILIZED ☐ Whose decision was it to have this operation instead of using some other family planning method? WIFE/PARTNER IS USING A FEMALE METHOD OTHER THAN STERILIZATION ☐ Whose decision was it to start using (METHOD RECORDED IN 310) instead of using some other family planning method? **IF DECISION WAS MADE JOINTLY, RECORD ALL PERSONS MENTIONED**	RESPONDENT ..... A WIFE/PARTNER ..... B FEMALE RELATIVE ..... C MALE RELATIVE ..... D DOCTOR/HEALTH PROFESSIONAL ..... E RESPONDENT NOT LIVING WITH PARTNER AT THE TIME ..... F OTHER_____ X (SPECIFY)	
313	Would you say that at that time both of you were in agreement or that you had different opinions about the contraceptive methods to avoid unwanted pregnancies?	BOTH AGREED ..... 1 HAD DIFFERENT OPINIONS 2	
314	CHECK 308 RESPONDENT IS USING A MODERN MALE METHOD – MALE STERILIZATION OR CONDOMS YES ☐	NO ☐_____	→401
315	CHECK 308: RESPONDENT WAS STERILIZED ☐ Before you made the decision to have the sterilization operation, did you discuss it with your wife/partner? RESPONDENT IS USING CONDOMS ☐ Before you started using condoms, did you discuss it with your wife/partner?	DECIDED ON HIS OWN ..... 1 DISCUSSED WITH WIFE/PARTNER ..... 2 NOT LIVING WITH HER AT THE TIME 3	

SECTION 4. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	Are you currently married or living with a woman ?[1]	YES, CURRENTLY MARRIED 1	
		YES, LIVING WITH A WOMAN 2	→404
		NO, NOT IN UNION 3	→406
402	Besides your wife, do you have any other women with whom you live as if married?	YES 1	
		NO 2	→405
403	How many wives do you have?	NUMBER OF WIVES	→405
404	How many women are you living with as if you were married?	NUMBER OF LIVE-IN PARTNERS	
405	WRITE THE NAMES AND LINE NUMBERS FROM THE HOUSEHOLD QUESTIONNAIRE FOR HIS WIFE OR WIVES. IF A WIFE DOES NOT LIVE IN THE HOUSEHOLD, WRITE '00' IN THE LINE NUMBER BOX. THE NUMBER OF BOXES FILLED MUST BE EQUAL TO THE NUMBER OF WIVES. IF 402 IS "NO Please tell me the name of your wife/partner 1 _____ IF 402 IS YES Please tell me the names of all your wives and live-in partners 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____	LINE NUMBER	→409
406	Do you currently have a regular sexual partner, an occasional sexual partner, or no sexual partner at all?	REGULAR SEXUAL PARTNER 1	
		OCCASIONAL SEXUAL PARTNER 2	
		NO SEXUAL PARTNER 3	
407	Have you ever been married or lived with a woman?	YES, FORMERLY MARRIED 1	
		YES, LIVED WITH A WOMAN 2	→409
		NO 3	→412

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
408	What is your marital status now: are you widowed, divorced or separated?	WIDOWED ..... 1 DIVORCED ..... 2 SEPARATED 3	
409	Have you been married or lived with a woman only once, or more than once?	ONCE ..... 1 MORE THAN ONCE 2	
410	CHECK 409: MARRIED./LIVED WITH A WOMAN ONLY ONCE → In what month and year did you start living with your wife/partner? MARRIED/LIVED WITH A WOMAN MORE THAN ONCE → Now we will talk about your first wife/partner. In what month and year did you start living with her?	MONTH ..... [ ][ ] DON'T KNOW MONTH ..... 98 YEAR ..... [ ][ ][ ][ ] DON'T KNOW YEAR 9998	→412
411	How old were you when you started living with her?	AGE ..... [ ][ ]	
412	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family life issues. How old were you when you first had sexual intercourse (if ever)?	NEVER ..... 00 AGE ..... [ ][ ] WHEN FIRST UNION STARTED 96	→438
413	When was the last time you had sexual intercourse? RECORD 'YEARS AGO' ONLY IF LAST INTERCOURSE WAS ONE OR MORE YEARS AGO.	DAYS AGO ..... 1 [ ][ ] WEEKS AGO ..... 2 [ ][ ] MONTHS AGO ..... 3 [ ][ ] YEARS AGO ..... 4 [ ][ ] DOES NOT REMEMBER 998	→438
414	The last time you had sexual intercourse, did you use a condom?	YES ..... 1 NO ..... 2 DOES NOT KNOW CONDOMS 3	→416
415	What was the main reason you used a condom on that occasion?	OWN CONCERN PREVENT STD/HIV ..... 1 OWN CONCERN TO PREVENT PREGNANCY ..... 2 OWN CONCERN TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNERS/FEELS PARTNER HAS OTHER PARTNERS ..... 4 PARTNER INSISTED ..... 5 OTHER_____ (SPECIFY) 6 DON'T KNOW 8	→417B
416	The last time you had sexual intercourse, did you or your partner do something or use some method to avoid a pregnancy?	YES ..... 1 NO ..... 2 UNSURE/DOES NOT KNOW 8	→418

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
417	What did you do or what did you use?	FEMALE STERILIZATION ..... 01 MALE STERILIZATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM/FOAM/JELLY ..... 09 LACTATIONAL AMENORRHEA ..... 10 RHYTHM/PERIODIC ABSTINENCE ..... 11 WITHDRAWAL ..... 12 EMERGENCY CONTRACEPTION ..... 13 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
417B	Circle "CONDOM"		
418	What is your relationship to the woman with whom you last had sex? IF "BOYFRIEND" OR "FIANCEE", PROBE BY ASKING: *"Was your (girlfriend/fiancee) living with you when you last had sex?"*	SPOUSE/COHABITING PARTNER ..... 1 BOYFRIEND/FIANCEE ..... 2 OTHER FRIEND ..... 3 CASUAL ACQUAINTANCE ..... 4 COMMERCIAL SEX CUSTOMER ..... 5 RELATIVE ..... 6 OTHER_____ 7 (SPECIFY)	→420
419	How long have you had a sexual relationship with the woman you last had sex with?	DAYS ..... 1 WEEKS ..... 2 MONTHS ..... 3 YEARS 4	
420	Have you had sex with anyone else in the last 12 months?	YES ..... 1 NO 2	→435
421	The last time you had sexual intercourse with this other woman, did you use a condom?	YES ..... 1 NO ..... 2 DOES NOT KNOW CONDOMS 3	→423
422	What was the main reason you used a condom on that occasion?	OWN CONCERN PREVENT STD/HIV ..... 1 OWN CONCERN TO PREVENT PREGNANCY ..... 2 OWN CONCERN TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNERS/FEELS PARTNER HAS OTHER PARTNERS ..... 4 PARTNER INSISTED ..... 5 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	→424B
423	The last time you had sexual intercourse with this woman, did you or she do something or use some method to avoid a pregnancy?	YES ..... 1 NO ..... 2 UNSURE/DOES NOT KNOW 8	→425

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
424	What did you do or what did you use?	FEMALE STERILIZATION ..... 01 MALE STERILIZATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM/FOAM/JELLY ..... 09 LACTATIONAL AMENORRHEA ..... 10 RHYTHM/PERIODIC ABSTINENCE ..... 11 WITHDRAWAL ..... 12 EMERGENCY CONTRACEPTION ..... 13 OTHER_____ 96 (SPECIFY) DON'T KNOW 98	
424B	CIRCLE CONDOM		
425	What is your relationship to this woman? IF "BOYFRIEND" OR "FIANCEE", PROBE BY ASKING: "Was your (girlfriend/fiancee) living with you when you last had sex?"	SPOUSE/COHABITING PARTNER ..... 1 BOYFRIEND/FIANCEE ..... 2 OTHER FRIEND ..... 3 CASUAL ACQUAINTANCE ..... 4 COMMERCIAL SEX CUSTOMER ..... 5 RELATIVE ..... 6 OTHER_____ 7 (SPECIFY)	→427
426	How long have you maintained a sexual relationship with this woman?	DAYS ..... 1 [ ][ ] WEEKS ..... 2 [ ][ ] MONTHS ..... 3 [ ][ ] YEARS ..... 4 [ ][ ]	
427	Other than these two women, have you had sex with anyone else in the last 12 months?	YES ..... 1 NO 2	→435
428	The last time you had sexual intercourse with this other woman, did you use a condom?	YES ..... 1 NO ..... 2 DOES NOT KNOW CONDOMS 3	→430
429	What was the main reason you used a condom on that occasion?	OWN CONCERN PREVENT STD/HIV ..... 1 OWN CONCERN TO PREVENT PREGNANCY ..... 2 OWN CONCERN TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNERS/FEELS PARTNER HAS OTHER PARTNERS ..... 4 PARTNER INSISTED ..... 5 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	→431B
430	The last time you had sexual intercourse with this woman, did you or she do something or use some method to avoid a pregnancy?	YES ..... 1 NO ..... 2 UNSURE/DOES NOT KNOW 8	→432

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
431	What did you do or what did you use?	FEMALE STERILIZATION ..... 01 MALE STERILIZATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM/FOAM/JELLY ..... 09 LACTATIONAL AMENORRHEA ..... 10 RHYTHM/PERIODIC ABSTINENCE ..... 11 WITHDRAWAL ..... 12 EMERGENCY CONTRACEPTION ..... 13 OTHER_____ 96 (SPECIFY) DON'T KNOW 98	
431B	CIRCLE CONDOM		
432	What is your relationship to this woman? IF "BOYFRIEND" OR "FIANCEE", PROBE BY ASKING: "Was your (girlfriend/fiancee) living with you when you last had sex?"	SPOUSE/COHABITING PARTNER ..... 1 BOYFRIEND/FIANCEE ..... 2 OTHER FRIEND ..... 3 CASUAL ACQUAINTANCE ..... 4 COMMERCIAL SEX CUSTOMER ..... 5 RELATIVE ..... 6 OTHER_____ 7 (SPECIFY)	→434
433	How long have you had a sexual relationship with this woman?	DAYS ..... 1 [ ][ ] WEEKS ..... 2 [ ][ ] MONTHS ..... 3 [ ][ ] YEARS ..... 4 [ ][ ]	
434	Altogether, with how many different women have you had sex in the last 12 months?	NUMBER OF PARTNERS ..... [ ][ ]	
435	Have you ever paid for sex?	YES ..... 1 NO 2	→438
436	How long ago was the last time you paid for sex?	DAYS AGO ..... 1 [ ][ ] WEEKS AGO ..... 2 [ ][ ] MONTHS AGO ..... 3 [ ][ ] YEARS AGO ..... 4 [ ][ ] DOES NOT REMEMBER 998	
437	The last time that you paid for sex, did you use a condom?	YES ..... 1 NO 2	
438	Do you know of a place where one can get condoms?	YES ..... 1 NO 2	→441

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
439	Where is that?[1] IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR HOSPITAL . . . . . 11 POLYCLINIC . . . . . 12 FGP . . . . . 13 PHARMACY . . . . . 15 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRV. HOSPITAL/CLINIC . . . . . 20 PHARMACY . . . . . 21 PRV. DOCTOR . . . . . 22 OTHER PRIVATE MEDICAL _____ 26 (SPECIFY) OTHER_____ 96 (SPECIFY) DON'T KNOW 98	
440	If you wanted to, could you yourself get a condom?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	
441	Do you know of a place where one can get female condoms?	YES . . . . . 1 NO 2	→501
442	Where is that?[1] IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR HOSPITAL....11 POLYCLINIC....12 FGP....13 PHARMACY....15 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRV. HOSPITAL/CLINIC....20 PHARMACY....21 PRV. DOCTOR....22 OTHER PRIVATE MEDICAL _____ 26 (SPECIFY) OTHER_____ 96 (SPECIFY) *DON'T KNOW....98*	
443	If you wanted to, could you yourself get a female condom?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	

SECTION 5. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	CHECK 401: CURRENTLY NOT IN UNION ☐ ▼ CURRENTLY MARRIED OR LIVING WITH A WOMAN ☐		→503A
502	CHECK 406: NOT IN UNION BUT HAS A REGULAR SEXUAL PARTNER ☐ ▼ HAS ONLY AN OCCASIONAL SEXUAL PARTNER OR NO SEXUAL PARTNER ☐		→505A
503	CHECK 401 AND 406: **A** HAS A WIFE OR LIVING WITH WOMAN ☐ ▼ 1. Is your wife / the woman you are living with currently pregnant? 2. Are any of your wives/ any of the women your are living with currently pregnant? **B** HAS A REGULAR SEXUAL PARTNER ☐ ▼ 3. Is your regular partner currently pregnant? 4. Is one of your regular partners currently pregnant?	YES . . . . . 1 NO . . . . . 2 DOES NOT KNOW/UNSURE 8	→505A
504	When she became pregnant, did you want her to become pregnant then, did you want her to have a child but wanted to wait or did you not want her to have a child at all?	THEN . . . . . 1 WANTED TO WAIT . . . . . 2 NOT AT ALL. 3	→505 B
505	CHECK 502 AND 503: **A** WIFE/PARTNER NOT PREGNANT OR UNSURE, OR HAS NO WIFE/REGULAR PARTNER ▼ Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children? **B** WIFE/PARTNER PREGNANT ☐ ▼ Now I have some questions about the future. After the child your wife/partner is expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD . . . . . 1 NO MORE/NONE . . . . . 2 SAYS WIFE CAN'T GET PREGNANT 3 SAYS HE CAN'T HAVE ANY MORE . 4 UNDECIDED/DOESN'T KNOW 8	→507
506	CHECK 503: WIFE/PARTNER NOT PREGNANT OR UNSURE, OR HAS NO WIFE/PARTNER ☐ ▼ 5. How long would you like to wait to have a child? 6. How long would you like to wait to have another child? WIFE/PARTNER PREGNANT ☐ ▼ After the child your wife/partner is expecting, how long would you like to wait before the birth of another child?	MONTHS . . . . . 1 ▒▒ YEARS . . . . . 2 ▒▒ SOON/NOW . . . . . 993 SAYS WIFE CAN'T GET PREGNANT 994 AFTER MARRIAGE . . . . . 995 OTHER 996 (SPECIFY) DOESN'T KNOW 998	
507	CHECK 308: USING A METHOD NOT ASKED ☐ NOT CURRENTLY USING ☐ ▼ CURRENTLY USING ☐ ▼		→512

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
508	Do you think you will use a method to avoid pregnancies within the next 12 months?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→510
509	Do you think you will use a method to avoid pregnancies at any time in the future?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→511
510	Which method would you prefer to use?	FEMALE STERILIZATION . . . . . 01 MALE STERILIZATION . . . . . 02 PILL . . . . . 03 IUD . . . . . 04 INJECTIONS . . . . . 05 IMPLANTS . . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM . . . . . 08 DIAPHRAGM/FOAM/JELLY . . . . . 09 LACTATIONAL AMENORRHEA . . . . 10 RHYTHM/PERIODIC ABSTINENCE . 11 WITHDRAWAL . . . . . 12 EMERGENCY CONTRACEPTION . . 13 OTHER_____96 (SPECIFY) UNDECIDED 98	→512
511	What is the main reason that you think you will never use a method?	NOT CURRENTLY MARRIED . . . . . 11 FERTILITY-RELATED REASONS INFREQUENT SEX . . . . . 22 WIFE/PARTNER MENOP./HYSTEREC . . 23 COUPLE SUBFECUND/INFECUND . . . . . 24 WANTS AS MANY CHILDREN AS POSSIBLE . . . . . 26 OPPOSITION TO USE RESPONDENT OPPOSED . . . . . 31 WIFE/PARTNER OPPOSED . . . . . 32 OTHERS OPPOSED . . . . . 33 *RELIGIOUS PROHIBITION* . . . . . 34 LACK OF KNOWLEDGE KNOWS NO METHOD . . . . . 41 KNOWS NO SOURCE . . . . . 42 METHOD-RELATED REASONS HEALTH CONCERNS . . . . . 51 FEAR OF SIDE EFFECTS . . . . . 52 LACK OF ACCESS/TOO FAR . . . . . 53 COST TOO MUCH . . . . . 54 INCONVENIENT TO USE . . . . . 55 INTERFERES WITH BODY'S NORMAL PROCESSES . . . . . 56 OTHER 96 (SPECIFY) DON'T KNOW 98	
512	CHECK 203 AND 205: HAS LIVING CHILDREN ▼ If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? NO LIVING CHILDREN ▼ If you could choose exactly the number of children to have in your whole life, how many would that be?	NUMBER . . . . . ☐☐ OTHER_____96 (SPECIFY)	→514

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	PROBE FOR A NUMERIC RESPONSE.		
513	How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter?	BOYS NUMBER ..... [ ] OTHER 96 (SPECIFY) GIRLS NUMBER ..... [ ] OTHER 96 (SPECIFY) EITHER NUMBER ..... [ ] OTHER 96 (SPECIFY)	
514	Would you say that you approve or disapprove of couples using a method to avoid getting pregnant?	APPROVE ..... 1 DISAPPROVE ..... 2 DO NOT KNOW/UNSURE 8	
515	Is it acceptable or not acceptable to you for information on family planning to be provided on the radio?	ACCEPTABLE ..... 1 NOT ACCEPTABLE ..... 2 DO NOT KNOW/UNSURE 8	
516	Is it acceptable or not acceptable to you for information on family planning to be provided on the television?	ACCEPTABLE ..... 1 NOT ACCEPTABLE ..... 2 DO NOT KNOW/UNSURE 8	
517	In the last few months have you heard about family planning: On the radio? On the television? In a newspaper or magazine? From a poster? From leaflets or brochures?	YES NO RADIO ..... 1 2 TELEVISION ..... 1 2 NEWSPAPER OR MAGAZINE 1 2 POSTER ..... 1 2 LEAFLETS OR BROCHURES 1 2	
519	In the last few months have you discussed the practice of family planning with your friends, neighbors, or relatives?	YES ..... 1 NO 2	→521
520	With whom? Anyone else? RECORD ALL MENTIONED.	WIFE/PARTNER ..... A MOTHER ..... B FATHER ..... C SISTER(S) ..... D BROTHER(S) ..... E DAUGHTER ..... F MOTHER-IN-LAW ..... G FATHER-IN-LAW ..... H FRIENDS/NEIGHBORS ..... I OTHER X (SPECIFY)	
521	CHECK 401: YES, CURRENTLY MARRIED ☐ ▼ YES, LIVING WITH A WOMAN ☐ ▼ NO NOT IN UNION ☐		→601
522	Spouses/partners do not always agree on everything. Now I want to ask you about your wife's/partner's views on family planning. Do you think that your wife/partner approves or disapproves of couples using a method to avoid pregnancy?	APPROVES ..... 1 DISAPPROVES ..... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
523	How often have you talked to your wife/partner about family planning in the past year?	NEVER . . . . . 1 ONCE OR TWICE . . . . . 2 MORE OFTEN 3	
524	Do you think your wife/partner wants the same number of children that you want, or does she want more or fewer than you want?	SAME NUMBER . . . . . 1 MORE CHILDREN . . . . . 2 FEWER CHILDREN . . . . . 3 DON'T KNOW 8	

SECTION 6. PARTICIPATION IN HEALTH CARE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	CHECK 211:	LAST CHILD BORN SINCE JANUARY 1994[1] ☐ ▼ HAS NO CHILDREN OR THE LAST CHILD WAS BORN BEFORE JANUARY 1994 ☐	→701
602	What is the name of your last child, that is the one who was born in (DATE AS INDICATED IN 211)?	_____ (NAME OF LAST CHILD)	
603	Who is the mother of (NAME OF CHILD)	WRITE THE CHILD'S MOTHER'S NAME AND LINE NUMBER AS INDICATED IN QUESTION 405. IF THE MOTHER IS NOT A HOUSEHOLD MEMBER WRITE "00" ☐☐ _____ (NAME OF LAST CHILD'S MOTHER)	
604	CHECK 603:	MOTHER OF LAST CHILD DOES NOT LIVE IN THE HOUSEHOLD (CODE 00) ☐ ▼ MOTHER OF LAST CHILD LIVES IN THE HOUSEHOLD ☐	→606
605	What is your relationship with (NAME OF LAST CHILD'S MOTHER)?	CURRENT WIFE ..... 1 FORMER WIFE ..... 2 FORMER LIVE-IN PARTNER ..... 3 REGULAR SEXUAL PARTNER ..... 4 OCCASIONAL SEXUAL PARTNER ..... 5 OTHER 6 (SPECIFY)	
606	When (NAME OF LAST CHILD'S MOTHER) became pregnant of (NAME OF LAST BORN CHILD), did you want to have a child then, did you want to have a child but wanted to wait until later, or did you not want to have any (more) children at all?	WANTED THEN 1	→608
		WANTED LATER 2	
		DID NOT WANT AT ALL 3	→608
607	How much longer would you like to have waited?	MONTHS ..... 1 ☐☐ YEARS ..... 2 ☐☐ UNDECIDED/DON'T KNOW 998	
608	Did (NAME OF LAST CHILD'S MOTHER) go to a health facility to receive antenatal care for this pregnancy?	YES 1	
		NO 2	→613
		DON'T KNOW 8	
609	At any time during this pregnancy, did you accompany (NAME OF LAST CHILD'S MOTHER) when she went to the health facility for antenatal care?	YES 1	
		NO 2	
610	At any time while (NAME OF LAST CHILD'S MOTHER) was pregnant, did any health professional talk to you about this particular pregnancy?	YES 1	
		NO 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
611	During this pregnancy, did you ever talk with (NAME OF LAST CHILD'S MOTHER) about what the health professional told her about her own health and the baby's health?	YES ..... 1 NO 2	
612	In your opinion, was this a normal pregnancy or were there health complications more serious than those that commonly occur during pregnancies?	NORMAL PREGNANCY ..... 1 THERE WERE COMPLICATIONS ..... 2 UNSURE/DON'T KNOW 8	
613	Where did (NAME OF LAST CHILD'S MOTHER) give birth to (NAME OF LAST BORN CHILD)?	HOME ..... 1 GOV. HOSPITAL/HEALTH CENTER ..... 2 PRIVATE HOSPITAL/CLINIC ..... 3 OTHER_____6 (SPECIFY)	→615 →615
614	When she gave birth to (NAME OF LAST BORN CHILD), did you go to the (HOSPITAL/HEALTH CENTER/CLINIC) with her?	YES ..... 1 NO 2	
615	In the first two months after (NAME OF LAST BORN CHILD) was born, did (NAME OF LAST CHILD'S MOTHER) visit a health facility to have her own health or the child's health checked?	YES ..... 1 NO ..... 2 DON'T KNOW 8	 →619
616	Did you accompany (NAME OF LAST CHILD'S MOTHER) on any of these visits?	YES ..... 1 NO 2	 →618
617	At any time during these visits, did the health professional talk to you about (NAME OF LAST CHILD'S MOTHER)'s health or (NAME OF LAST BORN CHILD)'s health?	YES ..... 1 NO 2	
618	Did you talk with (NAME OF LAST CHILD'S MOTHER) about what the health professional told her concerning her own health or the child's health?	YES ..... 1 NO 2	
619	Did (NAME OF LAST BORN CHILD) ever receive any vaccinations to prevent him/her from getting diseases?	YES ..... 1 NO ..... 2 DON'T KNOW 8	 →622
620	Were any of theses vaccines given at a health facility?	YES ..... 1 NO 2	 →622
621	The last time (NAME OF LAST BORN CHILD) was vaccinated in a health facility, who took him/her to the health facility? **RECORD ALL MENTIONED**	RESPONDENT ..... A CHILD'S MOTHER ..... B FEMALE RELATIVE ..... C MALE RELATIVE ..... D OTHER ..... X (SPECIFY)	
622	Did (NAME OF LAST BORN CHILD) have a fever, cough or diarrhea at any time in the last four weeks?	YES ..... 1 NO ..... 2 DON'T KNOW 8	 →701

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
623	Who took care of (NAME OF LAST BORN CHILD) when he/she was sick? **RECORD ALL MENTIONED**	RESPONDENT ..... A CHILD'S MOTHER ..... B FEMALE RELATIVE ..... C MALE RELATIVE ..... D OTHER X (SPECIFY)	
624	Was (NAME OF LAST BORN CHILD) seen by a health professional when he/she was sick?	YES ..... 1 NO ..... 2 DON'T KNOW 8	▸701
625	Who took the decision that (NAME OF LAST BORN CHILD) needed to be seen by a health professional? **RECORD ALL MENTIONED**	RESPONDENT ..... A CHILD'S MOTHER ..... B FEMALE RELATIVE ..... C MALE RELATIVE ..... D OTHER X (SPECIFY)	
626	The last time (NAME OF LAST BORN CHILD) was seen by a health professional, who took him/her to the health facility? **RECORD ALL MENTIONED**	RESPONDENT ..... A CHILD'S MOTHER ..... B FEMALE RELATIVE ..... C MALE RELATIVE ..... D OTHER X (SPECIFY)	
627	Were you present when (NAME OF LAST BORN CHILD) was seen by the health professional?	YES ..... 1 NO 2	

SECTION 7. AIDS AND OTHER SEXUALLY TRANSMITTED DISEASES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES . . . . . 1 NO 2	→718
702	Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→710
703	What can a person do? Anything else? RECORD ALL MENTIONED.	ABSTAIN FROM SEX . . . . . A USE CONDOMS . . . . . B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER . . . . . C LIMIT NUMBER OF SEXUAL PARTNERS . . . . . D AVOID SEX WITH PROSTITUTES . . . . . E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS . . . . . F AVOID SEX WITH HOMOSEXUALS . . . . . G AVOID SEX WITH PERSONS WHO INJECT DRUGS INTRAVENOUSLY . . . . . H AVOID BLOOD TRANSFUSIONS . . . . . I AVOID INJECTIONS . . . . . J AVOID KISSING . . . . . K AVOID MOSQUITO BITES . . . . . L SEEK PROTECTION FROM TRADITIONAL HEALER . . . . . M AVOID SHARING RAZORS, BLADES . . . . . N OTHER_____ (SPECIFY) . . . . . W OTHER_____ (SPECIFY) . . . . . X DON'T KNOW . . . . . Z	
704	Is it possible to avoid AIDS by having only one not infected sexual partner who doesn't have other partners?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
705	Can a person get AIDS through mosquito bite?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
706	In your view, is a person's chance of getting AIDS affected by using a condom every time he or she has sexual intercourse?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
707	Is it possible to prevent AIDS by avoiding eating together with AIDS carrier?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
708	Is it possible to prevent AIDS by total abstinence from sexual intercourse?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
710	Is it possible for a healthy-looking person to have the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
711	Do you know someone personally who has the virus that causes AIDS or someone who died from AIDS?	YES . . . . . 1 NO 2	
712	Can the virus that causes AIDS be transmitted from a mother to a child?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→714
713	When can the virus that causes AIDS be transmitted from a mother to a child? Can it be transmitted...	YES / NO / DK	
	During pregnancy?	1 / 2 / 8	
	During delivery?	1 / 2 / 8	
	During breastfeeding?	1 / 2 / 8	

714	CHECK 4O1: CURRENTLY MARRIED/ LIVING WITH A WOMAN ┌─┐└─┘ ▼ NOT CURRENTLY MARRIED/ NOT LIVING WITH A WOMAN ☐ ———		→715a
715	Have you ever talked about ways to prevent getting the virus that causes AIDS with (your wife/the woman you are living with)?	YES ..... 1 NO 2	
715a	In your opinion, is it acceptable or unacceptable for AIDS to be discussed:	ACCEPTABLE / UNACCEPTABLE / DK	
	on the radio?	1 / 2 / 3	
	on the TV?	1 / 2 / 3	
	In newspapers?	1 / 2 / 3	
716	If a person learns that he/she is infected with the virus that causes AIDS, should the person be allowed to keep this fact private or should this information be available to the community?	CAN BE KEPT PRIVATE ..... 1 AVAILABLE TO COMMUNITY ..... 2 DK/NOT SURE 8	
717a	If a relative of yours became sick with the virus that causes AIDS, would you be willing to care for her or him in your own household?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS 8	
717b	Should persons with the AIDS virus who work with other persons such as in a shop, office, or farm be allowed to continue their work or not?	CAN CONTINUE WORK ..... 1 SHOULD NOT CONTINUE WORK ..... 2 DK/NOT SURE/DEPENDS 8	
717c	Should children aged 12-14 be taught about using a condom to avoid AIDS?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS 8	
717d	Have you ever been tested to see if you have the AIDS virus?	YES ..... 1 NO 2	→717gx
717e	Would you want to be tested for the AIDS virus?	YES ..... 1 NO ..... 2 DON'T KNOW/UNSURE 8	
717f	Do you know a place where you could go to get an AIDS test?	YES ..... 1 NO 2	→718
NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
717g	Where can you go for the test?	PUBLIC SECTOR GOVERNMENT HOSPITAL ..... 11 GOVT. HEALTH CENTER ..... 12 FAMILY PLANNING CLINIC ..... 13 MOBILE CLINIC ..... 14 FIELD WORKER ..... 15 OTHER PUBLIC ..... 16 _____ (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC ..... 21 PHARMACY ..... 22 PRIVATE DOCTOR ..... 23 OTHER PRIVATE MEDICAL_____ (SPECIFY) 26 OTHER SOURCE SHOP ..... 31 CHURCH ..... 32 FRIENDS/RELATIVES ..... 33 OTHER_____ (SPECIFY) 96	
717gx	Where did you go for the test? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)		
718	(Apart from AIDS), have you heard about (other) infections that can be transmitted through sexual contact?	YES ..... 1 NO 2	→723

719	In a man, what signs and symptoms would lead you to think that he has such an infection? Any others? RECORD ALL MENTIONED.	ABDOMINAL PAIN ..... A GENITAL DISCHARGE/DRIPPING ..... B FOUL SMELLING DISCHARGE ..... C BURNING PAIN ON URINATION ..... D REDNESS/INFLAMMATION IN GENITAL AREA ..... E SWELLING IN GENITAL AREA ..... F GENITAL SORES/ULCERS ..... G GENITAL WARTS ..... H BLOOD IN URINE ..... I LOSS OF WEIGHT ..... J IMPOTENCE ..... K NO SYMPTOMS L

720	In a woman, what signs and symptoms would lead you to think that she has such an infection? Any others? RECORD ALL MENTIONED.	ABDOMINAL PAIN ..... A GENITAL DISCHARGE ..... B FOUL SMELLING DISCHARGE ..... C BURNING PAIN ON URINATION ..... D REDNESS/INFLAMMATION IN GENITAL AREA ..... E SWELLING IN GENITAL AREA ..... F GENITAL SORES/ULCERS ..... G GENITAL WARTS ..... H BLOOD IN URINE ..... I LOSS OF WEIGHT ..... J NO SYMPTOMS ..... K OTHER_____ (SPECIFY) ..... W OTHER_____ (SPECIFY) ..... X DON'T KNOW ..... Z
721	CHECK 412: HAS HAD SEXUAL INTERCOURSE ☐ HAS NOT HAD SEXUAL INTERCOURSE ☐	→801
722	During the last 12 months, have you had a sexually-transmitted disease?	YES ..... 1 NO ..... 2 DON'T KNOW 8
723	*Now I would like to ask you some questions about your health* in the last 12 months. Sometimes, men experience a discharge from their penis. During the last 12 months, have you had a discharge from your penis?	YES ..... 1 NO ..... 2 DON'T KNOW 8
724	Sometimes, men experience a sore or ulcer on or near their penis?. During the last 12 months, have you had a sore or ulcer on or near your penis?	YES ..... 1 NO ..... 2 DON'T KNOW 8
725	CHECK 722, 723, and 724: HAS HAD AN INFECTION ☐ HAS NOT HAD AN INFECTION ☐	→ 801
726	The last time you had (INFECTION FROM 722/723/724), did you seek any kind of advice or treatment?	YES ..... 1 NO ..... 2 →728

727	The last time you had (INFECTION FROM 822/823/824) did you do any of the following? Did you....	YES / NO	
	Seek advice from a health worker in a clinic or hospital?	1 / 2	
	Seek advice or medicine from a traditional healer?	1 / 2	
	Seek advice or buy medicines in a shop or pharmacy?	1 / 2	
	Ask for advice from friends or relatives?	1 / 2	
728	When you had (INFECTION FROM 822/823/824), did you inform the persons with whom you have been having sex?	YES ..... 1 NO ..... 2 SOME/ NOT ALL 3	
729	When you had (INFECTION FROM 822/823/824) did you do something to avoid infecting your sexual partner(s)?	YES ..... 1 NO ..... 2 PARTNER ALREADY INFECTED 3	→801
730	What did you do to avoid infecting your partner? Did you....	YES / NO	
	Stop having sex?	1 / 2	
	Use a condom when having sex?	1 / 2	
	Take medicine?	1 / 2	

SECTION 8. ATTITUDES TOWARD WOMEN

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	Now I would like to ask you a few questions regarding couples. People have many different opinions on these subjects and we would like to know what it is that you think about it.		
801	If the husband can provide enough money, do you believe that it is acceptable for the wife/partner to work outside the home to earn an income?	ACCEPTABLE TO WORK OUTSIDE . . . 1 UNACCEPTABLE TO WORK OUTSIDE . 2 NO OPINION/DON'T KNOW 8	→ 803
802	If for some reason the husband cannot provide enough money for the family, do you believe that it is acceptable for wife/partner to work outside the home to earn an income?	ACCEPTABLE TO WORK OUTSIDE . . . 1 UNACCEPTABLE TO WORK OUTSIDE . 2 NO OPINION/DON'T KNOW 8	
803	In a couple, do you think the woman should have a say about:	YES / NO / DO NOT KNOW/ DEPENDS	
	a) large household expenses, that require a lot of money?	a) 1 2 8	
	b) minor daily household expenses?	b) 1 2 8	
	c) when to visit family, friends or relatives?	c) 1 2 8	
	d) what to do with the money she earns for her work?	d) 1 2 8	
804	Sometimes a husband is annoyed or angered by things which his wife/partner does. In your opinion, is a husband/partner justified in hitting or beating his wife/partner in the following situations:	YES / NO / DO NOT KNOW/ DEPENDS	
	a) If she goes out without telling him?	a) 1 2 8	
	b) If she neglects the children?	b) 1 2 8	
	c) If she argues with him?	c) 1 2 8	
	d) If she refuses sex with him?	d) 1 2 8	
	e) If she burns the food?	e) 1 2 8	
805	Husbands and wives do not always agree on everything. Please tell me if you think a wife is justified in refusing to have sex with her husband when:	YES / NO / DO NOT KNOW/ DEPENDS	
	a) She has recently given birth to a child?	a) 1 2 8	
	b) She know or suspects that her husband has a sexually transmitted disease or AIDS?	b) 1 2 8	
	c) She know or suspects that her husband has been having sex with other women?	c) 1 2 8	
	d) She is not feeling well or she is tired?	d) 1 2 8	
	e) She is not in the mood to have sex?	e) 1 2 8	
806	Do you think that if a woman refuses to have sex with her husband, he has the right to	YES / NO / DO NOT KNOW/ DEPENDS	
	a) Get angry and reprimand her?	a) 1 2 8	
	b) Refuse to give her money or other means of financial support?	b) 1 2 8	
	c) Use force and have sex with her even if she doesn't want to?	c) 1 2 8	
807	In a household who do you think should have the main responsibility to maintain the discipline among the children, the man, the woman or both?	MAN . . . . . 1 WOMAN . . . . . 2 BOTH . . . . . 3 ANY OTHER RELATIVE 4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
809	In a couple, who do you think has the main responsibilities in the house, that is to say, cooking, cleaning, washing clothes and utensils, fetching water, tending the animals, collecting fuelwood?	MAN ..... 1 WOMAN ..... 2 BOTH ..... 3 ANY OTHER RELATIVE ..... 4 OTHER 6 (SPECIFY) DO NOT KNOW/DEPENDS 8	
810	As far as you can remember, has your father ever hit your mother?	YES ..... 1 NO ..... 2 DON'T KNOW/DOES NOT REMEMBER 8	
811	RECORD THE TIME.	HOUR .....  MINUTES ..... 	

SECTION 9. HEMOGLOBIN TESTING

READ TO THE RESPONDENT THE FOLLOWING INFORMATION ABOUT ANEMIA AND REQUEST HIS PARTICIPATION IN THE ANEMIA TESTING PART OF THE SURVEY. IF THE RESPONDENT AGREES TO PARTICIPATE, ASK HIM TO SIGN AND DATE THE RESPONDENT CONSENT FORM. THEN RECORD THE OUTCOME OF THIS REQUEST BY CIRCLING THE APPROPRIATE CODE AT THE BOTTOM OF THIS PAGE.

KAZAKHSTAN ACADEMY OF PREVENTIVE MEDICINE

Dear Respondent:

The Academy of Preventive Medicine is conducting Demographic and Health Survey in Kazakhstan. As part of this program we study the prevalence of anemia among , men, women and their children. We ask you to participate in this program, which will assist the Committee of Health of MECH RK to develop the specific measures to prevent and treat anemia.

Anemia is a disease, which is characterized by a low count of red blood cells. It results from poor nutrition and other causes

Today, it is possible to rapidly (within a few minutes) diagnose this disease. A low level of hemoglobin (less than 12 g/dl) can be determined by a Hemocue machine on the basis of a single drop of blood.

If you decide to participate in this program, we will ask you to provide a drop of blood from your finger for the analysis.The procedure will be done by sterile instruments. The blood will be analyzed using the new sophisticated American equipment, Hemocue. The result of analysis will be available to you right after the blood is taken and assessed by Hemocue. We will also keep the results confidential.

If you decide to participate in this program , please sign at the bottom of this form that you agree to provide a drop of blood.

If you decide not to participate, it is your right, and we will respect your choice.

I am _____

Last name, First name Middle name

agree to donate a drop of blood for the purpose of anemia diagnosis.

Signature: _____ Date: ____ _____

901	RESPONDENT AGREES TO TESTING ..... 1 ↓ 902	RESPONDENT DOES NOT AGREE TO TESTING ..... 2 ↓ END
902	RESPONDENT'S HEMOGLOBIN LEVEL (G/DL)	☐☐.☐
903	RESULT	MEASURED ..... 1 NOT MEASURED ..... 2 REFUSED ..... 3 OTHER _____ 6 (SPECIFY)