Contraception, Abortion, and Maternal Health Services in Turkey

Ministry of Health
General Directorate of
Mother and Child Health and Family Planning

Hacettepe University
Public Health Foundation

⊕**DHS**

Demographic and Health Surveys
Macro International Inc.

Contraception, Abortion, and Maternal Health Services in Turkey

Results of Further Analysis of the 1993 Turkish Demographic and Health Survey

Edited by

Ayşe Akın
Münevver Bertan

Ministry of Health
General Directorate of
Mother and Child Health and Family Planning
Ankara, Turkey

Hacettepe University
Public Health Foundation
Ankara, Turkey

Macro International Inc.
Calverton, Maryland USA

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LIST OF CONTRIBUTORS

Prof. Dr. Ayşe Akın
General Director
Ministry of Health of Turkey
General Directorate of Mother and Child Health and Family Planning

Prof. Dr. Münevver Bertan
Professor, Hacettepe University
Medical School of Department of Public Health

Tayfun Enünlü, M.D., Ph.D.
Research and Evaluation Consultant, Project Coordination Unit
Ministry of Health of Turkey

Bahar Güçiz Doğan, M.Sc., Ph.D.
Associate Professor, Hacettepe University
Medical School of Department of Public Health

Gül Ergör, M.D., M.P.H.
Assistant Professor, Hacettepe University
Medical School of Department of Public Health

Ahmet Afşar, M.D.
Ministry of Health of Turkey
General Directorate of Mother and Child Health and Family Planning

Mehmet Ali Biliker, M.D.
Deputy General Director
Ministry of Health of Turkey
General Directorate of Mother and Child Health and Family Planning

EXECUTIVE SUMMARY

CONTRACEPTIVE PREVALENCE

Overall contraceptive prevalence is 63 percent in Turkey. Among contraceptive users, 35 percent use modern methods and 28 percent use traditional methods.

Prevalence of modern method use is highest in the 30-34 age group (46 percent). Traditional methods, particularly withdrawal, are practised more frequently than modern methods in the under 20 and over 40 age groups. Naturally, women who are exposed but not using a method are most likely in the 15-19 and 20-24 age groups.

Method prevalence is 41 percent in the East Region, while it increases to 70 percent in the West Region. Contraceptive prevalence is approximately 61 percent in the other three regions. Modern methods are preferred to traditional ones in every region except the North Region. Prevalence of using any method is higher in urban areas (64 percent) than in rural (55 percent). The same situation is observed for those using any modern method.

Among women with no education, 25 percent use modern and 24 percent use traditional methods. Modern method prevalence rises with increasing level of education and reaches 48 percent in women with secondary or higher education. The most widely used modern method is the IUD (25 percent) and the most widely used traditional method is withdrawal (19 percent).

One-fourth (25 percent) of the 6,271 currently married women are not exposed to the risk of pregnancy. Among women age 15-49, 61 percent are exposed and using any method, while 15 percent do not use a method although they are exposed.

As expected, the rate of pregnancy is higher in women who have 0-1 children than in women who have 2 or more children. Women with 0-1 children also constitute the biggest proportion of nonusers. Contraceptive prevalence peaks (75 percent) for women who have 2-3 children and drops to 58 percent for women who have 4 or more children. Among women with no insurance, the proportion of women who want no more children but do not use any method is twice as high compared with insured women. Prevalence of modern methods is lower in women with no insurance.

The native language of 86 percent of currently married women is Turkish, and 65 percent of these women are using a contraceptive method. IUD prevalence is twice as high for women whose native language is Turkish compared to the other group. The proportion of women who do not want another child but do not use a method is three times as high for women whose native language is not Turkish.

The opinions of women about particular methods (pill, IUD, condom and withdrawal) and family planning in general are analysed according to reliability, ease of use, harmfulness of the method, and husband's opinion. The opinions of women about family planning and religion are also investigated.

The most reliable method is considered to be the IUD (62 percent) and the least reliable is the condom (39 percent). It is interesting that according to women's opinions, withdrawal is more reliable than the condom (42 percent). The pill is the easiest method to use (60 percent), followed by the IUD and withdrawal (48 percent and 45 percent, respectively). Over three-fourths of women think that the pill is

harmful, and over half of them think the IUD is harmful to their health. According to women's opinions, 49 percent of their husbands are against condom use, and 39 percent of them are against withdrawal.

Approximately one-fifth of never-users state that they do not have any opinion about the reliability of the IUD; this proportion is one-fourth for withdrawal while it is one-third for the pill and condom. However, more ever-users and current users have an opinion on the reliability of methods, and the opinions of these two groups are similar.

The most reliable method according to never-users is the IUD (56 percent). The IUD is also the most reliable method for the other groups (64 percent for current users and 61 percent for ever-users). Withdrawal is the least reliable method for all groups.

As for reliability, almost half of never-users have no opinion about the ease of use of the methods. It is interesting that ever and current users believe that the pill is easier to use than the IUD. In these groups, withdrawal is stated as easier to use than the condom.

In all of the user-status groups, women state that their husbands are more against male contraceptive methods or those methods which require cooperation from the husband. As a result, the condom is the least approved method, which is based on husbands' opinions according to women. Seventy percent of women and 73 percent of husbands think that family planning is not against religion. When the attitudes of women and their husbands on family planning are analysed by contraceptive method use status, the highest proportion who think family planning is against religion is among never-users (30 percent for women and 26 percent for husbands). The most commonly stated methods believed to be against religion are the IUD and abortion (49 percent and 55 percent, respectively).

Current method users and women not using a method at the time of the survey are analysed according to their intention for future use or switching of contraceptive methods. Intention about using a contraceptive method in the future provides information on the potential demand for family planning services.

As mentioned in the 1993 Turkish Demographic and Health Survey (TDHS) report, among currently married nonusers, 46 percent do not intend to use any method in the future while 31 percent intend to begin use in 12 months. The proportion intending to use varies with the number of living children, peaking at 64 percent among women with one child.

Among nonusers, the proportion of women who do not intend to use a method in the future increases with age, and reaches its highest level at the 45-49 age group (98 percent).

Contrary to current users, among nonusers, women in the West Region are most likely to have no intention to use a method (51 percent). There is little difference between urban and rural residence in terms of future contraceptive intention. While 59 percent of uneducated women do not intend to use a method in the future, this proportion decreases to 37 percent among women who have secondary or higher education.

According to the 1993 TDHS report, nonusers who do not intend to use in the future are mainly over the age of 30 (81 percent), and their reasons for nonuse are quite different from the reasons given by younger nonusers. The main reason for nonuse among women under age 35 is a desire for children. The majority of older nonusers are not exposed to pregnancy.

The most preferred method for future use is the IUD among all categories of nonusers, with the pill following after the IUD. After age 30, female sterilization is the third preferred method. The condom is the

least preferred modern method among nonusers. It is remarkable that traditional methods are preferred between 4 and 19 percent among nonusers as age increases.

In the East Region, the pill is preferred more (17 percent) than in the other regions. The IUD is preferred the least in the North Region compared with the other regions. Female sterilization is most highly preferred in the North (9 percent) and South Region (8 percent). In both rural and urban areas, the most preferred method is the IUD; however, the pill is preferred by a higher percentage in rural areas. Female sterilization is preferred more in urban than rural residences.

IUD preference increases by increasing level of education (from 46 to 61 percent), and conversely, the pill decreases with increasing level of education (from 16 to 8 percent).

Among women whose native language is not Turkish, 42 percent prefer the IUD and 18 percent prefer the pill. On the contrary, female sterilization is preferred more in this group.

Among modern method users, 59 percent of pill users do not want to change their method, while 88 percent of the IUD users do not want to change. Among all other methods, the IUD is the most desired method to change. There is no significant difference between the preferred methods by characteristics of women.

CONTRACEPTIVE USE DYNAMICS

As a result of family planning policies, the use of modern methods is gradually increasing in Turkey. In line with the increasing prevalence of modern methods, factors like method continuation, method failure, method switching and method adoption are gaining importance in the improvement and evaluation of family planning policies. The calendar used in the 1993 TDHS provides detailed information on contraceptive use dynamics.

The highest rate of discontinuation is observed in "other modern" (injectables, diaphragm/foam/jelly) and "other traditional" (periodic abstinence, abstinence, vaginal douche) methods. Sixty-three percent of women using other modern methods, and 57 percent of women using other traditional methods discontinue that method in 12 months. Although discontinuation rates are very high, it should be considered that the prevalence of these methods are very low. Being the most widely used modern method, the IUD has the lowest 12-month discontinuation rate. The 12-month discontinuation rate for the IUD is 10 percent, while this figure increases to 49 percent for the condom, and 56 percent for the pill. The 12-month discontinuation rate for withdrawal, which is the most widely used method in Turkey, is lower than the condom and the pill.

Evaluation of discontinuation rates according to reason for discontinuation provides valuable information for the development of family planning policies. Reasons for discontinuation are grouped as method failure, desire for pregnancy, side effects/health concerns related to the method, method-related reasons, and other reasons. Among modern methods, the 12-month failure rate is 1 percent for the IUD, 7 percent for the pill, 9 percent for the condom, and 18 percent for other reversible modern methods. It can also be observed that 12-month failure rates for the pill, the condom, and other modern methods (mostly vaginal barrier methods like diaphragm, foam and jelly) are much higher than the clinical failure rates for the same methods. The 12-month failure rate for withdrawal is as high as 16 percent and it rises to 25 percent for other traditional methods like periodic abstinence, abstinence, and vaginal douche. The most frequent reason for discontinuation is side effects/health concerns for women using the IUD and the pill. Twenty-three percent of women using the pill and 6 percent of women using the IUD discontinue within one year due to side

effects/health concerns. However, the most frequent reason for discontinuation is method-related reasons for the condom and other modern methods. Twenty-nine percent of couples using the condom and 25 percent of couples using other modern methods discontinue within one year due to method-related reasons. It can be observed that method-related reasons are a significant factor for discontinuation in traditional method users as well. Twelve percent of couples using traditional methods discontinue in one year due to method-related reasons.

Method-switching behaviors are also important for family planning policies. Women who discontinue due to reasons other than the desire for pregnancy and no need for contraception, and do not switch to another method immediately, and women who switch to a traditional method with a high failure rate from a modern method, are under the risk of an unwanted pregnancy. This situation might indicate the inadequacy of current family planning services in meeting the needs of these couples. Despite the low 12-month discontinuation rate, 3 percent of women using the IUD discontinue although they still need contraception and 3 percent switch to a traditional method within one year. Fourteen percent of the women using the pill discontinue within one year although they still need contraception, and 12 percent switch to a traditional method. Four percent of the women using the condom discontinue in one year although they still need contraception, and 15 percent switch to a traditional method. Although discontinuation of traditional methods is low, switching to modern methods is not high: Only 13 percent of the women using withdrawal and 10 percent of the women using other traditional methods switch to a modern method within one year.

In the 12 months following delivery, 13 percent of women who had a live birth become pregnant again without starting to use any method. Thirty-one percent of these women start using a modern method and 32 percent use a traditional method, while 24 percent are under the risk of pregnancy because they do not use any method.

INDUCED ABORTIONS

Abortion practices in Turkey are worth further examination due to several reasons. First, Turkey is one of the few countries in the world where induced abortions are performed on a voluntary basis until the 10th week of pregnancy; second, abortion is quite openly reported when asked; and third, there are a substantial number of women who seek induced abortions during their reproductive years. Although abortion rights are freely practised by the women in Turkey, it is of great interest to know the characteristics of the group of women who use abortion services instead of family planning services. According to the national policy, induced abortions are not considered a family planning method. Therefore, the results of this study will be very beneficial for the service providers and planners in order to determine target groups, and to design special approaches to reach these groups for family planning.

As presented in the 1993 TDHS, 13 percent of all women have had more than one induced abortion during their lifetime. This result suggests that these women are using abortion services as a means of family planning. Therefore, this group of women needs to be examined more thoroughly in terms of characteristics which may be different from women who have not had any induced abortions.

In Turkey, there is a high rate of induced abortions in relation to pregnancies; however, only 28 percent of women have had an induced abortion. Therefore, certain groups of women, which are not very small in number, use abortion services. The proportion having an induced abortion increases as age increases. Similarly, as the number of living children increase, induced abortions also increase.

As a result of multivariate analysis, which controls the effects of several factors simultaneously on having an induced abortion, variables such as age, education, husband's education, husband's desire for children, region, place of residence, and number of living children are found to be significantly associated with induced abortion. These variables show different effects between women with one induced abortion and those with more than one induced abortion.

The 1993 TDHS results show that 92 percent of induced abortions are conducted by the end of the second month of pregnancy, and 8 percent are done in the third or later months. Late abortions present a problem especially in the very young and old age groups. The abortions are done at a later time in the North and East Regions compared with the other regions. Educated women also apply earlier for services than uneducated women.

The previous contraceptive behaviour of women that seek abortion is another issue of interest. It is observed that 60 percent of abortions are the result of a method failure and 20 percent are the result of discontinuation of a method. Withdrawal users are the most likely to have a method failure, and among them, 47 percent have had an induced abortion. Among all induced abortions, 68 percent result from withdrawal failures. Therefore, method failure is a very important cause for an induced abortion. Method failures need to be reduced or users of withdrawal, which has a high failure rate, should be encouraged to switch to a modern method.

Counselling before and after the abortion procedure is a valuable opportunity to approach these women. This is a time of high motivation to use a contraceptive method. However, almost half of the women (45 percent) who start using a method choose traditional methods. There is an increase in method adoption from 1 month to 3 months after an abortion. Method choice is affected by education and age of the woman. Women in the West Region and in urban areas mostly prefer modern methods.

UTILIZATION OF MATERNAL HEALTH SERVICES

Antenatal care (ANC) is the regular observation of mother and foetus throughout the pregnancy by health personnel (midwife, nurse, or physician) in order to provide necessary examinations and recommendations.

Pregnant women who have been provided ANC by health personnel in or before the third month and have received five or more antenatal visits are classified as having received adequate ANC. According to this definition, 25 percent of pregnant women have received adequate ANC while 38 percent have received no ANC. While ANC coverage is 47 percent in women who were followed up by a midwife, seen at least once by a physician or seen once by a physician alone, this percentage falls to 15 percent if the woman was followed up by the physician alone. This result suggests that midwives, being a more close and accessible source of health personnel, are preferred by women seeking ANC.

Vaccination against tetanus is one of the services that should be provided during antenatal care. In the five years preceding the 1993 TDHS, the percentage of women who were not vaccinated with tetanus toxoid (TT) has decreased from 64 percent at the beginning of the five-year period to 52 percent in the most recent period (0-11 months). While TT2 (second dosage of tetanus toxoid) coverage has increased from 21 to 35 percent, there is no significant change in TT1 (first dosage of tetanus toxoid) coverage.

The person providing ANC seems to affect TT coverage. Coverage is lower in women who receive ANC from a midwife compared to women who receive ANC from a physician or both. Among the women visited by a midwife, TT2 coverage is 33 percent and the percentage of unvaccinated women is 52 percent.

Percentage of adequate vaccinations increases to 58 percent in women who have been followed up by both the physician and the midwife.

Among the women who receive adequate ANC (from health personnel, beginning in a suitable time frame and in adequate number), only 41 percent have received 2 doses of TT. In such pregnancies that are considered to be followed up adequately, expected coverage of TT is higher.

There is a considerable change in births delivered in healthy conditions between the first and the last year covered by the survey. While deliveries at home with the assistance of health personnel have decreased 8 percent, those delivered in a health facility have increased 9 percent during this period. According to region and place of residence, unhealthy deliveries are more frequent in the East Region and in rural areas.

Any type of health insurance among women increases the use of delivery services. Among women without health insurance, 35 percent deliver births in unhealthy conditions, and 53 percent of these women deliver at home. At the same time, 24 percent of the home deliveries correspond to women with insurance. Receiving adequate ANC also increases the use of delivery services. The percentage of healthy deliveries is 98 percent in women receiving adequate ANC, which indicates the importance of ANC. For women without ANC, this percentage drops to 52.

The reasons for not using health facilities are also analysed. The most important reason is distrust of health facilities or health personnel (31 percent). The second reason is due to tradition (24 percent), and the third is access problems to health facilities (21 percent). Distrust, tradition, and accessibility are seen as the most important factors for not using obstetrical services, which indicate the problems in quality of the obstetrical services.

Substantial information on crucial issues of reproductive health is presented in each section of this report. The researchers hope that these findings will play an important role in guiding future developments of health policies and programmes.

INTRODUCTION

Ayşe Akın

and

Münevver Bertan

1   BACKGROUND

The 1993 Turkish Demographic and Health Survey (TDHS) is designed to provide information on population and health in Turkey. In this survey, data were collected by carrying out interviews with the nationally representative sample of ever-married women less than 50 years old.

The survey was conducted by the Hacettepe University, Institute of Population Studies (HIPS) under an agreement through a subcontract between the General Directorate of Mother and Child Health and Family Planning, Ministry of Health and Macro International Inc. of Calverton, Maryland. The 1993 TDHS is a part of the worldwide Demographic and Health Surveys (DHS) programme, which is being administered by Macro International Inc. in various countries.

1.1   Geography and Population

Turkey has a surface area of 774,815 square kilometres and has land area in both Europe and Asia. The country is divided into seven geographical regions (Thrace, Aegean, Black Sea, Central, Mediterranean, Eastern, and Southeastern Anatolia). Anatolia consists of a semi-arid central plateau surrounded by mountains. The eastern region of the country is high and mountainous. There are vast differences in altitude among regions, ranging from an average of 500 metres in the west to 2,000 metres in the east. The climate is characterized by variations of temperature and rainfall, depending on topography. Dry, hot summers and cold, rainy winters are the typical climatic conditions of Turkey.

Turkey is a republic which is administratively divided into 79 provinces (there were 76 provinces at the time of the survey). The head of the province is the governor, who is appointed by and responsible to the central government. The governor, as the chief administrative officer in the province, carries out the policies of the central government, supervises overall administration of the province, coordinates the work of various ministry representatives appointed by the central authority and maintains law and order within his jurisdiction. Every locality with a population of more than 2,000 is entitled to form a municipal administration which is elected by a municipal electoral body and administered by a mayor and municipal council. Municipalities are expected to provide basic services such as electricity, water, gas, the building and maintenance of roads, and sewage and garbage disposal facilities. Educational and health services are mainly provided by the central government, but municipalities also provide some health services.

Citizens of Turkey are predominantly Muslim (98 percent) and the Sunni sect of the Muslim religion form the overwhelming majority. Ethnically, Turks predominate, yet there are Kurdish, Arabic, Greek, Circassian, Georgian, Armenian and Jewish communities as well.

As a result of the complex ethnic and religious mosaic, Turkey has a highly heterogeneous social and cultural structure, and the "modern" and the "traditional" exist simultaneously. Attitudes towards life are reminiscent of those in the Western world especially for the inhabitants of metropolitan areas. However, people migrating from rural areas and the eastern region carry their lifestyles to their new localities. Family ties are still strong and patriarchal ideology characterizes social life. People are more conservative and religious in the rural and eastern parts of the country.

Significant achievements have been made in literacy and education since the foundation of the Republic. According to the 1990 census figures, 72 percent of the females and 89 percent of the males are literate. The rate for primary school attendance today is around 90 percent. As compulsory education is limited to primary school, attendance rates drop for secondary school. Considerable regional and urban-rural

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differences in literacy and educational attainment exist in the country in addition to differences between males and females (SIS, 1992, 1994).

Turkey's population was 13.6 million in 1927 according to the census, which was performed four years after the establishment of the Republic. It became 56.5 million according to the census in 1990. Turkey is among the 20 most populous countries of the world (SIS, 1993; United Nations, 1985). Turkey has a young population. A third of the population is under 15 years of age while the proportion of elderly is quite low.

Marriage is a public institution which is widely accepted in Turkey, and marriages are predominantly civil. The main marriage custom is to undergo a civil as well as a religious ceremony. The average age at marriage is relatively low, about 18 years for females. At the end of the reproductive ages, in the age group 45-49, only 1.6 percent of females were never-married, whereas the corresponding figure for males in the same age group was 2.6 percent according to the 1990 population census (Hancıoğlu and Akadlı Ergöçmen, 1992).

Recent decades have witnessed dramatic declines in fertility rates. In the early 1970s, the total fertility rate was around 5 children per woman, whereas the latest estimates in the late 1980s put the total fertility rate at about 3 children per woman (HIPS, 1989).

Infant mortality rates estimated through fertility surveys have decreased in Turkey. The infant mortality rate in the late 1950s was around 200 per 1,000. It declined to about 130 per thousand during the mid 1970s, and to an estimated 67 per 1,000 during the 1985-1990 period. Latest estimates put life expectancy in Turkey at 62.7 years for males and 67.3 for females (Shorter, 1994).

According to the 1970 census, only 32 percent of the population was living in localities with more than 20,000 population. The corresponding figure in the 1990 census was 51 percent due to the intensive process of urbanization. This process has inevitably caused problems in the provision of urban services and the emergence of large areas of squatter housing in unplanned cities.

1.2   Health Policies and Programmes

The Government of the Turkish Republic implemented a somewhat pronatalist population policy until the mid-1960s, after which an antinatalist policy was adopted. This shift in policy is manifested in the Population Planning Law of 1965 (State Planning Organization, 1993). The law mandated to the Ministry of Health the responsibility for implementing the new family planning policy. In 1983, the law was revised and a more liberal and comprehensive law was passed. The new law legalized abortions up to the tenth week of pregnancy, and also legalized voluntary surgical contraception. It also specified the training of auxiliary health personnel in inserting IUDs and included other measures to improve family planning and mother and child health services.

Mother and child health and family planning services have been given priority status in the antinatalist policies of the government in recent decades due to the large proportion of women of reproductive ages and children in the Turkish population, the high infant, child, and maternal mortality rates, the high demand for family planning services and the limited prenatal and postnatal care. A number of programmes are being implemented, with special emphasis on provinces which have been designated as priority development areas, as well as programmes focusing on squatter housing districts in metropolitan cities, rural areas and special risk groups. Specific programmes in immunization, childhood diarrhoeal diseases, acute respiratory infections, promotion of breastfeeding and growth monitoring, nutrition, antenatal and delivery care, safe motherhood, programmes of information, education and communication for mother and child health and family planning activities are currently being implemented.

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The Ministry of Health is officially responsible for designing and implementing nationwide health policies and delivering health care services. Besides the Ministry of Health, other sectors and Non-governmental Organizations contribute to carrying out some health services. The responsibility for delivering the services and implementing specific primary health care programmes is shared by various General Directorates (Primary Health Care, Mother and Child Health and Family Planning, Health Training) and by various Departments (Tuberculosis Control, Malaria Control, Cancer Control).

At the provincial level, the health care system is under the responsibility of Health Directorates. The Provincial Health Director is responsible for delivering all primary health care services as well as curative services.

Mother and child health and family planning (MCH/FP) services, comprising an important part of preventive services, is delivered by approximately 5,000 health centres and 12,000 health houses. In addition, 268 MCH/FP centres in provinces and districts deliver services as well as carry out the education of staff. FP services are also offered by the FP units in hospitals and maternity hospitals. This system works as an organized network and these health facilities are also the main sources of the health information system.

2   OBJECTIVES

The objectives of the 1993 TDHS, a national sample survey of ever-married women of reproductive ages, are to:

- Collect data at the national level that will allow the calculation of demographic rates, particularly fertility and childhood mortality rates;
- Analyse the direct and indirect factors that determine levels and trends in fertility and childhood mortality;
- Measure the level of contraceptive knowledge and practice by method, region and urban-rural residence;
- Collect data on mother and child health, including immunizations, prevalence and treatment of diarrhoea, acute respiratory infections among children under five, antenatal care, assistance at delivery, and breastfeeding; and
- Measure the nutritional status of children under five and their mothers using anthropometric measurements.

The objectives of the further analysis of the 1993 TDHS are to:

- Determine contraceptive prevalence, contraceptive use dynamics, fertility effects of contraceptive use, future intentions on method use and attitudes of women related to some methods;
- Know the characteristics of women who use abortion services and to determine the target groups for family planning services; and
- Investigate the factors affecting the utilization of maternal health services in Turkey.

3   METHODOLOGY

3.1   Organization

The TDHS was carried out by HIPS, through a subcontract under an agreement signed by the General Directorate of Mother Child Health and Family Planning, Ministry of Health and Macro

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International Inc. of Calverton, Maryland, USA. Technical and financial support for the survey was provided by Macro International Inc. through its Demographic and Health Surveys (DHS) programme, a project sponsored by the United States Agency for International Development (USAID) to carry out population and health surveys in developing countries.

A steering committee consisting of representatives from the General Directorate, HIPS, the Hacettepe University Department of Public Health, the State Planning Organization and the State Institute of Statistics was set up to provide advice on the implementation of the survey

3.2 Sample

The sample for the TDHS was designed to provide estimates of population and health indicators, including fertility and mortality rates for the nation as a whole, for urban and rural areas, and for the five major regions of the country. A weighted, multistage, stratified cluster sampling approach was used in the selection of the 1993 TDHS sample.

The major focus of the TDHS was to provide estimates with acceptable precision for important demographic characteristics such as fertility, infant and child mortality and contraceptive prevalence, as well as several health indicators. The universe of the 1993 TDHS was defined as the total population of Turkey for the Household, and as a subset, all ever-married women younger than age 50 for the Woman's Questionnaire. The aim was to survey the population by designing a sample of households and interviewing an adult member of the household in order to collect information on household members. In addition, all eligible women who were present in the household were interviewed.

The country was divided into five regions according to socio-economic developmental level and demographic characteristics, in accordance with the objectives of the 1993 TDHS. These regions (West, South, Central, North and East) are separated from each other with province borders. Different criteria have been used for the definition of "urban" and "rural" settlements in Turkey. In the 1993 TDHS, the urban frame consists of provincial and district centres and settlements with populations larger than 10,000 regardless of administrative status. The rural frame was all of the settlements (subdistricts and villages) with a population of less than 10,000. The sample frame was designed according to the 1990 census results, and was consequently revised since some of the subdistricts and villages had been transformed to districts administratively during the time period between the census and the survey. All of the urban settlements are administratively divided into quarters and the quarters consist of streets in Turkey.

The population of the urban settlements had to be estimated in order to choose a probability proportional to sample size. For this estimation, population growth rates of each urban locality between the 1985 and 1990 censuses were calculated and populations at the time of the survey were estimated using these rates and 1990 census figures. The administrative status of the settlements as well as their population size were taken into account for "urban" classification. In Turkey, a district centre, no matter what its population size, is entitled to receive health and education investments (like a state hospital) from the central government. For this reason, all district centres with a population less than 10,000 were included in the frame of the urban sample in the 1993 TDHS. The rural sampling frame consisted of all subdistricts and villages with an estimated population of less than 10,000 at the time of the survey. Subdistricts and villages under the same district were assumed to have the same growth rate with the district, and the population of each district was estimated separately.

Comparable subregions and settlement-size categories were used as the criteria of stratification to produce a sample design that was methodologically and conceptually consistent with the designs of previous surveys. For example, a more detailed regional stratification was used to obtain a better dispersion of the

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selected sample. The criteria selected for further subdividing the five major regions into subregions were the infant mortality rates of each province estimated from the 1990 census using indirect techniques (see Hancıoğlu, 1991). Using geographical proximity and infant mortality as the two variables, provinces in each region were further grouped into subregions. This procedure created a total of 14 subregions embedded in the five initial major regions. The second criterion for stratification was the population size category of each settlement. Again, in order to be consistent with previous surveys and with the stratification conventions of other government organizations, such as the State Planning Organization and the State Institute of Statistics (SIS), settlement size categories were formed as follows:

Rural: 1. Subdistrict centres and villages with populations less than 10,000
Urban: 2. District centres with populations less than 10,000
                    Settlements with populations of:
                    3. 10,000 - 19,999
                    4. 20,000 - 49,999
                    5. 50,000 - 499,999
                    6. 500,000 - 999,999
                    7. 1,000,000 and more.

This is the first stage of sampling and the sampling units are the settlements with varying population size.

The target sample of 10,000 households was distributed over the five major regions. To ensure an adequate representation of clusters within each region, it was decided that selection of an average of 20 households per standard segment (each consisting of 100 households) would be sufficient. For the second stage of selection, lists of quarters were obtained from the SIS for each selected urban settlement. Each selected quarter was divided into groups consisting of approximately 100 households. In the rural areas, each selected village was taken as a quarter and divided into subgroups of 100 households when required. If any village had less than 100 households, it was combined with a neighbouring village to attain a total of 100 households. Following this selection of secondary sampling units, the 1993 TDHS teams developed a household list for each selected unit. Households were selected with systematic random sampling by using these lists.

Two types of questionnaires were used to collect TDHS data: the Household Questionnaire and the Individual Questionnaire for ever-married women of reproductive age. The contents of these questionnaires were based on the DHS Model "A " Questionnaire. In the process of designing the TDHS questionnaires, national and international population and health agencies were consulted for their comments. All questionnaires were developed in English and then translated into Turkish.

The Household Questionnaire was used to enumerate all usual members of and visitors to the selected households, and to collect information relating to the socioeconomic position of the households. In the first part of the Household Questionnaire, basic information was collected on the age, sex, educational attainment, marital status and relationship to the head of the household of each person listed as a household member or visitor. The objective of this first part was to obtain the information needed to identify women who were eligible for the individual interview as well as to provide basic demographic data for Turkish households. 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, the type of toilet facilities, and on the household's ownership of a variety of consumer goods.

The Individual Questionnaire for women was designed with the following section headings: background characteristics, reproduction, marriage, contraception, pregnancy and breastfeeding, immunization and health, fertility preferences, husband's background and woman's work, values, attitudes

and beliefs, maternal and child anthropometry. The Individual Questionnaire included a monthly calendar, which was used to record fertility, contraception, postpartum amenorrhoea and abstinence, breastfeeding, marriage and migration histories for a period of more than five years beginning in January 1988 up to the survey month.

In May 1993, a pretest of the questionnaires was conducted. For this purpose, 15 interviewers were trained at HIPS for a period of two weeks. The interviewers were mostly university graduates who had worked on previous surveys. Field work for the pretest was carried out in one district in central Ankara, two districts in squatter housing areas of Ankara, and a village in Ankara province. Some 180 interviews were completed during the pretest. Based on the evaluation of the results and on the feedback obtained from the interviewers, several minor changes were made to the questionnaires.

Candidates for the positions of interviewers, field editors, supervisors and measurers were interviewed by the staff of HIPS. Approximately 120 individuals who met the required qualifications were accepted for the training programme. All candidates for the field staff positions were at least high school graduates. Field training continued for 20 days and the candidates were given lectures on the demographic situation in Turkey, family planning and mother and child health and the TDHS questionnaires. They also practised role playing and mock interviews. Field practise was held in areas not covered by the survey, and quizzes were given to test their progress and capabilities. Towards the end of the third week of the training programme, teams that would eventually participate in the main field work were selected.

Field work for the TDHS began in the first week of August 1993 and was completed at the end of October 1993. The activities were completed in two stages. In the first stage, 13 teams, each consisting of a supervisor, a field editor, a measurer and 4 or 5 interviewers worked in Ankara in the beginning and left for the other provinces as soon as all initial visits were completed. The first stage of the field work was completed by the end of September. In the second stage, four new teams were set up from among the 13 teams who worked in the first stage and this stage continued until the end of October.

Four regional coordinators were responsible for visiting the teams in turn, checking the quality of data collected, and reporting periodically to the field director in Ankara. All interviewers and field editors were female and all measurers were male; both male and female supervisors were present.

Field work teams visited 68 of the then 76 provinces in Turkey. Some 41 percent of the 500 clusters in the sample were from provincial centres, 21 percent were from district centres, and 38 percent were from subdistrict centres and villages. However, interviews were successfully completed in 478 clusters. Due to accessibility problems and lack of security, 8 clusters were not listed and 14 clusters were not visited.

The questionnaires were returned to HIPS by the field work teams for data processing as soon as each provincial interview was completed. The data, checked by the office editing staff, were entered and edited on microcomputers using the Integrated System for Survey Analysis (ISSA), a packaged programme specially developed to process DHS data. Entry and editing activities were initiated within two days after the beginning of the field work and were completed 10 days after the completion of field work.

An important aspect of the 1993 TDHS data is that analyses have to be performed using weights. The TDHS sampling plan is not a self-weighted one; in order to have sufficient numbers of observations for meaningful statistical analyses, more sample units were chosen from the Northern and Southern regions. If the target number of households had been allocated by probability proportional to the size, these regions would have yielded inadequate numbers of observations. The weights for the regions compensated for the nonresponse to the Household Questionnaire and to the Individual Questionnaire during field work. Since selection was carried out proportionately in the urban/rural breakdown within the regions, and since there

is almost no variation in nonresponse rates among the rural areas of the five regions, there was no need to calculate separate weights for rural and urban areas.

During the field work, it was determined that 8,900 of the 10,631 selected households were occupied and the teams successfully completed interviews with 8,619 households (97 percent). In the interviewed households, 6,862 eligible women were identified, of whom 95 percent were interviewed. Eligibility for the individual interview required that the woman be ever-married, be younger than 50 years of age, and be present in the household on the night before the interview. The main reasons field work teams were unable to interview some households were that some of the listed dwelling units were found to be vacant at the time of the interview or the household was away for an extended period. Among the small number of eligible women not interviewed in the survey, the principal reason for nonresponse was the failure to find the woman at home after repeated visits to the household. The overall response rate for the 1993 TDHS was calculated as 92 percent.

The main objective of 1993 TDHS is to obtain information required for the improvement of design and implementation activities to improve health conditions and encourage family planning programmes and the development of relevant policies. The survey report published in October 1994 has greatly achieved this objective and has been used by decision makers of all levels in various sectors.

In this Further Analysis Report of the 1993 TDHS, antenatal care and delivery services, abortions, contraceptive use dynamics, and attitudes on contraceptive use have been evaluated in detail. Please note that the figures in some tables may not add to 100.0 due to rounding procedures.

3.3   Data Quality

Information about some background characteristics was also collected in the survey to evaluate the reliability of data. These characteristics include the presence of another person during the interview, language used in the interview, whether or not an interpreter was used, and reliability of answers according to the interviewer. In developing countries like Turkey where the educational level of women is not high, heaping is observed at ages ending with 0 and 5 due to the rounding trend (David et al., 1990). In this survey, the presence of heaping at these ages was investigated graphically. Low heaping at ages ending with 0 and 5 shows that data about dates are reliable, particularly in analyses in which dates are important.

In countries like Turkey, where cultural taboos in talking about family planning still exist even in urban areas, presence of another person during the interview affects the reliability of the answers. Particularly if the mother-in-law was present in the survey (if she was opposed to family planning, or a male child was desired), reliability of the answers related to family planning decreases. In addition, it is embarrassing for Turkish women to talk to a foreign person about fertility behaviours even in urban areas.

Using an interpreter during the interview may also affect the quality of all answers. There was no time during the field work to give special training to the interpreter. For this reason, the interpreters conveyed to the women what they wanted or understood from the questions, and the same was done for the translation of answers. Table 1 summarises some background variables that provide insight into data quality.

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Table 1 Selected background variables influencing the quality of data, Turkey, 1993		
Variable	Number	Percent
Presence of another person during the interview (n=6501)		
None	4,417	67.9
Mother-in-law	113	1.7
Mother	53	0.8
Other women	783	12.1
Other[1]	1,135	17.5
Language used in the interview (n=6505)		
Turkish	6,097	93.7
Kurdish	379	5.8
Arabic	27	0.4
Other	2	0.1
Interpreter (n=408)		
Not Used	287	70.3
Used	121	29.7
Reliability of the answers (n=6489)		
Weak	219	3.1
Moderate	1,052	16.2
Good	3,619	55.8
Very good	1,600	24.7
[1] Child, spouse, etc.		

Approximately two-thirds of the women were interviewed alone; in only 3 percent of the cases was the mother-in-law or mother present during the interview. Among the 6,505 interviews in which the language used was recorded, 94 percent were conducted in Turkish. In 70 percent of the interviews that were conducted in a language other than Turkish, no interpreter was used. Reliability of the responses was estimated by the interviewer in 6,489 of the 6,519 interviews. Only 3 percent of the interviews were considered to have low reliability. The percentage of the interviews that were considered moderately reliable was 16 percent while it was 81 percent for good and very good reliability.

No significant heaping was observed at ages ending with 0 and 5 in the distribution of women by single ages. Heaping can be observed at other ages as fluctuations until the age of 40, while the heaping at 40 and 45 ages are more prominent. This situation might be due to the low educational level of women of these ages. Consequently, these findings suggest that the interviews were reliable.

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CONTRACEPTIVE USE DYNAMICS

IN TURKEY

Tayfun Enünlü

and

Bahar Güçiz Doğan

1 INTRODUCTION

Studies on contraceptive use dynamics generally consist of titles like contraceptive method prevalence, discontinuation rates, method switching, method failure and method acceptance (Curtis and Hammerslough, 1995). Family planning policies in developing countries have increased contraceptive method prevalence. Due to this increase, issues like method continuation, failure and switching have gradually taken an important place in the evaluation and improvement of family planning policies. Besides the policies encouraging couples to use modern methods, other policies should be developed offering alternatives to couples in deciding whether to continue use of their current method or to switch to another method which may be more suitable for them. Although it is known that the importance of analyses on contraceptive use dynamics increase in line with contraceptive prevalence, such studies are insufficient in developing countries. One reason for this is the lack of data about the change in contraceptive behaviours over time, which is required for these kinds of studies (Curtis and Hammerslough, 1995; Kost, 1993). Studies on contraceptive use dynamics have increased in recent years and new methods have been developed for collecting monthly data regarding the change in contraceptive use. In this context, a calendar has been added to the basic questionnaire forms used in the Demographic and Health Survey (DHS) projects which includes monthly information on the contraceptive behaviour of the respondents in the previous six years. The calendar section, specially designed for the collection of such data, was tested in field trials performed in Peru and the Dominican Republic in 1986, and widely used in DHS surveys afterwards (Curtis and Hammerslough, 1995; Moreno et al., 1990).

The 1993 Turkish Demographic and Health Survey (TDHS) was carried out to collect information on subjects like the level of fertility and change in fertility in ever married women under 50, infant and child mortality, family planning, and maternal and child health. The 1993 TDHS was a field study performed on a representative sample of ever married women under 50, selected from all parts of Turkey. The sampling procedure was designed to provide demographic and health indicators for urban and rural areas, for five regions and for the whole country. The sample was selected by a multistage, stratified cluster sampling method. The field work of the survey was conducted from August to October of 1993 by Hacettepe University, Institute of Population Studies. The model questionnaire developed within the DHS programme and the *Household Questionnaire* and *Women's Questionnaire* based on the forms previously used in demographic and health surveys in Turkey were used in field studies. Final results of the 1993 TDHS were published in October 1994 in the report entitled *Turkish Demographic and Health Survey 1993* (MOH et al., 1994).

An agreement was made between the Turkish Ministry of Health, General Directorate of Mother and Child Health and Family Planning, and Macro International Inc. in February 1995 to enable further analysis of some topics that were not presented in the *Turkish Demographic and Health Survey 1993*. One of the topics introduced within this framework is contraceptive use dynamics. Further analyses of contraceptive use dynamics are based on the *Model Further Analysis Plan* (Curtis and Hammerslough, 1995) developed for this purpose by Macro International Inc. Initial analyses of the study were performed in October 1995, during the Anglophone Contraceptive Use Dynamics Seminar organized by Macro International Inc. with the participation of five countries (Bangladesh, Indonesia, Philippines, Zimbabwe and Turkey), and continued into November 1995 during the study tour organized in the same place.

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2   DATA AND METHODOLOGY

2.1   Unit of analysis

The Women's Questionnaire used in the 1993 TDHS includes the following sections:

- Basic information
- Fertility
- Marriage
- Contraceptive methods
- Pregnancy and breastfeeding
- Immunization and health
- Fertility preferences
- Basic information about husbands and working status of women
- Values, attitudes and opinions
- Height and weight
- Calendar

The aim was to collect information on contraceptive use dynamics in Turkey using the calendar at the end of the women's questionnaire. In this section, data about the following issues were coded monthly for a period of 68-70 months starting from January 1988 until the survey:

Column (1):   Deliveries, pregnancies and contraceptive use
Column (2):   Starting of contraception and the person starting induced abortion
Column (3):   Postpartum amenorrhoea
Column (4):   Postpartum abstinence
Column (5):   Breastfeeding
Column (6):   Marriage
Column (7):   Migration and place of residence

The calendar is comprised of information for every woman in the preceding 68-70 months on periods of contraception, pregnancies resulting in a live birth, miscarriages or stillbirths, periods of nonuse and nonpregnancy, and periods free from marriage. In order to analyse the calendar data, a data set has to be created including *segments* of use and nonuse periods for each woman. A *segment* is defined as the period in which the contraceptive using status of a woman does not change. For example, a 36-month-long segment of IUD use is a period of using the IUD for 36 months, with another event before and after this period. Before this segment some events may have taken place like a marriage, a pregnancy resulting in a live birth, a miscarriage or stillbirth, switching from another method, or nonuse of contraceptives. Similarly, other segments may follow the IUD segment like pregnancy, switching to another method, discontinuation or divorce. If a woman using a method is currently using that method at the time of the interview, this period is considered as the last segment. Such a segment is called a *censored observation* (Curtis and Hammerslough, 1995).

A data set involves four types of segments: (1) method use; (2) pregnancy resulted with miscarriage or stillbirth; (3) pregnancy resulted with a live birth; and (4) non-method using status (without being pregnant). A segment ends with the change in method use or pregnancy status—that is, method switching, discontinuation, beginning of pregnancy or end of pregnancy. As it is understood from this definition, a woman can contribute to a data set with more than one segment. In the analysis stage, each segment is evaluated as if it belongs to a different woman. The records of each segment include information on type of segment (method use, nonuse, pregnancy), status before the segment, status after the segment, and length of the segment, as well as the information on the characteristics of that woman. If method use has ended within the calendar period, information about the reason for discontinuation is also collected. The reason for discontinuation may be coded in different ways (i.e., pregnancy during method use, desire for pregnancy, side effects, reasons not related to health, etc.). If a woman continues to use a method at the time of interview, the reason for discontinuation for this woman is coded as a *censored observation* (Curtis and Hammerslough, 1995; Kost, 1993).

A special programme developed for creating the segment-based data sets is required for the analysis of calendar data. This programme was finalized during the Anglophone Contraceptive Use Dynamics Seminar in October 1995 and was revised to be consistent with the software developed for this purpose by Macro International Inc. As the data set was created, only the segments starting within the 60 months (5 years) preceding the survey, that is, during the period between 3-62 months prior to the survey, were included. The last three months (0, 1st and 2nd months, if the month of the interview is accepted as 0) were not included in the data set to prevent bias which may arise from unrealized pregnancies during that period (right-censored segment). Segments starting before the 60-month period (62 months preceding the survey) were also not included in the analysis. Segments starting before January 1988 were not included since the previous event was not known and the length of the segment could not be calculated (left-censored segment). Segments starting after January 1988 before 62 months were not included due to the technical problems encountered in the creation and analysis of data sets (left-truncated segment).

Each segment is treated as a different *user* in the analysis because of the characteristics of segment-based analysis. For instance, if a woman has used two different methods in the five years preceding the survey, she was accepted as two women using different methods. Likewise, a woman who has used the same method twice in the five years preceding the survey, was accepted as two different women using the same method. Table 2.1 shows the distribution of segment of use (women using a method) by the methods and the characteristics used in the analysis. The last row of the table shows the ratio of each method in all methods used.

Distribution of segment of use by method is somewhat different from the distribution of women using any method at the time of the survey by method. The ratio of segments of use related to methods which have a longer continuation period among all segments is relatively low, while the ratio of segments of use related to methods which have a shorter continuation period is relatively high. The ratio of women currently using the pill, condom or other modern methods at the time of the survey to all women using any method, is lower than the ratio of segments of use related to those methods to all segments of use. However, the ratio of women currently using the IUD or sterilized at the time of the survey to all women using any method, is higher than the ratio of segments of use related to those methods to all segments of use. The ratio of women using traditional methods during the survey to all method users is similar to the ratio of segments related to traditional methods to all segments.

Table 2.1 Percent distribution of segment of use by contraceptive method for selected background characteristics, Turkey 1993

Background Characteristics	Method								Number of segments
	Pill	IUD	Condom	Other reversible modern	Sterilzation	Withdrawal	Other traditional	Total	
Region									
West	14.2	21.8	14.3	2.4	1.8	42.2	3.2	100.0	1,966
South	13.3	27.2	13.3	5.3	1.6	37.1	2.3	100.0	863
Central	13.1	24.6	13.7	4.2	1.9	38.6	3.9	100.0	1,262
North	13.3	14.6	11.5	2.9	2.4	54.2	1.1	100.0	510
East	16.0	23.9	13.6	3.5	1.7	38.6	2.7	100.0	665
Residence									
Urban	13.2	24.8	14.8	3.4	2.0	38.0	3.7	100.0	3,649
Rural	15.6	18.7	10.9	3.7	1.3	48.5	1.4	100.0	1,617
Age									
<=24	13.8	21.2	12.9	3.2	0.3	45.7	3.0	100.0	2,106
25-29	15.0	23.0	15.3	3.9	1.3	38.8	2.7	100.0	1,477
30+	13.2	25.1	13.0	3.6	4.1	37.8	3.1	100.0	1,683
Level of education									
None	15.2	22.3	10.2	4.6	3.5	42.9	1.2	100.0	1,162
Primary	14.5	22.5	12.2	3.2	1.4	44.4	1.8	100.0	2,985
Secondary+	11.1	24.9	21.0	3.1	1.2	31.1	7.6	100.0	1,119
Contraceptive intention									
Spacer	13.6	17.6	15.6	3.1	0.1	45.9	4.0	100.0	1,980
Limiter	14.1	26.1	12.4	3.8	2.9	38.4	2.4	100.0	3,286
No. of live births									
0 - 1	11.6	17.9	16.7	3.1	0.2	45.1	5.5	100.0	1,586
2 - 3	14.3	25.9	13.2	3.7	1.8	39.3	1.8	100.0	2,486
4 +	16.3	23.3	10.5	3.9	4.1	40.1	1.8	100.0	1,194
Total	14.0	22.9	13.6	3.5	1.8	41.2	2.9	100.0	5,266
Current users	7.8	30.0	10.5	2.1	4.6	41.9	3.0	100.0	3,927

2.2 Background Variables

As it is expected to have an effect on contraceptive use dynamics, characteristics of women and the categories of these variables are presented as follows:

1) Place of residence by geographical region at the time of the survey: Western Anatolia, Southern Anatolia, Central Anatolia, Northern Anatolia, and Eastern Anatolia.

2) Type of residence at the beginning of the segment: Urban and rural.

3) Woman's age at the beginning of the segment: 24 and below, 25-29, and 30 and above.

4) Woman's education at the time of the survey: Illiterate or not completed primary school (NONE), graduated from primary school of not completed secondary school (PRIMARY), and graduated from secondary school or higher (SECONDARY+).

5) Woman's desire for another child at the beginning of the segment: Wants to have another child in the future, and does not want to have another child.

6) Number of live births at the beginning of the segment: 0-1, 2-3, and 4 and over.

It should be noted that the variables analysed can change in time during the calendar period. Thus, type of residence, woman's age, desire for another child, and number of live births have been recreated to

show the situation at the beginning of the segment, by using calendar data. Variables related to place of residence by region and education reflect the situation at the time of the survey and no data was collected to show the possible change in those variables during the calendar period. However, those variables are also included in the analysis assuming that the situation at the time of the survey would be the same for the entire calendar period, as they are considered to have a significant effect on contraceptive use.

It should also be taken into account that the characteristics known to influence contraceptive use dynamics may show a high correlation with each other. For example, most of the women age 24 and below will probably have 0-1 live births and desire children in the future. It is expected that women living in rural areas will have a lower educational level and a higher average number of live births compared to those in urban areas. Likewise, the number of live births is expected to increase with age and decrease with education. Probably, the average age of higher educated women will be lower than the others.

2.3   Data Quality

All retrospectively reported data are subject to various types of error. The retrospective six-year longitudinal data of DHS-II and DHS-III surveys will inevitably include errors. Nevertheless, the calendar method has been shown to be superior to alternative retrospective data collection techniques for longitudinal information. The questionnaire with this method provides a framework for resolving inconsistencies in birth dates, death dates, breastfeeding duration, and segments of contraceptive use or nonuse. The calendar makes it possible to identify precisely the timing of events in relation to one another, although expecting the respondent to recall detailed information for a relatively long period prior to the survey causes some problems. Therefore, evaluation of data quality is a crucial stage of the analysis to bring out the limitations of survey results (Curtis and Hammerslough, 1995).

The most common errors in calendar data include recall problems. Respondent's forgetting short periods of contraceptive use is among the most important cause of errors. Such omissions would be expected to become more common further back in time and for certain methods, such as condoms, which may be used only occasionally. Another recall problem is mixing the order of methods used in time. One powerful test for such errors is to compare the data in the calendar with data from an external source. Considering that the calendar covers a six-year period, many of the countries also have an earlier survey performed close to the starting date of the calendar. The current status data on contraceptive use from the earlier survey can then be compared with the calendar data in the later survey for the corresponding time period. If omission of short periods of contraceptive use is common in the calendar, there will be some differences between the prevalence obtained from the calendar and the prevalence obtained from the earlier survey. Particularly for the temporary methods which may be forgotten easily, the prevalence obtained from the current status data in the earlier survey would be expected to be higher than that obtained from the calendar of the last survey (Curtis and Hammerslough, 1995).

Table 2.2 compares the current contraceptive prevalence based on the 1988 Turkish Population and Health Survey (TPHS) data (HIPS, 1989) and the prevalence obtained from calendar data of the 1993 TDHS for the time period corresponding to the earlier survey. The comparison of two separate surveys depends on the comparability of two samples as much as possible. The calendar data for contraceptive prevalence has been obtained from women under 50 in the 1993 TDHS. Women who are in the 15-49 age group in the last survey (1993) would have been in the 10-44 age group in the earlier one (1988). Marital status can also change over time as well. A woman who is married at the time of the last survey might not have been married at the time of the earlier survey. Thus, data belonging to married women in the 15-44 age group from

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the 1988 survey have been compared to 1993 TDHS calendar data of women who had been in the 15-44 age group and married at the time of the earlier survey, to maintain comparability of age and marital status.

The current status data of contraceptive prevalence in the 1988 survey are expected to be more reliable than the previous contraceptive prevalence data obtained from the 1993 survey, as there were no recall problems in the earlier survey. The percentage of nonusers in the 1988 survey is lower than the corresponding period based on the 1993 survey data. The prevalence of withdrawal and modern methods other than the condom are remarkably similar in both surveys despite the high potential for recall error. The low prevalence of short-term methods like condoms, vaginal douche, and rhythm obtained from the calendar data of the 1993 survey compared to the prevalence in the 1988 survey suggests that the differences between the two studies are due to recall problems rather than sampling differences.

Table 2.2   Percentage of married women using each method of contraception at the time of the 1988 TPHS, based on calendar data from the 1993 TDHS and current status data from the 1988 TPHS

Method	TDHS 1993 Calendar Data (Ages 15-44)	TPHS 1988 (Ages 15-44)
No method	42.3	33.9
Any modern method	30.2	33.1
IUD	15.7	15.3
Condom	4.4	7.7
Pill	6.5	6.7
Female sterilization	1.8	1.4
Other reversible modern	1.8	2.0
Any traditional method	27.5	33.3
Withdrawal	25.4	26.5
Other traditional	2.1	6.8

Another important error in surveys that ask respondents to recall retrospectively events in the past is heaping on significant dates or time duration (Curtis and Hammerslough, 1995). In effect, respondents are estimating the dates of past events that were not very memorable. Although the calendar minimizes this type of recall error, heaping can occur on prominent durations such as 6, 12, and 24 months. Heaping usually is a concern if it is extreme, because life table summary rates are essentially smoothed. Heaping on significant values was investigated for reported duration of segments in Figure 2.1. In addition, Table 2.3 shows the results of the heaping index, another method used for the evaluation of heaping. The index is expected to be close to 1 in the case of no heaping.

The heaping index is equal to the number of segments at the reported duration divided by the average number of segments at the two consecutive durations on either side. For example, the heaping index at 6 months is calculated as follows (Moreno et al., 1990):

Table 2.3   Heaping index on particular duration for all segments and uncensored segments in the calendar, Turkey 1993

Duration intervals (months)	All Segments	Uncensored Segments
6	1.05	1.10
12	1.10	1.26
18	0.77	0.76
24	0.96	1.10

$$\text{Heaping index at 6 months} = \frac{\text{Number of segments in 6 months}}{(\text{Total no. of segments in 4, 5, 7 and 8 months}) / 4}$$

Figure 2.1 shows no significant heaping in segment duration on prominent values. Similarly, it is observed in Table 2.3 that heaping indexes in 12 and 24 months are very close to 1, which are the most commonly expressed values in life table results. Lack of heaping shows that the discontinuation rates obtained by the life table technique were not significantly influenced by recall errors for duration of method use.

Figure 2.1 Percent Distribution of Reported Duration of Segments in the Calendar, Turkey 1993
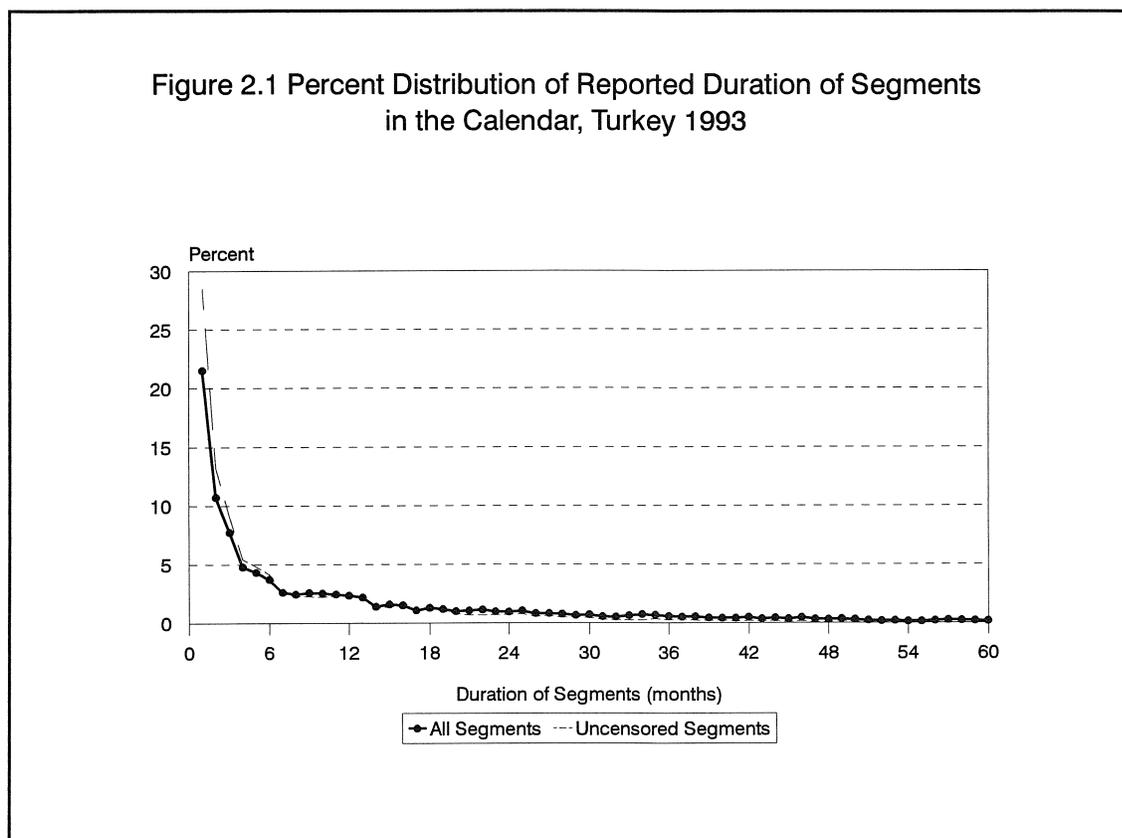
Recall errors are due to memory relapses or accidental event omission, like in the case of short periods of contraceptive use. Another type of error in retrospective surveys is deliberate omission or misreporting of events. Contraceptive failure that results in an unintended pregnancy is a sensitive and potentially embarrassing topic for many women in many countries. They may conceal contraceptive failures by misreporting them as wanted pregnancies. Many women who had gotten pregnant while using a method and terminated their pregnancy with an induced abortion, may hide this abortion during the interview. Misunderstanding of contraceptive failure, and expression of another reason for discontinuation by the women during the survey are other causes of errors. A simple approach to detect such misclassification of contraceptive failures is to tabulate the status of the woman immediately after discontinuation by the stated reason for discontinuation. If a woman was pregnant in the month after discontinuation but did not report contraceptive failure as the reason for discontinuation, she had probably misreported a reason to conceal contraceptive failure (Curtis and Hammerslough, 1995). Table 2.4 shows the distribution of the status of discontinued women in the month immediately following discontinuation, by reason for discontinuation.

Table 2.4 Distribution of discontinued segments of use by reason for discontinuation and status in the month immediately following discontinuation, Turkey 1993

| Reason for Discontinuation | Status in the month after discontinuation | | | | | Percent of exposed women who became pregnant[1] |
	Pregnant	Termination	Not using a method	Using another method	Total	
Contraceptive failure	540	239	0	0	779	100.0
Desire to get pregnant	80	2	387	2	471	17.5
Other reason	12	4	406	1005	1426	3.8
Total	632	245	793	1008	2676	52.5

[1] The exposed are defined as those users who are not using another method of contraception in the month following discontinuation of their original method, i.e., the denominator for the percentage includes those women who are pregnant, who experienced a termination, or who are not using any method of contraception.

Approximately 15 percent of women (92/632) who became pregnant in the month after discontinuation reported a reason other than contraceptive failure for discontinuation. Ninety-eight percent of women (239/245) who became pregnant in the month after discontinuation and terminated the pregnancy, reported contraceptive failure as the reason for discontinuation. Seventeen percent of the women (82/469) who discontinued due to desire for pregnancy and did not switch to another method afterwards, and 4 percent of the women (16/421) who discontinued for other reasons and did not switch to another method afterwards expressed that they had became pregnant in the month immediately after discontinuation. Although the percent of women who reported wanting a pregnancy as a reason for discontinuation and had become pregnant in the month immediately after discontinuation is considerably high, this percentage is lower than the commonly accepted monthly fecund ability of 0.2-0.3 (Bongaarts and Potter, 1983; Wood and Weinstein, 1988; Curtis and Hammerslough, 1995). Low pregnancy rates in the first month among women who discontinued for other reasons suggests that pregnancies terminated with induced abortion may be concealed in this group. These figures in general do not indicate that failures are misreported as discontinuations due to other reasons.

These data quality analyses do not detect any serious data quality problems in the calendar data. However, it should be considered that checks with such techniques may not recognize all errors. Studies based on U.S. data suggest that abortion reporting in surveys is extremely incomplete and that the omission of contraceptive failures resulting in induced abortion causes a substantial downward bias in estimates of contraceptive failure rates (Grady et al., 1986; Jones and Forrest, 1992). Such underreporting is extremely difficult to detect without reliable external information on induced abortion, which is rarely available (Curtis and Hammerslough, 1995).

2.4 Statistical Methods

A calendar was used in the 1993 TDHS to collect monthly data for each method used from January 1988 to the date of the survey. As explained before, only the 60-month period between 3-62 months prior to the survey was taken into consideration in the analysis. The analysis unit for discontinuation studies is not the woman using a method but a certain segment of contraceptive use. If a women has used more than one method during the period covered by the survey, she contributes to the analysis with segments equal to the number of methods she used. The duration of use is known for the segments started within the survey period

and discontinued before the end of the survey. However, the duration can not be known for the methods that are still used at the end of the survey (censored observation). Furthermore, each segment of method use has a different starting date. The life table technique is the most suitable method for the analysis of data which includes censored observations and different starting dates for each observation. The life table technique, which had initially been developed for the analysis of morbidity and mortality studies, has been adapted to many problems involving a "transition" from one event to another. For discontinuation studies, the transition is the discontinuation of a method. Various life table techniques was used for the analysis of this survey (Curtis and Hammerslough, 1995; Sinquefield, 1973; Trussell and Menken, 1982; Laing, 1982).

The "single-decrement" life table technique was used for the calculation of discontinuation rates for each method and the comparison of discontinuation rates for each method in various groups. Twelve and 24-month discontinuation rates and median duration for discontinuation (time period required for half of the users to discontinue) were presented as a summary of the single-decrement life table results.

"Multiple-decrement" life tables were developed for the analysis of situations in which discontinuation is grouped by reason for discontinuation or status following discontinuation, and the results were summarized as the 12-month discontinuation rates for each reason or status. Rates calculated from multiple-decrement life tables are called net discontinuation rates. Discontinuation rates calculated for each reason or status are dependent on the discontinuation rates due to the other reasons or situations which are competing with them. Multiple-decrement life tables were used in the analysis of discontinuation rates by reason for discontinuation, method switching and method adoption.

The "associated single-decrement" life table technique is used for the calculation of "underlying" discontinuation rates due to a certain reason, without the existence of other reasons. Underlying discontinuation rates of a certain reason are also called gross discontinuation rates. Gross discontinuation rates are theoretical rates and are always higher than net discontinuation rates. They are generally used for the comparison of discontinuation rates due to a certain reason in different population groups since they are not influenced by discontinuation rates due to other reasons. The associated single-decrement life table technique was used for the comparison of discontinuation rates according to various characteristics for each method.

Single-decrement and associated single-decrement life tables was prepared by using the life table module of SPSS PC+ statistical software. Cross tables required for multiple-decrement life tables was obtained by using SPSS PC+ and life tables was prepared by using Lotus 1-2-3.

3   CONTRACEPTIVE DISCONTINUATION RATES

In order to evaluate the success of a particular contraceptive method in preventing unwanted pregnancies, it is essential to know the continuation rate as well as the number of women using that method in a particular moment. Contraceptive discontinuation rates become an increasingly important indicator of the success and quality of family planning programmes as contraceptive use increases. High discontinuation rates may suggest either dissatisfaction among users or a high level of failure. Counseling services provided as a part of family planning programmes are an important factor determining the continuity of the method. Inefficient individual counseling and lack of follow-up increase the frequency of discontinuation and unwanted pregnancies. In the evaluation of discontinuation rates, it should be kept in mind that discontinuation is not always a "negative" attitude. The main objective of family planning programmes is to provide the most convenient method for the couples. Sometimes the couples discontinue a method to switch to a more convenient method for them (Curtis and Hammerslough, 1995).

Table 3.1 shows 12-month and 24-month discontinuation rates and median duration of use for each method. While 12-month and 24-month discontinuation rates indicate the cumulative proportion of women who abandoned using a method in that particular period, the median duration of method use indicates the duration in which half of the users have discontinued that method.

Table 3.1	Life table discontinuation rates and median duration of use by method, Turkey 1993			
Method	12-month discontinuation rate (percent)	24-month discontinuation rate (percent)	Median duration of use (months)	Number of segments of use
Pill	55.7	71.6	9.5	735
IUD	10.0	20.5	49.5	1207
Condom	49.0	66.0	12.3	718
Other reversible modern	63.4	77.6	6.4	185
Withdrawal	38.4	55.7	18.9	2172
Other traditional	56.6	69.9	9.4	154
Total[1]	36.5	51.5	22.6	5266
Total[2]	37.2	52.3	21.7	5171

[1] All methods, including sterilization
[2] All reversible methods, i.e., excluding sterilization

When all methods, including female and male sterilization are considered together, the 12-month discontinuation rate is 37 percent and the 24-month rate is 52 percent. In approximately two years (23 months), half of the women (couples) who started to use a method abandon that method. When reversible methods are examined alone, there is little difference between these rates and those for all methods, indicating that sterilization is not a widely used method in Turkey.

When each method is examined alone, the highest discontinuation rates are found for other modern methods (injectables, diaphragm/foam/jelly) and other traditional methods (periodic abstinence, abstinence, vaginal douche). Among women using modern methods like injectables, diaphragm, foam and jelly, 63 percent abandon using the method in one year and 78 percent in two years. Half of those women discontinue in six months. Among women using traditional methods like periodic abstinence, abstinence and vaginal douche, the 12-month discontinuation rate is 57 percent and the 24-month rate is 70 percent. Half of the women using traditional methods other than withdrawal discontinue that method in nine months. Although discontinuation rates are very high, it should be noted that the number of related segments are very small.

The IUD is the most widely used modern method and has the lowest discontinuation rates. Ten percent of the women using the IUD discontinue in one year and 21 percent discontinue in two years. The duration in which half of the users discontinue is over four years (49.5 months). On the contrary, discontinuation rates for the pill and the condom are very high. Fifty-six percent of women using the pill discontinue in one year and 72 percent in two years. The one-year discontinuation rate is 49 percent and the two-year rate is 66 percent in couples using the condom. It is interesting to see that discontinuation rates for the pill and the condom are higher than that for withdrawal, which is the most widely used contraceptive method in Turkey. The 12-month discontinuation rate is 38 percent while the 24-month discontinuation rate is 56 percent in couples using withdrawal. Similarly, half of the women using the pill discontinue in 12 months and half of the couples using condoms discontinue in 12 months, while this period rises to 19 months for withdrawal. The discontinuation rate for withdrawal is lower than all other traditional methods and all modern methods except the IUD in Turkey.

Discontinuation rates for various contraceptive methods can differ either according to the characteristics of the method or the characteristics of the users. Therefore, it is useful to examine discontinuation rates according to selected background characteristics of the users to improve and evaluate family planning programmes. The effect of selected background characteristics on 12-month discontinuation rates and median duration of use are examined for the pill, IUD, condom and withdrawal—the most widely used methods in Turkey. Similar analysis could not be done for other methods since the number of segments were small. Similarly, the effect of the region on discontinuation rates of the pill and the condom could not be examined because of the inadequate number of pill and condom segments.

Table 3.2 presents 12-month discontinuation rates with 95-percent confidence intervals and median duration of use for the pill by selected background characteristics of users.

Table 3.2   Life table 12-month discontinuation rates with 95-percent confidence intervals and median duration of use for the pill by slected background characteristics, Turkey 1993

Background characteristics	12-month discontinuation rate (percent)	95-percent confidence interval		Median duration of use (months)	Number of segments of use
		Lower bound (percent)	Upper bound (percent)		
Residence					
Urban	56.4	51.9	60.9	9.5	485
Rural	54.3	47.8	60.8	9.2	250
Age					
<=24	54.8	48.9	60.7	10.6	291
25-29	57.8	50.9	64.7	9.1	221
30+	55.1	48.2	62.0	8.8	223
Level of education					
None	50.2	42.6	57.8	12.0	177
Primary	55.1	50.2	60.0	9.5	433
Secondary+	66.,1	57.3	74.9	5.1	125
Contraceptive intention					
Spacer	60.6	54.5	66.7	7.1	270
Limiter	52.7	48.0	57.4	10.8	465
No. of live births					
0 - 1	67.2	60.1	74.3	5.6	185
2 - 3	49.4	43.9	54.9	12.1	355
4+	55.5	48.2	62.8	10.5	195
Total	55.7	52.0	59.4	9.5	735

Among pill users, there is no precise effect of type of residence and respondent's age on discontinuation rates. The difference between 12-month discontinuation rates and median duration of use for urban and rural areas are not statistically significant. Even though there is not a significant relationship between age and the 12-month discontinuation rate, the relationship between the starting age of the respondent and median duration of use is obvious. As the starting age increases, median duration of pill use decreases. Younger women, those 24 years and below, have a median duration of 11 months while older women (30 and above) have a median duration of 9 months.

There is a considerable relationship between level of education and pill use although it is not statistically significant. With increasing level of education, discontinuation rates increase and median duration of use decreases. This relationship is more obvious in women with secondary or higher education. While 50 percent of women with no education or incomplete primary education discontinue in one year, this proportion increases to 66 percent in women with secondary or higher education. Similarly, half of the women with secondary or higher education discontinue in five months while this duration is approximately twice as long for women with lower levels of education.

There is a considerable relationship between discontinuation and desire for another child although it is not statistically significant. The 12-month discontinuation rate in women who do not want another child (53 percent) is lower than the rate in women who want another child (61 percent). In line with this, the median duration of use in women who do not want another child is higher than the duration in women who want another child.

The number of live births in pill users significantly affects discontinuation rates. The 12-month discontinuation rate for women who have 2 or 3 live births (49 percent) is lower than both the women who have 0 or 1 live births (67 percent) and the women who have 4 or more live births (56 percent). The former difference is found to be statistically significant while the latter is not significant. Also, the 12-month discontinuation rate of women who have 4 or more live births is lower than that of women who have 0 or 1 live births, although the difference is not significant. Half of the women who have 0 or 1 live births discontinue in six months while this period is approximately two times that for women who have more live births.

Table 3.3 shows 12-month discontinuation rates with 95-percent confidence intervals and median duration of use for the IUD by selected background characteristics of users. It can be seen that regional differences and type of residence have no certain effect on discontinuation rates for the IUD. Nevertheless, 12-month discontinuation rates in the Central and North Regions (11 percent and 12 percent, respectively) are slightly higher than the other regions. The longest median duration of use is in the East (58 months). Although the 12-month discontinuation rate in rural areas (11 percent) is slightly higher than urban (10 percent), the duration in which half of the women discontinue is longer in rural areas (58 months) than in urban areas (48 months). This situation suggests than even though discontinuation in one year is higher in rural areas, long-term IUD use is more prevalent in rural areas than in urban.

Table 3.3   Life table 12-month discontinuation rates with 95-percent confidence intervals and median duration of use
for the IUD by selected background characteristics, Turkey 1993

Background characteristics	12-month discontinuation rate (percent)	95-percent confidence interval		Median duration of use (months)	Number of segments of use
		Lower bound (percent)	Upper bound (percent)		
Region					
West	9.7	6.8	12.6	51.9	429
South	8.5	4.8	12.2	47.6	234
Central	11.3	7.6	15.0	45.5	311
North	11.7	4.1	19.3	48.9	74
East	9.7	4.8	14.6	57.5	159
Residence					
Urban	9.6	7.6	11.6	48.3	907
Rural	11.1	7.5	14.9	58.0	300
Age					
<=24	12.1	9.0	15.2	41.0	436
25-29	9.2	6.1	12.3	50.2	344
30+	8.5	5.8	11.2	>60	427
Level of education					
None	11.2	7.3	15.1	>60	259
Primary	10.6	8.1	13.1	48.6	669
Secondary+	7.3	4.2	10.4	47.1	279
Contraceptive intention					
Spacer	15.5	11.4	19.6	36.6	348
Limiter	7.8	5.8	9.8	>60	859
No. of live births					
0 - 1	13.7	9.4	18.0	36.7	284
2 - 3	8.6	6.2	11.0	54.8	645
4 +	9.6	6.1	13.1	>60	279
Total	10.0	8.2	11.8	49.5	1207

Although it is not statistically significant, there is a trend between age, 12-month discontinuation rates, and median duration of use. While 12 percent of the women 24 years of age and below discontinue in one year, this rate decreases to 9 percent in women 30 years of age and above. Similarly, half of the women 24 years of age and below discontinue in 41 months while this duration increases to over 60 months in women 30 years of age and above.

The relationship between level of education and discontinuation for the IUD is not statistically significant. The 12-month discontinuation rates for women with secondary or higher education is considerably lower than for women with lower levels of education. However, median duration of use in women with no or incomplete primary education (more than 60 months) is considerably longer than women with higher levels of education. Although the one-year discontinuation rate is higher in women with low levels of education, the long-term continuation rate is also higher compared to women with higher levels of education.

As expected, there is a statistically significant relationship between IUD discontinuation and desire for another child. The one-year discontinuation rate for women who do not want another child (8 percent) is half that of women who want another child (16 percent). Similarly, median duration of use is 37 months in women who want another child while this period is more than 60 months in women who do not want

another child. The relationship between discontinuation and number of live births is similar, although it is not statistically significant. While the 12-month discontinuation rate in women who have 0 or 1 live births is higher than women who have 2 or more live births, median duration of IUD use is lower in the former group than in the latter.

Table 3.4 shows 12-month discontinuation rates with 95-percent confidence intervals and median duration of condom use by selected background characteristics of users. Although it is not statistically significant, there is a considerable relationship between condom discontinuation and type of residence. Fifty-eight percent of the couples in rural areas discontinue in one year while this rate is 46 percent in urban areas. Similarly, the duration in which half of the users discontinue is 9 months in rural and 13 months in urban areas.

Table 3.4   Life table 12-month discontinuation rates with 95-percent confidence intervals and median duration of condom use by selected background characteristics, Turkey 1993

Background characteristics	12-month Discontinu-ation rate (percent)	95-percent confidence interval		Median duration of use (months)	Number of segments of use
		Lower bound (percent)	Upper bound (percent)		
Residence					
Urban	46.2	41.7	50.7	13.1	542
Rural	57.7	49.9	65.5	9.2	176
Respondent's age					
<=24	59.2	52.9	65.5	9.0	272
25-29	46.2	39.3	53.1	13.7	226
30+	38.9	32.0	45.8	18.9	220
Level of education					
None	48.7	39.1	58.3	12.5	119
Primary	50.1	44.6	55.6	11.9	363
Secondary+	47.3	40.4	54.2	12.9	236
Contraceptive intention					
Spacer	57.7	51.8	63.6	9.1	310
Limiter	42.2	37.1	47.3	17.2	408
No. of live births					
0 - 1	57.2	50.9	63.5	9.3	265
2 - 3	45.6	39.7	51.5	14.3	327
4 +	38.9	30.8	48.8	17.9	122
Total	49.0	48.6	49.4	12.3	718

There is a significant relationship between women's age and condom discontinuation. The 12-month discontinuation rate decreases and median duration of use increases with the age. While 39 percent of women above 30 years of age discontinue in one year, this percentage rises to 59 percent in women 24 years of age and below. This difference is statistically significant. Although not significant, the 12-month discontinuation rate is lower in women age 25-29 years than in women age 24 years and below, and lower in women age 30 years and above than in women age 25-29 years. The duration in which half of the women age 30 years and above discontinue (19 months) is approximately twice as long as the duration for women age 24 years and below.

There is no relationship between level of education and the 12-month discontinuation rate and median duration of use. Although there are considerable trends between these indicators and level of education (either in a positive or negative direction) for the pill, the IUD and withdrawal (Table 3.5), it is interesting to find no such trend for the condom.

Desire for another child and number of live births have a strong effect on condom discontinuation. While 58 percent of women who want another child discontinue in one year, this rate drops to 42 percent in women who do not want another child. Similarly, median duration of use in women who do not want another child (17 months) is twice as long as for the women who want another child (9 months).

The one-year discontinuation rate for women who have 4 or more live births (39 percent) is lower than for women who have 0 or 1 live births (57 percent); this difference is statistically significant. Also, the 12-month discontinuation rate in women who have 2 or 3 live births is lower than for women who have 0 or 1 live births, and the rate in women who have 4 or more live births is lower than for women who have 2 or 3 live births; however, these differences are not significant. In line with those results, the duration in which half of the women who have 0 or 1 live births discontinue is 9 months while it increases to 18 months in women who have 4 or more live births.

Table 3.5 shows 12-month discontinuation rates with 95-percent confidence intervals and median duration of use for withdrawal by selected background characteristics of users. There is no considerable relationship between regions, 12-month discontinuation rates and median duration of use. Nevertheless, median duration of use is longer in the East (23 months) and in the North (21 months) than other regions. Type of residence also does not have a considerable effect on withdrawal discontinuation.

On the contrary, age, level of education, desire for another child and number of living children have statistically significant effects on withdrawal discontinuation. The 12-month discontinuation rate decreases and median duration of use increases with the age. One-year discontinuation rates are 49 percent for women age 24 years and below, 36 percent for women age 25-29, and 25 percent for women age 30 years and above. While half of the women age 24 years and below discontinue withdrawal in 13 months, this duration increases three times (40 months) in women age 30 years and above. Differences between 12-month discontinuation rates of all age groups are found to be statistically significant.

The 12-month discontinuation rate increases with level of education. Twenty-nine percent of the women with no or incomplete primary education discontinue withdrawal in one year. This proportion is 39 percent in women with primary education and 49 percent in women with secondary or higher education. Similarly, while half of the women with no or incomplete primary education discontinue in 29 months, this duration drops to 12 months in women with secondary or higher education. Differences between 12-month discontinuation rates of all education groups are found to be statistically significant.

Fifty percent of the women who want another child discontinue in one year, while this figure drops to 30 percent in women who do not want another child. Median duration of use in women who do not want another child (33 months) is approximately three times that of the other group.

Table 3.5 Life table 12-month discontinuation rates with 95-percent confidence intervals and median duration of use for withdrawal by selected background characteristics, Turkey 1993

Background characteristics	12-month discontin- uation rate (percent)	95-percent confidence interval		Median duration of use (months)	Number of segments of use
		Lower bound (percent)	Upper bound (percent)		
Region					
West	39.5	36.0	43.0	18.6	831
South	37.8	32.1	43.5	18.2	320
Central	39.2	34.5	43.9	17.5	487
North	35.5	29.4	41.6	20.7	277
East	37.2	30.7	43.7	23.4	257
Residence					
Urban	38.8	36.2	41.6	18.5	1,427
Rural	37.8	33.9	41.3	19.6	745
Age					
<=24	48.5	45.2	51.8	12.5	963
25-29	36.0	31.7	40.3	21.4	573
30+	25.0	21.5	28.5	39.7	636
Level of education					
None	28.5	24.2	32.8	28.9	499
Primary	39.2	36.3	42.1	18.2	1,325
Secondary+	49.4	43.7	55.1	12.3	348
Contraceptive intention					
Spacer	49.9	46.4	53.4	12.0	910
Limiter	30.1	27.4	32.8	32.6	1,262
No. of live births					
0 - 1	53.4	49.5	57.3	10.5	715
2 - 3	33.3	30.2	36.4	25.0	977
4 +	26.6	22.3	30.9	34.0	480
Total	38.4	36.2	40.6	18.9	2,172

A trend similar to the one related to respondent's age is observed between number of live births and 12-month discontinuation rates. While 53 percent of women who have 0 or 1 live births discontinue withdrawal in one year, this figure decreases to 33 percent in women who have 2 or 3 live births, and 27 percent in women who have 4 or more live births. These differences are statistically significant. Although it is not significant, the 12-month discontinuation rate of women who have 2 or 3 live births is considerably higher than women who have 4 or more live births. Similarly, the duration in which half of the women who have 0 or 1 live births discontinue is 11 months, while it rises three times (34 months) in women who have 4 or more live births.

4 CONTRACEPTIVE DISCONTINUATION RATES BY REASON FOR DISCONTINUATION

Examination of total discontinuation rates regardless of reason for discontinuation provides a useful insight to contraceptive discontinuation in general and influencing factors. However, examining the reasons for discontinuation may provide important benefits for development and monitoring of family planning policies. Understanding the reason for discontinuation of a particular contraceptive method can lead to the development of specific policies for particular reasons. In addition, analysis of the differences between discontinuation reasons for various contraceptive methods can lead to identifying the advantages and disadvantages of those methods and therefore to understanding contraceptive use dynamics in the population. Such information may provide an important contribution to the assessment of family planning programmes and the improvement of counseling services (Curtis and Hammerslough, 1995).

Table 4.1 presents 12-month discontinuation rates by reason for each method, and Figure 4.1 shows the breakdown of reasons for discontinuation for each method. Note that the column totals in Table 4.1 (total of discontinuation rates by each reason) are equal to the method discontinuation rates in Table 3.1. Reasons for discontinuation are summarized in five groups:

- Method failure (getting pregnant while using the method)
- To get pregnant
- Side effects or health concerns related to the method
- Other reasons related to the method (disapproval of the husband, difficulties in accessing the method, desire for using a more effective method, difficulties in using the method, high cost)
- Other reasons (absence of husband/infrequent coitus, stated difficulties in getting pregnant/being in menopause, divorce/separation/death of husband, fatalistic approach, other reasons)

Table 4.1   Life table 12-month discontinuation rates by reason for discontinuation and method, Turkey 1993

Method	Reason for discontinuation					
	Contra-ceptive failure	Desire to get pregnant	Side effects/ health concerns	Method-related reasons	Other reasons	Total
Pill	6.6	5.9	23.1	5.3	14.8	55.7
IUD	1.0	0.8	6.4	0.1	1.7	10.0
Condom	8.6	6.1	0.5	28.9	4.9	49.0
Other reversible modern	17.6	4.7	3.9	24.5	12.6	63.4
Withdrawal	16.1	6.8	0.1	11.8	3.6	38.4
Other traditional	24.8	14.7	0.7	11.7	4.7	56.6
Total[1]	10.2	5.2	5.1	10.8	5.2	36.5
Total[2]	10.4	5.3	5.2	10.9	5.3	37.1

[1] All methods, including sterilization
[2] All reversible methods, i.e., excluding sterilization

When all reversible methods are examined, 12-month discontinuation rates for each reason are as follows: 11 percent due to method-related reasons, 10 percent due to contraceptive failure, 5 percent due to desire to get pregnant, 5 percent due to side effects or health concerns, and 5 percent due to other reasons. Since sterilization is not a preferred method in Turkey, 12-month discontinuation rates by reason for discontinuation for all methods are very close to the rates for reversible methods only.

Figure 4.1 Percent Distribution of 12-Month Discontinuation Rates by Reason for Discontinuation, According to Method, Turkey 1993
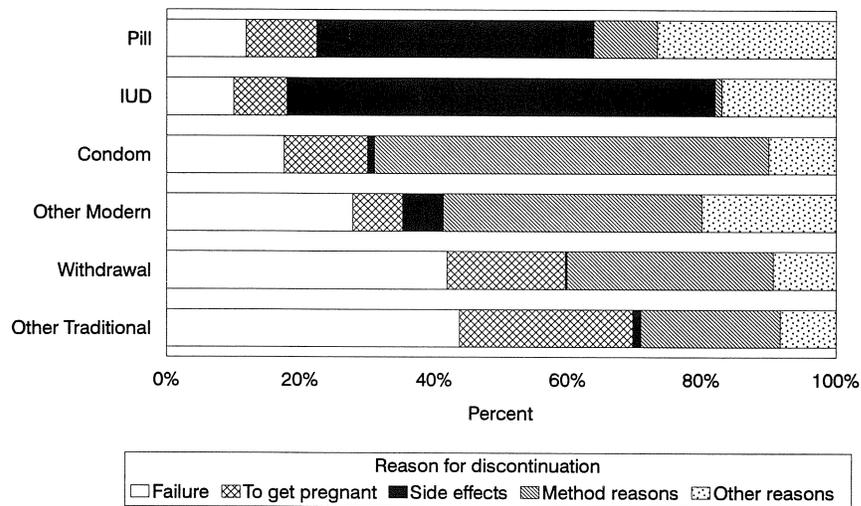
Among modern methods, the 12-month failure rate is 1 percent for the IUD, 7 percent for the pill, 9 percent for the condom and 18 percent for other modern methods. Twelve-month failure rates for the pill, condom, and other modern methods (mostly vaginal barrier methods like diaphragm, foam and jelly) seem to be well above the clinical failure rates of those methods. This might be related to the high proportion of user error for modern methods other than the IUD (characteristics of the method do not allow user error for the IUD) which indicates the inadequacy of individual counseling services in family planning programmes. In addition, side effects, health concerns or method-related reasons for methods other than the IUD may have a negative effect on the motivation of individuals to use the method regularly and may increase user errors.

The most common reason for discontinuation of traditional methods is contraceptive failure. The 12-month failure rate is 16 percent for withdrawal, the most widely used contraceptive method in Turkey, and 25 percent for other traditional methods (periodic abstinence, abstinence and vaginal douche) which are very high rates. Among all reasons for discontinuation, the proportion of failure is 10 percent for the IUD and the pill, 20 percent for barrier methods (mostly the condom) and 40 percent for traditional methods

(mostly withdrawal) (Figure 4.1). Considering that 45 percent of women using any method use traditional methods, and failure rates of these methods are very high, the importance of policies directed towards couples using traditional methods is obvious in developing family planning programmes.

The most frequent reason for 12-month discontinuation among IUD and pill users is side effects and health concerns. Twenty-three percent of women using the pill and 6 percent of women using the IUD discontinue in one year due to side effects and health concerns. When the breakdown of reasons are examined by method (Figure 4.1) the proportion of side effects and health concerns among all reasons is 64 percent for the IUD and 42 percent for the pill. Since the IUD and the pill are the most common modern methods and the most stated reason for discontinuation is side effects and health concerns for both methods, individual counseling and follow-up services for the IUD and the pill have to be strengthened.

Method-related reasons other than health are the most common reasons for discontinuing condom use and other modern methods (mostly barrier methods). Twenty-nine percent of the couples using condoms and 25 percent of the couples using other modern methods discontinue due to method-related reasons in one year. Method-related reasons are also important for discontinuation of traditional methods. Twelve percent of the couples using traditional methods discontinue in one year due to those reasons. Among all reasons for discontinuation, the proportion of method-related reasons is 60 percent for condoms, 40 percent for other modern methods and 30 percent for withdrawal (Figure 4.1). Other reasons related to the method include the following: disapproval of the husband, difficulties in accessing the method, desire for using a more effective method, difficulties in using the method, and high cost. If couples using condoms and other barrier methods have such problems related with the method, it would be more convenient for them to switch to another modern method. To do so requires an increase in the number of contraceptive methods offered in family planning institutions and the development of individual counseling services for alternative methods.

Twelve-month discontinuation rates due to desire to get pregnant are between 5 and 7 percent for methods except the IUD and other traditional methods. This rate drops to 1 percent for the IUD and increases to 15 percent for other traditional methods. This suggests that IUD users are mostly women who do not want another child, or spacers, while other traditional method users are women who want another child and are using that method for a short period of time. High failure rates observed for other traditional methods support this idea, indicating that the motivation of these couples for using a regular method is not so high.

"Other reasons" for discontinuation include situations related to low risk of pregnancy, such as: absence of husband, infrequent coitus, stated difficulties in getting pregnant, menopause, divorce, separation, death of husband, fatalistic approach and other reasons. It is observed that 15 percent of women using the pill and 13 percent of women using other modern methods discontinue in one year due to these reasons. This rate is between 2 percent and 5 percent for all methods except the pill and other modern methods. Among all reasons for discontinuation, "other reasons" is the second most common for the IUD and the pill, and the third most common for other modern methods.

Table 4.2 shows the distribution of 12-month discontinuation rates the for pill by reason for discontinuation and selected background characteristics. Twelve-month total discontinuation rates do not differ very much according to type of residence among pill users. However, there are remarkable differences in the pattern of reasons for discontinuation between urban and rural areas. While desire for pregnancy, side effects and health concerns, and "other reasons" are most prevalent in urban areas, failure and method-related reasons are twice as frequent in rural areas than in urban areas. The high failure rate in rural areas

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may be related to the low quality of family planning services compared to that in urban areas. Method-related reasons include factors related to the provision of family planning services, like difficulties in accessing the method or cost of the method. Low accessibility of services and high probability of delay in the procurement and distribution of pills in rural areas may increase discontinuation rates due to method- related reasons other than health.

Table 4.2	Life table 12-month discontinuation rates for the pill by reason for discontinuation, and selected background characteristics, Turkey 1993					
	Reason for discontinuation					
Background characteristics	Contraceptive failure	Desire to get pregnant	Side effects/ health concerns	Method-related reasons	Other reasons	Total
Residence						
Urban	4.9	6.9	24.3	3.9	16.3	56.4
Rural	9.9	3.9	20.8	8.0	11.7	54.3
Age						
<=24	7.8	10.2	23.8	5.5	7.5	54.8
25-29	5.9	3.0	25.1	5.3	18.5	57.8
30+	5.8	3.0	20.3	5.1	20.8	55.1
Level of education						
None	5.5	4.6	22.7	7.3	10.1	50.2
Primary	7.3	4.9	23.8	4.8	14.2	55.0
Secondary+	5.5	11.4	21.4	4.4	23.3	66.1
Contraceptive intention						
Spacer	5.7	15.5	25.3	4.0	10.1	60.6
Limiter	7.1	0.2	21.9	6.1	17.5	52.7
No. of live births						
0 - 1	9.5	17.8	21.9	5.0	12.9	67.2
2 - 3	5.5	2.4	24.1	5.5	12.0	49.4
4+	5.6	0.7	22.6	5.1	21.5	55.5
Total	6.6	5.9	23.1	5.3	14.8	55.7

Although there is not a significant relationship between age and 12-month total discontinuation rates, the distribution of reasons according to the age groups shows remarkable differences. It is expected that young women will have an increased desire to have children and a low motivation for regular method use. In fact, discontinuation due to failure and desire for pregnancy is higher in women age 24 years and below than in women age 25 years and above. Discontinuation due to "other reasons" (decreased pregnancy risk and decreased need for contraceptives) is higher in women age 25 years and above.

The 12-month total discontinuation rate gradually increases with increasing level of education. On the contrary, there is no trend between pill failure rates and level of education. The failure rate in women with primary education is higher than women with no or incomplete primary education and women with secondary or higher education. Discontinuation to get pregnant is remarkably prevalent among women with secondary or higher education. This situation suggests that the reason for women with secondary or higher education to use the pill is to extend the period between pregnancies. Discontinuation due to "other reasons" is also higher in women with secondary or higher education. In women with no or incomplete primary education, discontinuation due to method-related reasons is higher than the other groups. This may be related

to the effect of type of residence rather than to the level of education, considering that most of the lower educated women live in rural areas.

The 12-month total discontinuation rate in women who want another child is higher than the rate for women who do not want another child. This difference is mostly due to the high discontinuation rate to get pregnant among women who want another child. The discontinuation rate to get pregnant is very low in women who do not want another child. Similarly, discontinuation due to "other reasons"—mostly consisting of situations in which pregnancy risk has decreased—is also higher in women who do not want another child. The effect of desire for another child on the failure rate is somewhat different than expected. The failure rate in women who want another child is lower than the other group, although it is expected to be higher because of low motivation for regular method use.

There is no relationship between number of live births and 12-month total discontinuation rates. However, discontinuation patterns show considerable differences according to the number of live births. Discontinuation to get pregnant decreases with increasing number of live births. Discontinuation of the pill to get pregnant is very frequent in women who have 0 or 1 live births (18 percent), due to the effect of desire for another child. In addition, failure rates are high in this group probably due to low motivation for regular method use. Discontinuation due to other reasons is considerably high in women who have 4 or more live births (22 percent).

Age, desire for another child, and number of live births have similar effects on the pattern of reasons for discontinuation of the pill. Side effects and health concerns seem to be important factors that limit the continuation of pill use for all women, regardless of differences in background characteristics as illustrated by the similar discontinuation rates.

Table 4.3 shows the distribution of 12-month discontinuation rates for the IUD by reason for discontinuation and selected background characteristics. Since 12-month total discontinuation rates for the IUD are low, it is difficult to evaluate the differences in discontinuation rates by reasons for discontinuation according to various factors.

Table 4.3 Life table 12-month discontinuation rates for the IUD by reason for discontinuation, and selected background characteristics, Turkey 1993

Background characteristics	Contraceptive failure	Desire to get pregnant	Side effects/ health concerns	Method-related reasons	Other reasons	Total
Region						
West	0.3	0.7	7.1	0.9	1.6	9.7
South	0.3	1.1	4.6	0.4	2.2	8.5
Central	1.5	0.8	7.0	0.0	1.9	11.3
North	3.7	0.0	7.1	0.0	0.8	11.7
East	1.5	0.8	5.7	0.0	1.7	9.7
Residence						
Urban	0.9	0.8	6.4	0.1	1.4	9.6
Rural	1.2	0.8	6.3	0.0	2.8	11.2
Age						
< =24	1.1	1.5	7.2	0.9	2.3	12.1
25-29	1.5	0.5	5.4	0.9	1.8	9.2
30+	0.4	0.3	6.4	0.2	1.2	8.5
Level of education						
None	0.9	0.3	8.6	0.0	1.3	11.2
Primary	0.9	1.3	6.3	0.1	1.9	10.6
Secondary+	1.2	0.0	4.5	0.0	1.7	7.3
Contraceptive intention						
Spacer	1.0	2.4	8.7	0.0	3.3	15.5
Limiter	1.0	0.2	5.5	0.1	1.1	7.8
No. of live births						
0 - 1	0.5	2.7	7.4	0.0	3.1	13.7
2 - 3	1.1	0.3	6.1	0.0	1.0	8.6
4 +	1.1	0.0	6.0	0.3	2.2	9.6
Total	1.0	0.8	6.4	0.1	1.7	10.0

Twelve-month total discontinuation rates are slightly higher in the North and Central Regions than in other regions. The North Region is remarkable both for the highest failure rate and the lowest rate of discontinuation to get pregnant. In the Central and East Regions, IUD failure rates are considerably higher than in the West and South. Side effects and health concerns, which are the most common reasons for IUD discontinuation, are lower in the South and East Regions. No considerable difference is observed in 12-month IUD discontinuation rates and pattern of reasons for discontinuation by type of residence.

The 12-month total discontinuation rate is remarkably higher in women who start using the IUD at the age of 24 or below, compared to women who start using the IUD in the other age groups. In women age 24 years and below, discontinuation rates due to desire to get pregnant, side effects/health concerns, and "other reasons" are higher than among women age 25 and above. The low failure rate in the 30 and above age group may be due to low fertility in this group.

The 12-month total discontinuation rate decreases with increasing level of education. Discontinuation rates due to side effects and health concerns drop steadily as educational level increases. This situation might be related to high usage of IUD follow-up services as well as high motivation of method

use in women with higher levels of education. Discontinuation due to desire to get pregnant is considerably higher in women with primary education than the other two educational categories.

The discontinuation rate due to desire to get pregnant is considerably higher in women who want another child than women who do not want another child. High rates of discontinuation due to side effects/health concerns and "other reasons" in these women suggest that motivation for continuing the method is low in women who want another child.

The effect of number of live births on discontinuation closely resembles the effect of age and desire for another child. Discontinuation due to desire to get pregnant is considerably higher for women who have 0 or 1 live births than for the other women. Discontinuation due to side effects/health concerns and "other reasons" are also high in this group, probably because of low motivation to continue the method. Among women who have 4 or more live births, discontinuation due to "other reasons" is high, probably since that response mostly consists of reasons due to decreasing risk of pregnancy.

Table 4.4 shows the distribution of 12-month discontinuation rates for the condom by reason for discontinuation and selected background characteristics.

Table 4.4 Life table 12-month discontinuation rates for the condom by reason for discontinuation, and selected background characteristics, Turkey 1993

Background characteristics	Reason for discontinuation					
	Contraceptive failure	Desire to get pregnant	Side effects/ health concerns	Method-related reasons	Other reasons	Total
Residence						
Urban	8.1	6.4	0.6	26.0	5.1	46.2
Rural	10.1	4.9	0.0	38.5	4.2	57.7
Age						
<=24	7.8	8.4	1.3	37.3	4.4	59.2
25-29	9.8	5.2	0.0	27.0	4.2	46.2
30+	8.2	4.0	0.0	20.5	6.2	38.9
Level of education						
None	14.5	2.7	0.0	29.3	2.2	48.7
Primary	7.5	5.4	0.6	32.3	4.3	50.1
Secondary+	7.3	8.9	0.5	23.6	7.0	47.3
Contraceptive intention						
Spacer	8.2	13.2	1.1	30.7	4.4	57.7
Limiter	8.8	0.5	0.0	27.6	5.2	42.2
No. of live births						
0 - 1	8.5	13.1	0.9	29.9	4.6	57.2
2 - 3	6.5	2.1	0.3	30.0	6.7	45.6
4+	13.9	0.1	0.0	24.3	0.6	38.9
Total	8.6	6.1	0.5	28.9	4.9	49.0

The 12-month total discontinuation rate for condoms is remarkably higher in rural than in urban areas. This difference is mostly due to high discontinuation rates of method-related reasons and failure in rural areas. Method-related reasons include disapproval of the husband, difficulties in accessing the method,

and desire to use a more effective method. High rates of discontinuation due to those reasons in rural areas also suggest that the motivation to continue using the condom is not so high. This fact probably causes the failure rates to rise. Another reason for high discontinuation due to method-related reasons might be low accessibility of family planning services and delays in condom procurement and distribution in rural areas.

Twelve-month total discontinuation rates steadily decrease as the starting age of women increases. Particularly in women age 24 years and below, discontinuation due to method-related reasons is very high. Among younger women whose sexual life may be more active, reasons such as husband's disapproval may affect condom discontinuation. In addition, discontinuation due to desire to get pregnant is higher in women age 24 years and below than women of older ages.

Although there is not a considerable relationship between level of education and 12-month total discontinuation rates, the pattern of reasons for discontinuation change according to educational categories. The condom failure rate is twice as high in women with no or incomplete primary education than for women with higher education. The discontinuation rate due to desire to get pregnant increases with educational level. In women with secondary or higher education, discontinuation due to method-related reasons is lower than the other groups.

The 12-month total discontinuation rate for the condom is considerably higher in women who want another child. This difference is due to the high discontinuation rate due to desire for pregnancy in this group. Method-related reasons, which are the most common reasons for condom discontinuation, are not affected by desire for another child.

The 12-month total discontinuation rate gradually decreases with the increase in number of live births. As in women who want another child, discontinuation due to desire to get pregnant is high in women who have 0 or 1 live births. The condom failure rate increases in women who have 4 or more live births, paralleling the situation for women with no or incomplete primary education. In this group of women with 4 or more live births, the low rate of reasons other than failure may cause a relative increase in method failure rate.

Table 4.5 shows the distribution of 12-month discontinuation rates for withdrawal by reason for discontinuation and selected background characteristics. Twelve-month total discontinuation rates for withdrawal do not reveal a significant difference according to region, and patterns of reasons for discontinuation are similar among regions as well. However, it is remarkable that the discontinuation rate due to desire to get pregnant is twice as high in the West Region compared to the other regions. There is also no significant relationship between 12-month total discontinuation rates and patterns of reasons for discontinuation according to type of residence. Nevertheless, the discontinuation rate due to method-related reasons is slightly higher in urban areas.

The 12-month total discontinuation rate for withdrawal decreases steadily with age. While discontinuation due to desire to get pregnant is very high in women age 24 years and below, it is very low in women age 30 years and above. Low levels of failure in women age 30 years and above may be related to the decreasing fertility in older ages.

Table 4.5　Life table 12-month discontinuation rates for withdrawal by reason for discontinuation, and selected background characteristics, Turkey 1993

Background characteristics	Reason for discontinuation					
	Contraceptive failure	Desire to get pregnant	Side effects/ health concerns	Method-related reasons	Other reasons	Total
Region						
West	14.6	10.3	0.2	10.9	3.5	39.5
South	18.6	4.1	0.0	12.8	2.4	37.8
Central	16.7	4.3	0.0	13.9	4.3	39.2
North	15.6	5.9	0.2	8.8	5.0	35.5
East	17.0	4.6	0.4	12.6	2.7	37.2
Residence						
Urban	15.9	6.6	0.2	12.9	3.2	38.8
Rural	16.3	7.2	0.1	9.8	4.3	37.8
Age						
<=24	18.6	11.9	0.3	13.2	4.4	48.5
25-29	16.1	4.9	0.0	12.0	3.0	36.0
30+	12.1	0.8	0.0	9.3	2.9	25.0
Level of education						
None	15.5	2.0	0.0	8.2	2.8	28.5
Primary	16.4	7.4	0.2	11.1	4.1	39.2
Secondary+	15.5	11.5	0.0	19.4	2.9	49.4
Contraceptive intention						
Spacer	17.6	15.8	0.3	11.6	4.5	49.9
Limiter	14.9	0.3	0.0	11.9	3.0	30.1
No. of live births						
0 - 1	17.6	18.0	0.3	12.7	4.8	53.4
2 - 3	15.7	1.9	0.1	12.3	3.2	33.3
4 +	14.4	0.4	0.0	9.3	2.5	26.6
Total	16.1	6.8	0.1	11.8	3.6	38.4

The 12-month total discontinuation rate for withdrawal increases steadily with level of education as well as the discontinuation rate due to desire to get pregnant. The discontinuation rate due to desire to get pregnant is approximately 6 times lower in women with no or incomplete primary education, compared to women with secondary or higher education. Discontinuation due to method-related reasons also rises with the increasing level of education. It is interesting to find no trend between failure rates for withdrawal and level of education.

The 12-month total discontinuation rate is considerably lower in women who do not want another child. This difference is mostly because the discontinuation rate due to desire to get pregnant is very high in women who want another child, while it is very low in women who do not want another child.

The 12-month total discontinuation rate for withdrawal decreases steadily with the increasing number of live births. This effect originates from the high discontinuation rate due to desire to get pregnant in women who have 0 or 1 live births. The low failure rate in women who have 4 or more live births may be explained by the older age and lower fertility of these women.

Age, level of education, desire for another child, and number of live births have similar effects on the pattern of reasons for discontinuation for withdrawal. While less educated, older women who have more children use withdrawal to prevent pregnancy, more educated, younger women who have less children use that method for extending the period between pregnancies. Withdrawal failure, although similar in various subgroups, is the most common reason for discontinuation in all of these subgroups. The high failure rate in women age 24 and below who are more likely to be fertile particularly emphasizes the necessity of developing special family planning policies for couples using withdrawal.

5 CONTRACEPTIVE SWITCHING BEHAVIOUR

Contraceptive discontinuation and switching behaviours are closely related to each other. The effects of discontinuation on both the level of fertility and on women as individuals, depend on switching behaviour. If a woman terminates using a method for side effects and does not start using any other method immediately, she is at risk of unwanted pregnancy. If a woman discontinues a method for any reason other than to get pregnant or for a situation that decreases the risk of pregnancy (divorce, menopause, etc.) and does not switch to another method immediately, it indicates that current family planning services did not meet her needs successfully. Immediate switching of a woman to another method after terminating the use of a method will cause less problems than discontinuation, even if the failure rate of the new method is higher than the former one. In addition, switching is an indicator of the success of family planning programmes in providing the clients with a range of alternatives to meet their needs. Hence, from the perspective of developing and evaluating family planning policies in a country, behaviour of women after discontinuation is as important as the reason for discontinuation (Curtis and Hammerslough, 1995).

In this section, behaviour of women after termination of a method is examined. The proportion of women who do not use another method following the termination of a method is particularly of interest, because this group is at risk of unwanted pregnancy. However, it should be noted that some of the women who do not switch to another method may not need to use a method for a long period of time. Thus, the status of women *in the month immediately following discontinuation* is classified into four categories:

- Women who no longer need contraception
- Women who switch to another modern method
- Women who switch to another traditional method
- Women who discontinue (abandon use of the method) although they need contraception.

Users reporting that they discontinue for one of the following reasons are classified as "no longer needs contraception": getting pregnant while using the method (failure), absence of husband or infrequent coitus, stated difficulties in getting pregnant, menopause, divorce, separation, or death of husband. Although women who get pregnant while using the method constitute a special situation, they are included in this group because discontinuation due to failure is examined in detail in another section. Since failure rates of traditional methods are high, women who switch to traditional methods in the month following discontinuation of a method are classified separately from women who switch to modern methods. Users reporting that they discontinue for one of the following reasons are classified as "abandoned the use of a method although needs contraception": side effects or health concerns related to the method, disapproval

of the husband, difficulties in accessing the method, desire to switch to a more effective method, difficulties in using the method, method cost, fatalistic approach and other reasons.

Table 5.1 presents 12-month discontinuation rates by status immediately following discontinuation for each method. Note that the column totals in Table 5.1 are slightly different from the 12-month total discontinuation rates in Table 3.1, because women whose reasons for discontinuation were "unknown" are not included in the analysis.

Table 5.1   Life table 12-month discontinuation rates by status after discontinuation according to method, Turkey 1993

| Method | Status after discontinuation | | | | |
	No need to switch	Switch to modern	Switch to traditional	Abandon use	Total
Pill	17.8	12.7	11.6	13.9	56.0
IUD	2.5	1.8	3.1	2.8	10.3
Condom	15.4	15.6	14.6	3.9	49.6
Other reversible modern	27.1	17.1	12.1	7.0	63.4
Withdrawal	24.9	12.9	0.5	0.6	39.0
Other traditional	39.0	10.1	5.6	2.1	56.8
Total[1]	17.5	10.6	5.2	3.7	37.0
Total[2]	17.8	10.7	5.3	3.8	37.7

[1] All methods, including sterilization
[2] All reversible methods, i.e., excluding sterilization

Among women who discontinue a method, the ones who abandon the method although they need contraception, and the ones who switch from a modern method to a traditional method (which has a higher failure rate) are of special concern since they are at risk of pregnancy. When all reversible methods are examined, 16 percent of the users of those methods switch to any other method in one year. The 12-month rate of switching to a modern method (11 percent) is approximately twice the rate of switching to a traditional method (5 percent). This situation is related to the high switching rates to a modern method among women who discontinue withdrawal, which is the most commonly used method. Among women who switch to any method while using a modern method, half choose any modern and the other half choose any traditional (mostly withdrawal) method. The proportion of women who discontinue although they need contraception is very low (4 percent) compared to the proportion of women who switch. The proportion of women who do not need contraception at the time of discontinuation is as high as 18 percent, which is primarily related to discontinuation due to failure or desire to get pregnant. Since sterilization methods are not common in Turkey, rates for all methods are found to be very close to the values for all reversible methods.

Among modern methods, discontinuation rates in women who still need contraception considerably differ according to method. The discontinuation rate in pill users who still need contraception is 14 percent, which is five times that of IUD users, four times that of condom users, and twice that of other modern method users (mostly vaginal barrier method). Among traditional methods, discontinuation rates for women who still need contraception are considerably lower than for women using modern methods; the percentage is less than 1 percent for withdrawal.

Thirty percent of women using barrier methods and 24 percent of women using the pill switch to another method in one year; this rate drops to 5 percent for the IUD. Twelve-month switching rates both from other modern methods (mostly vaginal barrier) and condoms to any other modern method (17 percent and 16 percent, respectively) are higher than the switching rate of pill users to any other modern method (13 percent). Women using a modern method other than the IUD prefer switching to modern methods rather than traditional methods, while women using the IUD prefer switching to traditional methods. The 12-month switching rate to any modern method is 13 percent for withdrawal, but slightly lower from other traditional methods (10 percent). While switching to another traditional method is very low in withdrawal users, 6 percent of women using withdrawal switch to another traditional method in one year.

High failure rates of other reversible modern methods, withdrawal, and other traditional methods cause the proportion of women who do not need contraception at the time of discontinuation of those methods to increase considerably (27 percent, 25 percent, and 39 percent, respectively).

Figure 5.1 shows the distribution of the status of women following discontinuation. Twenty-five percent of women who discontinue the pill and the IUD still need contraception at the time of discontinuation. This proportion is remarkably higher than for the other methods. Thirty percent of women who discontinue the IUD and the condom and 21 percent of women who discontinue the pill switch to a traditional method. Sixty-five percent of women who discontinue withdrawal and 68 percent of women who discontinue other traditional methods do not need contraception at the time of discontinuation.

Figure 5.1 Percent Distribution of 12-Month Discontinuation Rates by Status after Discontinuation, According to Method, Turkey 1993
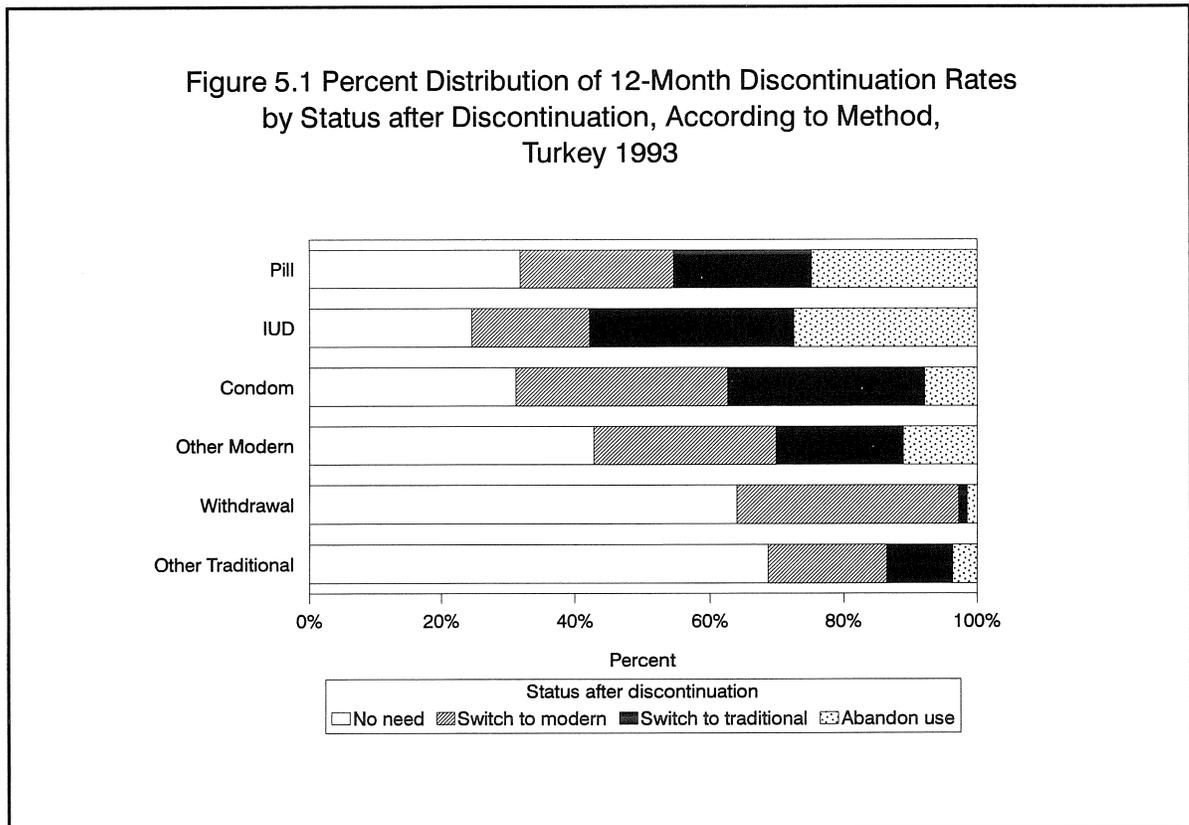
Table 5.2. presents the status of women after abandoning use of the pill, the IUD, and withdrawal. While method adoption behaviours of women who abandon the use of the pill and the IUD are similar, the behaviour of women who abandon the use of withdrawal is different. Forty-two percent of women discontinue the pill and 40 percent of women who discontinue the IUD get pregnant within 12 months. This rate drops to 23 percent in women who discontinue withdrawal. The proportion of women who do not get pregnant among women who abandon the pill and the IUD, and do not switch to any other method, is 23 percent and 29 percent respectively, while it is 68 percent for women who abandon withdrawal. This situation suggests that most of the women abandoning withdrawal who do not switch to any other method are older women with lower fertility. Approximately one-third of the women who abandon the pill or the IUD start using a method in one year. Among women who abandon withdrawal, the rates of switching to another method or returning to the same method are very low compared to women who abandon the pill or the IUD.

Table 5.2 Life table method adoption rates for women who abandoned a method by selected methods, Turkey 1993

	Status after abandoning method				
	Pregnant (percent)	Accept modern (percent)	Accept traditional (percent)	Return to the same method (percent)	Do not use (percent)
Pill (N=244)					
3 months	32.4	3.7	2.4	16.3	45.2
12 months	42.5	6.2	3.0	25.4	22.8
24 months	48.6	6.2	3.0	27.2	15.0
IUD (N=252)					
3 months	31.9	5.6	4.4	15.4	42.7
12 months	40.5	8.6	4.4	18.0	28.5
24 months	45.5	11.0	4.4	18.0	21.2
Withdrawal (N=180)					
3 months	16.7	1.7	0.0	2.0	79.6
12 months	22.8	3.3	0.0	6.3	67.6
24 months	31.8	5.8	0.0	12.0	50.4

When behaviour of abandoning a method while there is a need for contraception and switching from a modern to a traditional method are evaluated together, a considerable proportion of women using modern methods other than the IUD are exposed to a high risk of pregnancy within one year. In addition, the failure rates of these methods are well above the clinical failure rates. While 40 percent of women who abandon the pill and the IUD become pregnant in one year without starting to use a method, most of the group return to the same method despite the problems related with the method. These facts indicate that these women encounter some obstacles in finding an alternative contraceptive method. Therefore, the number of contraceptive methods provided in the family planning clinics should be increased, and individual counseling services on alternative methods and follow-up services for women using the pill and the IUD should be improved.

Table 5.3 shows 12-month discontinuation rates for the pill by status following discontinuation and selected background characteristics. Although there is not a significant difference in 12-month discontinuation rates by type of residence, the 12-month switching rate to modern methods is higher in urban areas while the 12-month switching rate to traditional methods is higher in rural areas. This situation can be explained by the higher accessibility to family planning services in urban areas. However, high rates of discontinuation among women who still need contraception in urban areas reveal that although they have access to family planning methods, these women have problems in finding a suitable alternative method. The high proportion of women who do not need contraception in rural areas may be due to higher failure rates in rural than urban areas.

Table 5.3   Life table 12-month discontinuation rates for the pill by status after discontinuation, and selected background characteristics, Turkey 1993

| Background characteristics | Status after discontinuation | | | | |
	No need to switch	Switch to modern	Switch to traditional	Abandon use	Total
Residence					
Urban	16.8	14.2	10.5	15.4	56.9
Rural	20.0	9.7	13.8	10.9	54.4
Age					
<=24	21.2	12.6	12.4	9.1	55.3
25-29	12.9	13.3	13.5	18.4	58.1
30+	18.2	12.3	8.8	16.0	55.2
Level of education					
None	18.4	10.8	7.4	13.7	50.3
Primary	18.1	11.8	12.6	12.7	55.2
Secondary+	16.2	18.5	14.2	17.9	66.8
Contraceptive intention					
Spacer	25.2	11.7	14.3	9.9	61.0
Limiter	13.4	13.3	10.0	16.3	53.0
No. of live births					
0 - 1	31.6	10.4	15.7	9.8	67.5
2 - 3	11.5	14.9	11.9	11.6	49.8
4+	15.5	11.0	7.1	21.9	55.6
Total	17.8	12.7	11.6	13.9	56.0

Approximately one-fourth of women age 29 years and below switch to another method in one year and the rate of switching to modern and traditional methods is the same. In women 30 years and older, the rate of switching to modern methods is the same as the other age groups, while the rate of switching to traditional methods is less. Discontinuation rates in women who still need contraception are higher in women age 25 years and above than among women age 24 years and below. The high proportion of women who do not need contraception among women age 24 years and below indicates high discontinuation rates due to failure of method and desire to get pregnant, while the same situation in women age 30 years and above indicates high discontinuation rates due to "other reasons" including situations in which the risk of pregnancy is less.

The 12-month total switching rate increases with educational level. Switching to modern methods is more frequent in women with secondary or higher education. Nevertheless, switching to traditional methods also increases with educational level. While the rate for switching to modern methods is higher among women with primary education and among women with secondary or higher education, switching

to traditional methods is slightly higher among women with secondary or higher education. While the proportion of women who do not need contraception at the time of discontinuation does not change with level of education, the proportion of women who still need contraception at the time of discontinuation is higher among women with secondary or higher education. It seems contradictory that while 17 percent of the higher educated pill users discontinue in one year due to failure or desire to get pregnant, and 23 percent of them discontinue due to "other reasons" (Table 4.2), the percentage of women who do not need contraception at the time of discontinuation in this group is only 16 percent. However, a detailed analysis on "other reasons" for discontinuation among women with secondary or higher education reveals that these reasons mostly consist of situations other than the ones indicating a decreased risk of pregnancy. High discontinuation rates in women with secondary or higher education although they still need contraception indicate that these women may have problems finding an alternative contraceptive method. The similarity of this effect with the effect of type of residence can be explained by assuming that most of the educated women live in urban areas.

The proportion of pill users who do not need contraception among women who want another child is almost twice that of women who do not want another child, because of the high rate of discontinuation due to desire for pregnancy among these women. The switching rate to traditional methods is higher in women who want another child, while the rate of switching to modern methods is higher among women who do not want another child. Among women who do not want another child, the highest discontinuation rate is among women who continue to be unprotected and need contraception.

The relationship between number of live births and method switching is similar to the relationship between desire for another child and method switching. The proportion of women who do not need contraception among previous pill users with 0 or 1 live births is 2-3 times higher than for women who have more live births. The 12-month method switching rate is higher for women who have 3 or less live births than for women who have 4 or more live births. In addition, women who have 0 or 1 live births prefer traditional methods while women who have 2 or 3 live births prefer modern methods. Although they do not switch frequently, women who have 4 or more live births prefer modern methods. However, the discontinuation rate among these women, despite the need for contraception, is very high, similar to the women who do not want another child. According to these findings, the pill does not seem to be a suitable method for women who have more live births and who probably do not want another child, yet these women have difficulties in finding another method convenient for them.

Table 5.4 shows 12-month discontinuation rates for the IUD by status following discontinuation. Low 12-month discontinuation rates for the IUD make it difficult to interpret the relationship between method switching and selected background characteristics.

Table 5.4 Life table 12-month discontinuation rates for the IUD by status after discontinuation, and selected background characteristics, Turkey 1993

Background Characteristic	Status after discontinuation				
	No need to switch	Switch to modern	Switch to traditional	Abandon use	Total
Region					
West	1.6	2.5	2.9	2.6	9.7
South	1.8	2.1	2.8	2.1	8.8
Central	3.1	1.1	3.8	3.6	11.6
North	4.6	1.7	1.8	4.4	12.5
East	4.0	0.7	3.4	2.2	10.3
Residence					
Urban	2.2	2.3	3.0	2.4	9.8
Rural	3.5	0.4	3.5	4.1	11.5
Age					
<=24	2.6	2.7	4.0	3.1	12.3
25-29	3.5	1.1	2.4	2.8	9.8
30+	1.6	1.5	2.8	2.6	8.5
Level of education					
None	2.2	1.8	3.9	3.5	11.4
Primary	2.7	1.7	3.1	3.2	10.7
Secondary+	2.3	2.2	2.3	1.2	8.1
Contraceptive intention					
Spacer	4.9	3.1	4.1	4.1	16.1
Limiter	1.6	1.3	2.7	2.3	7.9
No. of live births					
0 - 1	3.6	3.3	4.2	2.9	14.0
2 - 3	1.9	1.3	2.9	2.7	8.8
4 +	2.9	1.6	2.4	3.0	9.9
Total	2.5	1.8	3.1	2.8	10.3

In the North Region, the 12-month method switching rate is slightly lower, and the discontinuation rate despite the need for contraception is slightly higher than in the other regions. Switching to another modern method from the IUD is lower in the East than in the other regions. The discontinuation rate despite the need for contraception is considerably higher in rural than in urban areas. Similarly, the rate of switching to a modern method is higher in urban areas. High rates of switching from the IUD to another modern method in the West, South and urban areas can be explained by easy access to family planning services and availability of alternative modern contraceptive methods.

The 12-month switching rates for both modern and traditional methods are higher among women age 24 years and below compared to the other age groups. The discontinuation rate despite the need for contraception decreases slightly but steadily with age.

The 12-month total discontinuation rate for the IUD decreases with increasing educational level. The discontinuation rate despite the need for contraception is remarkably lower in women with secondary or higher education. In addition, the 12-month switching rate to another modern method is higher among these women than women with less education. Switching to traditional methods decreases with increasing level of education.

The rate of discontinuation for women who do not need contraception at the time of IUD discontinuation is approximately three times higher in women who want another child, due to the high percentage who discontinue to get pregnant. In line with this situation, the proportion of women who still need contraception at the time of IUD discontinuation is higher among women who want another child. Nevertheless, it is remarkable that contrary to expectations, 12-month switching rates to both modern and traditional methods is higher in this group than among women who do not want another child. Most likely, women who use the IUD in order to extend the period between pregnancies discontinue if their motivation to continue a method is low, and switch to another method if their motivation is high.

The proportion of women who do not need contraception at the time of IUD discontinuation is high among women who have 0 or 1 live births as well as among women who have 4 or more live births. The reason for the former group's discontinuation is desire to get pregnant, while it is decreased risk of pregnancy for the latter group. Switching rates to both modern and traditional methods are higher for women who have 0 or 1 live births, women age 24 years and below, and women who want another child.

It is expected that the motivation for using a method is high among women who are young, have one live birth, and use the IUD to extend the period between pregnancies. Nevertheless, IUD discontinuation due to side effects and health concerns is also high in this group, and it is high among women who prefer switching to traditional methods. Taking these facts into consideration, individual counseling services on alternative effective methods and follow-up services for the IUD should be improved for young women who use the IUD to space pregnancies.

Table 5.5 shows 12-month discontinuation rates for the condom by status following discontinuation. Discontinuation despite the need for contraception as well as switching to traditional methods is frequent in rural areas. This could be due to the low accessibility of family planning services and alternative methods in rural areas.

Twelve-month switching rates both to modern and traditional methods are highest in women age 24 years and below. Switching to traditional methods considerably decreases with age. The proportion of nonusers despite the need for contraception is high among women age 24 years and below, probably due to low motivation for continuing the method.

Table 5.5   Life table 12-month discontinuation rates for the condom by status after discontinuation, and selected background characteristics, Turkey 1993

| Background Characteristics | Status after discontinuation | | | | |
	No need to switch	Switch to modern	Switch to traditional	Abandon use	Total
Residence					
Urban	15.4	15.8	12.8	2.9	46.9
Rural	15.3	15.1	20.3	7.3	58.0
Age					
<=24	16.2	17.7	20.3	5.4	59.5
25-29	16.7	13.7	13.2	3.2	46.8
30+	13.0	15.0	8.7	2.9	39.6
Level of education					
None	17.1	11.1	13.1	7.7	49.0
Primary	13.8	15.8	17.9	2.6	50.1
Secondary+	17.1	17.6	10.3	4.0	48.9
Contraceptive intention					
Spacer	22.5	11.7	18.6	5.5	58.3
Limiter	10.0	18.7	11.5	2.8	42.9
No. of live births					
0 - 1	23.2	12.6	16.4	5.8	58.0
2 - 3	9.0	18.6	15.6	2.8	46.0
4+	14.8	14.4	8.0	2.8	40.1
Total	15.4	15.6	14.6	3.9	49.6

The proportion of women who still need contraception at the time of discontinuing condom use among women with no or incomplete primary education is higher than for women with a higher level of education. Similarly, the 12-month total switching rate is lower in these women, and women who switch prefer traditional methods. The 12-month switching rate to modern methods rises with level of education. The proportion of nonusers who still need contraception at the time of discontinuing condom use among women with primary education is considerably lower than for women in the other educational categories. The highest 12-month switching rate to traditional methods is observed for women with primary education.

The proportion of women who discontinue condom use despite the need for contraception among women who want another child is twice that of women who do not want another child. While desire for another child does not effect the 12-month total switching rate, women who want another child prefer traditional methods and women who do not want another prefer modern methods. The proportion of women who do not need contraception at the time of discontinuing condom use among women who want another child is twice as high as that of women who do not want another child, probably because of the high discontinuation of condoms to get pregnant.

The proportion of women who discontinue condom use despite the need for contraception among women who have 0 or 1 live births is twice that of the women who have 2 or more live births, similar to the effect of desire for another child. These women with 0 or 1 live births prefer to switch to traditional methods while women who have 2 or more live births prefer to switch to modern methods. The 12-month switching rate to traditional methods in women who have 4 or more live births is half that of the women who have fewer live births.

Table 5.6 shows 12-month discontinuation rates for withdrawal by status following discontinuation. Most of the women who discontinue withdrawal do not need contraception at the time of discontinuation, due to high failure rates and the desire to get pregnant. The effect of selected background characteristics on failure rates and pregnancy behaviours have been analysed in the previous section. Discontinuation despite the need for contraception and switching to traditional methods is occasionally seen in women practising withdrawal. Hence, only the effects of selected background characteristics on switching behaviour to modern methods are examined.

Table 5.6　Life table 12-month discontinuation rates for withdrawal by status after discontinuation, and selected background characteristics, Turkey 1993

Background Characteristics	Status after discontinuation				
	No need to switch	Switch to modern	Switch to traditional	Abandon use	Total
Region					
West	26.6	13.3	0.2	0.3	40.4
South	24.2	12.8	1.1	0.6	38.6
Central	23.5	14.9	0.9	0.2	39.5
North	24.9	9.2	0.0	1.5	35.6
East	23.3	11.5	0.9	1.4	37.2
Residence					
Urban	24.4	13.9	0.8	0.3	39.5
Rural	26.0	11.1	0.0	1.1	38.1
Age					
<=24	33.0	14.2	0.8	0.7	48.7
25-29	23.2	12.9	0.5	0.2	36.7
30+	14.1	10.9	0.2	0.9	26.1
Level of education					
None	19.9	8.1	0.0	1.0	29.1
Primary	26.3	12.7	0.3	0.5	39.8
Secondary+	27.2	20.5	2.1	0.3	50.1
Contraceptive intention					
Spacer	36.4	12.2	0.9	0.7	50.2
Limiter	16.7	13.4	0.2	0.5	30.9
No. of live births					
0 - 1	38.1	13.9	1.2	0.9	54.0
2 - 3	19.5	13.9	0.2	0.1	33.8
4 +	16.4	9.4	0.2	1.1	27.1
Total	24.9	12.9	0.5	0.6	39.0

The 12-month switching rate to modern methods is lower in the North Region than other regions. Although accessibility of family planning services and modern methods is high in urban areas, the 12-month switching rate to modern methods is not much higher than in rural areas. Switching to modern methods gradually decreases with increasing age while it increases with educational level. This situation suggests that women with secondary education and above use withdrawal as a transient method. Desire for another child has a very little effect on switching to modern methods. The 12-month switching rate to modern methods is remarkably lower for women who have 4 or more live births than for women who have fewer live births. Probably withdrawal is the only choice of contraception available to older, less educated women who have more children and who live in rural areas, although it has a high failure rate.

6   CONTRACEPTIVE FAILURE RATES

In this section, failure rates of the pill, the IUD, condoms and withdrawal are compared by selected background characteristics of women. Contraceptive failure rates often are of particular interest for studies on contraceptive use dynamics since they result directly in unwanted pregnancies. Method failure contributes to increases both in induced abortions and fertility levels. Indeed, as contraceptive use becomes widespread in a population and the desired family size decreases, contraceptive failures account for an increasing proportion of all pregnancies. Contraceptive failure rates vary considerably by method, but they also vary across subgroups of a population because some women use contraception more effectively than others. High failure rates may indicate inadequacy of counseling services and identifying the subgroups of users with high failure rates may be useful for improving family planning services (Curtis and Hammerslough, 1995).

Contraceptive failure may occur due to two reasons: the method itself fails, or the method is used incorrectly or inconsistently. Consequently, different definitions of failure rates are used to measure different types of contraceptive failure. The clinical failure rate attempts to measure failure under ideal conditions with correct use, and is primarily useful for clinical evaluation of contraceptive methods. The use-failure rate attempts to measure contraceptive failure rate in the population under the prevailing conditions of use, and is a more suitable indicator for the improvement and evaluation of family planning programmes. Data for the calculation of use-failure rates are collected in the Demographic and Health Surveys. All failure rates in this section are use-failure rates. The difference between clinical failure rates and use-failure rates tends to be large for methods with large potential for user error (e.g., the pill, condom, and periodic abstinence), but low for methods with low capacity for user error (e.g., the IUD and Norplant). Large differentials between clinical and use-failure rates can also be partly due to the differentials in fecundity levels (Curtis and Hammerslough, 1995).

The observed failure rate in a population is calculated from a multiple-decrement life table and discussed in section 4. The net failure rate obtained from the multiple-decrement life table depends not only on the level of failure but also on the level of discontinuation for other reasons. If discontinuation for reasons other than failure are very high, failure rates will correspondingly be reduced because few women are exposed to the risk of failure. Hence, differentials in net failure rates between methods and populations reflect not only differentials in the level of failure, but also differentials in the level of discontinuation for other reasons. If the levels of discontinuation for other reasons vary greatly between the different populations of interest, the comparison of failure rates will be distorted. The way to overcome this problem is to calculate failure rates using an associated single-decrement life table. Such a life table assumes that failure is the only risk operating. The life table is constructed by treating all discontinuations for reasons other than failure as censored observations. Hence, the effect of other competing reasons for discontinuation is eliminated. The failure rates calculated in this way are called "gross" failure rates. Gross failure rates are higher than the corresponding net failure rates because all other reasons for discontinuing contraception are eliminated, and they represent *theoretical* failure rates in a population while using a method (Curtis and Hammerslough, 1995).

Table 6.1 shows 12-month gross failure rates and 95 percent confidence intervals by method. The 12-month gross failure rate for reversible methods is calculated as 12.5 percent (11.5 percent-13.5 percent). This figure is almost the same for all methods, as sterilization is not common in Turkey. Gross failure rates for various methods greatly differ from each other. The lowest gross failure rate is 1.0 percent (0.4 percent-1.6 percent) for the IUD. This is because user errors are seldom found in IUD use. The highest gross failure rates are 24.6 percent (16.6 percent-32.6 percent) for other reversible modern methods (mostly vaginal barrier methods), and 29.9 percent (21.3 percent-38.5 percent) for other traditional methods. It is remarkable

that gross failure rates of other modern methods are very high and do not statistically differ from gross failure rates of other traditional methods. Although vaginal barrier methods are not a part of family planning services and not commonly used in Turkey, failure rates for these methods are similar to the failure rates of vaginal barrier methods in most countries (Jejeebhoy, 1991).

Table 6.1   Life table 12-month gross failure rates and 95-percent confidence intervals by method, Turkey 1993

| Method | Failure rate (percent) | 95-percent confidence interval | |
		Lower bound (percent)	Upper bound (percent)
Pill	9.7	7.0	12.4
IUD	1.0	0.4	1.6
Condom	11.7	8.8	14.6
Other reversible modern	24.6	16.6	32.6
Withdrawal	18.8	16.8	20.8
Other traditional	29.9	21.3	38.5
Total[1]	12.3	11.3	13.3
Total[2]	12.5	11.5	13.5

[1] All methods, including sterilization
[2] All reversible methods, i.e., excluding sterilization

The next lowest gross failure rates following the IUD belong to the pill and the condom. No statistically significant difference could be found between gross failure rates of the pill and condoms. The gross failure rate of the pill is 9.7 percent (7.0 percent-12.4 percent) while it is 11.7 percent (8.8 percent-14.6 percent) for the condom. These rates are very high compared to the clinical failure rates of the pill and condoms, which could be explained by the high proportion of user errors for these methods. Therefore, counseling and follow-up services for the pill and condoms should be encouraged when developing family planning policies.

While the failure rate for withdrawal of 18.8 percent (16.8 percent-20.8 percent) is higher than that of the IUD, the pill and condom, it is not statistically different from the other modern methods. (It should also be kept in mind that the number of segments for other modern methods is very low, hence the confidence interval is wide). The failure rate for withdrawal is lower than for the other traditional methods.

Table 6.2 shows 12-month gross failure rates and 95-percent confidence intervals for the pill by selected background characteristics. Wide confidence intervals due to the low number of segments for the pill make the evaluation difficult.

Table 6.2   Life table 12-month gross failure rates and 95-percent confidence intervals for the pill by selected background characteristics, Turkey 1993

Background Characteristics	Failure rate (percent)	95-percent confidence interval	
		Lower bound (percent)	Upper bound (percent)
Residence			
Urban	7.3	4.2	10.4
Rural	14.3	8.6	20.0
Age			
<=24	10.7	6.4	15.0
25-29	8.9	3.6	14.2
30+	9.4	4.1	14.7
Level of education			
None	7.8	2.7	12.9
Primary	10.7	7.0	14.4
Secondary+	8.7	2.2	15.2
Contraceptive intention			
Spacer	8.4	4.3	12.5
Limiter	10.4	6.7	14.1
No. of live births			
0 - 1	15.5	8.2	22.8
2 - 3	7.1	4.0	10.2
4 +	9.5	3.6	15.4
Total	9.7	7.0	12.4

Although the 12-month gross failure rates for pill users with 0 or 1 live births, and for those living in rural areas (15.5 percent and 14.3 percent respectively), are greater than the general average, these differentials between the categories of various characteristics are not statistically significant. This situation indicates that user errors for the pill do not differ significantly by these characteristics. Particularly, it is remarkable that there is no difference between gross failure rates of pill users according to various levels of education. It may be suggested that a woman's level of education will not have much effect on family planning policies regarding the pill.

Table 6.3 shows 12-month gross failure rates and 95-percent confidence intervals for the IUD by selected background characteristics. Although the number of IUD segments is high, wide confidence intervals and low number of segments related specifically to method failure make the evaluation difficult.

The 12-month gross failure rate is very low (1 percent) for the IUD due to the low proportion of user errors. The gross failure rate is high in the North Region while it is greater than the general average in the East and Central Regions, although the differences are not statistically significant. However, it should be noted that confidence intervals are very wide and method failure rates are low in general in all of these three regions. Further research may be needed to determine the cause of this situation. The fact that the gross failure rate is lower than the general average in women age 30 and above may be related to the low fecundity of these women.

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Table 6.3 Life table 12-month gross failure rates and 95-percent confidence intervals for the IUD by selected background characterist, Turkey 1993

Background Characteristics	Failure rate (percent)	95-percent confidence interval	
		Lower bound (percent)	Upper bound (percent)
Region			
West	0.3	0.0	0.9
South	0.4	0.0	1.2
Central	1.6	0.0	3.2
North	3.9	0.0	8.8
East	1.6	0.0	4.0
Residence			
Urban	1.0	0.2	1.8
Rural	1.3	0.0	2.7
Age			
<=24	1.2	0.0	2.4
25-29	1.6	0.2	3.0
30+	0.4	0.0	1.0
Level of education			
None	0.9	0.0	2.1
Primary	1.0	0.2	1.8
Secondary+	1.2	0.0	2.6
Contraceptive intention			
Spacer	1.1	0.0	2.3
Limiter	1.0	0.2	1.8
No. of live births			
0 - 1	0.5	0.0	1.3
2 - 3	1.2	0.2	2.2
4 +	1.1	0.0	2.3
Total	1.0	0.4	1.6

Table 6.4 shows 12-month gross failure rates and 95-percent confidence intervals for the condom by selected background characteristics. Wide confidence intervals due to the low number of segments for the condom also make the evaluation difficult, as it was for the pill and the IUD.

Like the pill, the failure rate for the condom is also affected by user errors, but no statistically significant relationship can be found between selected factors and 12-month gross failure rates. Nevertheless, the gross failure rates in less educated women, those who have 4 or more live births, and those living in rural areas is considerably greater than the general average. Gross failure rates in women who have 2 or 3 live births and in women with secondary or higher education are lower than the general average.

Table 6.4   Life table 12-month gross failure rates and 95-percent confidence intervals for the condom by selected background characteristics, Turkey 1993

Background Characteristics	Failure rate (percent)	95-percent confidence interval	
		Lower bound (percent)	Upper bound (percent)
Residence			
Urban	10.6	7.5	13.7
Rural	15.5	9.0	22.0
Age			
<=24	12.0	6.7	17.3
25-29	12.6	7.3	17.9
30+	10.3	5.4	15.2
Level of education			
None	19.6	10.4	28.8
Primary	10.6	6.5	14.7
Secondary+	9.3	4.4	14.2
Contraceptive intention			
Spacer	12.1	7.4	16.8
Limiter	11.3	7.6	15.0
No. of live births			
0 - 1	12.3	7.2	17.4
2 - 3	8.8	4.9	12.7
4 +	17.1	9.3	24.9
Total	11.7	8.8	14.6

Table 6.5 shows 12-month gross failure rates and 95-percent confidence intervals for withdrawal by selected background characteristics. Method failure for withdrawal is usually related to user errors. There may be various types of user errors in withdrawal and it is nearly impossible to practise this method successfully. While no significant relationship could be detected between failure of withdrawal and region, type of residence or level of education, there is a statistically significant relationship according to women's age and desire for another child. The relationship between method failure and number of live births is also remarkable although it is not statistically significant.

Decreasing gross failure rates for withdrawal by age of the respondent may be due to declining fertility or decreasing user errors. High 12-month gross failure rates in younger women who want another child may reflect low motivation among these women to use a method. High 12-month gross failure rates in women who have 0 or 1 live births also supports this idea, although it is not statistically significant. Consequently, family planning policies should be developed for couples who want another child but use withdrawal to space pregnancies.

Table 6.5　　Life table 12-month gross failure rates and 95-percent confidence intervals for withdrawal by selected background characteristics, Turkey 1993

Background Characteristics	Failure rate (percent)	95-percent confidence interval	
		Lower bound (percent)	Upper bound (percent)
Region			
West	17.3	14.2	20.4
South	21.2	15.9	26.5
Central	19.7	15.6	23.8
North	17.8	12.5	23.1
East	19.6	13.7	25.5
Residence			
Urban	18.6	16.2	21.0
Rural	19.7	8.3	23.1
Age			
<=24	23.5	20.2	26.8
25-29	18.3	14.6	22.0
30+	13.1	10.2	16.0
Level of education	16.8	13.1	20.5
None	19.3	16.8	21.8
Primary	20.0	14.7	25.3
Secondary+			
Contraceptive intention	22.4	19.1	25.7
	16.5	14.1	18.9
Spacer			
Limiter			
	23.2	19.3	27.1
No. of live births	17.7	15.0	20.4
0 - 1	15.7	12.0	19.4
2 - 3			
4 +			
Total	18.8	16.8	20.8

7   METHOD ADOPTION RATES FOLLOWING A LIVE BIRTH

In this section, fertility behaviour and method adoption following the termination of pregnancy has been analysed by the multiple-decrement life table method. Since induced abortions was evaluated as a seperate topic in the context of this book, two major issues will be examined in the current section. The first of these issues is method adoption after a live birth and the influence of various factors on method adoption, and the second issue is the analysis of fertility behaviour and method adoption of women, following the termination of pregnancy, who had used any contraceptive method prior to pregnancy, according to reason for discontinuation.

Table 7.1 shows the pregnancy or method adoption rates following termination of pregnancy by the outcome of the pregnancy. Women's behaviour following the termination of pregnancy is very closely related to the outcome of the pregnancy.

Table 7.1   Life table method adoption rates following termination of pregnancy by outcome of pregnancy, Turkey 1993

	Method adoption status			
	Pregnant (percent)	Accept modern (percent)	Accept traditional (percent)	Nonuser (percent)
Live birth (N=3714)				
3 months	1.8	22.6	28.1	47.5
12 months	12.8	31.3	31.8	24.0
24 months	23.1	33.9	32.9	10.1
Induced abortion (N=908)				
3 months	1.8	46.2	37.9	14.1
12 months	6.6	48.6	38.3	6.5
24 months	8.0	48.8	38.3	4.9
Miscarriage/stillbirth (N=520)				
3 months	13.4	15.0	24.1	47.6
12 months	40.0	16.1	24.8	19.1
24 months	48.5	16.2	24.8	10.5

Among women whose pregnancy ends in a live birth, 13 percent become pregnant again in the following 12 months, and 23 percent in the following 24 months after delivery. Of the women who have a live birth, 31 percent adopt any modern and 32 percent adopt any traditional method in the 12 months following the delivery. Low pregnancy rates in the three months following the delivery may be explained by the low ratio of women at risk due to the amenorrhoeic period, breastfeeding and abstinence. However, after a pregnancy is terminated by induced abortion, 84 percent of the women begin to use a method in three months. It is interesting to see that the probability of a recurrent pregnancy is very low following induced abortion. If the pregnancy is terminated by a miscarriage or stillbirth, 40 percent of the women have a recurrent pregnancy in the following 12 months and almost half of the women in the following 24 months. Contraceptive adoption rates for these women are lower than for women who have a live birth or induced abortion, with approximately 40 percent accepting a method in the 12 and 24 months following the termination of pregnancy.

If the space between the deliveries is shorter than 24 months, it poses a risk for both maternal and child health. The importance of postpartum family planning services is obvious considering the fact that within 24 months following a live birth, approximately one-fourth of the women are pregnant and approximately one-third have chosen methods with high failure rates.

Table 7.2 shows 12-month pregnancy or method adoption rates following a live birth by selected background characteristics.

Table 7.2   Life table 12-month method adoption rates following a live birth by selected background characteristics, Turkey 1993

Background characteristics	Method adoption status				
	Pregnant (percent)	Accept modern (percent)	Accept traditional (percent)	Nonuser (percent)	Number of segments
Region					
West	8.0	37.6	41.9	12.4	1008
South	11.0	39.3	30.1	19.6	609
Central	13.3	35.0	32.3	19.4	816
North	11.8	25.0	45.9	17.3	351
East	19.3	18.2	16.2	46.3	930
Residence					
Urban	11.1	36.0	32.7	20.2	2227
Rural	15.4	24.4	30.4	29.8	1487
Age					
<=24	13.8	31.4	32.9	21.9	1948
25-29	12.0	33.5	31.8	22.7	1001
30+	11.6	28.3	29.0	31.1	766
Level of education					
None	18.1	20.1	17.7	44.1	1365
Primary	11.2	34.3	40.9	13.6	1852
Secondary +	4.4	50.8	36.5	8.3	497
Contraceptive intention	17.2	26.7	30.2	25.9	1767
Spacer	8.9	35.6	33.2	22.3	1947
Limiter					
No. of live births	16.2	30.2	35.8	17.8	1210
1	10.1	36.1	34.8	19.0	1533
2 - 3	13.2	25.2	22.0	39.7	971
4 +					
Total	12.8	31.3	31.8	24.0	3714

The 12-month recurrent pregnancy rate following a live birth is 19 percent in the East Region, which is twice the rate of other regions. In addition, women in this region are at greater risk at the end of the 12 months since they are less likely to use any method. Nearly 70 percent of women in other regions begin to use any method within 12 months. This percentage is as high as 80 percent in the West Region. While the 12-month adoption rate for modern methods following a live birth is similar in the West, South and Central Regions (38 percent, 39 percent and 35 percent, respectively), it decreases to 25 percent in the North. In addition, the North Region has the highest traditional method adoption rate in the 12 months following a live

birth. The adoption rates of both modern and traditional methods following live a birth are lower in the East Region (18 percent and 16 percent, respectively) compared to the other regions.

The 12-month pregnancy rate following a live birth is lower for women living in urban than rural areas. Among women age 30 and above, the 12-month pregnancy rate following a live birth is lower, and the rate of nonusers who are not pregnant is higher than in the other age groups. This situation may be due to the decreased fertility in women 30 and over. Among those women, both the traditional and modern method adoption rates following a live birth is lower than in the other age groups.

There is a strong correlation between educational level and pregnancy or method adoption rates following a live birth. As educational level increases, the pregnancy rate decreases and the adoption rate of any method increases. The pregnancy rate in the 12 months following a live birth is 18 percent for women with no education, while it drops to 4 percent for women with secondary or higher education. The fact that 44 percent of non-educated women do not adopt any method in the 12 months following a live birth, shows that these women are at high risk for pregnancy. Adoption of any method after a live birth increases with educational level. Half of the women with secondary education or higher adopt a modern method within 12 months following a live birth. Women with primary education are more likely to adopt traditional methods than modern ones.

If women desire another child, their adoption rate of both modern and traditional methods following a live birth is lower than for women who do not want another child. These women have a pregnancy rate twice as high as that for the women who do not want another child. Even if they begin to use a method following a live birth, they tend to choose traditional methods with higher failure rates. This situation indicates the value of postpartum family planning services offered to women who want to have another child in the future, in terms of maternal and child health.

The analysis reveals that the risk of pregnancy in the 12 months following a live birth in women with one live birth is higher than for women with two or more live births. Women with one live birth prefer traditional methods while women with 2 or 3 live births prefer modern methods. Among women with 4 or more live births, adoption rates of both modern and traditional methods in the 12 months following a live birth are lower than that of other women. The low rate of pregnancy among nonusers of these women in 12 months suggests that most of these women are in the older age groups and have low fertility. However, percentage of nonusers among women with 4 or more live births in the 12 months following a live birth is higher than the average. It is possible that women in this group are actually young women with high fertility, and have had many live births since they did not adopt any contraceptive method.

The method adoption behaviour of women, following the termination of pregnancy, who had used any method prior to pregnancy, can also help in understanding contraceptive use dynamics. Table 7.3 shows the 12-month pregnancy and method adoption rates following termination of pregnancy with miscarriage, stillbirth or live birth among women who had used any method prior to pregnancy.

Table 7.3 Life table 12-month method adoption rates following termination of pregnancy among women who had used any contraceptive method prior to pregnancy by type of method and reason for discontinuation, Turkey 1993

	Method adoption status					
	Pregnant (percent)	Accept modern (percent)	Accept traditional (percent)	Return to the same method (percent)	Nonuser (percent)	Number of segments
Modern methods[1]	6.7	27.2	18.4	38.7	9.1	875
Contraceptive failure	4.4	34.3	18.7	35.4	7.2	310
Wanted pregnancy	8.9	19.3	18.7	45.5	7.6	314
Other	6.5	28.4	17.4	34.3	13.4	251
Traditional methods[2]	4.4	27.6	2.6	61.1	4.3	1165
Contraceptive failure	2.7	32.3	2.7	58.4	3.8	816
Wanted pregancy	8.0	16.1	2.4	68.7	4.8	324

[1] Excludes 31 missing cases
[2] Excludes 67 missing cases

Eighty-four percent of women who become pregnant after discontinuation of a modern method begin to use any method in the 12 months following the termination of pregnancy. This percentage is 91 percent among women who had discontinued a traditional method. Among women who had used any modern method prior to pregnancy, 39 percent continue to use the same method and 27 percent switch to another modern method following the termination of pregnancy. A considerable portion (18 percent) of those women switch to traditional methods. Among women who had used any traditional method prior to pregnancy, 61 percent continue to use the same traditional method and 28 percent switch to any modern method following the termination of pregnancy. As expected, both traditional and modern method users prior to pregnancy begin to use any method following the termination of pregnancy. However, it is of interest that approximately 60 percent of traditional method users return to the same method after pregnancy.

The rate of returning to the same method following the termination of pregnancy among women who discontinue due to desire for pregnancy is higher than the rate among women who discontinue due to method failure or other reasons. Nevertheless, approximately one-third of women who discontinue due to method failure or other reasons return to the same method following the termination of pregnancy. Providing personal counseling services, particularly for women who discontinue due to method failure and return to the same method afterwards, will decrease the risk of a new failure. In addition, increasing the number of alternative methods offered within family planning services will help women who become pregnant due to method failure or other reasons to switch to another modern method which is more convenient for them following the termination of pregnancy. Twenty percent of women who had discontinued any modern method prior to pregnancy switched to traditional methods following the termination of pregnancy. Alternative contraceptive methods and improvement of counseling services will also decrease the switching rate for these women.

Among women who had used any traditional method (most of which was withdrawal) prior to pregnancy and became pregnant due to method failure, the percent who switch to modern methods following the termination of pregnancy is twice that of women who wanted the pregnancy. However, the ratio of returning to traditional methods is very high in both groups. This situation reveals the inadequacy of current family planning policies in meeting the needs of couples using traditional methods.

8 FERTILITY EFFECTS OF CONTRACEPTIVE USE

In this section, contraceptive prevalence rates are integrated with the gross failure rates in an attempt to understand the fertility effects of contraceptive use in the population. A simple static model of prevalence structure and the fertility rate that results from that structure are used (Curtis and Hammerslough, 1995). The first step of the analysis is to calculate average pregnancy rates for different contraceptive use and nonuse groups. The second is to construct policy-relevant scenarios of how the prevalence structure might change, and to use a static model to project their impact on the population's pregnancy rate. The final result is a flexible tool that assists family planning managers and policymakers to assess the hypothetical demographic effect of policy or programme changes.

This static model assists managers and policymakers in evaluating the demographic effect of several different kinds of programme decisions. For example, policy programmemers may have the choice of building new clinics or upgrading services at existing ones. The analysis in this section can be used to compare the impact on fertility of serving nonusers with increasing the use of efficient methods among current users of inefficient methods. Another use would be to assist in deciding whether to increase recruitment of new users or to improve clinical quality to decrease programme drop-outs. Each alternative can be evaluated for its potential impact on fertility in advance of any actual change.

In addition to decision support for resource allocation, the model helps estimate the fertility-reducing effect of different methods within each country. Such information helps planners decide whether to drop or to add particular methods, such as injectables, to a national programme. The model provides the baseline data for cost-benefit analyses of any programme changes that are likely to change the national structure of contraceptive prevalence. At the broadest level, this section is designed to assist national level policymakers in shaping contraceptive practise in their country.

The model requires average pregnancy (failure) rates by method and contraceptive prevalence by method. The decomposition of contraceptive prevalence always adds to 100 percent. Thus, the average pregnancy rates weighted by the method prevalence rates yield an average pregnancy rate of the population for a given prevalence structure.

This simple model incorporates implicit assumptions that limit the validity of the results—the most important being that it is a static model of a dynamic process. For example, the average pregnancy rates are a function of the underlying distribution of use-durations. If a woman changes her contraceptive status, she begins at duration month 0, not the duration month of her prior status. Similarly, if a method has been recently introduced by a programme, failure rates will be relatively high for a time. Another implicit assumption is that women changes from the non-exposed to the exposed statuses equally over time. If there are large scale secular changes underway (for example, declining age at first sex, greater sexual frequency or declining marriage rates), the balance between non-exposed and exposed may also be changing. In addition, homogenity assumptions in static models such as this one may cause some distortions. It is known

that women who do not use contraceptives are subfecund compared to women who use them (Curtis and Hammerslough, 1995). Women who are more fecund achieve their desired fertility faster than subfecund women, thus, adopting contraception earlier. Differences in quality of contraceptive use and coital frequency (male fecundity) may also introduce heterogeneity in conception probabilities.

In the analysis of contraceptive method prevalence, the population is divided into three main groups: not exposed, exposed/using a method, and exposed/not using a method. Each of these divisions contains several exposure statuses. Those "not exposed" are either sexually inactive or physiologically incapable of conceiving. The model assumes that the pregnancy rate among non-exposed women is zero. All of the other average pregnancy rates are derived empirically from life tables. The first step in the analysis is to examine the life table conditional probabilities of pregnancy for each duration month, i, since the beginning of method use (or unprotected exposure). The second step in deriving average pregnancy rates is to find the distribution of current duration in each contraceptive status. This quantity forms a weight for each of the monthly pregnancy rates. The average monthly failure rate is the monthly failure rates weighted by the proportion of the population in each prevalence status. Finally, it is easier to use average annual pregnancy rates than monthly ones, so the monthly rate is converted to a 12-month rate by multiplying it by 12.

Table 8.1 Scenarios of contraceptive prevalence in the population, Turkey 1993

Contraceptive prevalence categories	Annual pregnancy rate[1]	Current prevalence in population (percent)	Contraceptive prevalence scenario				
			I[2] (percent)	II[3] (percent)	III[4] (percent)	IV[5] (percent)	V[6] (percent)
Not Exposed	0.0	31.6	31.6	31.6	31.6	31.6	31.6
Exposed/using a method							
Pill	7.5	4.0	4.0	7.0	8.5	8.5	4.0
IUD	1.9	14.4	18.7	27.0	14.4	22.1	20.6
Condom	9.7	4.9	4.9	6.9	9.4	4.9	4.9
Sterilization	0.2	1.7	6.0	2.7	1.7	4.0	6.0
Norplant	0.2	0.0	0.0	2.0	0.0	4.5	4.5
Other modern	17.2	0.9	0.9	0.9	0.9	0.9	0.9
Withdrawal	17.1	20.0	20.0	10.0	20.0	10.0	5.0
Other traditional	20.5	1.3	1.3	1.3	1.3	1.3	1.3
Exposed/not using a method							
Wants a child in 2 years	90.4	9.0	9.0	4.5	0.0	0.0	9.0
Wants no more	30.8	8.6	0.0	4.3	8.6	8.6	8.6
Intention undetermined	30.8	3.6	3.6	1.8	3.6	3.6	3.6
Total population	-	100.0	100.0	100.0	100.0	100.0	100.0
Total pregnancy rate	16.8	-	14.2	9.8	9.4	7.4	14.4
Pregnancy rate of exposed	24.5	-	20.8	14.3	13.8	10.9	21.0

[1] Current pattern
[2] Wants no more: half to sterilization, half to IUD
[3] Exposed/not using reduced to half and distributed to modern methods
[4] Wants more in 2 years: half to condom, half to pill
[5] Wants more in two years and using withdrawal: half distributed to pill, IUD, sterilization, and Norplant.
[6] Distributed to modern methods.

The left column of Table 8.1 shows prevalence/exposure categories while the next column shows the annual pregnancy rate. Contrary to the contraceptive prevalence analysis (which covers only currently married women), the analysis in this chapter is performed according to "all women" (never-married, ever-married, and currently married). The annual pregnancy rate of non-exposed women is assumed to be zero. The TDHS data reveal that Norplant is not used by any of the currently married women. However, due to the policy of the Ministry of Health on family planning, Norplant is one of the modern contraceptive methods which is considered to be included in the national family planning programme. According to the literature (Hatcher et al., 1989), Norplant has nearly the same failure rate as female sterilization (0.2 percent - 1.1 percent). For these reasons, Norplant is included in the "exposed/using a method" category even though its current prevalence is zero.

Prevalence of reversible methods ranges from 1 percent for other modern methods to 20 percent for withdrawal. The highest annual pregnancy rate is for women who "want another child within 2 years" (90 percent) as expected. Those women who do not want another child have an annual pregnancy rate of 31 percent. According to the results of the TDHS, the total annual pregnancy rate is 17 percent among all women, while it is 25 percent in exposed women in Turkey.

Each scenario in the remaining columns indicates an alternative prevalence distribution. All scenarios assume some of the contraceptive prevalence will increase. Scenario I is an alternative that switches nonusers who do not want another child equally to sterilization and the IUD. In this situation, the annual pregnancy rate decreases to 14.2 percent and pregnancies fall by 15.3 percent compared to the baseline. A strategy to make all nonusers use modern and efficient contraceptives can have only a slight demographic effect in Turkey.

Scenario II shows the result of reducing the exposed nonusers and exposed withdrawal users by half and distributing them over the modern contraceptives. In this case, the annual pregnancy rate decreases to 9.8 percent and the pregnancy rate falls by 42 percent, largely because of the high pregnancy rate in nonusers.

Scenario III is focused on spacers by distributing half of them to condoms and half to the pill, the pregnancy rate then falls by 44 percent. In Scenario IV, withdrawal users are reduced by half and all spacers are distributed over all modern methods except the condom. The pregnancy rate falls to 7.4 percent in this scenario, and the proportion of decrease is 56 percent. Both of these scenarios was created on the basis of this assumption: all of the spacers want a child at the end of two years. If it is assumed that most of the women who want a child within two years are newly married and younger, delaying the first pregnancy would have positive effects on both maternal health and adoption to marriage. Training on this subject would have a positive effect on young women. In Turkey, particularly in rural areas where extended families are dominant, training on this topic should be given not only to young women, but also to their mothers and mothers-in-law. However, it is difficult to convince newly-wed women to not have a child within the first two years of marriage in a country like Turkey, where giving birth is the most secure way to prove the fecundity of a woman.

Despite the negative conditions, Scenarios III and IV were developed to show the great effect of convincing all of the spacers not to have a child within two years. The last scenario (Scenario V) assumes that the percent of traditional method users are reduced from 21 percent to 6 percent and distributed over all

modern methods, according to the targets of the Ministry of Health for the year 2000. This change has a little effect on the pregnancy rate, decreasing it by 15 percent.

As seen from the results, no important achievements in fertility reduction can be obtained without including nonusers in the model. If it is assumed that half of the "spacers" want another child after the first year, the most effective model would be Scenario II with a decline of 42 percent. However, the Scenario V which uses the Ministry of Health's goals is more realistic and more appropriate given country policies.

9 CONCLUSIONS AND RECOMMENDATIONS

Evaluation of discontinuation rates and reasons for discontinuation provides very beneficial information to understand the experiences of women using a contraceptive method. Generally, a high discontinuation rate is an indicator of displeasure and a decrease in the effect of that method on fertility levels. Evaluation of discontinuation rates according to the reasons for discontinuation is directly related with the choice of policies. If the aim is to lower the discontinuation rate of a particular method, the policies should be geared towards the most common reason for discontinuation of that method. Method switching is usually related with discontinuation. After discontinuing a method, if a women can not continue using contraception with another method, and is at high risk of pregnancy again, this may be an indicator of the inadequacy of family planning services to meet the woman's contraceptive needs.

In this section, discontinuation and switching behaviours for the IUD, the pill, condoms, and withdrawal will be summarized in the context of their probable relationship with family planning policies.

9.1 The IUD

Apart from being the most widely used modern method in Turkey, the IUD has the lowest 12-month discontinuation rate. The failure rate is very low due to the characteristics of the method. The most common reason for discontinuation is side effects and health concerns. Discontinuation rates are higher for less educated women, women age 24 and below, those living in rural areas, those who have 0 or 1 live births, and those who want another child. Discontinuation due to side effects and health concerns is also higher in these groups. Although discontinuation rates are low for the IUD, a considerable proportion of women who abandon the IUD, even though they still need contraception, switch to traditional methods, and are therefore exposed to high risk of pregnancy. Abandoning and switching to traditional methods are more frequent in less educated women, those age 24 and below, those living in rural areas, those who have 0 or 1 live births, and those who want another child. Individual counseling services for the IUD, improvement of follow-up, and expansion of alternative contraceptive methods may lower discontinuation rates due to side effects and health concerns as well as the practise of abandoning and switching to traditional methods.

9.2 The Pill

The pill is the second most widely used method after the IUD and is among the modern methods which have the highest discontinuation rates. Discontinuation increases considerably in women with secondary or higher education, women who want another child, and women who have 0 or 1 live births. Like the IUD, the most common reason for discontinuation of the pill is side effects and health concerns. Since the frequency of this reason does not differ considerably by selected background characteristics, it is considered to be an important factor for all women who discontinue the method. In addition, the use-failure

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rate is much higher than the clinical failure rate for the pill. A remarkable proportion of pill users discontinue or switch to a traditional method in one year although they still need contraception and are exposed to high risk of pregnancy. The discontinuation rate among women who still need contraception is particularly high in the group consisting of women who do not want another child, and those who have 4 or more live births. Rates of switching to a traditional method are remarkably high in all groups. Women who live in rural areas, those who want another child, and those who have 0 or 1 live births prefer switching to traditional rather than modern methods. In Turkey, counseling and follow-up services for the pill is insufficient. Improvement of individual counseling and follow-up services may lower failure and discontinuation rates due to side effects and health concerns. Expansion of alternative contraceptive methods may reduce abandoning and switching to traditional methods despite the need for contraception.

9.3   The Condom

Condom 12-month discontinuation rates are very high, although lower than rates for the pill. The discontinuation rate is remarkably higher in women living in rural areas, and it decreases with increasing age and number of live births. Similarly, the discontinuation rate is lower in women who do not want another child. The most common reason for discontinuation is method-related reasons such as disapproval of the husband, difficulties in accessing the method, and desire to use a more effective method. Use-failure is another important cause of discontinuation which is very high compared to the clinical failure rate. The failure rate is especially high in women with no or incomplete primary education and those who have 4 or more births. Contrary to the pill, the proportion of women who still need contraception at the time of discontinuation is low for the condom. However, this proportion is twice as high for women with no or incomplete primary education and those living in rural areas. Half of the women discontinuing condom use switch to modern methods, while the other half switch to traditional methods. Women age 24 years and below, those living in rural areas, and those who want another child prefer to switch to traditional methods. Considering that the most common reason for discontinuation is method-related reasons other than health, policies relating to condom use should focus on attempting to increase switching to modern methods rather than reducing discontinuation rates. Expansion of alternative contraceptive methods and improvement of individual counseling services for alternative methods will help to reduce the switching rates to traditional methods.

9.4   Withdrawal

The discontinuation rate for withdrawal is lower than for all methods except the IUD, although more than one-third of the couples using withdrawal discontinue in one year. The dtinuation rate is lower in women age 30 years and above, women with no or incomplete primary education, women who do not want another child, and women who have 4 or more live births. The most common reason for discontinuation is failure, which constitutes 40 percent of all reasons. Failure does not differ considerably according to selected background characteristics. Switching to modern methods is remarkably low among couples using withdrawal. Most of the women who get pregnant while using withdrawal return to the same method following the termination of pregnancy. It is interesting that adoption of modern methods is half that in women who discontinue to get pregnant compared to the women who get pregnant because of failure.

Although withdrawal is the most widely used method in Turkey and failure rates are very high, the reluctance to switch to modern methods suggests that using withdrawal is a kind of permanent behaviour among these couples. It is probable that current family planning policies can not meet the needs of these couples and new policies should be developed for couples who practise withdrawal.

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CONTRACEPTIVE PRACTICE

IN TURKEY

Bahar Güçiz Doğan

and

Tayfun Enünlü

In order for policymakers and programme managers to better plan for future family planning needs, it is essential that information on topics such as current contraceptive use, attitudes towards contraception and intent for future use be available. While contraceptive prevalence continues to be the most widely accepted means of evaluating programme success, attitudes towards contraception are important indicators used to identify problem areas that can be addressed in future educational and contraceptive promotional campaigns. Intention of future use provides a forecast of potential demand for services as well as indicates the disposition towards contraception among nonusers.

These issues are addressed in the following three sections, beginning with current contraceptive prevalence, followed by attitudes towards contraception. The third section covers future intention regarding family planning use.

1   CONTRACEPTIVE PREVALENCE

In this section, currently married women are classified on the basis of their current contraceptive status. The differences in exposure status are then presented according to certain basic variables. All eligible respondents are classified into these mutually exclusive and exhaustive exposure/prevalence categories.

The purpose of this classification is to evaluate the effect of contraceptive method use on fertility and to furnish the data required for a policy-relevant model. In this section, the distribution of respondents across all prevalence categories is shown. This helps to project the answers to "what-if" decision questions. The answers to these questions may help policymakers conduct the cost-benefit analysis of new programmes and revise their decisions on reducing the allocations to other programmes.

Ideally, the exposure status of all women, married or unmarried, to pregnancy risk should be known for this kind of analysis. However, the respondents of the 1993 TDHS were *ever-married* women, yet questions about contraceptive use were only asked to *currently married* women. Taking the social and cultural structure of Turkey into account, unmarried women may be considered as not exposed to pregnancy risk. In this context, exposure status of married women gains special importance. The tables in this section illustrate the change in the exposure status of married women according to some basic variables. In addition, the analyses in the section "Fertility Effects of Contraceptive Use" concerning policies in the country for the expansion of contraceptive use, can be integrated with this section's tables.

This cross-sectional analysis, however, does not give much information on contraceptive use dynamics, and it can not reveal the shift of women from one exposure category to another through time. It is rather a snapshot of contraceptive use status of the respondents.

Respondents were initially classified according to their exposure status to the risk of pregnancy, and if they were exposed, whether or not they were using a contraceptive method. Therefore, all currently married women involved in the 1993 TDHS were divided into two groups: "exposed" and "not exposed." Currently pregnant, amenorrhoeic, menopausal and infecund women were regarded as not exposed (since it is not possible for these women to become pregnant), while fecund women constituted the exposed group.

The second division was done based on the current contraceptive use status of exposed women. Currently married women using any contraceptive method at the time of the survey were classified as "user." Each contraceptive method was analysed separately.

Nonusers were categorized by their intention for another child. Currently married nonusers were asked during the survey whether they want another child, and if so, when. Women who do not want another child and women who want a child after two years or more were classified in the same group and reported as "does not want a child" in the text. Women who want another child in two years were classified as "wants a child."

Table 1.1 shows the distribution of currently married women by exposure/prevalence categories. One-fourth (25 percent) of the 6,271 currently married women are not exposed to the risk of pregnancy. Among

women age 15-49, 61 percent are exposed and using any method, while 15 percent do not use a method although they are exposed. Prevalence of modern methods is higher than that of traditional methods. The most widely used modern method is the IUD (19 percent) and the most widely used traditional method is withdrawal (25 percent). Eight percent of the women do not use any method despite the fact that they do not want any more children and are exposed to the risk of pregnancy. It is assumed that most of the unwanted pregnancies are seen in this group.

Table 1.1　Percent distribution of currently married women by exposure/prevalence categories, Turkey 1993

Prevalence categories and exposure/prevalence status	Percent	Number of women
Not exposed	24.5	1,541
Infecund	6.9	434
Pregnant	7.8	491
Amenorrhoeic	5.2	327
Menopausal	4.6	289
Exposed: using a method	60.7	3,807
Modern methods	33.8	2,119
IUD	18.7	1,173
Condom	6.4	400
Pill	4.9	304
Female sterilization	2.5	160
Diaphragm/Foam/Jelly	1.2	76
Injectables	0.1	4
Male sterilization	0.0	2
Traditional methods	26.9	1,688
Withdrawal	25.1	1,575
Periodic abstinence	1.0	60
Vaginal douche	0.6	37
Abstinence	0.0	3
Other	0.2	13
Exposed: not using a method	14.8	923
Wants more within 2 years	5.6	350
Wants no more children or more in 2+ years	8.0	500
Intention undetermined	1.2	73
Total	100.0	6,271

Distribution of women by exposure/prevalence categories according to five-year age groups is presented in Table 1.2. Prevalence of modern method use is highest in the 30-34 age group (46 percent), followed by age 25-29 (41 percent) and age 35-39 (41 percent). Traditional methods, particularly withdrawal, are practised more frequently than modern methods by women under 20 and over 40 years.

Among women who are not exposed, proportions of infecund and menopausal women increase by age while that of pregnant women decrease. In line with this situation, the proportion of amenorrhoeic women is higher in younger age groups (11 percent for age 15-19), than in older age groups (1 percent for age 40-44).

As expected, women who are exposed but not using a method are primarily in the 15-19 and 20-24 age groups. Most of these women are recently married and want children within 2 years. The proportion of women who do not want any more children and do not use a contraceptive method rises with age.

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Table 1.2   Percent distribution of currently married women by exposure/prevalence categories according to age group, Turkey 1993

Prevalence categories and exposure/prevalence status	Age group						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Not exposed	42.0	28.3	20.0	15.1	14.3	26.8	51.1
Infecund	1.1	0.9	2.3	3.9	7.5	16.5	21.2
Pregnant	29.6	17.6	9.9	5.4	1.8	1.1	-
Amenorrhoeic	10.9	9.5	7.5	5.4	2.6	1.0	0.2
Menopausal	0.4	0.3	0.3	0.4	2.4	8.2	29.7
Exposed: using a method	21.7	48.2	66.1	74.9	75.9	59.8	38.5
IUD	6.2	16.4	23.3	26.3	21.9	13.4	6.6
Condom	2.2	5.1	6.5	8.4	8.3	7.0	2.5
Pill	0.6	5.0	9.0	6.2	3.7	2.1	1.6
Other modern	-	1.1	2.2	4.8	6.6	5.9	4.3
Withdrawal	12.5	20.1	24.3	26.8	33.8	28.1	19.9
Other traditional	0.2	0.5	0.8	2.4	1.6	3.3	3.6
Exposed: not using a method	36.4	23.3	13.9	9.8	9.8	13.3	10.3
Wants more within 2 years	23.3	13.5	6.4	2.9	1.3	0.9	0.2
Wants no more children or more in 2+ years	10.6	8.4	6.6	6.2	7.7	11.2	8.0
Intention undetermined	2.5	1.4	0.9	0.7	0.8	1.2	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	329	1,026	1,190	1,254	1,026	833	613

Table 1.3   Percent distribution of currently married women by exposure/prevalence categories, according to region, Turkey 1993

Prevalence categories and exposure/prevalence status	Region				
	West	South	Central	North	East
Not exposed					
Infecund	20.8	23.3	25.1	22.1	34.6
Pregnant	6.7	7.0	7.8	6.0	6.7
Amenorrhoeic	5.9	7.5	8.0	6.2	12.9
Menopausal	2.9	4.6	5.2	4.7	11.0
	5.3	4.2	4.1	5.2	4.0
Exposed: using a method					
IUD	69.7	61.3	60.6	61.8	40.7
Condom	18.8	20.9	21.9	11.4	16.2
Pill	8.0	5.8	6.0	6.9	3.7
Other modern	6.1	4.2	4.3	5.1	3.4
Withdrawal	3.7	5.3	3.7	5.3	2.3
Other traditional	30.4	23.8	22.5	32.3	14.8
	2.7	1.3	2.2	0.8	0.3
Exposed: not using a method					
Wants more within 2 years	9.5	15.4	14.4	16.2	24.9
Wants no more children or more in 2+ years	4.3	6.3	5.9	6.1	6.8
Intention undetermined	4.5	7.8	7.6	8.8	15.6
	0.7	1.3	0.9	1.3	2.5
Total	100.0	100.0	100.0	100.0	100.0
Number of women	2,207	963	1,472	589	1,039

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As presented in Table 1.3, method prevalence is 41 percent in the East while it increases to 70 percent in the West. Contraceptive prevalence is approximately 61 percent in the other three regions. Modern methods are preferred to traditional ones in every region except the North; modern method prevalence is 29 percent in that region while traditional method prevalence is 33 percent. The IUD is the most preferred modern method in each region although its prevalence changes. The highest IUD prevalence is observed in the Central Region (22 percent) while the lowest is in the North Region (11 percent). While the East has the lowest contraceptive prevalence, it has the lowest withdrawal prevalence as well (15 percent). The proportion of women who do not use any method, although they do not want any more children, increases from the West to the East Region and reaches the highest level in the East (16 percent).

Table 1.4 indicates that prevalence of any method is higher in urban areas (64 percent) than in rural areas (55 percent). The same situation is observed for use of any modern method. Thirty-eight percent of the women living in urban areas use a modern method compared with 26 percent among women living in rural areas. Most of the difference between urban and rural use is due to the higher prevalence of IUD use in urban areas. Higher utilization of family planning services in general in urban areas may also have an effect. The percentage of women who want no more children or want one after two years, and who do not use any method in rural areas (11 percent) is almost twice that of urban areas (7 percent).

Contraceptive prevalence by level of education is shown in Table 1.5. Prevalence of unmet need in family planning decreases and contraceptive prevalence increases as the level of education increases. Among women with no education, 25 percent use modern and 24 percent use traditional methods. Modern method prevalence rises with increasing level of education and reaches 48 percent in women with secondary or higher education. In this group, the IUD and condoms are the most preferred methods, while withdrawal is the least used method.

Table 1.4	Percent distribution of currently married women according to exposure/prevalence categories by type of residence, Turkey 1993	
	Residence	
Prevalence categories and exposure/prevalence status	Urban	Rural
Not exposed	22.4	28.4
Infecund	6.1	8.4
Pregnant	7.3	8.7
Amenorrhoeic	4.5	6.5
Menopausal	4.5	4.8
Exposed: Using A Method	64.2	54.6
IUD	21.4	14.0
Condom	7.5	4.5
Pill	4.9	4.7
Other modern	4.3	3.0
Withdrawal	23.7	27.6
Other traditional	2.4	0.8
Exposed: Not using a method	13.3	17.2
Wants more within 2 years	5.7	5.3
Wants no more children or more in 2+ years	6.5	10.6
Intention undetermined	1.1	1.3
Total	100.0	100.0
Number of women	4,005	2,265

As expected, the proportion of women pregnant is higher for those who have 0-1 children than for those women who have 2 or more children (see Table 1.6). These women also constitute the largest group among nonusers. While the percentage of women who want another child within two years is 1 percent among women who have 2 or more children, this figure rises to 18 percent among women who have 0-1 children. The latter group is assumed to be motivated to have more children to reach the ideal family size of Turkish women, (2.4 children). However, 12 percent of women who went beyond the ideal number of children do not use any method although they do not want another child. Most of these women are considered to be older and do not expect to get pregnant again.

Contraceptive prevalence peaks among women who have 2-3 children (75 percent) and drops to 58 percent among those women who have 4 or more children. Women who have more than 3 children are found to be older, to have a lower level of education, and lower contraceptive prevalence compared to women with 2-3 children. Women who have 2-3 children may have been affected by family planning programmes carried out by the Ministry of Health.

Table 1.5   Percent distribution of currently married women by exposure/prevalence categories by respondent's level of education, Turkey 1993

Prevalence categories and exposure/prevalence status	Level of education		
	None	Primary	Secondary+
Not exposed	32.6	21.1	18.8
Infecund	10.6	5.3	4.4
Pregnant	7.4	8.5	6.7
Amenorrhoeic	7.0	4.3	4.2
Menopausal	7.6	3.0	3.5
Exposed: using a method	48.7	65.6	70.6
IUD	13.2	20.4	25.2
Condom	3.5	6.2	13.6
Pill	3.7	5.5	5.3
Other modern	4.4	3.3	4.3
Withdrawal	22.8	28.8	17.6
Other traditional	1.1	1.4	4.6
Exposed: not using a method	18.7	13.2	10.8
Wants more within 2 years	4.2	6.3	6.0
Wants no more children or more in 2+ years	13.0	5.8	4.1
Intention undetermined	1.5	1.1	0.7
Total	100.0	100.0	100.0
Number of women	2,102	3,227	942

Table 1.6   Percent distribution of currently married women by exposure/prevalence categories according to number of living children, Turkey 1993

Prevalence categories and exposure/prevalence status	Number of living children		
	0 - 1	2 - 3	4 +
Not exposed	35.4	16.5	28.3
Infecund	8.4	5.0	9.0
Pregnant	19.4	3.7	3.5
Amenorrhoeic	5.7	4.0	6.9
Menopausal	1.9	3.8	8.9
Exposed: using a method	38.5	74.5	58.0
IUD	11.3	23.8	16.8
Condom	5.0	8.1	4.6
Pill	3.6	6.1	3.9
Other modern	0.9	4.4	5.8
Withdrawal	16.5	29.8	25.4
Other traditional	1.2	2.3	1.5
Exposed: not using a method	26.2	9.1	13.4
Wants more within 2 years	18.3	1.3	0.4
Wants no more children or more in 2+ years	6.6	6.6	12.0
Intention undetermined	1.3	1.2	1.0
Total	100.0	100.0	100.0
Number of women	1,664	2,981	1,625

Table 1.7 shows contraceptive prevalence by health insurance status. Among women with no insurance, the proportion of women who want no more children but do not use any method is twice that of insured women. Similarly, proportions of pregnant (7 percent) and amenorrhoeic women (7 percent) among those not insured are higher than the insured group (6 percent and 4 percent, respectively). Prevalence of modern methods is lower in women with no insurance. In Turkey, health insurance is an encouraging factor for women to utilize health facilities. Even though the figures are low, the difference between proportion of women who want another child within two years among the insured (4 percent) and the not insured (7 percent) women suggests that insured women are younger, have not reached their ideal number of children yet, and are more motivated to have another child.

Turkish is the native language of 86 percent of currently married women, and 65 percent of these women were using a contraceptive method at the time of the survey (see Table 1.8). IUD prevalence is twice as high among these women compared with women whose native language is not Turkish. This relationship is reversed for pregnant women: the proportion pregnant among women whose native language is Turkish is 7 percent compared with 13 percent among those whose native language is other than Turkish. The proportion of women who do not want to have another child but are not using a method of contraception is three times as high among women whose native language is not Turkish compared with native speakers of Turkish.

| Table 1.7 | Percent distribution of currently married women by exposure/prevalence categories according to respondent's health insurance status, Turkey 1993 |

	Health insurance status	
Prevalence categories and exposure/prevalence status	Not insured	Insured
Not exposed	27.7	21.6
Infecund	9.6	6.6
Pregnant	7.3	6.2
Amenorrhoeic	6.8	3.7
Menopausal	4.0	5.1
Exposed: using a method	53.7	67.3
IUD	15.9	21.4
Condom	4.2	8.4
Pill	5.1	4.7
Other modern	2.6	5.0
Withdrawal	24.8	25.4
Other traditional	1.1	2.4
Exposed: not using a method	18.8	11.0
Wants more within 2 years	6.9	4.4
Wants no more children or more in 2+ years	10.4	5.7
Intention undetermined	1.5	0.9
Total	100.0	100.0
Number of women[1]	3,024	3,234

[1] Health insurance status is unknown for 11 women.

Table 1.8   Percent distribution of currently married women by exposure/prevalence categories according to respondent's native language, Turkey 1993

Prevalence categories and exposure/prevalence status	Native language	
	Turkish	Other
Not exposed	22.5	36.6
Infecund	7.1	6.2
Pregnant	6.9	13.3
Amenorrhoeic	3.8	13.3
Menopausal	4.7	3.8
Exposed: using a method	65.1	35.3
IUD	20.1	10.3
Condom	6.9	3.6
Pill	5.0	4.0
Other modern	4.0	2.9
Withdrawal	27.0	14.3
Other traditional	2.1	0.2
Exposed: not using a method	12.4	28.1
Wants more within 2 years	5.2	7.7
Wants no more children or more in 2+ years	6.3	17.7
Intention undetermined	0.9	2.7
Total	100.0	100.0
Number of women	5,360	910

[1] Native language is unknown for one woman.

2   ATTITUDES TOWARDS CONTRACEPTION

This section is about the attitudes towards contraception and contraceptive methods of ever-married women in the survey. The opinions of women about particular methods (pill, IUD, condom and withdrawal) and family planning in general were analysed according to the reliability, ease of use, and harmfulness of the method as well as the husband's opinion. The opinions of women about family planning and religion were also investigated.

During the data collection stage of the 1993 TDHS, questions about the four contraceptive methods examined in this section were asked to women who reported that they knew the methods. For this reason, the number of respondents for each method is different. Due to nonresponse, the total number of women who responded to questions about the methods they knew may differ as well.

In Turkey, over 90 percent of the population is Muslim, and especially the people living in rural or semi-urban areas attach great importance to the religious leader's opinion. Hence, it is important to learn women's attitudes about family planning and their opinions on family planning and religion.

In Table 2.1, attitudes of women about various contraceptive methods are presented. Regarding the three modern and one traditional method, the respondents believe the most reliable method is the IUD (62 percent) and the least reliable is the condom (39 percent). It is interesting that according to these women's opinions,

Table 2.1   Percent distribution of attitudes of women about various contraceptive methods, according to method, Turkey 1993

Women's attitudes	Method			
	Pill	IUD	Condom	Withdrawal
Reliable				
Yes	51.8	61.7	38.8	41.1
No	28.6	26.2	36.8	50.4
Don't know[1]	19.6	12.1	24.4	8.5
Total	100.0	100.0	100.0	100.0
Number of women	6,232	6,316	5,238	5,669
Easy/difficult to use				
Easy	59.5	48.0	35.6	44.9
Difficult	24.3	19.9	24.2	38.5
Don't know[1]	16.2	32.1	40.2	16.5
Total	100.0	100.0	100.0	100.0
Number of women	6,234	6,312	5,238	5,669
Harmful[2]				
Yes	76.9	54.0	NA	NA
No	10.7	29.7	NA	NA
Don't know[1]	12.4	16.3	NA	NA
Total	100.0	100.0	NA	NA
Number of women	6,227	6,309	NA	NA
Husband's opinion[3]				
Against	28.6	24.2	48.7	39.0
Not against	54.1	59.3	32.2	51.2
Don't know[1]	16.2	15.5	18.4	9.5
Husband doesn't know the method	1.1	1.1	0.7	0.3
Total	100.0	100.0	100.0	100.0
Number of women	6,232	6,315	5,238	5,669

NA = Not applicable
[1] Women had no opinion about this subject
[2] This was asked for the pill and IUD only.
[3] This item was not asked to husbands directly, but rather these are women's ideas about their husbands' attitude.

withdrawal is more reliable than the condom (41 percent). Respondents report that the pill is the easiest method to use (60 percent), followed by the IUD and withdrawal (48 and 45 percent, respectively). Thirty-two percent of the women state that they do not have any idea about the ease of use of the IUD, and this figure rises to 40 percent for the condom. Over three-fourths of women think that the pill is harmful, and over half of them think the IUD is harmful for their health. According to these women's opinions, 49 percent of their husbands are against condom use, and 39 percent of them are against withdrawal.

The attitudes of current users according to current method are shown in Table 2.2. Even though most of the women believe that modern contraceptives are reliable, the least reliable method according to modern method users is the condom (86 percent). Among all methods, withdrawal is the least reliable with 28 percent reporting it is a non-reliable method. However, nearly three-fourths of withdrawal users think that this method is reliable.

Table 2.2   Percent distribution of attitudes of women who are current users of contraceptive methods, according to method, Turkey 1993

Women's attitudes	Current method			
	Pill	IUD	Condom	Withdrawal
Reliable				
Yes	90.4	91.1	85.5	70.3
No	8.9	7.6	13.8	28.1
Don't know[1]	0.7	1.3	0.7	1.7
Easy/difficult to use				
Easy	89.1	86.3	85.0	70.6
Difficult	10.9	13.4	13.1	25.2
Don't know[1]	NA	0.3	1.9	4.2
Harmful[2]				
Yes	47.2	32.2	NA	NA
No	45.1	59.8	NA	NA
Don't know[1]	7.6	8.0	NA	NA
Husband's opinion[3]				
Against	7.4	4.9	13.3	12.7
Not against	91.5	93.3	86.3	86.5
Don't know[1]	0.4	1.7	0.5	0.7
Husband doesn't know the method	0.7	0.1	NA	0.1
Total	100.0	100.0	100.1	100.0
Number of women	308	1,178	415	1,641

[1] Women had no opinion about this subject
[2] This was asked for the pill and IUD only.
[3] This item was not asked to husbands directly, but rather these are women's ideas about their husbands' attitude.
NA = Not applicable

The most difficult method to practise is also withdrawal (25 percent). Over half of the women believe that the IUD is not harmful to their health, while 45 percent believe that the pill is not harmful.

According to women's beliefs about their husbands' opinions, 13 percent of the husbands are opposed to withdrawal and 13 percent are against condom use. On the other hand, husbands are less against the pill and IUD, (7 and 5 percent, respectively).

Approximately one-fifth of never-users state that they do not have any opinion about the reliability of the IUD (see Table 2.3). This proportion is one-fourth for withdrawal while it is one-third for the pill and condoms. As expected, ever-users and current users are more likely to have an opinion on the reliability of methods. The opinions of ever-users are similar to those of current users.

The most reliable method according to never-users is the IUD (56 percent). The IUD is also considered the most reliable method for the other groups (64 percent in current users and 61 percent in ever-users). Withdrawal is believed to be the least reliable method among all groups. However, it is considered to be more reliable by current users compared to the other groups, which suggests that withdrawal is currently used as a method by some of these women.

Table 2.3   Percent distribution of women's opinions about the reliability of various contraceptive methods according to contraceptive use status, Turkey 1993

	Contraceptive use status		
Method/opinion	Never-user	Ever-user	Current user
Pill			
Reliable	38.3	56.5	54.4
Not reliable	28.8	27.6	28.9
Don't know[1]	32.9	15.9	16.7
Number of women	1,170	1,222	3,840
IUD			
Reliable	56.0	61.2	63.7
Not reliable	21.3	28.3	27.1
Don't know[1]	22.6	10.6	9.3
Number of women	1,202	1,234	3,880
Condom			
Reliable	35.5	40.8	39.0
Not reliable	29.4	36.1	38.6
Don't know[1]	35.1	23.2	22.4
Number of women	734	1,047	3,456
Withdrawal			
Reliable	33.0	39.4	43.4
Not reliable	41.8	52.7	51.5
Don't know[1]	25.2	7.9	5.1
Number of women	810	1,149	3,710
Total	100.0	100.0	100.0

[1] Women had no opinion about this subject

Similar to reliability, almost half of never-users have no opinion about the ease of use of the methods (see Table 2.4). It is interesting that for both ever and current users, the pill is perceived as easier to use than the IUD. These women may be influenced by some complications which occur after the insertion of the IUD. Surprisingly, in all groups, withdrawal is stated as easier to use than condoms. This may be due to the interruption in sexual relations when using a condom.

Table 2.5 shows the respondents' opinions on the harmfulness of two contraceptive methods. The IUD is considered harmful according to half of the women. Among never-users, the proportion of women who have no idea about the harmfulness of those methods is 29 percent for the IUD and 26 percent for the pill. The proportion of women who consider the pill harmful is greater among current and ever-users than never-users. In all of the groups, approximately three-fourths of the women think that the pill is harmful. Negative opinions among never-users may arise from complications that they have seen among friends or from incorrect information.

Table 2.4 Percent distribution of women's opinions about the ease of use of various contraceptive methods according to contraceptive use status, Turkey 1993

Method/opinion	Contraceptive use status		
	Never-user	Ever-user	Current user
Pill			
Easy	49.7	64.4	60.9
Difficult	17.3	24.6	26.4
Don't know[1]	33.0	11.0	12.7
Number of women	1,172	1,223	3,838
IUD			
Easy	26.1	49.5	54.4
Difficult	19.3	18.8	20.4
Don't know[1]	54.6	31.7	25.2
Number of women	1,202	1,233	3,876
Condom			
Easy	25.5	35.1	37.8
Difficult	15.2	24.3	26.1
Don't know[1]	59.3	40.5	36.1
Number of women	734	1,047	3,456
Withdrawal			
Easy	27.3	44.9	48.8
Difficult	30.7	39.3	40.0
Don't know[1]	42.0	15.7	11.2
Number of women	810	1,149	3,710
Total	100.0	100.0	100.0

[1] Women had no opinion about this subject

Table 2.5 Percent distribution of women's opinions about the harmfulness of the pill and IUD according to contraceptive use status, Turkey 1993

Method/opinion	Contraceptive use status		
	Never-user	Ever-user	Current user
Pill			
Harmful	64.9	80.2	79.4
Not harmful	9.5	10.9	11.0
Don't know[1]	25.6	8.9	9.5
Number of women	1,172	1,222	3,834
IUD			
Harmful	50.0	56.7	54.4
Not harmful	21.2	28.7	32.7
Don't know[1]	28.8	14.6	12.9
Number of women	1,201	1,233	3,874
Total	100.0	100.0	100.0

[1] Women had no opinion about this subject

Among all of the groups, women state that their husbands are more against male methods or methods requiring male cooperation than female methods (see Table 2.6). The condom is believed to be the least approved method. However, it must be noted that these are husbands' opinions according to their wives. Women think that the pill is more harmful than the IUD and, at the same time, they state that their husbands are more against the pill than the IUD. These answers may partly reflect women's own opinions

Table 2.6   Percent distribution of women's perceived opinions of their husbands' attitudes about various contraceptive methods according to contraceptive use status, Turkey 1993

Method/husband's attitude	Contraceptive use status		
	Never-user	Ever-user	Current user
Pill			
Against	25.2	26.8	30.3
Not against	35.5	58.8	58.2
Don't know[1]	37.2	13.4	10.7
Husband doesn't know the method	2.1	1.0	0.8
Number of women	1,173	1,222	3,837
IUD			
Against	21.7	23.6	25.1
Not against	38.6	57.9	66.2
Don't know[1]	37.3	17.0	8.2
Husband doesn't know the method	2.4	1.5	0.5
Number of women	1,202	1,234	3,879
Condom			
Against	37.0	49.7	50.9
Not against	23.0	29.9	34.8
Don't know[1]	39.0	19.2	13.8
Husband doesn't know the method	1.0	1.2	0.6
Number of women	734	1,047	3,456
Withdrawal			
Against	39.1	41.9	38.1
Not against	27.5	49.4	56.9
Don't know[1]	32.6	8.4	4.8
Husband doesn't know the method	0.8	0.3	0.1
Number of women	810	1,149	3,710
Total	100.0	100.0	100.0

[1] Women had no opinion about this subject

| Table 2.7 | Percent distribution of attitudes of women and their husbands about family planning and religion, Turkey 1993 |

Attitude	Women		Husbands[1]	
	Percent	Number	Percent	Number
Family planning against religion	15.9	1,033	13.3	864
Some methods against religion	3.9	252	3.0	195
Family planning not against religion	70.0	4,561	73.1	4,758
Don't know	10.2	665	10.6	693
Number of women[2]	100.0	6,512	100.0	6,512

[1]This item was not asked to husbands directly; these are women's ideas about their husbands' attitudes.
[2] Seven women gave no answer to this question.

As can be seen from Table 2.7, 70 percent of women and 73 percent of husbands think that family planning is not against religion. The proportion of women who think that it is against religion is 16 percent, and the proportion of women who believe their husbands think it is against religion is 13 percent.

When both the attitudes of women and their beliefs about their husbands' attitudes concerning family planning are analysed by contraceptive method use status, the highest proportion who think family planning is against religion is among never-users (30 percent for women; 26 percent for husbands). Once a woman uses any contraceptive method, this percent decreases by half (see Table 2.8).

| Table 2.8 | Percent distribution of attitudes of women and their husbands about family planning and religion according to contraceptive use status, Turkey 1993 |

Contraceptive use status	Attitude about family planning and religion[1]									
	Family planning against religion		Some methods against religion		Family planning not against religion		Don't know		Total	
	Woman	Husband	Woman	Husband	Woman	Husband	Woman	Husband	Woman	Husband
Never-users (n=1326)	29.8	26.3	4.2	4.1	52.8	52.1	13.1	17.6	100.0	100.0
Ever-users (n=1258)	16.6	14.1	3.7	2.9	70.6	74.4	9.1	8.6	100.0	100.0
Current users (n=3928)	10.9	8.6	3.8	2.7	75.7	79.7	9.6	9.0	100.0	100.0
Total (n=6512)[2]	15.9	13.3	3.9	3.0	70.0	73.1	10.2	10.6	100.0	100.0

[1] This item was not asked of husbands directly; these are women's ideas about their husbands' attitudes.
[2] Seven women gave no answer to this question

Ages 15-19 (21 percent) and 45-49 (23 percent) are the groups which have the highest proportion of women that believe family planning is against religion (see Table 2.9). This percentage decreases with age and begins to increase again by the age of 40. This reflects the fact that women under 25 and over 40 are probably more influenced by religious leaders than other women.

Table 2.9   Percent distribution of women's attitudes about family planning and religion according to background characteristics, Turkey 1993

Background characteristic	Attitudes about family planning and religion					
	Family planning against religoin	Some methods against religion	Family planning not against religion	Don't know	Total	Number of women[1]
Age						
15-19	21.3	5.5	58.1	15.2	100.0	332
20-24	17.0	3.6	68.5	10.9	100.0	1,039
25-29	13.4	3.3	72.4	11.0	100.0	1 209
30-34	13.3	3.1	75.9	7.8	100.0	1,283
35-39	13.3	4.0	72.4	10.3	100.0	1,072
40-44	17.0	5.6	66.9	10.5	100.0	899
45-49	23.4	3.5	63.6	9.6	100.0	678
Region						
West	7.8	2.7	79.7	9.8	100.0	2,322
South	12.8	5.3	72.3	9.6	100.0	995
Central	16.6	3.9	69.9	9.6	100.0	1,520
North	14.6	6.9	64.4	14.0	100.0	612
East	36.0	3.4	50.3	10.4	100.0	1,063
Residence						
Urban	11.1	3.6	76.4	8.8	100.0	4,176
Rural	24.3	4.3	58.7	12.7	100.0	2,336
Type of residence						
Capital	5.8	3.5	82.7	8.0	100.0	1,538
Small town	14.1	3.9	73.5	8.5	100.0	1,682
Town	14.4	3.6	71.4	10.5	100.0	957
Country	24.3	4.3	58.7	12.7	100.0	2,335
Level of education						
None	28.6	5.2	53.0	13.1	100.0	2,193
Primary	11.6	3.8	74.1	10.4	100.0	3,335
Secondary+	1.7	1.1	94.3	3.0	100.0	984
Native language						
Turkish	12.6	3.9	73.5	10.1	100.0	5,570
Other	35.4	3.8	49.7	11.1	100.0	942
Civil marriage						
Yes	14.1	3.9	72.1	9.9	100.0	6,005
No	37.2	3.7	45.5	13.6	100.0	507

[1] Seven women gave no answer to this question

Thirty-six percent of women in the East Region think that family planning is against religion, which is twice as high as the next highest region (Central Region with 17 percent). The proportion in the West Region (8 percent) is the lowest among all regions. Twenty-four percent of the women in rural areas think that family planning is against religion compared to only 11 percent in urban areas.

As one might expect, the proportion of women who believe that family planning is against religion decreases markedly with increasing level of education.

In Turkey, for a marriage to be registered before the law, there must be a civil ceremony. A religious ceremony depends on the couples' wish, but some couples prefer only a religious ceremony. In Table 2.9, for the variable civil marriage, "yes" means there was both a civil and religious ceremony, and "no" means there was only a religious ceremony. Among women who had only a religious ceremony, 37 percent that family planning is against religion, while this proportion decreases to 14 percent in the other category. Women who had only a religious ceremony seem to be more conservative than the others.

Over one-third (35 percent) of women whose native language is other than Turkish state that family planning is against religion. These women live mostly in the rural areas of the East Region, and due to the characteristics of the region, their level of education is lower than women in other regions. The high proportion of women who think that family planning is against religion in this region should be evaluated taking these factors into account.

From Table 2.7, it can be seen that 252 women think that some methods are against religion. In the survey, the question "Which methods are against religion?" was asked with no probing allowed for the answer. The responses are shown in Table 2.10. Methods believed to be against religion by the most women are the IUD and abortion (49 percent and 55 percent, respectively), followed by the pill (11 percent).

Table 2.10   Percent distribution of women's attitudes about various contraceptive methods and religion among those who believe some methods are against religion, according to method, Turkey 1993

| | Attitude about family planning and religion | | | |
Method	Family planning not against religion	Family planning against religion	Total[1]	Number of women
Pill	89.5	10.5	100.0	240
IUD	53.2	46.8	100.0	240
Condom	95.0	5.0	100.0	240
Withdrawal	96.4	3.6	100.0	240
Abortion	44.9	55.1	100.0	240
Injectables	95.8	4.2	100.0	240
Norplant	98.1	1.9	100.0	240

[1] Twelve women gave no answer to this question.

3   INTENTION FOR FUTURE USE

Current method users and women not using a method at the time of the interview were analysed according to their intention for future use and switching of contraceptive methods. Intention to use a contraceptive method in the future provides an estimate of potential demand for family planning services. Women who were not using a contraceptive method at the time of the survey were asked if they thought they would do something to keep from getting pregnant, and current users were asked if they intend to change their current method. Among nonusers, those who reported that they were intending to use a method were asked whether they planned to begin to use within the next 12 months. For current users, variables regarding preferred method and reason for not using preferred method were used in the analysis. Nonusers were asked about intention to use, preferred future method, and contraceptive use and intention which were used in this analysis.

As it is mentioned in the 1993 TDHS final report, among currently married nonusers, 46 percent do not intend to use any method in the future while 31 percent intend to begin use in 12 months. The proportion intending to use varies with number of living children, peaking at 64 percent among women with one child.

Table 3.1   Percent distribution of contraceptive use intentions of currently married nonusers, according to background characteristics, Turkey 1993

Background characteristic	Intention to use a method					Total	Number of women
	In next 12 months	Use later	Unsure about timing of use	Unsure about use	Does not intend to use		
Age							
15-19	38.6	30.6	3.9	10.4	16.5	100.0	249
20-24	47.4	27.6	3.0	7.7	14.2	100.0	495
25-29	47.6	17.7	1.7	8.3	24.7	100.0	373
30-34	41.0	10.8	2.2	7.4	38.6	100.0	291
35-39	28.1	4.7	1.6	4.6	61.0	100.0	235
40-44	8.0	1.0	0.4	3.8	86.8	100.0	323
45-49	0.7	-	0.3	0.6	98.4	100.0	356
Region							
West	28.9	12.6	1.4	5.8	51.3	100.0	619
South	32.9	11.9	1.1	3.0	51.1	100.0	356
Central	32.1	15.4	2.4	4.4	45.6	100.0	543
North	31.5	19.7	1.2	5.3	42.4	100.0	207
East	31.3	13.4	2.5	10.1	42.7	100.0	597
Residence							
Urban	30.4	14.8	1.7	6.8	46.3	100.0	1,334
Rural	32.1	13.0	2.0	5.2	47.8	100.0	988
Level of education							
None	24.4	8.5	1.3	6.6	59.2	100.0	1,035
Primary	36.3	18.1	2.6	5.7	37.1	100.0	1,038
Secondary+	37.1	19.5	1.0	5.5	37.0	100.0	248
Native language							
Turkish	31.4	14.0	1.6	4.6	48.4	100.0	1,748
Other	30.1	14.0	2.5	10.8	42.6	100.0	574

As presented in Table 3.1, among nonusers, the proportion of women who do not intend to use a method in the future increases with age, and reaches its highest level at the 45-49 age group (98 percent). The proportion of women who intend to use a method in the next 12 months is 47 percent in the 20-24 age group, 48 percent for age 25-29, and 41 percent in the 30-34 age group. The 15-19 age group is the most unsure about using a method.

In contrast to current users, among nonusers, women in the West Region are less likely to intend to use a method. Women in the South and Central intend to use a method more than those in the other regions (33 and 32 percent, respectively).

There is little difference between urban and rural areas concerning the intention to use or not use a method within 12 months. Intention to use according to native language also shows little difference between groups.

While 59 percent of uneducated women do not intend to use a method in the future, this proportion decreases to 37 percent among women who have secondary or higher education. Women who intend to use a contraceptive method within 12 months show an opposite trend ranging from 24 percent of uneducated women to 37 percent with secondary or higher education intending to use a method.

Reasons for not using a method by background characteristics of nonusers are presented in Table 3.2. According to the 1993 TDHS report, nonusers who do not intend to use in the future are mainly over the age of 30 (81 percent), and their reasons for nonuse are quite different from the reasons given by younger nonusers. The main reason for nonuse among women under age 35 was a desire for children, but in decreasing proportions (66 percent in the 15-19 age group, compared with 33 percent in the 30-34 age group). The majority of older nonusers are not exposed to pregnancy; among women in the 35-39 age group, 43 percent reported that it was difficult for them to get pregnant and 19 percent had had a hysterectomy or were menopausal. These proportions for the 40-44 and 45-49 age groups are as follows, respectively: 42 percent and 29 percent for the 40-44 age group, and 28 percent and 56 percent for the 45-49 age group.

The main reason for nonuse among women in the West Region is being menopausal or having had a hysterectomy (41 percent), while the reason is difficulty in getting pregnant in the South Region (32 percent) and the Central Region (34 percent), and wanting more children in the East Region (26 percent).

Among women who are not educated, 15 percent want children, 27 percent report that it is difficult for them to get pregnant, and 28 percent have had a hysterectomy or are menopausal. These proportions are 19, 37, and 28 percent among women who have a primary education, and 8, 45, and 36 percent among women who have a secondary or higher education.

Women whose native language is not Turkish are more likely to want children (29 percent) than women whose native language is Turkish (12 percent).

The most preferred method is the IUD among all categories of characteristics of nonusers (see Table 3.3). The pill is the second most preferred modern method. After age 30, female sterilization is the third most preferred method. The condom is the least preferred modern method among nonusers. It is remarkable that traditional methods are preferred by between 4 percent and 19 percent of nonusers by age group.

In the East Region, the pill is preferred more (17 percent) than in the other regions. The IUD is preferred less in the North Region than the other regions. Female sterilization is highly preferred in the North (9 percent) and in the South (8 percent). In rural areas, the pill is more highly preferred (17 percent) than in urban areas, and the IUD is less preferred (46 percent). Female sterilization is preferred more in urban than rural areas.

Table 3.2   Percent distribution of reasons for not using a contraceptive method by background characteristics of nonusers, Turkey 1993

Background characteristic	Main reason for not using a contraceptive method							Total	Number of women
	Want children	Difficult to get pregnant	Menopausal/ had hysterectomy	Health concerns/side effects	Religious/ fatalistic	Infrequent sex	Other reasons		
Age									
15-19	65.6	6.1	-	8.6	6.2	-	13.5	100.0	41
20-24	58.2	14.6	-	6.3	4.3	1.8	14.8	100.0	70
25-29	38.4	26.9	1.8	3.1	9.2	5.3	15.4	100.0	92
30-34	32.7	31.8	5.7	2.5	13.9	3.8	9.6	100.0	112
35-39	14.6	43.4	18.6	2.9	6.3	7.8	6.3	100.0	143
40-44	3.2	42.0	29.3	5.2	5.2	7.2	7.7	100.0	280
45-49	1.0	28.1	55.7	1.1	2.9	7.2	4.1	100.0	349
Region									
West	6.3	38.3	41.4	2.8	2.4	6.3	2.8	100.0	317
South	19.1	31.9	23.0	4.2	6.0	6.0	9.9	100.0	181
Central	15.9	33.9	27.3	2.1	5.9	7.9	6.9	100.0	247
North	16.7	36.1	33.3	1.4	3.5	4.2	4.9	100.0	88
East	25.5	22.2	16.2	5.3	10.9	5.0	14.8	100.0	255
Residence									
Urban	15.2	33.9	31.7	3.3	5.1	5.7	5.1	100.0	616
Rural	17.0	30.1	24.5	3.3	6.7	6.7	11.7	100.0	472
Level of education									
None	15.4	27.4	27.6	4.0	8.1	7.0	10.4	100.0	611
Primary	18.6	37.1	28.4	2.2	3.3	5.5	5.0	100.0	386
Secondary+	8.2	45.0	36.0	3.6	0.8	3.1	3.3	100.0	91
Native language									
Turkish	12.1	36.4	32.8	3.1	4.0	5.9	5.7	100.0	845
Other	29.1	18.1	13.9	4.4	12.0	6.9	15.5	100.0	243

Table 3.3   Percent distribution of preferred contraceptive method among currently married women, according to background characteristics, Turkey 1993

Background characteristic	Pill	IUD	Con-dom	Female sterili-zation	Other modern	With-drawal	Other tradit-ional	Don't know	Total	Number of women
Age										
15-19	18.5	45.5	3.9	2.5	6.9	6.4	2.4	13.8	100.0	181
20-24	12.8	53.9	3.6	2.7	5.7	7.5	1.9	11.9	100.0	385
25-29	10.6	53.7	2.5	6.6	4.0	8.7	1.0	12.9	100.0	249
30-34	13.7	49.8	2.0	12.7	4.1	4.8	2.0	10.7	100.0	156
35-39	12.6	48.2	2.8	10.5	9.0	3.8	-	13.0	100.0	81
40 +	19.4	35.5	-	9.6	16.1	3.2	16.1	-	100.0	31
Region										
West	9.8	52.3	2.3	4.7	2.3	11.7	1.9	15.0	100.0	265
South	12.4	47.1	4.8	8.1	7.6	3.8	3.3	12.9	100.0	162
Central	13.7	58.1	3.9	4.3	7.2	4.6	2.3	6.1	100.0	270
North	15.7	39.9	2.8	9.0	3.4	14.0	1.1	14.0	100.0	108
East	16.8	49.1	1.8	5.7	7.8	3.0	1.9	13.7	100.0	277
Residence										
Urban	11.0	54.9	3.5	6.6	4.4	6.6	1.6	11.5	100.0	620
Rural	16.9	45.7	2.3	4.7	7.7	7.0	2.9	12.7	100.0	464
Level of education										
None	16.1	46.0	1.5	8.3	8.7	4.1	1.9	13.4	100.0	350
Primary	13.4	51.4	3.4	4.4	4.1	8.7	2.0	12.6	100.0	591
Secondary+	7.8	61.3	4.9	5.2	6.1	5.3	3.2	6.3	100.0	143
Native language										
Turkish	12.1	53.8	3.2	5.2	4.8	8.0	2.4	10.4	100.0	819
Other	18.1	42.0	2.5	7.6	8.9	2.8	1.1	17.1	100.0	265

IUD preference increases with increasing level of education (from 46 to 61 percent), and in contrast, the pill decreases in preference with increasing level of education (from 16 to 8 percent). Among women whose native language is not Turkish, 42 percent prefer the IUD and 18 percent prefer the pill. Female sterilization is preferred more by this group than by native speakers of Turkish.

The intention of current users is also an important factor indicating satisfaction of the method used. In Table 3.4, the satisfaction of current users and methods they intend to use in the future is presented. In Table 3.5, the preferred method by background characteristics of current users is shown. Among modern method users, 59 percent of pill users do not want to change their method, while 88 percent of IUD users do not want to change. Among those who intend to change, the IUD is the most preferred method for future use. Sixty-two percent of withdrawal users and 71 percent of other traditional method users are satisfied with their current method. Table 3.5 illustrates there is no significant difference between the preferred methods by characteristics of respondents.

Table 3.4 Percent distribution of preferred contraceptive method among current users according to current method, Turkey 1993

Current method	Same method	Pill	IUD	Condom	Female sterilization	Male sterili-zation	Other modern	Other traditional	Any other method	Don't know/not sure	Total	Number of women
Modern method												
Pill	59.0	-	22.7	0.4	3.0	7.4	4.2	0.2	0.8	2.2	100.0	308
IUD	88.0	1.6	-	0.2	3.0	3.7	1.0	0.5	0.3	1.6	100.0	1,177
Condom	62.7	2.7	20.1	-	5.4	3.0	2.8	0.6	1.2	1.6	100.0	414
Other modern	65.0	-	16.5	-	1.9	10.7	-	1.5	0.7	3.7	100.0	82
Traditional method												
Withdrawal	62.4	3.7	20.8	0.6	2.1	3.1	2.4	0.9	1.2	2.6	100.0	1,640
Other traditional	71.4	5.0	12.5	0.9	4.8	2.9	0.9	-	1.0	0.7	100.0	115

Preferred contraceptive method

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Table 3.5   Percent distribution of preferred contraceptive method among current users, according to background characteristics, Turkey 1993

Background characteristic	Same method	Pill	IUD	Female sterilization	Male sterilization	Other modern	Other traditional	Any other method	Not sure	Total	Number of women
Age											
15-19	66.3	10.4	20.2	-	-	0.8	-	1.3	1.0	100.0	78
20-24	61.8	3.7	23.3	3.3	1.4	2.9	0.6	1.2	1.9	100.0	520
25-29	62.7	3.8	19.1	3.3	5.3	2.5	0.4	1.0	1.9	100.0	788
30-34	69.0	1.9	15.0	3.3	3.9	3.0	0.8	0.5	2.9	100.0	920
35-39	75.0	1.7	8.8	3.4	5.9	2.3	0.8	0.6	1.5	100.0	741
40-44	81.7	1.5	6.2	1.8	2.3	1.9	0.9	1.7	2.0	100.0	467
45-49	89.0	0.8	1.7	1.5	1.1	2.2	0.6	0.3	2.8	100.0	223
Region											
West	73.3	1.9	14.0	3.3	2.4	1.9	0.9	0.7	1.7	100.0	1,519
South	69.9	2.4	12.6	2.7	5.4	2.5	0.6	0.4	3.5	100.0	571
Central	68.5	3.2	14.8	3.2	4.0	3.3	0.2	1.4	1.4	100.0	874
North	67.0	3.5	13.8	0.9	5.2	2.9	1.6	1.4	3.8	100.0	353
East	68.9	3.5	14.4	3.2	5.2	2.7	-	0.8	1.4	100.0	421
Residence											
Urban	70.2	2.6	14.4	3.2	3.9	2.4	0.7	0.6	2.0	100.0	2,518
Rural	71.4	2.5	13.1	2.4	3.7	2.8	0.7	1.4	2.2	100.0	1,219
Level of education											
None	73.4	2.4	10.1	2.1	4.9	2.2	0.8	1.2	2.9	100.0	982
Primary	70.8	2.9	14.5	2.1	3.8	2.6	0.6	0.9	1.6	100.0	2,096
Secondary+	65.6	1.9	18.2	6.7	2.2	2.4	0.5	0.3	2.2	100.0	659
Native language											
Turkish	70.5	2.5	14.2	3.1	3.7	2.6	0.7	0.8	2.1	100.0	3,422
Other	70.9	3.8	12.3	1.5	5.4	2.0	0.2	1.8	1.9	100.0	316

Reasons for current method use among current users are shown in Table 3.6. The five most frequently reported reasons are: side effects of other methods (28 percent), convenience (16 percent), desire for more effective method (15 percent), husband's preference (14 percent), and recommendation by family planning worker (8 percent). One in six current users could not state the reason for choosing the current method.

Table 3.6 Percent distribution of reasons for using current contraceptive method among current users, Turkey 1993

Reason for using current method	Percent	Number of women
Side effects of other methods	28.4	1,111
Convenience	16.1	629
Wanted more effective method	14.7	577
Husband preferred	13.6	534
Recommended by family planning worker	8.4	329
Wanted permanent method	7.1	280
Accessibility/availability	2.8	110
Recommended by friends	2.4	95
Cost	0.7	28
Other	4.0	156
Don't know	1.7	68
Total	100.0	3,917

ABORTION IN TURKEY

Gül Ergör

and

Ayşe Akın

1   INTRODUCTION

Induced abortion is an important event in fertility which has been experienced by millions of women for hundreds of years. In most places in the world, it is still practised illegally and under unsafe conditions. In 1983, Turkey took a liberal stand on this issue by legalizing abortions up to 10 weeks of pregnancy. Since then, reported induced abortions have increased; however, almost all abortions are carried out under safe conditions.

Surveillance on induced abortions is routinely carried out in only a few countries, and the DHS surveys do not usually collect information on induced abortions. Therefore, a comparison with many countries is not possible; the rates are considered high if they are over 100 induced abortions per 1,000 women, as in the former Soviet Union. The induced abortion rate per 1,000 women is 130 in Romania, 87 in Turkey, 24 in the United States, and 5 in the Netherlands. There are 705 abortions per 1,000 pregnancies in Romania; this number is 179 for Turkey (IMCC et al., 1993). There are 339 abortions per 1,000 live births in the United States and 254 in Turkey (Wilcox and Marks, 1994). Turkey has a high induced abortion rate compared with many countries. The rate per woman shows that induced abortions are used by only a small group of women.

Contraceptive prevalence is 63 percent in Turkey, which is fairly high compared with many developing countries. This indicates that couples are highly motivated to control their fertility. Although family planning services are widely available there are still a considerable number of induced abortions in Turkey. The distribution of method choice indicates that almost half of the women are using withdrawal, which has a high failure rate. Some methods may not be used correctly and there may even be a group of women who prefer to have induced abortions rather than using a contraceptive method. Overall, there are many reasons why women utilize induced abortion.

Abortion practices in Turkey are worth examining further for several reasons. First, Turkey is one of the few countries in the world where induced abortions are performed on a voluntary basis until the 10th week of pregnancy; second, it is quite openly reported when asked, and third, there is a substantial number of women who seek induced abortion during their reproductive years. Although the right to abortion is freely practised by women in Turkey, it is of particular interest to know the characteristics of women who use abortion services instead of family planning services. According to the national policy, induced abortion is not considered a family planning method. Therefore, the results of this study will be very useful for service providers and planners to help identify target groups, and to design special approaches to reach them for family planning.

A crucial point in abortion services is post-abortion counselling. This analysis will provide insight into this issue to better understand the practices of each group of providers (public and private), and to recognize the need to strengthen counselling practices. The characteristics of women who choose to use modern methods, traditional methods, or no method at all after an induced abortion will also be examined.

As seen in the 1993 Turkish Demographic Health Survey (TDHS) (MOH et al., 1994), 13 percent of all women have had more than one induced abortion in their lives. This result can be interpreted as these women are using abortion services as a method of family planning. Therefore, this group of women need to be examined more thoroughly in terms of characteristics that differentiate them from women who have never had an abortion.

2   DATA AND METHODS

The 1993 TDHS was designed to provide estimates of population and health indicators for rural and urban areas, and five regions of the country. The sample was selected by a multistage, stratified cluster sampling technique, such that 10,631 households were selected for the sample and 8,619 households were interviewed. In these households, 6,862 ever-married women were considered eligible for the individual interview. A total of 6,519 of these women were interviewed. The fieldwork for the survey was conducted from August to November 1993.

A subfile with selected variables was constructed from the rectangular individual recode file for the purpose of this analysis. The software used was SPSS Version 5.1 for Windows. The first subfile had all of the 6,519 women's individual records. This file was used for the analysis of characteristics of the women who did or did not have an induced abortion, as well as multivariate analyses of induced abortions. The sample was then restricted to all ever-married women who had had an induced abortion in the five years before the survey (799 records) for the analysis of the timing of induced abortions, factors leading to abortion, and contraceptive use after an induced abortion. The information used to analyse the contraceptive use behaviour of women who had an induced abortion was only available from January 1988 until the time of the interview. This is included in the calendar section of the questionnaire, which contains monthly information on contraceptive use, pregnancies and terminations (induced abortions, miscarriages and stillbirths). Month of pregnancy at the time of induced abortion was also recorded in the calendar; however, due to the design of the calendar, which recorded data on a monthly basis, any time period between 4 and 8 weeks was recorded as one month, unless it was a full 8 weeks, in which case it was recorded as two months.

In the third section, number of induced abortions is the dependent variable in crosstabulations with the independent variables. In the fourth section, induced abortions are analysed in a multivariate analysis. Independent variables controlled for in the multivariate analysis are age, region, urban-rural residence, number of living children, woman's and husband's education, and woman's and husband's attitudes toward family planning.

The backward elimination method was used as a model building strategy. All selected variables (based on univariate analysis) were included in the full model. Using backward elimination, a final model was reached which best describes the relationships of the dependent variables to the independent variables. More details on the modelling are given in Section 4.

In the fifth section, timing of induced abortion in the last five years is the dependent variable. Month of pregnancy at the time of abortion was created as a new variable from the calendar data. In this analysis, timing of abortion is crosstabulated by background characteristics and variables concerning the type of provider. The sixth section includes the events prior to induced abortion (in terms of contraception), as well as pregnancy outcome following contraceptive failure, with the focus on induced abortion.

In the seventh section, contraceptive use after abortion is examined. Again, new variables were created using the calendar data: contraceptive use in the first month after induced abortion, and contraceptive use in the three months following induced abortion. The distribution of the two variables are given, and further analysis is carried out with the "three months after" variable. The socio-economic characteristics, women's status indicators, abortion provider, and attitudes towards contraceptive use variables are the independent variables. Two variables regarding contraceptive use before induced abortion were also created from the calendar: contraceptive use one month before the start of pregnancy, and contraceptive use three months before the start of pregnancy. There were no significant differences in contraceptive use three months before the pregnancy; therefore, only one month before the pregnancy was used. Contraceptive use before and after induced abortion

are also examined by grouping the women as nonusers, traditional method users, and modern method users. These groups are then analysed by background characteristics. In this section, the multiple-decrement life table technique is used to determine the rates of method use or pregnancy following induced abortion. The data were obtained from the calendar for the 3-62 months before the survey (Curtis and Hammerslough, 1995).

3 CHARACTERISTICS OF WOMEN WHO HAD AN INDUCED ABORTION

This section gives a description of ever-married women who have had an induced abortion by region, place of residence, age at the time of abortion, and educational status of both the woman and her husband. Some fertility characteristics, such as age at first marriage, ever use of contraceptives, and first method used are specific variables thought to be related to the number of induced abortions. Specific areas of interest that are examined are differences in abortion practices by age at marriage, contraceptive use history, and attitudes of both the woman and her husband toward family planning and religion. These variables will give a better understanding of the women who choose to have an induced abortion. Other important variables such as number of living children and induced abortion rates by region and place of residence are not shown in this section because they are discussed in the TDHS report.

Table 3.1   Percent distribution of ever-married women by number of induced abortion, according to selected background characteristics, Turkey 1993

Background characteristic	None	1	2	3 +	Total	Number
		Number of induced abortions				
Age						
15-19	97.6	2.4	-	-	100.0	332
20-24	91.4	6.9	1.7	-	100.0	1,040
25-29	79.2	14.1	5.1	1.6	100.0	1,211
30-34	68.1	17.8	8.1	6.0	100.0	1,283
35-39	60.2	20.2	11.8	7.8	100.0	1,073
40-44	59.2	17.4	12.8	10.7	100.0	901
45-49	60.5	17.9	10.8	10.8	100.0	679
Level of education						
None	74.2	13.7	6.5	5.6	100.0	2,196
Primary	72.1	15.0	7.5	5.4	100.0	3,339
Secondary+	67.1	17.5	10.5	4.9	100.0	984
Husband's level of education						
None	79.2	11.9	3.4	5.5	100.0	528
Primary	73.0	14.5	7.3	5.2	100.0	3,677
Secondary	70.0	15.6	8.5	5.9	100.0	1,759
Higher	65.4	18.4	10.8	5.4	100.0	553
Total	72.0	14.9	7.6	5.5	100.0	6,519ᵃ

ᵃ Total number for husband's education is 6,517 because of 2 missing cases.

Among the women included in the survey, 28 percent have had at least one induced abortion (Table 3.1). The percentage of women having an induced abortion increases gradually with age. In the 15-19 year age group, 2 percent have had an induced abortion, and by 35-39 years the percentage increases to 40 percent and remains the same thereafter. After age 35, the number of induced abortions increases, reaching 20 percent with one abortion, 12 percent with two abortions, and 8 percent with three or more abortions.

Although there are not significant differences, the percentage of induced abortions increases as the educational level of both the woman and husband increases. Among women with no education, 14 percent had one induced abortion, 7 percent had two abortions, and 6 percent had three or more abortions, while for women with secondary or higher education these percentages are 18, 11, and 5, respectively. One possible explanation is that the more educated the woman, the more likely it is that she works and, therefore, may be more motivated to terminate an unwanted pregnancy.

Table 3.2   Percent distribution of women by number of induced abortions, according to selected fertility characteristics, Turkey 1993

Fertility characteristic	Number of induced abortions				Total	Number of women
	None	1	2	3 +		
Miscarriage						
None	73.7	14.3	7.3	4.7	100.0	5,120
1	66.1	18.2	8.3	7.4	100.0	988
2 +	65.3	15.3	9.9	9.5	100.0	412
Stillbirth						
None	72.2	14.9	7.5	5.4	100.0	6,185
1 +	68.8	15.5	9.5	6.2	100.0	334
Marital age						
< 15	69.6	15.8	8.7	5.9	100.0	626
15-19	71.0	14.7	8.1	6.2	100.0	3,744
20-24	73.6	15.0	7.2	4.2	100.0	1,757
25 +	78.1	15.3	3.8	2.8	100.0	393
First method used						
Never used	93.2	4.4	1.4	1.0	100.0	1,332
Pill	57.0	20.2	13.2	9.6	100.0	1,468
IUD	67.8	16.8	7.6	7.8	100.0	811
Condom	67.7	17.3	10.1	4.9	100.0	403
Withdrawal	73.4	15.9	6.6	4.1	100.0	2,026
Other	63.9	19.1	10.5	6.5	100.0	477
Total	72.0	14.9	7.6	5.5	100.0	6,519

Table 3.2 shows the distribution of induced abortions according to selected fertility characteristics. Women who have had a miscarriage or a stillbirth are more likely to have had an induced abortion than women who have had no previous miscarriages or stillbirths. Similarly, the number of induced abortions increases with the number of spontaneous abortions, which suggests that some induced abortions could be misreported as miscarriages. It could also be that these three variables are related to each other through age, since the numbers of pregnancies and, therefore, potential outcomes increase with age.

The probability of having an induced abortion increases with early marriage. Thirty percent of women who married younger than age 15 have had an induced abortion compared with only 22 percent of women who married over the age of 25. Although the percentage of women who have had one induced abortion does not vary by marital age, the percentage of women who have had two or more induced abortions is twice as high for those who married at less than 15 years compared with those who married later than age 25.

The pattern of induced abortion varies according to the first contraceptive method used. There are two groups which display marked differences from the other groups; one is women who choose the pill as their first contraceptive method. Forty-three percent of women in this group have had at least one induced abortion. These women also have the highest percentage of two or more induced abortions. The other group that differs is women who never used a method. Only 7 percent of women (90 women) who never used a method have had an induced abortion. Clearly, the majority of never-users are not inclined to limit their family size and thus would not have had induced abortions. However, many of the nonusers are also young and are, therefore, at the beginning of their reproductive life. Yet, the women who never used a method and have had at least one induced abortion may possibly be using induced abortion as a method of contraception. It must be kept in mind, however, that these women constitute a very small group. In order to better explain the effect of age and other confounders, multivariate analysis is necessary.

Among women who believe their husbands think that any contraception is against religion, 22 percent have had an induced abortion; among women whose husbands think that some methods are against religion, 25 percent had an induced abortion (Table 3.3). The rate of induced abortion increases to 31 percent among women who believe their husbands think that contraception is not against religion. Although attitudes on contraception and abortion are not necessarily parallel, it can be assumed that women who think contraceptive methods are against religion will also think induced abortion is against religion. However, women who think contraception is not against religion may not have the same attitude toward induced abortion. Women who report that they do not know their husband's attitude behave more like the women who think their husbands have a negative attitude toward contraception.

Table 3.3   Percent distribution of women by number of induced abortions, according to attitudes toward family planning and religion, Turkey 1993

Attitude toward family planning and religion	Number of induced abortions				Total	Number of women
	None	1	2	3 +		
Woman's attitude						
Family planning against religion	79.9	12.0	4.4	3.7	100.0	1,033
Some methods against religion	74.3	12.6	7.0	6.1	100.0	252
Family planning not against religion	68.9	16.3	8.8	6.0	100.0	4,561
Don't know	80.2	11.4	5.0	3.4	100.0	665
Husband's attitude						
Family planning against religion	78.4	12.9	4.9	3.7	100.0	864
Some methods against religion	75.1	12.6	7.5	4.8	100.0	195
Family planning not against religion	69.4	15.9	8.7	6.0	100.0	4,758
Don't know	81.3	11.3	3.8	3.6	100.0	693
Total	72.0	14.9	7.6	5.5	100.0	6,511

4   MULTIVARIATE DETERMINANTS OF REPEAT ABORTIONS

Women who report that they have had more than one induced abortion are of special concern. The characteristics of women who have never had an induced abortion are different from those of women who have had an abortion, as seen in Section 3. Likewise, women who have had only one abortion may have distinct characteristics that differ from women who have had more than one abortion. In order to better educate these groups toward accepting family planning methods, differences between them must be explored. Multivariate analysis is performed to determine whether differences are genuine or a result of confounders. Age, education, region, and type of residence of these women are important covariates that are controlled for in the analysis. Husband's education and husband's and woman's attitudes towards family planning are other variables of interest that are examined. Number of living children is controlled for in the multivariate analysis, as is husband's desire for more children.

Multivariate analysis using continuation-ratio regression was performed to describe the characteristics of women who had repeat abortions (13 percent) versus women who never had an abortion (72 percent). The dependent variable in the multivariate analysis is the number of induced abortions a woman has had, grouped as 0, 1, 2, and 3 or more. This is an ordered categorical response variable. Women must pass through the state of having had one induced abortion before they can be classified as having had two induced abortions; therefore, a natural model choice is the continuation-ratio logit model (Agresti, 1984). This model can be fitted as a series of three independent binomial logit models. Three files were created for model fitting. Three separate analyses were carried out. The three logit models tested were:

Model 1 (Logit P_0) tests the odds of having had no abortion versus having had an induced abortion for the various levels of the covariables.

Model 2 (Logit P_1) tests the odds of having had one induced abortion versus the odds of having had two or more abortions for the various levels of covariables.

Model 3 (Logit P_2) tests the odds of having had two induced abortions versus the odds of having had three or more abortions at the various levels of covariables.

Model selection was done by using the backward elimination method. Each of the three full models contained 9 variables. A significance level of 0.10 was used to eliminate the variables. When there was no significant change in the likelihood ratio test statistic, the procedure was terminated. The three models are shown in Tables 4.1, 4.2 and 4.3. The significant variables in all three models are shown in Table 4.4.

When controlling for all other variables, age is a significant predictor of individual abortion. The odds of having an induced abortion are 3 times greater in the 25-29 age group compared with women younger than 25. The odds become 8 times greater, as the age increases to 40-44, and 7 times greater in the 45-49 age group. Education is a predictor for having an induced abortion; if the woman has no education, the odds of having an induced abortion are reduced by 33 percent compared with women who have a primary education. Having a higher education than primary does not have a significant effect. This indicates that women with at least a primary education are more likely to terminate and unwanted pregnancy. Husband's education has a similar effect; if the husband is not educated the odds of the woman having an induced abortion is 48 percent lower than for a woman whose husband has primary education. However, if the husband has had a secondary education, the odds of the woman having had an induced abortion increase 27 percent above a woman whose husband has primary education.

Table 4.1 Model 1 estimates: no induced abortions versus all induced abortions, Turkey 1993

Parameter	Estimate	Odds Ratio	Significance
Age			
< 25	0.00	1.00	.00
25-29	1.17	3.22	.00
30-34	1.64	5.17	.00
35-39	2.01	7.44	.00
40-44	2.12	8.32	.00
45-49	1.97	7.20	.00
Level of education			
None	-0.39	0.67	.00
Primary	0.00	1.00	.00
Secondary+	0.04	1.04	.68
Husband's level of education			
None	-0.63	0.53	.00
Primary	0.00	1.00	.00
Secondary	0.24	1.27	.00
Higher	0.14	1.16	.28
Desire for children			
Husband wants same	0.00	1.00	.00
Husband wants more	-0.09	0.92	.36
Husband wants fewer	0.38	1.47	.00
Region			
West	0.00	1.00	.00
South	-0.42	0.66	.00
Central	-0.31	0.73	.00
North	-0.26	0.77	.05
East	-0.77	0.46	.00
Residence			
Urban	0.00	1.00	.00
Rural	-0.57	0.57	.00
Living children [1]	0.20	1.22	.00

[1] Number of living children is treated as a continuous variable in the model

When controlling for all other the covariables, the odds that a woman has had an abortion versus no abortion are estimated to be lower for all other regions compared with the West Region. The odds in the East Region are reduced by 54 percent compared with the West Region, while in the North Region they are reduced by only 23 percent. The East Region has the lowest odds for having an induced abortion, which is similar to the patterns for contraceptive prevalence (lowest) and number of desired children (highest). This may be because women living in the West Region have easier access to abortion services, as well as a greater need to limit their family size.

The respondent's perception of her husband's desire for children has an effect on the woman having an abortion. The odds of having an induced abortion are increased by 46 percent if the woman thinks her husband wants fewer children than she does. In addition, the number of living children increases the odds of having an induced abortion. With each living child the odds of having an induced abortion increase 21 percent.

Table 4.2   Model 2 estimates: one induced abortion versus two or more, Turkey 1993

Parameter	Estimate	Odds ratio	Significance
Age			
< 25	0.00	1.00	.00
25-29	0.58	1.79	.08
30-34	1.05	2.87	.00
35-39	1.22	3.38	.00
40-44	1.49	4.44	.00
45-49	1.67	5.30	.00
Husband's level of education			
None	-0.52	0.60	.04
Primary	0.00	1.00	.04
Secondary	0.22	1.25	.08
Higher	0.03	1.03	.87
Woman's attitude toward family planning and religion			
Family planning not against religion	0.00	1.00	.06
Family planning against religion	-0.43	0.65	02
Some methods against religion	-0.05	0.95	.86
Residence			
Urban	0.00	1.00	.00
Rural	-0.31	0.74	.02
Living children [1]	0.12	1.12	.01

[1] Number of living children is treated as a continuos variable in the model

The second model examines women with one induced abortion versus more than one induced abortion. The results show that age is a significant predictor of having more than one induced abortion. As age increases, the odds of having more than one abortion increase from 1.8 to 5.3. The effect of the husband's education is similar to that found in Model 1. The odds of having more than one induced abortion are 40 percent less for women whose husbands have no education compared with women whose husbands have primary education. If the husband has secondary education, the odds of having more than one induced abortion increases 25 percent. Husband's education seems to have a greater determinant effect than the woman's education on the frequency of induced abortion, evident by the fact that woman's education is excluded from the model.

This model also includes women's attitudes toward family planning and religion. The odds of having two or more abortions are estimated to be 35 percent less for women who think family planning is against religion, compared with women who think that it is not against religion.

Living in the rural areas decreases the odds of having two or more induced abortions by 26 percent compared with urban woman. This reflects the easy access to abortion services in the urban areas. As the number of living children increases, the odds of having more than one induced abortion increase by 12 percent. Although lower, the effect is similar to the effect of number of living children in Model 1 (no abortion versus abortion).

100

Table 4.3   Model 3 estimates: two induced abortions versus three or more, Turkey 1993

Parameter	Estimate	Odds ratio	Significance
Age			
< 25	0.00	1.00	.00
25-29	1.37	3.93	.19
30-34	2.27	9.66	.03
35-39	2.13	8.41	.04
40-44	2.29	9.87	.03
45-49	2.54	12.66	.01
Husband's level of education			
None	1.21	3.34	.00
Primary	0.00	1.00	.02
Secondary	0.10	1.11	.57
Higher	-0.19	0.83	.49

Table 4.4   Significant variables in Models 1, 2, and 3, Turkey 1993

Model 1: **0 abortion versus ALL**	**Model 2:** **1 abortion versus 2 or more**	**Model 3:** **2 abortions versus 3 or more**
Age	Age	Age
Education	Husband's education	Husband's education
Husband's education	Woman's attitude of family planning	
Husband's desire for children	Urban/Rural residence	
Region	Number of living children	
Urban/Rural residence		
Number of living children		

The third model compares women with two induced abortions to women with three or more abortions. This model includes only age and husband's education. The odds of having three or more induced abortions increase as women get older. The increase is four-fold in the 25-29 age group and nine-fold in the 30-34 age group. The odds ratio for women in 45-49 age group is 12.7.

Husband's education shows an interesting effect for women with three or more abortions. The odds of having three or more abortions increase 3.3 times for women whose husbands have no education, whereas in the previous models, the effect for no education is in the opposite direction. This may be explained by the fact that women having three or more induced abortions are probably not using any contraceptive method or not using the method effectively and, therefore, are using induced abortion as a means of limiting family size. These women are most likely uneducated and come from less educated families. In the univariate analysis, this effect is not observed, but when controlling for age, it becomes significant.

In all the three models, age of the woman and the husband's educational level are seen as the significant common variables. In having or not having an induced abortion, several factors play an important role. Woman's educational level, woman's perception of husband's desire for children, region, urban/rural residence, and the number of living children show significant effects.

For having more than one abortion, woman's belief that religion is against family planning reduces the odds of having had more than one abortion. Woman's education, regional differences and husband's desire for children are not significant for this model.

Only woman's age and husband's education are significant predictors of having three or more versus two abortions. This analysis highlights the importance of the husband's role in predicting induced abortion. The participation and impact of husbands on family planning is also shown in previous studies. These findings suggest that family planning activities should be planned and organized with more emphasis on men's involvement.

5 FACTORS RELATED TO TIMING OF ABORTION

In this section, factors affecting the timing of abortion are analysed. This section deals with women who had an induced abortion in the last five years (recorded in the calendar). It is important to know the characteristics of women who delay abortion beyond the safe time (after 10 weeks or 2.5 months), as it greatly increases the risk to the woman. The tables below show the effect of age and educational level of the woman and the husband on the timing of abortion. Regional and urban-rural differentials are also shown, as well as the health insurance status of the woman. These variables were the current status of the woman, which might have been different from that at the time of the abortion. Since the time frame for abortions are only the last five years, it is assumed that changes in these variables have not occurred. Only 18 percent of women have changed their place of residence in the last five years; however, the information on residence changes between regions is not available.

The timing of induced abortion is important for the health of the woman. Due to the fact that early abortions have less complications, induced abortions are legal upon request until 10 weeks of pregnancy. To assess the timing of abortions in Turkey, the month of pregnancy at the time of induced abortion is asked in the survey. The time information is collected in months, according to the design of the calendar. Therefore, anyone reporting one month could mean anything from 4 to 8 weeks since the last menstrual period. It is necessary to keep this fact in mind while reviewing the results of the tables concerning the timing of the abortions. It can be stated definitely that abortions in the third month or after are beyond the legal limits (8 percent), and even some of the 30 percent of women who terminated pregnancy in the second month are actually over the 10-week mark. The total number of abortions (799) refer to the last abortion a woman had in the last five years. The timing of abortion by selected background characteristics are shown in Table 5.1.

Women who are very young and those who are nearing the end of their fertility tend to be the ones who have late-term abortions, which may be explained by the fact that young women often do not realize early enough that they are pregnant, whereas older women may not realize it due to irregular menstrual periods. Among women who are less than age 24, 14 percent had their abortion in the third month or later, while 36 percent of women who are older than 40 had their abortion in the second month, and 12 percent had their abortion in the third month or later.

There are no major regional differences between the West, South and Central Regions in relation to the timing of induced abortions. The North and East Regions show differences from the pattern of the other regions. Abortions are delayed to the second month by 41 percent of the women in the North Region, and third month abortions (2 percent) are the least common among all regions. The timing of abortions in the East shows that 31 percent of all abortions are in the second month, and 20 percent of all abortions are performed in the third month or later.

More urban women have induced abortions in the first month than rural women. Rural women tend to delay abortion until the second month, but there are almost no differences between urban and rural women for induced abortions in or after the third month.

Education of both the woman and the husband has an effect on the timing of abortions. The higher the level of education, the earlier women obtain access to abortion services. While only 5 percent of the highly educated women have had an abortion after three months, 10 percent of uneducated women have had one (Table 5.2).

Table 5.1   Percent distribution of women who have had an induced abortion in the last five years by month of pregnancy termination, according to selected background characteristics, Turkey 1993

Background characteristic	Month when pregnancy ended			Total	Number of women
	1	2	3 +		
Age					
15-24	66.0	20.1	13.9	100.0	88
25-29	64.5	30.2	5.2	100.0	177
30-34	65.7	26.9	7.4	100.0	234
35-39	58.5	35.9	5.6	100.0	187
40-49	52.3	35.7	12.0	100.0	114
Region					
West	66.1	25.5	8.4	100.0	340
South	61.0	33.1	5.9	100.0	105
Central	62.2	32.8	4.9	100.0	193
North	57.5	40.8	1.7	100.0	73
East	49.4	30.7	19.9	100.0	88
Residence					
Urban	63.7	28.2	8.1	100.0	594
Rural	56.4	36.3	7.3	100.0	205
Total	61.8	30.3	7.9	100.0	799

Note: The total percentages shown in this table are different from Table 5.9 in the 1993 TDHS report, which includes all pregnancy terminations (abortions and stillbirths). The title of Table 5.9 in the TDHS report should be "Timing of Terminations."

The health insurance status of a woman can change over time. Table 5.2 shows the current status of health insurance and looks at induced abortions in the preceding five years where some of the women might have switched from being insured to uninsured or vice versa. Nevertheless, there is a difference in the timing of abortions between the two groups: 12 percent of the uninsured and 5-6 percent of the insured had abortions in or after the third month. There does not seem to be any differences between groups who have the Emekli Sandigi and the Social Security systems. The other category, which consists of privately insured, Bagkur and Greencard holders have quite varying benefits. Therefore, it is not relevant to comment on this group.

Timing of abortions and the choice of the provider are thought to be related. The later induced abortions could be done by private providers since it is not legal after 10 weeks of pregnancy. However, the two major providers—private and public doctors—seem to have similar patterns for timing of abortions. One reason could be that these doctors are in fact the same people who work both at their private practices and the government hospitals, and therefore their manner of practice does not vary. On the other hand, if they see a patient in their

Table 5.2 Percent distribution of women who have had an induced abortion in the last five years by month of pregnancy termination, according to educational level and health care characteristics, Turkey 1993

Education/Health care characteristic	Month when pregnancy ended				Number of women
	1	2	3 +	Total	
Level of education					
None	53.0	36.6	10.4	100.0	218
Primary	65.0	27.3	7.7	100.0	431
Secondary+	65.8	29.6	4.6	100.0	149
Husband's level of education					
None	48.6	35.9	15.5	100.0	44
Primary	60.4	31.2	8.4	100.0	424
Secondary	64.1	28.8	7.1	100.0	256
Higher	70.1	26.6	3.3	100.0	75
Health insurance					
None	59.8	29.0	11.2	100.0	314
SSK	65.0	29.4	5.5	100.0	306
Emekli sandiji	61.2	33.5	5.2	100.0	109
Other	58.0	34.6	7.4	100.0	70
Provider					
Private doctor	63.4	29.8	6.8	100.0	531
Government hospital	62.3	28.7	9.0	100.0	226
Other	(39.7)	(44.3)	(16.0)	100.0	(42)
Total	61.8	30.3	7.9	100.0	799

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

private practice who is farther along in her pregnancy, they may have the procedure done at the hospital which has better facilities than the private office. The "other" group consists of nurse/midwives, or unqualified providers such as traditional midwives; these are not discussed here because of the small number of such providers.

In general, urban and rural women do not show any difference in choosing the provider for abortion services. Table 5.3 shows the distribution of the choice of provider by months of pregnancy at the time of abortion, by urban and rural residence. Women show similar behaviour on their choice of provider according to their months of pregnancy whether they live in urban or rural areas.

Table 5.3　Percent distribution of women who have had a recent induced abortion by residence and month of pregnancy termination, according to type of provider, Turkey 1993

Type of provider	Month when pregnancy ended									
	Urban					Rural				
	1	2	3 +	Total	Number	1	2	3 +	Total	Number
Private	65.0	27.6	7.4	100.0	394	58.7	36.2	5.1	100.0	137
Hospital	64.5	27.3	8.2	100.0	177	(54.5)	(33.7)	(11.8)	100.0	49
Other	*	*	*	100.0	23	*	*	*	100.0	19
Total	63.7	28.2	8.1	100.0	594	56.4	36.3	7.3	100.0	205

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

6　CONTRACEPTIVE BEHAVIOUR LEADING TO INDUCED ABORTION

It is important to know the contraceptive behaviours of women that lead to an induced abortion. This information will help in understanding women seeking abortion and their contraceptive behaviour, and is of particular interest both to family planning counsellors and abortion providers. A woman who has an abortion is either not using a method or is using one incorrectly and it failed to prevent pregnancy. The nonuser could have either been not using since the time she got married or after she had a pregnancy which may or may not have resulted in a live birth.

Table 6.1 indicates that of the induced abortions that took place in the five years before the survey, 60 percent resulted from method failure, 18 percent from discontinuation of a method (nonuse), 14 percent from nonuse after pregnancy or marriage, and 8 percent for unknown reasons. The unknowns are from the left-truncated segments (segments of use which started prior to five years before the survey). In other words, in these cases it is not known whether the abortion was preceded by discontinuation or by nonuse. This is because the abortion is preceded by a period of nonuse that began before the start of the calendar period (prior to January 1988). The total number of abortions examined in this section is 917, which are all the abortions in the last five years.

The majority of abortions occur as a result of contraceptive failure regardless of age group. The pattern of reasons for abortion are similar in all age groups except among the women younger than 24. In this age group more abortions result from nonuse after a pregnancy than from discontinuing a method; among women over 25 years old, the reverse is true. This may indicate that younger women fail to use a method right after their pregnancy when indeed they do not want to get pregnant again.

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Table 6.1   Percent distribution of women by contraceptive behaviour before an induced abortion in the last five years according to selected background characteristics, Turkey 1993

Background characteristic	Contraceptive behaviour before abortion					Number of women
	Failure	Discontinuation	Nonuse	Unknown	Total	
Age						
< 19	(24.4)	-	(60.3)	(15.4)	100.0	29
20-24	63.3	9.4	19.8	7.5	100.0	138
25-29	60.9	20.0	14.5	4.7	100.0	288
30-34	60.8	24.3	10.6	4.2	100.0	228
> 35	59.8	18.0	9.2	13.0	100.0	234
Intent						
Spacer	50.6	15.3	25.5	8.5	100.0	204
Limiter	62.4	19.2	11.2	7.2	100.0	713
Parity						
1-2	48.8	15.0	28.4	7.8	100.0	152
3	65.6	19.1	10.6	4.6	100.0	282
4 +	59.8	18.9	12.2	9.0	100.0	483
Total	59.8	18.3	14.4	7.5	100.0	917

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

Among spacers, half of abortions are due to method failure, a quarter are due to nonuse after a pregnancy, 15 percent had discontinued a method, and 9 percent are unknown. Among limiters, most abortions are also the result of a method failure (62 percent), while discontinuation is the second major reason (19 percent), followed by nonuse after pregnancy (11 percent). That discontinuation is more frequent among the limiters could be related to the fact that they are also older and perceive themselves to be less likely to get pregnant. Nonuse after pregnancy being higher among spacers could be related to the fact that breastfeeding is accepted as a contraceptive measure. Parity shows patterns similar to other background variables mainly because it is affected by the age of the woman and closely related to contraceptive intent.

Table 6.2   Percent distribution of pregnancy outcomes after a contraceptive failure, according to method, Turkey 1993

Method	Result of pregnancy						Number of segments of use
	Birth	Miscarriage	Induced abortion	Stillbirth	Pregnancy	Total	
Pill	47.5	6.9	37.0	1.0	7.6	100.0	105
IUD	25.7	13.2	56.4	-	4.7	100.0	60
Condom	43.8	5.6	44.4	-	6.1	100.0	105
Withdrawal	37.6	7.0	46.6	1.5	7.2	100.0	804
Other	39.2	4.7	50.5	-	5.6	100.0	107
Total	38.5	7.0	46.5	1.1	6.9	100.0	1,181[a]

[a] There are 1,181 segments of use which resulted in failure in the last five years.

It is observed that 60 percent of induced abortions come from method failures (Table 6.1). It is also of interest to see the distribution of pregnancy outcomes that result from method failure (Table 6.2). Overall, 47 percent of failures end in an induced abortion, 39 percent in a live birth, 7 percent in miscarriage, 1 percent in stillbirth, and 7 percent were still pregnant at the time of the survey.

Most of the pregnancies after a failure of the IUD or "other" methods end in induced abortion (56 and 51 percent). Pill users are more likely to give birth after a failure than any other method users. Condom failures are as likely to result in a live birth as an induced abortion. Among the withdrawal users who fail, 47 percent have an induced abortion and 38 percent have a live birth.

Of all induced abortions coming from method failures (549) 68 percent come from withdrawal, 9 percent from condoms, 7 percent from the pill, 6 percent from the IUD, and 10 percent from other method failures (these percentages are calculated as the column percent of induced abortions).

7 CONTRACEPTIVE USE AFTER INDUCED ABORTION

The major group of women who have an induced abortion are in fact contraceptive method users, who either discontinue or fail while using. These women should learn how to use the methods effectively or should be counselled to use more effective methods. Therefore, the behaviour of these women in regards to contraceptive use after an induced abortion are analysed in more detail. In the TDHS final report, it is indicated that less than one-fifth of women adopt an effective method of family planning within one month of the abortion.

The relationship between the adoption of a method and background characteristics including age, number of pregnancies, number of induced abortions, woman's education, region and urban/rural residence are examined in the following section. Women's contact with health services during an abortion is a valuable opportunity for counselling on family planning. Therefore, the effect of the provider (public and private) on the post-abortion adoption of family planning methods is also examined.

The timing of the adoption of a method is analysed by the multiple-decrement life table technique, and these results are shown in Table 7.1 and Figure 7.1.

Table 7.1   Adoption of contraception and pregnancy rates after induced abortion, life table method, Turkey 1993

| Time after abortion | Adoption of contraception | | Pregnancy | Total |
	Modern method	Traditional method		
1 month	31.1	29.3	0.0	60.4
2 months	43.9	37.3	0.9	82.1
3 months	46.3	38.0	1.7	86.0
12 months	48.6	38.4	6.5	93.5
24 months	48.9	38.4	7.9	95.1
36 months	49.2	38.4	8.6	96.2

Note: The rates are obtained from the life table for all abortions in the last five years.

Figure 7.1 Contraceptive Use and Pregnancy Status After an Induced Abortion in the Last Five Years, Turkey 1993

Percent

(Graph showing Percent on y-axis from 0 to 60, and Month after abortion on x-axis from 1 to 24. Legend: Modern Method, Traditional Method, Pregnancy)

Month after abortion

—•— Modern Method   —+— Traditional Method   —— Pregnancy
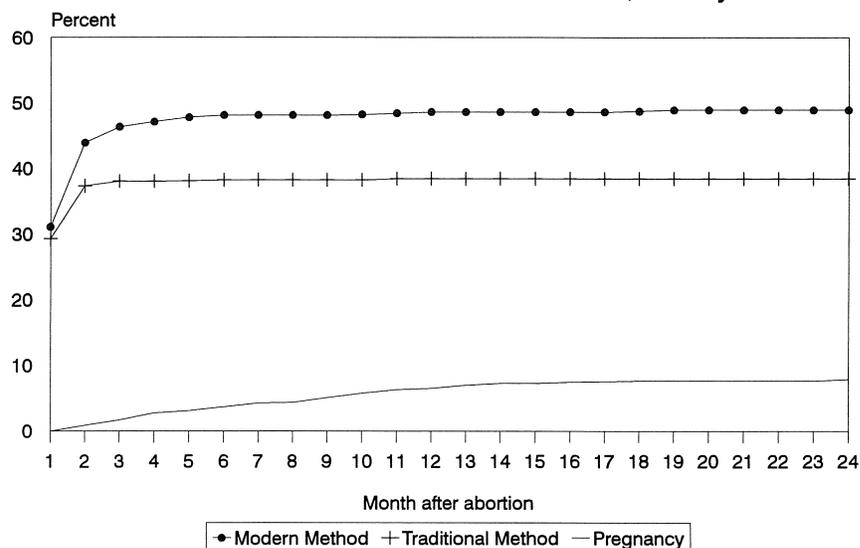
Method use after an induced abortion is analysed with a multiple-decrement life table. Acceptance of a modern method is 31 percent and acceptance of a traditional method is 29 percent in the first month following the abortion; this increases to 46 percent in modern methods and 38 percent in traditional methods by the third month after the abortion. There is a slight change after the third month in modern methods and no change in traditional methods after the third month. However, the pregnancy rate increases from 1 percent in the second month to 7 percent by the end of one year.

According to Table 7.2, three months after an induced abortion, 86 percent of women are using some type of contraception. Women who have had a recent induced abortion have a higher contraceptive prevalence, compared with all current users, who are 63 percent of the currently married women. It is expected that these women will be more motivated to use a contraceptive method and to use it effectively, right after they have had an induced abortion. However, 33 percent of these women have chosen to use withdrawal, while 11 percent use the pill, 24 percent use the IUD, and 11 percent use condoms. These findings show that there is a definite increase in contraceptive use after an abortion, regardless of method.

The TDHS final report shows the contraceptive use status of women one month after the abortion by status in the month previous to the abortion. In this study, it was believed that examining a longer time period would be useful, since adoption of a method could increase over time. As hypothesized, the nonusers dropped from 39 percent to 14 percent in the three-month period.

It is interesting to see that many women choose to stay with the method they were using before the abortion (Table 7.3). Fortunately, the switchers are mostly nonusers who start to use a method (68 percent). The majority of pill users also switch to other methods (69 percent). The group most resistant to change is women who practise withdrawal. After an induced abortion, 58 percent return to this practice. The other important group

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that needs to be examined is women who were nonusers prior to the induced abortion and remained nonusers 3 months after the abortion. These women consist of 32 percent of nonusers who had an induced abortion and 11 percent of all women who had an induced abortion.

Table 7.2   Percent distribution of women according to contraceptive use status 1 month and 3 months after the last induced abortion, Turkey 1993

	Contraceptive use status	
Method	1 month after abortion	3 months after abortion
No method	39.0	14.4
Pill	9.4	11.0
IUD	11.2	23.6
Diaphragm/spermicide	1.6	2.6
Condom	9.4	11.3
Female sterilization	0.6	0.8
Rhythm	1.3	1.5
Withdrawal	27.0	32.9
Other [a]	0.5	0.7
Pregnancy	-	1.2
Total	100.0	100.0
Number	788[b]	756[c]

[a] Other category includes: injectables, spermicides, periodic abstinence, vaginal douche, and other traditional methods.
[b] 11 cases are censored; (those who had an induced abortion at the month of interview).
[c] 43 cases are censored, (those who had an induced abortion prior to 3 months from the date of interview).

Table 7.3   Percent distribution of women by method used in the 3 months after the last abortion (in the five years preceding the survey), according to method use in the month before the abortion, Turkey 1993

Method used month before abortion	Method used 3 months after the abortion							
	Pill	IUD	Condom	Other[a]	Withdrawal	No method	Total	Number of women
Pill	(31.2)	(28.7)	(15.2)	(6.1)	(7.5)	(11.3)	100.0	33
IUD	(15.7)	(43.4)	(11.6)	-	(18.5)	(10.9)	100.0	38
Condom	(10.5)	(10.9)	(48.1)	(2.4)	(18.6)	(9.5)	100.0	41
Other[a]	10.1	19.8	6.6	40.5	17.1	5.9	100.0	54
Withdrawal	7.1	20.3	8.8	2.3	57.9	3.6	100.0	336
No method	13.1	27.3	9.0	7.7	10.9	32.1	100.0	254
Total	11.0	23.6	11.3	5.7	32.9	15.5	100.0	756[b]

Note: Figures in parentheses are based on 25-49 cases.
[a] Other category includes: injectables, spermicides, periodic abstinence, vaginal douche, and other traditional methods.
[b] There are 43 censored cases, which are the women who had an abortion in the three months before the interview.

Table 7.4   Percent distribution of women by method used in the 3 months after the last abortion (in the five years preceding the survey), according to selected background characteristics, Turkey 1993

Background characteristic	Method used 3 months after the abortion			Total	Number of women
	No method	Modern	Traditional		
Age					
<25	21.7	51.8	26.5	100.0	83
25-29	14.3	48.4	37.4	100.0	163
30-34	12.7	57.2	30.2	100.0	223
35-39	8.0	48.1	43.8	100.0	176
40-49	29.7	36.0	34.3	100.0	111
Education					
None	24.8	35.1	40.1	100.0	206
Primary	13.4	53.2	33.4	100.0	407
Secondary	8.4	60.0	31.6	100.0	143
Region					
West	10.9	55.1	34.0	100.0	317
South	11.3	50.0	38.7	100.0	96
Central	18.9	47.3	33.8	100.0	187
North	16.4	40.5	43.1	100.0	71
East	29.3	41.1	29.6	100.0	85
Residence					
Urban	14.2	51.5	34.3	100.0	565
Rural	19.5	43.7	36.7	100.0	191
Total	15.5	49.6	34.9	100.0	756

Certain characteristics of the woman such as age, education, and type of residence influence her decision to use or not use a contraceptive method after an induced abortion (Table 7.4). The method used varies with the age of the woman. Younger women tend to choose modern methods over traditional methods, although women 35-39 years of age have the highest prevalence of any method use; almost half of these users are using traditional methods.

Level of education has a large impact on contraceptive use after an induced abortion. One-quarter of women who do not have any education are not using any method, and only 35 percent are using a modern method. Modern method use increases as education increases (60 percent among those with secondary or higher education).

The regional method use patterns are similar to the contraceptive use patterns of ever-married women (MOH, HIPS, and MI, 1994: Ch. 4), nonuse being highest in the East, modern method use highest in the West, and traditional method use highest in the North. There are slight differences in method use by place of residence. Modern method use is 52 percent in urban areas compared with 44 percent in rural areas.

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Table 7.5   Percent distribution of women by method used in the 3 months after the last abortion (in the five years preceding the survey), according to selected fertility characteristics, Turkey 1993

Fertility characteristic	Method used 3 months after the abortion			Total	Number of women
	No method	Modern	Traditional		
No. of pregnancies					
1 - 2	22.1	51.2	26.7	100.0	70
3	12.8	53.6	33.6	100.0	123
4	11.2	54.2	34.5	100.0	157
5+	16.9	46.3	36.8	100.0	406
No. of induced abortions					
1	16.7	49.1	34.2	100.0	389
2	14.1	48.0	37.9	100.0	207
3	14.3	51.9	33.9	100.0	94
4+	14.8	54.1	31.0	100.0	65
Provider					
Private doctor	14.0	51.6	34.4	100.0	500
Government hospital	16.5	46.8	36.7	100.0	217
Other	(28.9)	(39.5)	(31.6)	100.0	38
Total	15.5	49.6	34.9	100.0	756

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

Women with one or two pregnancies are more reluctant to use a method after an induced abortion compared with women with 3 or 4 pregnancies (Table 7.5). More than half of the women who use a method choose a modern method except for women with 5 or more pregnancies (46 percent choose a modern method).

The number of previous induced abortions shows a relationship opposite to that of the number of pregnancies. As the number of previous abortions increases, modern method use also increases.

The type of provider is not a significant determinant of post-abortion contraceptive method. Fifty-two percent of women who have an abortion in a private clinic use a modern method, compared with 47 percent of women who have an abortion in a government hospital.

8   CONCLUSION

In Turkey, there is a high rate of induced abortion per pregnancy; however, only 28 percent of all women have had an abortion. Therefore, it is apparent that only certain groups of women use abortion services. One of the characteristics examined is age. The proportion of women who have had an induced abortion increases with age. Similarly, as the number of living children increases, the proportion of women who have an abortion also increases.

The age effect is a crucial element that is correlated with many other variables, particularly parity, number of stillbirths, and miscarriages. Multivariate analysis is used to control simultaneously for the effects of several variables. The results show that having an induced abortion is significantly associated with age, education, husband's education, woman's perception of husband's desire for children, region, place of residence, and number of living children. These variables have different effects as the number of induced abortions increases.

Another important issue is the timing of the abortion. Ninety-two percent of induced abortions take place before the end of the second month of pregnancy, and 8 percent occur in the third or later months. Late abortions present a problem especially in the youngest and oldest age groups. Abortions take place at a later time in the North and East Regions compared with other regions. Educated women seek abortions earlier than women with no education.

The prior contraceptive behaviour of women that seek abortion is another area of interest. Sixty percent of abortions are the result of a method failure and 20 percent are the result of discontinuation of a method. Among failures, withdrawal users are the major group and among these, 47 percent have had an induced abortion. Looking at all the reasons for induced abortion, the results show that 68 percent come from withdrawal failures. Therefore, method failure is a very important cause of induced abortion. Method failures need to be reduced, and users of withdrawal, which has a high failure rate, should be encouraged to switch to a modern method.

Post-abortion counselling is an important opportunity to provide information about family planning. This is a time of especially high motivation to use a contraceptive method. However, almost half of the women (45 percent) who start using a method choose a traditional method. There is an increase in method adoption from 1 month to 3 months after an abortion. Method choice is affected by education and age of the woman. Women in the West Region and in urban areas are more likely to prefer modern methods.

In conclusion, if the intention is to reduce the induced abortion rate, policies should address some of these important issues. Efforts should be made to reduce withdrawal use by switching to more effective methods. However, withdrawal should not be disregarded totally, since it has been a widely used method for a long time and is known and accepted by the population in general. Information on the failure rates and consequences should be provided, and specific methods could be advised for select groups of users but not for others. The health consequences of induced abortion are not well understood by the population. Awareness of these issues should be increased and better counselling to reduce the discontinuation of methods in general should be encouraged. Postpartum counselling is essential to start contraceptive use at the right time after the termination of a pregnancy. Post-abortion counselling is also necessary to increase effective method use following an induced abortion.

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UTILIZATION OF

MATERNAL HEALTH

SERVICES IN TURKEY

Ahmet Afşar

and

Mehmet Ali Biliker

1   INTRODUCTION

Antenatal care (ANC) is the regular observation of mother and foetus by health personnel (midwife/nurse/physician) throughout the whole pregnancy with necessary examinations and recommendations. Women who have received adequate ANC during their pregnancy are expected to deliver in appropriate conditions (in a health institution and/or with the assistance of health personnel). Therefore, ANC and delivery services, as practised in Turkey, should be provided within the primary health care system.

The 1993 Turkey Demographic and Health Survey (TDHS) obtained information on a number of basic aspects of reproductive health services for women; specifically, the care that women receive during pregnancy and their use of delivery care services. With respect to maternity care services, according to the 1993 TDHS, 62 percent of women in Turkey receive at least some prenatal care by health personnel, and 60 percent deliver their babies in a health facility. However, for a large minority of births—roughly 1 in 3—women do not receive even one checkup during pregnancy, and 2 in 5 births are delivered at home. Among births taking place outside a health facility, nearly half are delivered without the assistance of a trained health professional.

For more than half of the births, ANC visits start before the fifth month. With regard to the frequency of care, although 37 percent of women received no ANC, 36 percent had 4 or more visits. Among those who received ANC, the median number of ANC visits is 4.7, and median time at first visit was 3.1 months.

As an important ANC service, Tetanus Toxoid (TT) vaccination status is examined in the 1993 TDHS. Among the births in the five years preceding the survey, 16 percent had one dose, and 26 percent had two or more doses of TT.

In this study, the aim is to obtain additional information regarding the provision and use of ANC and delivery services in Turkey by reevaluating the 1993 TDHS data. ANC and delivery services were defined and their relation to place of residence, region, mother's age, mother's education, birth order and type of health insurance are examined. Furthermore, the trends in reproductive health in the five years preceding the survey are evaluated.

2   ANTENATAL CARE

Antenatal care (ANC), is the regular observation and care of mother and foetus by trained health personnel (midwife/nurse/physician) throughout the whole pregnancy with necessary examinations and recommendations. During the five-year period covered by the 1993 TDHS, 62 percent of the pregnant women received at least one antenatal visit by health personnel, but this percentage is not considered adequate. Pregnant women, who had ANC provided by health personnel, began ANC in or before the third month of pregnancy, and received 5 or more antenatal visits, are considered to have received adequate ANC. According to this definition, only 25 percent of pregnant women have received adequate ANC while 38 percent have received no ANC. These percentages did not change considerably over the five years preceding the survey (Figure 1).

Figure 1 Status of Antenatal Care in the Five Years
Preceding the Survey, Turkey 1993
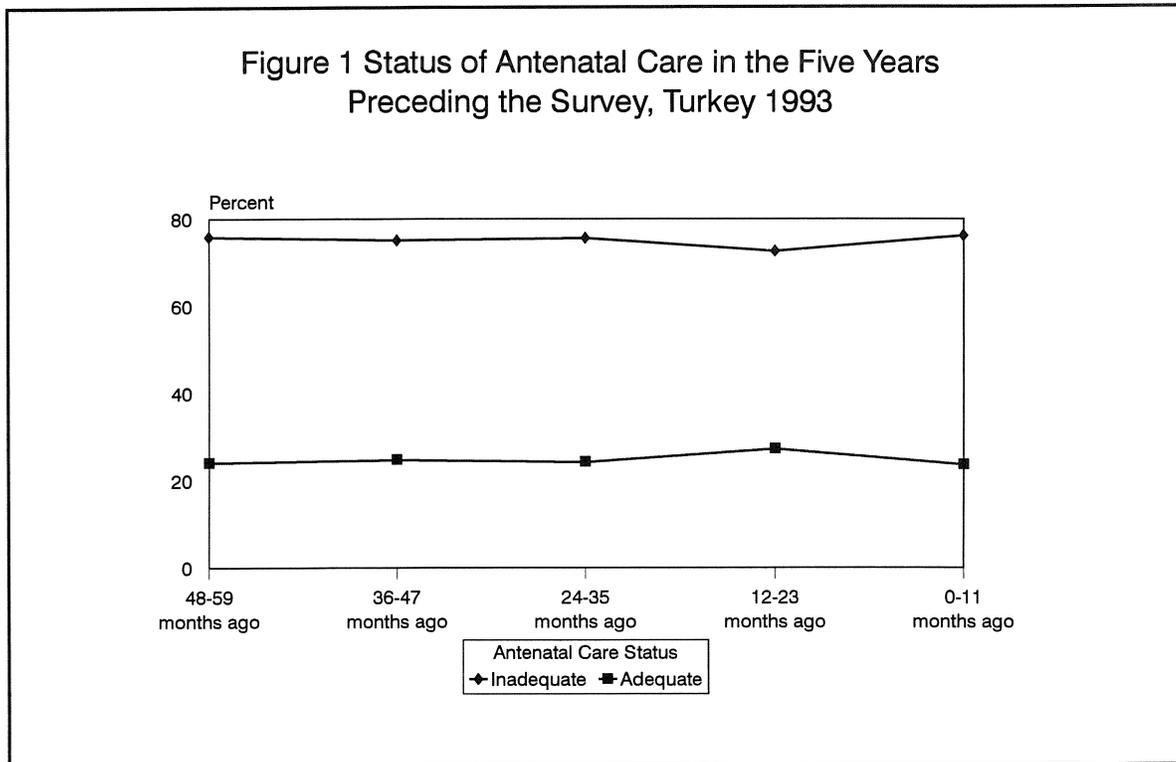
There is a considerable difference between the West (45 percent) and East Regions (9 percent) in receiving adequate ANC (Table 1). On the other hand, the percentage of women without ANC is 67 percent in the East Region.

Differences by place of residence are also apparent in receiving ANC. Those living in urban areas are more likely to receive ANC than those living in rural areas (34 percent and 11 percent, respectively).

Coverage of adequate ANC increases with educational level. Only 8 percent of women who did not complete primary education received adequate ANC, while this figure is 28 percent and 60 percent for those who completed primary and secondary school, respectively.

Table 2 shows the comparison of educational level with selected background characteristics among women receiving adequate ANC. There is a considerable difference between women with no education and those who completed secondary school or higher.

Children born to very young or to older women may experience increased mortality. Studies have shown that mortality rates are very high among children of young mothers. At the same time, 13 percent of women age 15-19 years are married in Turkey, which means 1 in 6 women gets married in adolescence. It is particularly important that adolescent pregnancies, like pregnancies of women above age 35, receive adequate ANC. However, only 23 percent of adolescent pregnant women have received adequate ANC. This percentage decreases to 12 percent in women 35 years of age and above, while it is 27 percent in the 20-34 age group, which is at less risk (Table 1). However, when considering mother's education, women who finished secondary school and higher have the highest percentage of ANC compared with the other educational groups (Figure 2).

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Table 1   Percent distribution of births in the five years preceding the
          survey, by antenatal care, according to selected background
          characteristics, Turkey 1993

Background characteristics	Adequate None	Inadequate ANC	Total	Number of births
Region				
West	44.6	55.4	100.0	985
South	28.4	71.6	100.0	587
Central	19.3	80.7	100.0	820
North	19.7	80.3	100.0	356
East	8.9	91.1	100.0	947
Residence				
Urban	34.3	65.7	100.0	2197
Rural	11.0	89.0	100.0	1498
Level of Education				
None	7.6	92.4	100.0	1350
Primary	28.0	72.0	100.0	1845
Secondary+	59.6	40.4	100.0	500
Age at birth				
< 20	22.8	77.2	100.0	581
20-34	26.6	73.4	100.0	2831
35+	11.8	88.2	100.0	283
Health Insurance				
None	14.9	85.1	100.0	2075
SSK	36.2	63.8	100.0	1046
Emekli Sandığı	41.5	58.5	100.0	312
Bağ-Kur	44.1	55.9	100.0	178
Other	26.9	73.1	100.0	71
Birth order				
1	35.1	64.9	100.0	1226
2-3	27.1	72.9	100.0	1502
4-5	11.8	88.2	100.0	499
6+	4.7	95.3	100.0	469
Total	24.8	75.2	100.0	3695

Table 2   Percentage of women who received adequate ANC during their pregnancy by level of education, according to selected background characteristics, Turkey 1993

Background characteristics	None	Primary	Secondary+	Total
Region				
West	20.8	41.0	70.9	44.6
South	9.7	30.2	62.0	28.4
Central	4.1	19.6	55.4	19.3
North	10.3	19.1	47.8	19.7
East	4.8	15.6	30.0	8.9
Residence				
Urban	11.8	35.5	61.6	34.3
Rural	3.9	16.2	42.4	11.0
Age at birth				
<20	5.1	26.4	55.8	22.8
20-34	8.8	28.7	59.4	26.6
35+	4.3	19.1	74.2	11.8
Health Insurance				
None	5.5	19.4	54.6	14.9
SSK	12.1	38.4	62.8	36.2
Emekli Sandığı	20.8	36.3	54.2	41.5
Bağ-Kur	19.8	39.0	72.8	44.1
Other	4.0	20.6	71.2	26.9
Birth order				
1	10.9	31.7	62.0	35.1
2-3	9.4	28.8	58.5	27.1
4-5	7.5	17.4	20.7	11.8
6+	4.2	7.8	-	4.7
Total	7.6	28.0	59.6	24.8

Figure 2 Percent Distribution of Women Who Received
Adequate ANC During Their Pregnancy by Education
and Age at Birth, Turkey 1993
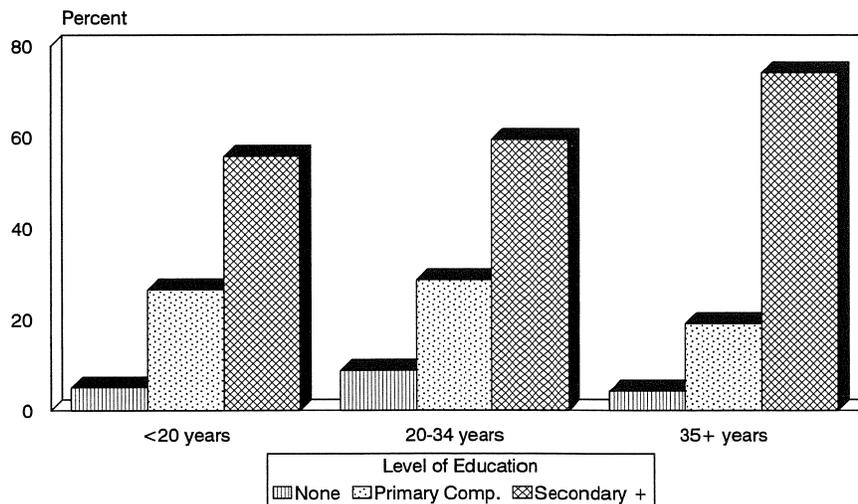
ANC services are provided free of charge to every individual in primary and secondary health care institutions of the Ministry of Health in Turkey. Nevertheless, a considerable difference has been found between those who have and do not have health insurance in regards to ANC. According to the 1993 TDHS, 56 percent of the women surveyed did not have health insurance. Only 15 percent of this group of women had received adequate ANC, while 38 percent of women with some type of health insurance did (Table 1). A similar situation is observed with the husband's health insurance status. In addition, the ANC percentage is less among women who are under the coverage of SSK insurance, compared with other insurance systems. This suggests that people using SSK institutions may have some problems in accessing or receiving ANC services.

Fifteen percent of women who delivered in the five years preceding the survey report that they were checked by a nurse/midwife only in the antenatal period (Table 3). While ANC coverage is 25 percent in women who were followed up by a midwife only or by both a physician and midwife, this percentage rises to 38 percent among women who were followed up by only a physician. This result suggests that midwives, although being more accessible, are not preferred by women seeking ANC. A similar situation was observed in the 1988 Turkish Population and Health Survey.

Table 3   Percentage of women who delivered in the preceding five years by birth interval, according to
          antenatal and delivery care characteristics, Turkey 1993

ANC and Delivery Care characteristics	Birth delivered in interval:					
	48-59 months ago	36-47 months ago	24-35 months ago	12-23 months ago	0-11 months ago	Total
TT Vacccination						
No TT	63.5	61.1	50.7	50.5	52.1	55.6
TT 1 dose	15.1	13.6	15.9	14.6	12.6	14.3
TT 2+ dose	21.4	25.3	33.3	34.8	35.3	30.1
Antenatal Care Provider						
No one	43.4	40.6	34.0	33.6	33.3	37.0
Other	0.8	0.6	0.6	0.6	0.4	0.6
Nurse/midwife only	13.5	15.7	16.4	17.2	14.5	15.4
Physician only	34.5	35.3	38.8	38.8	40.4	37.6
Physician and Nurse/midwife	7.7	7.8	10.2	9.8	11.4	9.4
Assistance During Delivery						
No one	1.6	2.1	0.8	2.0	1.3	1.6
Other	23.3	25.6	21.1	20.3	22.6	22.6
Nurse/midwife only	43.1	40.9	44.5	42.7	41.2	42.5
Physician only	8.1	8.5	8.5	10.5	9.0	8.9
Physician and Nurse/midwife	23.9	23.0	25.1	24.5	25.9	24.5
Place of Delivery						
Home	45.4	44.4	41.4	35.5	36.1	40.5
Respondent's home	45.2	44.3	41.2	35.2	36.0	40.3
Other home	0.1	0.1	0.3	0.3	0.1	0.2
Clinic	54.6	55.6	58.6	64.5	63.9	59.5
Public	51.4	52.4	54.7	59.9	59.6	55.7
Private	3.2	3.3	3.8	4.5	4.3	3.8
Delivery Status						
Home/no medical care	24.7	27.4	21.9	22.2	23.8	24.0
Home/medical care	20.6	17.0	19.6	13.4	12.3	16.5
Clinic/medical care	54.6	55.4	58.6	64.3	63.9	59.5
Antenatal Care Status						
Inadequate	75.9	75.2	75.7	72.7	76.3	75.2
Adequate	24.1	24.8	24.3	27.3	23.7	24.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	771	749	692	747	737	3695

During the five years preceding the survey, the percentage of women receiving ANC from health personnel has increased from 56 percent to 66 percent, while there was a 10 percent decrease in the number of women receiving no ANC (Figure 3).

Figure 3 Percentage of Women by Antenatal Care Provider Status in the Five Years Preceding the Survey, Turkey 1993
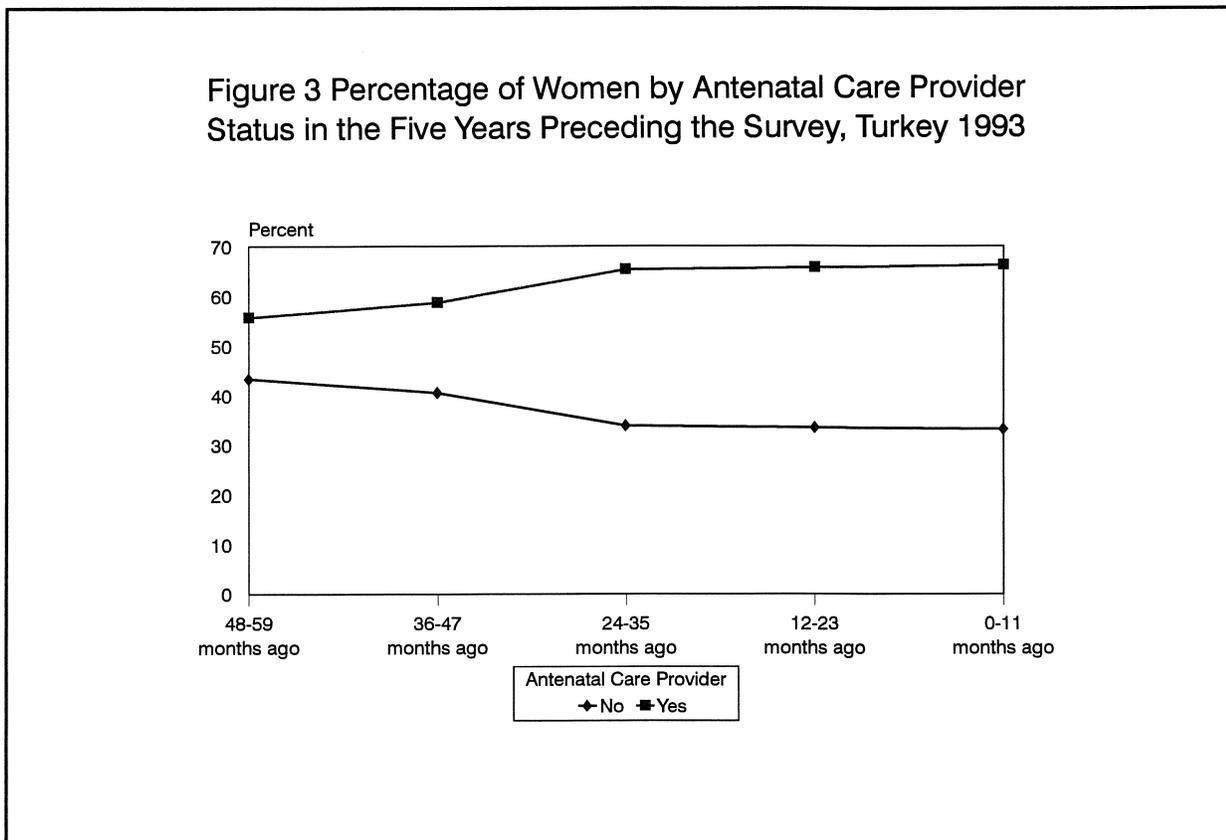
According to the maternal health programme in Turkey, pregnancies among women who have given birth more than four times are considered high risk and should, in particular, be provided adequate ANC. When birth order is examined, women are more likely to receive ANC for their first delivery (35 percent). ANC coverage decreases as birth order increases, dropping to 5 percent for the sixth delivery and above (Table 1).

2.1   Multivariate Analysis

After determining the effect of each variable on ANC, their net effect was analysed using logistic regression. Reference groups were determined for all categorical variables, and dummy variables were created. Backward elimination was used to derive the model with the best fit.

Table 4 shows the significant variables in the model. When the partial correlation values (R) are ranked, woman's education had the greatest influence on the model. Region also had a similar effect.

In Table 5, coefficients and odds ratios are shown for each category of the variables in the model.

Table 4   Logistic regression analysis of variables affecting adequate antenatal care, Turkey 1993

Variable	Wald	Significance	R
Level of Education	114.3682	0.0000	0.1635
Region	110.9279	0.0000	0.1579
Health Insurance	62.0098	0.0000	0.1144
Residence	55.4532	0.0000	0.1138
Birth order	25.9243	0.0000	0.0695

No significant difference at the 0.05 level was found between the Central and East Regions. When the other regions were analysed, the probability of having adequate ANC was found to be 3.6 times higher in the West Region, 2.5 times higher in the South Region, and 1.6 times higher in the North Region compared with the East Region.

The probability of receiving adequate ANC is 2.2 times higher in urban areas than in rural areas. Mother's education also has an effect on receiving adequate ANC. Among women who completed secondary school or higher, the probability of receiving adequate ANC is 5.4 times more than for women who had no education or did not complete primary education, and 2.2 times more than for those who were primary school graduates.

The presence of health insurance has a positive impact on the probability of adequate ANC. The probability of receiving adequate ANC for those under the coverage of SSK, Bağ-Kur, or Emekli Sandığı is approximately 2 times higher than for those who do not have insurance. However, this difference is not apparent among women who have the "other" type of health insurance.

Table 5   Coefficients and odds ratios of significant variables predicting adequate antenatal care, Turkey 1993

Variable	B	Significance	Odds Ratio
Region			
West	1.2707	0.0000	3.5634
South	0.897	0.0000	2.4522
Central	0.3072	0.0577	1.3597
North	0.4852	0.0131	1.6246
East	-	Reference	-
Residence			
Urban	0.7810	0.0000	2.1837
Rural	-	Reference	-
Level of Education			
None	-	Reference	-
Primary	0.8044	0.0000	2.2354
Secondary +	1.6897	0.0000	5.4178
Health Insurance			
None	-	Reference	-
SSK	0.6557	0.0000	1.9264
Emekli Sandığı	0.7649	0.0000	2.1487
Bağ-Kur	0.9448	0.0000	2.5724
Other	0.4381	0.1863	1.5497
Birth order			
1	1.0286	0.0000	2.7971
2-3	0.8525	0.0005	2.3456
4-5	0.4067	0.1386	1.5019
6+	-	Reference	-
Constant	-4.2684	0.0000	

The higher the birth order, the less likely the woman is to have adequate ANC. The probability of receiving adequate ANC is 2.8 times higher for the first delivery, and 2.3 times higher for the second and third deliveries compared with the sixth delivery. There is little difference between the probability of seeking ANC for fourth and fifth deliveries, and sixth or higher deliveries.

3   TETANUS VACCINATION

Vaccination against tetanus is one of the services that should be provided during antenatal care (ANC). According to the vaccination schedule applied in the time period covered by the survey, pregnant women should receive 2 doses of tetanus toxoid (TT) after the first trimester and up to three weeks before delivery. If the pregnant woman had received 1 dose of TT in one of her previous pregnancies and it has been less than 5 years since the administration of the first dose, one dose of TT in her current pregnancy is sufficient and is classified as TT2. In the five years preceding the 1993 TDHS, the percentage of women who were not vaccinated against tetanus has decreased from 64 percent at the beginning of the five-year period to 52 percent in the most recent period (0-11 months), while TT2 coverage has increased from 21 percent to 35 percent, respectively. There is no significant change in TT1 coverage (Table 3 and Figure 4).

Figure 4 Tetanus Toxoid (TT) Coverage in Pregnant Women in the Five Years Preceding the Survey, Turkey 1993
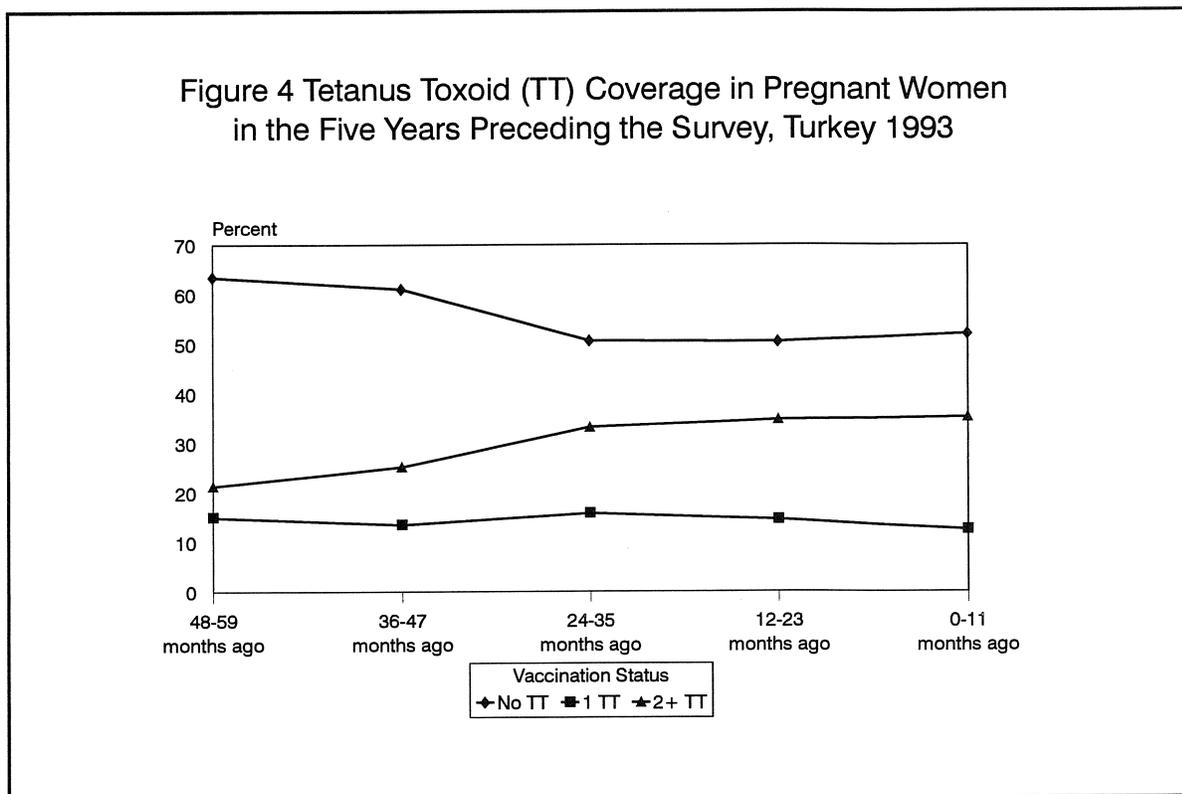
Table 6 shows the distribution of births in the five years preceding the survey by number of TT injections given to women during pregnancy, according to selected background characteristics. Total doses of TT which were administered since the beginning of that period until the last pregnancy were counted. One dose of TT in the last pregnancy was counted as TT1 if the woman had not been vaccinated in her previous pregnancies; if she had been previously vaccinated, the dose in the most recent pregnancy was counted as TT2.

By regional breakdown, TT2 coverage is highest in the South Region (52 percent) and lowest in the East Region (16 percent). There is no considerable difference between rural and urban areas in terms of vaccination coverage.

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Mother's education has an important effect on vaccination status. The percentage of adequately vaccinated women increases with level of education.

No considerable difference is observed between women who are less than 20 and those in the 20-34 age group according to TT vaccination. However, the percentage of adequately vaccinated women in the 35 and above age group is 15 percent, which is less than half of those in the other age groups.

Birth order also influences TT vaccination status. Although there are not noticeable differences in vaccination status among the first three deliveries, the percentage of adequately vaccinated women decreases rapidly for fourth and higher deliveries.

The person providing ANC seems to affect TT coverage. Coverage is lower among women who receive ANC from a physician compared with women who receive ANC from a midwife or from both. Among the women seen by a physician, TT2 coverage is 33 percent while the percentage of unvaccinated women is 52 percent. The percentage of adequately vaccinated women increases to 58 percent among those who have been followed up by both the physician and the midwife (Figure 5).

Figure 5 Tetanus Toxoid Coverage in Pregnant Women According to Antenatal Care Provider, Turkey 1993
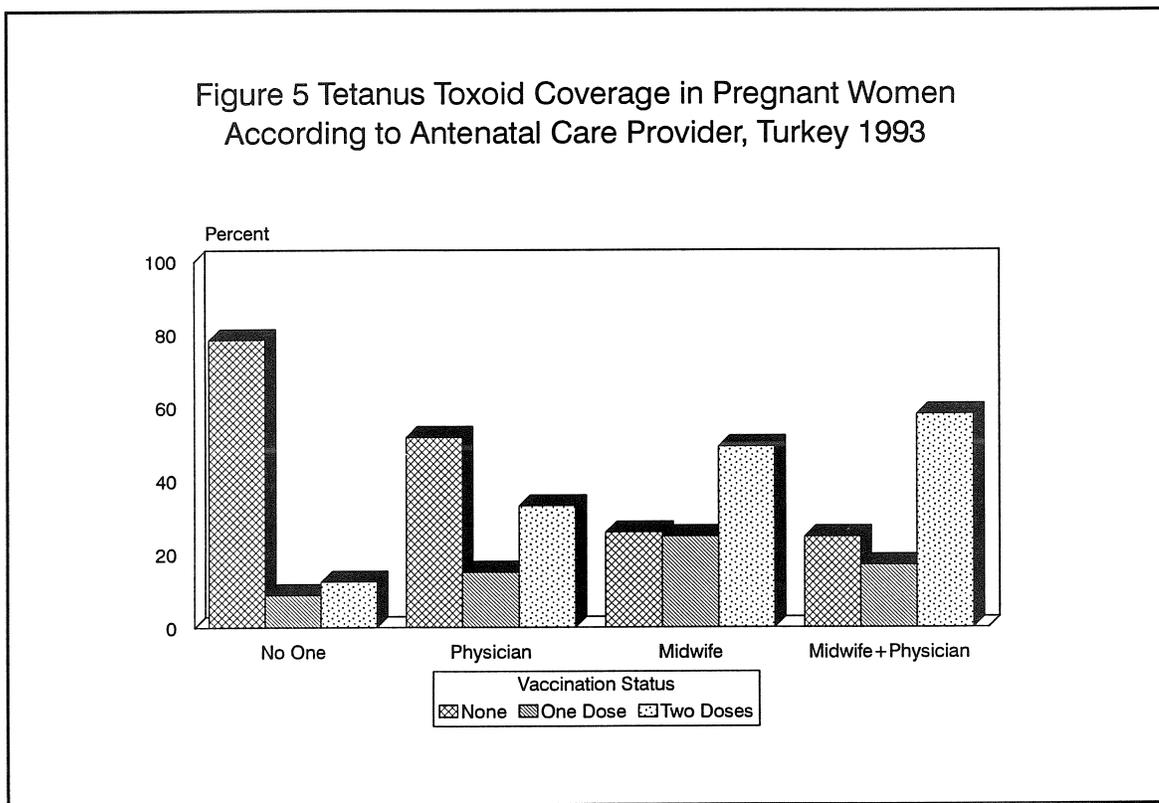
Among women who receive adequate ANC (from health personnel, beginning at the suitable time, and in adequate frequency), only 41 percent have received 2 doses of TT. In pregnancies that are considered to be followed up adequately, coverage of TT is expected to be higher.

Table 7 shows missed opportunities of TT vaccination in women receiving adequate ANC. According to this table, the highest TT2 coverage is observed in the South Region, while the lowest appears in the West and Central Regions.

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Table 6 Percent distribution of births in the five years preceding the survey, by number of tetanus toxoid (TT) injections given to the mother during pregnancy, according to selected background characteristics, Turkey 1993

Background characteristics	TT Vaccination Status			Total	Number of Births
	None	**One Dose**	**Two Doses**		
Region					
West	54.1	14.4	31.5	100.0	973
South	32.6	15.8	51.6	100.0	581
Central	55.2	16.2	28.6	100.0	814
North	47.3	19.3	33.4	100.0	354
East	73.2	10.4	16.4	100.0	938
Residence					
Urban	51.9	15.4	32.7	100.0	2177
Rural	60.1	13.1	26.8	100.0	1484
Level of Education					
None	70.1	11.0	18.9	100.0	1340
Primary	45.5	16.4	38.1	100.0	1827
Secondary +	50.4	16.9	32.7	100.0	494
Age at birth					
< 20	54.1	14.3	31.6	100.0	577
20-34	53.6	14.8	31.6	100.0	2802
35+	73.2	11.6	15.2	100.0	281
Birth order					
1	49.7	15.8	34.5	100.0	1217
2-3	50.4	15.7	33.9	100.0	1490
4-5	65.0	12.1	23.0	100.0	493
6+	74.5	9.8	15.7	100.0	461
Health Insurance					
None	60.0	14.0	26.1	100.0	2060
SSK	48.4	15.2	36.4	100.0	1033
Emekli Sandığı	49.7	15.4	35.0	100.0	310
Bağ-Kur	44.6	13.8	41.5	100.0	174
Other	62.4	19.4	18.2	100.0	71
Antenatal Care Provider					
No one	78.5	8.9	12.5	100.0	1361
Physician	51.8	15.1	33.1	100.0	1368
Midwife	25.9	24.8	49.3	100.0	565
Midwife and Physician	24.7	17.1	58.1	100.0	345
Number of ANC Visits					
0	78.5	8.9	12.5	100.0	1361
1-3	43.6	19.4	37.0	100.0	967
4+	39.8	16.6	43.6	100.0	1316
Don't Know	35.1	12.5	52.3	100.0	16
Delivery Conditions					
In a health facilty	47.5	16.4	36.1	100.0	2181
At home by health personnel	50.4	14.4	35.2	100.0	604
Unhealthy	77.6	9.6	12.8	100.0	876
Antenatal Care					
Adequate	42.7	16.2	41.1	100.0	909
Early, but inadequate	44.9	14.2	40.9	100.0	603
Late, and inadequate	36.0	22.7	41.3	100.0	733
None	78.1	9.0	12.9	100.0	1383
Don't know	53.0	17.9	29.1	100.0	34
Total	55.2	14.5	30.3	100.0	3661

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When all of the pregnancies are examined, TT vaccination is found to be lower in rural areas (Table 6). However, the percentage of adequately vaccinated women who receive adequate ANC is less in urban areas than rural areas (Table 7). If TT vaccination was accepted as the only indicator of quality for ANC, these results would show that the quality of ANC is actually better in rural areas.

When TT vaccination and mother's educational level are examined together, TT2 coverage is significantly higher among women who completed primary education compared with uneducated women. The percentage of women with TT2 coverage is not greater in the highest educated group, but rather in the group who completed only primary school (Table 6).

Table 7   Percent distribution of births in the five years preceding the survey by number of tetanus toxoid (TT) injections given to mothers who have adequate antenatal care during pregnancy, according to selected background characteristics, Turkey 1993

| | TT Vaccination Status | | | | |
	None	One Dose	Two Doses	Total	Number of Births
Region					
West	51.3	13.7	35.0	100.0	435
South	20.7	19.2	60.1	100.0	164
Central	45.4	17.8	36.8	100.0	157
North	36.3	22.1	41.6	100.0	69
East	41.5	15.1	43.4	100.0	83
Residence					
Urban	47.1	15.0	37.9	100.0	745
Rural	22.9	21.0	56.1	100.0	164
Level of Education					
None	40.4	17.4	42.2	100.0	103
Primary	37.4	16.4	46.2	100.0	512
Secondary +	52.8	15.2	31.9	100.0	293
Age at birth					
< 20	30.4	19.6	50.0	100.0	131
20-34	44.4	15.4	40.2	100.0	745
35+	53.9	19.5	26.6	100.0	32
Birth order					
1	42.7	15.5	41.8	100.0	427
2-3	43.0	17.4	39.6	100.0	403
4-5	49.3	12.0	38.7	100.0	57
6+	20.9	16.5	62.6	100.0	22
Health Insurance					
None	39.7	17.4	42.9	100.0	307
SSK	41.8	14.6	43.6	100.0	375
Emekli Sandığı	48.1	17.3	34.6	100.0	128
Bağ-Kur	45.7	17.0	37.3	100.0	77
Other	57.5	17.6	25.0	100.0	19
Antenatal Care Provider					
Physician	52.7	15.3	32.1	100.0	629
Midwife	18.0	19.7	62.3	100.0	121
Midwife and Physician	21.8	17.0	61.1	100.0	158
Total	42.7	16.2	41.1	100.0	909

4   DELIVERY CARE SERVICES

In this report, deliveries that took place in a health facility or at home with the assistance of trained health personnel are considered healthy (safe) deliveries. Using this definition, 24 percent of the deliveries reported in the 1993 TDHS occurred in unhealthy (unsafe) conditions. The distribution of births in the five years preceding the 1993 TDHS by condition of delivery are presented in Table 8 and Figure 6. There is a considerable change in the number of births delivered in healthy conditions between the first and the last year covered by the survey. While deliveries at home with the assistance of trained health personnel have decreased by 8 percent, those in the health facility have increased by 9 percent during this period.

Of all deliveries reported in the 1993 TDHS, 60 percent took place in a health facility and 40 percent at home. Health personnel assisted 41 percent of the home deliveries. The remainder of the home deliveries occurred with the help of traditional birth attendants (TBA) or neighbors (not shown).
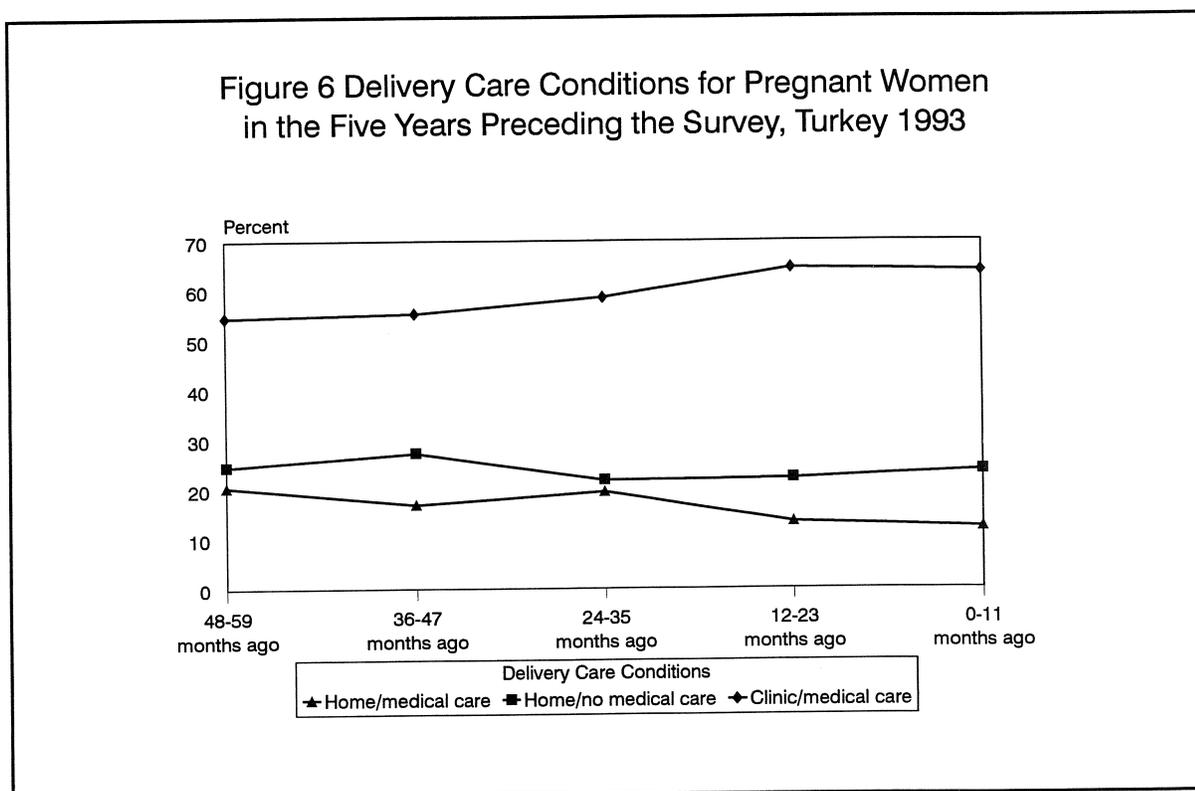
Figure 6 Delivery Care Conditions for Pregnant Women
in the Five Years Preceding the Survey, Turkey 1993

By region and place of residence, unhealthy deliveries are more frequent in the East Region and in rural areas. The highest percentage of healthy deliveries is observed in the West Region (94 percent) (Table 8). When the assistance of health personnel in home deliveries is examined separately (Table 9), births in the South Region are more frequently assisted by health personnel (57 percent), than those in the Central and North regions, despite the fact that the percentage of deliveries in a health facility is similar in those three regions.

Mother's education also affects the condition of delivery. Among women with secondary education or higher, the percentage of unhealthy deliveries is only 1 percent, while this figure is 47 percent among those who did not complete primary school (Table 8).

Table 8 Percent distribution of births in the five years preceding the survey, by conditions of delivery, according to selected background characteristics, Turkey 1993

	In a health facility	At home by health personnel	Unhealthy	Total	Number of births
Region					
West	80.1	13.5	6.4	100.0	985
South	62.9	21.3	15.8	100.0	587
Central	63.8	13.4	22.9	100.0	820
North	66.4	13.2	20.4	100.0	356
East	29.6	20.6	49.8	100.0	947
Residence					
Urban	73.5	14.3	12.1	100.0	2197
Rural	38.9	19.6	41.5	100.0	1498
Level of Education					
None	33.9	19.2	46.9	100.0	1350
Primary	70.5	16.2	13.4	100.0	1845
Secondary +	88.1	10.5	1.4	100.0	500
Age at birth					
< 20	61.6	15.4	23.0	100.0	581
20-34	60.4	17.1	22.4	100.0	2831
35+	46.0	12.2	41.8	100.0	283
Birth order					
1	77.8	12.2	10.1	100.0	1226
2-3	61.2	19.0	19.8	100.0	1502
4-5	40.5	21.3	38.2	100.0	499
6+	26.4	14.8	58.9	100.0	469
Health Insurance					
None	47.1	18.3	34.7	100.0	2075
SSK	75.7	14.2	10.1	100.0	1046
Emekli Sandığı	79.8	12.5	7.7	100.0	312
Bağ-Kur	76.2	16.4	7.4	100.0	178
Other	57.1	18.1	24.8	100.0	71
Antenatal Care Provider					
None	34.5	17.7	47.8	100.0	1365
Physician	82.4	10.5	7.1	100.0	1388
Nurse/Midwife	55.1	25.6	19.3	100.0	570
Nurse/Midwife and Physician	74.6	21.2	4.1	100.0	347
TT Vaccination					
None	51.3	15.1	33.7	100.0	2020
One dose	67.7	16.4	15.9	100.0	530
Two doses	70.8	19.1	10.1	100.0	1111
Antenatal Care					
Adequate	84.7	12.8	2.5	100.0	918
Early but inadequate	68.3	18.4	13.4	100.0	612
Late, inadequate	67.0	17.5	15.5	100.0	741
None	34.6	17.6	47.8	100.0	1387
Don't know	71.1	14.1	14.8	100.0	37
Total	59.5	16.5	24.0	100.0	3695

Turkish health policies define pregnancies before the age of 20 and over 35 as high risk. ANC services and healthy delivery conditions are particularly important for these two groups. There is no significant difference between women giving birth at 20 and under and the 20-34 age groups (77 percent and 78 percent, respectively), while the percentage of healthy deliveries declines to 58 percent for women age 35 and above.

Table 9   Percent distribution of births in home deliveries in the five years preceding the survey, by health personnel assistance, according to region, Turkey 1993

| | Births in Home Deliveries | | | |
	With health Personnel	Unhealthy	Total	Number of births
Region				
West	67.8	32.2	100.0	196
South	57.3	42.7	100.0	218
Central	37.0	63.0	100.0	297
North	39.1	60.9	100.0	120
East	29.3	70.7	100.0	666
Total	40.7	59.3	100.0	1496

Having health insurance increases a woman's use of delivery services. Of the women without health insurance, 35 percent deliver births in unhealthy conditions, and 53 percent of these women deliver at home. At the same time, 24 percent of home deliveries correspond to women with insurance. However, these figures are also influenced by such variables as education of the woman (or her husband), working status, etc.

Receiving adequate ANC also increases the use of delivery services. The percentage of healthy deliveries is 98 percent among women receiving adequate ANC. Among women without ANC, this percentage drops to 52 percent. While 96 percent of women who were visited both by a physician and midwife deliver births in healthy conditions, the percentage of unhealthy deliveries is higher in women cared for by a midwife alone (19 percent) than those cared for by only a physician (7 percent).

4.1   Multivariate Analysis

In order to evaluate the combined effect of the variables on delivery services, multivariate analysis was performed using logistic regression. Variables for the model are shown in Table 10. When ranked by partial coefficients, variables which influence the model most are residence, provision of ANC by a physician, birth order, and region. Mother's education, health insurance status, ANC status, age of mother, and nurse/physician's presence at birth are also significant.

The odds of having a healthy delivery are lowest in the East Region. Women in the Central Region are twice as likely to have a healthy delivery, while women in the North and South Regions are about two and a half times as likely. Women in the West Region are more likely to have healthy deliveries than any other region.

Table 10   Multivariate analysis of variables affecting delivery care, Turkey 1993

Variable	Wald	Significance	R
Residence	98.2408	0.0000	0.1543
ANC Provider: Physician	82.7352	0.0000	0.1413
Birth order	75.5334	0.0000	0.1311
Region	69.6018	0.0000	0.1234
Level of Education	53.6125	0.0000	0.1108
Health Insurance	53.8686	0.0000	0.1065
Antenatal Care Status	17.8542	0.0000	0.0626
Age at Birth	13.1959	0.0014	0.0477
ANC Provder: Nurse/Physician	10.8444	0.0010	0.0468

Table 11 shows the odds ratios of the variables according to category. The probability of a healthy delivery is 2.8 times greater in urban than in rural areas.

Mother's education is a significant predictor of a healthy delivery. If a mother's educational level is secondary school or higher, the chance of delivering in healthy conditions is 5.5 times greater than women who did not complete any school. Women who have completed only primary school are twice as likely to have a healthy delivery.

Unlike in the univariate analysis, after controlling for confounders, the impact of mother's age at the time of delivery is different than what would be expected. Among women under 20 and between 20-34, the probability of delivering in healthy conditions is approximately half that of women age 35 and above.

Having health insurance also increases the probability of a healthy delivery. Compared with women who have no insurance, this probability is 2.8 times greater in Emekli Sandığı, 2.4 times greater in Bağ-Kur, and 2.2 times greater in SSK.

The results for birth order show that the probability of a healthy delivery for the first birth is 5 times higher than for the sixth. The odds gradually decrease for the birth orders of 2-3 and 4-5.

Women who receive adequte ANC are nearly 3 times more likely to have a healthy delivery than those who do not. Women visited by a physician have 3.2 times more chance for a healthy delivery than those who are not visited by a physician. Women visited by a nurse or physician are 1.5 times as likely to have a healthy delivery.

Table 11 Coefficients and Odds Ratios of the variables influencing healthy deliveries, Turkey 1993

Variable	B	Significance	Odds Ratio
Region			
West	1.1671	0.0000	3.2128
South	0.9453	0.0000	2.5737
Central	0.6542	0.0000	1.9236
North	0.8662	0.0000	2.3779
East	-	Reference	-
Residence			
Urban	1.0315	0.0000	2.8051
Rural	-	Reference	-
Level of Education			
None	-	Reference	-
Primary	0.7321	0.0000	2.0794
Secondary +	1.7148	0.0000	5.5556
Age at birth			
< 20	-0.8583	0.0004	0.4239
20-34	-0.4391	0.0205	0.6446
35+	-	Reference	-
Health Insurance			
None	-	Reference	-
SSK	0.8056	0.0000	2.2380
Emekli Sandığı	1.0314	0.0001	2.8049
Bağ-Kur	0.9087	0.0066	2.4810
Other	0.7788	0.0289	2.1788
Birth order			
1	1.6282	0.0000	5.0946
2-3	0.8359	0.0000	2.3068
4-5	0.4290	0.0115	1.5357
6+	-	Reference	-
Antenatal Care Provider			
Physician	1.1712	0.0000	3.2257
Nurse/Physician	0.4188	0.0010	1.5202
Antenatal Care Status			
Adequate	1.0180	0.0000	2.7677
Inadequate	-	Reference	-
Constant	-1.5364	0.0000	

4.2   Reasons for nonuse of health facilities

Table 12 and Figure 7 show the reasons reported for not delivering in a health facility. The most frequent reason is distrust of health facilities or health personnel (31 percent). The second reason is tradition (24 percent), followed by accessibility problems to health facilities (21 percent). Distrust, tradition, and acccessibility are the more frequently cited reasons for not using obstetrical services.

As shown in Table 12, accessibility problems are the most frequent in the Central Region and the least frequent in the East Region. In the East Region, the main reason for delivering outside of a health facility are distrust and tradition.

Figure 7 Reasons of Pregnant Women for Not Delivering in a Health Facility, Turkey 1993

Distrust 31%

Accessibility 21%

Don't Know 1%

Other 18%

Tradition 24%

No Need 6%
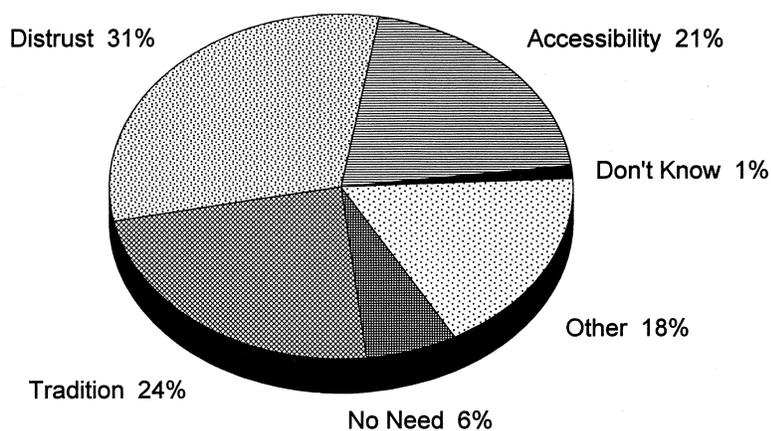
Table 12 Percent distribution of births not delivered in a health facility in the five years preceding the survey, by reason according to selected background characteristics, Turkey 1993

	Reason for not delivering in health facility							
	Access	Distrust	Tradition	Other	No need	Don't know	Total	Number of Births
Region								
West	24.1	34.8	13.9	21.5	5.7	0.0	100.0	196
South	22.0	34.4	16.7	17.0	9.6	0.4	100.0	217
Central	31.7	18.3	28.3	15.8	4.8	1.0	100.0	297
North	19.8	33.0	17.3	23.9	5.1	1.0	100.0	120
East	14.2	33.2	27.7	16.6	6.5	1.9	100.0	669
Residence								
Urban	16.9	35.9	23.7	16.0	6.7	0.9	100.0	581
Rural	22.9	27.3	23.5	18.6	6.3	1.3	100.0	916
Level of Education								
None	18.0	32.3	27.9	16.3	4.2	1.4	100.0	894
Primary	24.2	27.7	18.2	19.8	9.1	1.0	100.0	546
Secondary+	24.0	32.6	8.5	20.3	14.6	0.0	100.0	59
Age at birth								
< 20	19.4	30.0	28.7	13.4	8.1	0.5	100.0	223
20-34	22.0	30.4	22.4	17.8	6.3	1.1	100.0	1124
35+	11.6	33.0	24.6	23.4	4.8	2.6	100.0	152
Birth order								
1	23.2	27.2	26.6	15.3	6.9	0.8	100.0	275
2-3	22.5	27.6	19.9	21.0	8.1	0.9	100.0	583
4-5	21.4	34.9	23.9	15.3	4.1	0.3	100.0	297
6+	14.3	34.8	27.0	16.2	5.0	2.7	100.0	345
Health Insurance								
None	20.4	32.7	23.7	15.9	6.4	0.9	100.0	1101
SSK	22.3	22.3	25.7	22.1	6.3	1.2	100.0	255
Emekli Sandığı	21.6	33.1	11.7	20.3	6.7	6.6	100.0	63
Bağ-Kur	19.4	32.9	23.4	14.3	10.0	0.0	100.0	42
Other	10.8	15.8	33.4	36.6	3.4	0.0	100.0	30
Antenatal Care Provider								
None	17.5	30.0	29.9	16.1	5.2	1.3	100.0	894
Physician	24.8	34.9	12.6	20.3	5.4	2.0	100.0	246
Nurse/Midwife	25.3	26.3	18.0	20.1	10.3	-	100.0	255
Nurse/Midwife and Physician	22.0	40.7	10.1	18.1	9.0	-	100.0	88
TT Vaccination								
None	17.5	32.6	27.0	16.2	5.2	1.6	100.0	986
One dose	25.7	25.5	21.0	19.7	7.4	0.7	100.0	171
Two doses	26.1	27.5	15.8	20.7	9.6	0.3	100.0	325
Antenatal Care								
Adequate	21.3	37.9	8.1	24.4	7.9	0.4	100.0	143
Early but inadequate	23.9	33.8	16.6	15.1	9.9	0.5	100.0	194
Late, inadequate	27.1	27.4	16.7	20.8	6.7	1.3	100.0	244
None	17.9	29.8	29.4	16.1	5.3	1.4	100.0	907
Don't know	21.3	18.9	14.5	39.5	5.7	0.0	100.0	11
Delivery Assistance								
No one	40.0	31.4	19.4	7.1	0.0	2.1	100.0	50
Nurse/Physician	16.9	31.7	20.2	22.0	8.3	1.0	100.0	598
Physician	24.4	14.9	26.0	25.6	9.2	0.0	100.0	13
Other	21.9	30.0	26.1	15.2	5.4	1.3	100.0	837
Total	20.5	30.6	23.6	17.7	6.4	1.2	100.0	1499

The percentage of women who reported distrust of the health facility or health personnel increases slightly with age and birth order. Mother's education does not have the same effect however. Women who have completed primary school are less likely to have cited distrust than women with either no education or secondary or higher education.

Among women who delivered outside the health facility, 39 percent received any kind of ANC and 10 percent received adequate ANC. Thirty-eight percent of women who delivered outside the health facility despite receiving adequate ANC reported distrust of health facilities as the most frequent reason for choosing home delivery.

5 CONCLUSIONS

The main goal of antenatal care (ANC) is the maintenance of health during pregnancy. During ANC visits, the following activities are performed by the health personnel:

- Early diagnosis and treatment of diseases that could cause complications
- Detection of high risk pregnancies
- Monitoring the development of the foetus
- Vaccinating the mother against tetanus
- Determining where the delivery will take place and who will assist
- Educating the mother on nutrition, hygiene, child care, and family planning methods

ANC services are routinely provided in health houses, health centres, maternal and child health/family planning centres, hospitals, and by private physicians within the current health system.

According to the 1988 TDHS, although 57 percent of women were not visited by health personnel throughout their pregnancy, this percentage has dropped to 37 percent in the 1993 TDHS. Only one visit may be adequate for an uncomplicated pregnancy; however, the number of visits should increase if complications occur. In this analysis, adequate ANC is defined as the detection of pregnancy in the first three months, and the provision of at least five visits during the pregnancy by health personnel. According to this criterion, only 25 percent of pregnant women receive adequate ANC. The most important factors influencing ANC are level of education and region.

One of the essential elements of ANC is vaccination against tetanus. If the quality of ANC is high, the women should be properly vaccinated according to the vaccination schedule. In this study, it is disappointing to see that only 41 percent of women who received adequate ANC were vaccinated with two doses of tetanus toxoid. Among women who finished secondary school and higher, although they received adequate ANC during their pregnancy, still more than half were not vaccinated (53 percent). It is interesting to see that among lower educated women who receive adequate ANC, vaccination coverage is higher than the most educated group. This situation suggests that education alone is not adequate for the development of health consciousness or awareness.

When vaccination status is examined according to the person providing the service, the results show that coverage is higher among women who receive ANC from a midwife. This is surprising as the physician is the leader of the primary health care team, and is expected to be more aware of the importance of vaccines.

Adequate number of visits during the pregnancy or the assistance of health personnel during the delivery does not necessarily mean that the quality of ANC is high. There was not adequate information in the 1993 TDHS to assess the quality of ANC. The quality of the services is as important as the quantity, and studies should be performed in the future to evaluate this.

According to the 1993 TDHS, 40 percent of the deliveries were made outside of a health institution. The main reasons for this were distrust, tradition, and accessibility problems. Psychosocial and cultural studies should be carried out to analyse the factors influencing the use of services. The results of these studies should be discussed at the national level and applied to family planning practices.