HACETTEPE UNIVERSITY INSTITUTE OF POPULATION STUDIES
TECHNICAL DEMOGRAPHY PROGRAM

DETERMINANTS OF UNMET NEED FOR FAMILY PLANNING IN TURKEY WITH A PARTICULAR EMPHASIS ON DIFFERENT APPROACHES

Pelin ÇAĞATAY SEÇKİNER

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of Doctor of Philosophy
in Technical Demography at Hacettepe University
Institute of Population Studies

Ankara
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Supervisor
Prof. Dr. İsmet Koç

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April 2013

ACCEPTANCE AND APPROVAL

This is to certify that we have read and examined this thesis and that in our opinion it is fully adequate, in scope and quality as a thesis for the degree of Doctor of Philosophy in Technical Demography.

Examining Committee Members:

Member (Chair):.....
Assoc. Prof. Dr. Filiz Kardam, Çankaya University, Department of Political Science and International Relations

Member (Supervisor): .....
Prof. Dr. İsmet Koç, Hacettepe University, Institute of Population Studies

Member: .....
Prof. Dr. Banu Ergöçmen, Hacettepe University, Institute of Population Studies

Member: .....
Assoc. Prof. Dr. A. Sinan Türkyılmaz, Hacettepe University, Institute of Population Studies

Member: .....
Assoc. Prof. Dr. Sarp Üner, Hacettepe University, Department of Public Health

This thesis has been accepted by the above-signed members of the Jury and has been confirmed by the Administrative Board of the Institute of Population Studies, Hacettepe University.

Date: .... / .... / 2013

.....
Prof. Dr. Armağan Tarım
Director

I would like to dedicate this dissertation to
my beloved mother Eser Çağatay,
and to my father, Rifat Çağatay,
who desperately wanted
me to finalize
my PhD
study.

SUMMARY

In general, unmet need refers to the condition of wanting to avoid or postpone childbearing but not using any methods of contraception. The concept has its origins in the first fertility and family planning surveys carried out during the 1960s under the label “KAP-gap”, and then it has been extensively used as a reproductive health indicator for tracking progress on improving maternal health.

One of the aims of this dissertation is to estimate and compare the level of unmet need in Turkey by using the data sets of 1998 and 2008 Turkey Demographic and Health Surveys based on the different approaches. It has been revealed that the estimates, can largely vary according to the various methodological perspectives, and it is difficult to attain one single best estimate for unmet need. In line with the objectives, the predictors of unmet need are determined through multivariate analyses in both surveys. The two surveys have both common and uncommon variables. Among the common variables, the level of total unmet need is significantly influenced by the marital duration, mother tongue of women, the gap between actual number of children and ideal number of children, sex of living children and ever use of contraception in each survey. Additionally, in 1998, the age of women, health insurance, effect of mass media, women’s religious concerns about family planning and household wealth status are found to be significant predictors. In 2008, the employment status of women and women gathering activities are observed to be other determinants of unmet need.

It is well-known that contraceptive prevalance rate and unmet need are closely associated with each other. The most immediate effect of reducing unmet need comes through the increasing level of contraceptive prevalence rate, which leads to changes in overall fertility. In case of a reduction of unmet need in Turkey, this will generate a total fertility rate below the replacement level (it ranges from 1.6 to 1.9), but its demographic impact is relatively low when compared to other developing countries having higher levels of unmet need.

ÖZET

Karşılanmamış aile planlaması ihtiyacı genel olarak herhangi bir gebeliği önleyici yöntem kullanmadığı durumlarda çocuk doğurmayı sonlandırma veya erteleme isteğini ifade eder. Bu kavram, doğurganlık ve aile planlaması araştırmalarının ilk olarak yapılmaya başlandığı 1960'lı yıllarda "KAP-açığı" adı altında ortaya çıkmıştır ve sonrasında anne sağlığındaki iyileşmelerin takibi için bir üreme sağlığı göstergesi olarak yoğun bir biçimde kullanılmıştır.

Bu tezin amaçlarından biri de 1998 ve 2008 Türkiye Nüfus ve Sağlık Araştırmaları'nın veri setleri kullanılarak Türkiye'deki karşılanmamış aile planlaması ihtiyacını farklı yaklaşımlar kullanarak hesaplamak ve karşılaştırmaktır. Buna göre, farklı metodolojik yaklaşımların birbirinden oldukça farklı tahminler ürettiği ve karşılanmamış aile planlaması ihtiyacını en iyi şekilde üretecek tek bir yaklaşımın olamayacağı sonucuna varılmıştır. Tezin hedefleri ile uyumlu olarak, her çok değişkenli regresyon analizi ile iki araştırma için karşılanmamış aile planlaması ihtiyacının belirleyicileri tespit edilmiştir. Her iki araştırmada ortak ve ortak olmayan değişkenler bulunmaktadır. Ortak olan değişkenler arasından, evlilik süresi, anadil, mevcut çocuk sayısı ve ideal çocuk sayısı arasındaki fark, yaşayan çocuğun cinsiyeti ve daha önce gebeliği önleyici yöntem kullanmış olma durumu her iki araştırmada da karşılanmamış aile planlaması için önemli belirleyici faktörlerdir. Bunlara ek olarak, 1998 araştırması için kadının yaşı, sağlık güvencesinin olup olmaması, medya araçları, aile planlaması konusunda kadının dinsel çekinceleri ve hanenalkı refah düzeyi anlamlı bulunmuştur. 2008 araştırması için ise kadının çalışma durumu ve kadınların arkadaş toplantıları anlamlı değişkenler arasındadır.

Bilindiği üzere yöntem kullanımı ve karşılanmamış aile planlaması ihtiyacı arasında sıkı bir ilişki vardır. Yöntem kullanımının artmasının en direk etkisi karşılanmamış aile planlaması ihtiyacının azalmasına yönelik olup genel doğurganlık düzeyini de değiştirmektedir. Türkiye'de karşılanmamış aile planlamasının (en az yüzde 20) azaltılması durumunda toplam doğurganlık hızı (1.6 ila 1.9), yenilenme düzeyi toplam doğurganlık hızının altına düşmektedir. Ancak bu etki karşılanmamış aile planlaması ihtiyacının çok yüksek olduğu diğer gelişmekte olan ülkelere göre oldukça düşüktür.

ACKNOWLEDGEMENT

I owe my deepest gratitude to my supervisor, Prof. Dr. İsmet Koç, for guiding me in doing a lot of research and leading me to complete my PhD study in the past six years. I came to know about so many new things under this supervision. Without his support, patience and invaluable expert advice, this dissertation would have never been finished.

I would like to thank Prof. Dr. Banu Ergöçmen, Assoc. Prof. Dr. Sinan Türkyılmaz, Assoc. Prof. Dr. Filiz Kardam and Assoc. Prof. Dr. Sarp Üner for their valuable suggestions in finalizing this dissertation.

I would also like to express my great appreciation to Prof. Dr. Sabahat Tezcan for her support in all stages of my academic career.

I am really grateful to my parents who provided me with a carefree environment so that I could concentrate on my study. I am deeply indebted to my mother, Eser Çağatay, who has sacrificed so much during the last four months while spending sleepless nights with me, correcting my grammatical mistakes as a proofreader, and driving me to the bus station tirelessly every morning during my three-month stay in their home. My special thanks are extended to my father, Rifat Çağatay for providing positive energy to relax my tense muscles.

I want to express my utmost gratitude to Şerife Özkan who tirelessly took care of my daughter, provided a well-ordered home atmosphere for her during my absence without getting bored. This dissertation would not have been completed without her help. Additional thanks are due to Osman Seçkiner who kindly took my daughter to kindergarden and spent hours with her in order to help me study.

I would like to offer my special thanks to my beloved husband, Bülent Seçkiner, for his endless support and encouraging talks, to my little daughter, Berrak Seçkiner, for being so warm-hearted, patience and understanding while I was away from home.

I have to offer my special thanks to my dearest office mate, Ayşe Abbasoğlu Özgören, who provided me with inspiration, hearty support and sympathetic encouragement in every phase of my dissertation. I would like to thank Erhan

Özdemir for his practical comments and for putting up with me as I complained incessantly about my PhD studies. I am really grateful to my colleague, Hande Tunçkanat for her help, energy and precious friendship.

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I. INTRODUCTION

> *"Couples have a basic human right to determine freely and responsibly on the number and spacing of their children and a right to adequate education and information in this respect."*
>
> ***UN Declaration (1968)***

> *"All countries should, over the next several years, assess the extent of national unmet need for good-quality family-planning services and its integration in the reproductive health context, paying particular attention to the most vulnerable and underserved groups in the population [...] The aim should be to assist couples and individuals to achieve their reproductive goals [...]"*
>
> ***ICPD paragraph 7.16***

The conflict between individual and collective interests has arisen the curiosity of many social scientists and politicians since Machiavelli (1525), who referred to the political and social predicament due to the (over)use of resources creating an inequality (Jager et al. 2000). In the international arena, the dilemma is largely related to the reproductive behaviors of couples realized at the "expense" of social and political welfare of the countries.

The 20th century has mainly been characterized by the intense debates on human reproduction and health that have been at the centre of researches focusing on revising, modifying and expanding the conceptual, methodological and strategic frameworks in this field (Camarena and Lerner 2005). During the late 1950s, governments became more concerned about rapidly increasing population, particularly in developing countries (Davis 1967; Donaldson 1990; Sinding et al. 1994; Blanc and Tsui, 2005; Sinding 2007). The extensive growth of Asian populations has encouraged governments to take measures to provide the well-being of human beings in terms of socio-economic and demographic aspects. At the same

time, donor countries such as the United States and the United Kingdom began to promote policies and aid programmes designed to avert population growth rates. The individual motivation to limit fertility has been found insufficient to improve social and economic conditions in developing countries. In fact, development versus family planning, voluntary fertility control programs versus direct interventions to influence reproductive behavior were highly polemical issues in the sixties and seventies (Sinding et al. 1994). In 1950, Frank Notestein envisaged the cost of population control by stating:

"*The greatest danger, it seems to me, is that concern about slowing growth may drive societies to a renewed emphasis on the obligations of the individual to reproduce for the benefit of the state, church, party or other extra-personal unit. There is a danger that the emotional reaction to slowing growth will lead us to seek people for society, rather than to enrich society for people*".

The motives behind the family planning programmes being introduced within this global context in the mid-seventies have been largely argued to be "supply-driven" forces rather than "demand-driven" (Mason 1994). The assumption is probably the same as what the classical economists have defended, that is, supply would create its own demand[1]. Accordingly, larger investments have been made in family planning programs which are believed to be the most cost-effective in the development field (Sinding et al. 1994). This view prevalent in 1970s and 1980s has been subject to dramatic changes as women rights advocates have created tension over national and societal goals versus individual and private ones (Camarena and Lerner 2005). With the International Conference on Population and Development held in Cairo in 1994, women activists and advocates made a huge leap in the acknowledgement of women's reproductive and sexual self-determination (Dixon-Mueller and Germain 1993; Sinding 1993; Correa and Petchesky 1994; Cook 1995; Costa 2000).

[1] As knowns as Say's Law (Jean Baptiste Say, 1967-1832)

In fact, family planning program have long since been a subject of such polemics which were initially introduced to the public as of 1960s when the U.S. government declared to take the initiative for large-scale funding of domestic and international family planning programs. Feminists and women's health advocates have expressed their opposition on every platform to the accusatory speeches of developed countries by holding the women in underdeveloped countries responsible for overpopulation (Hartmann 1995; Karkal and Pandey 1989; Dixon-Mueller 1993). On one hand, they have supported the advancement of family planning methods as long as these methods contribute to increase the empowerment of women to take control over their own lives (Petchesky 1984). On the other hand, they have strongly resisted family planning programs used as a population or birth control mechanism due to the fact that policies and programs focusing on the limitation of population growth in less developed contries have put pressure on women to use fertility control methods "*imported and imposed*" by the national governments and international donors (Hartmann 1995; Dixon-Mueller 1993). Karkal and Pandey (1989) have explained these efforts as target-oriented. In other words, women are referred to being the targets of family planning programs which have been directed to them while lacking female point of view. Instead of reflecting the basic needs of women in the programs, quantitative efforts such as mathematical modelling of population processes and the development of tools for assessment of program interventions have been prioritized (Dixon-Mueller 1993).

The advancement of the concept of unmet need is regarded as part of these paradigms and has been extensively used within different perspectives while being exposed to several modifications in line with diverse objectives. In general, unmet need refers to the condition of wanting to avoid or postpone childbearing but not using any method of contraception. The concept, which had its origins in the first fertility and family planning surveys carried out during the 1960s under the label "KAP-gap", used to advocate the investments in family planning programs because of its causal link to unwanted childbearing (Casterline and Sinding, 2000). Within years, the level of unmet need has become an important policy tool for

conceptualizing program strategies, estimating budgets and other resources needed, and assessing program outcomes (Dixon-Mueller and Germain, 1993).

On the other hand, the concept has been prone to not only methodological but also conceptual criticisms (Dixon-Mueller and Germain 1992; Pritchett 1994; Bongaarts and Bruce 1995; Hartmann 1995; Westoff and Bankole 1995; Casterline et al. 1997; DeGraff and De Silva 1996; El-Zeini 1999). In fact, the unmet need identified by programs and interventions rather than by women themselves has appeared to be the cornerstone of the debates at the theoretical and methodological as well as at the political and the ideological level (Camarena and Lerner 2005). There are also some efforts made focusing on the aspects of the concept within reproductive health approach manifesting the individual's needs and choices while emphasizing women's reproductive right and gender inequalities (Dixon-Mueller 1993; Dixon-Mueller and Germain 1993; Visaria 1997).

In spite of being a contentious issue among social researchers, unmet need for family planning is widely considered as a reproductive health indicator. Worldwide, over 100 million married women within the reproductive age (15-49 years) in the developing countries are estimated to have unmet need for family planning (Robey et al., 1996). Over the last thirty years, increasing contraceptive prevalence rates have reduced the levels of unmet need for family planning in most developing countries. However, in some countries, unmet need has remained persistently high or even worse, may still be increasing.

In recent years, new political, financial, and health-system challenges have emerged complicating women's unmet need to be addressed. Understanding the levels, patterns and trends in the components (spacing, limiting and total) of unmet need for family planning is important in mapping strategies for addressing its adverse consequences. Many studies have indicated that reduction in the level of unmet need

would substantially result in fertility decline (Westoff and Bankole 1995; Sinding et al. 1994). Moreover, unmet need may lead to unintended pregnancies, which pose numerous risks for women and societies when they are ended with unsafe abortion. For instance, it is stated that in developing countries, 18 million unsafe abortions take place every year, contributing to high rates of maternal mortality (Murray and Lopez, 1998). In line with its importance in meeting goals in fertility and women's health, unmet need for family planning have been added to the fifth Millennium Development Goal (MDG) in 2006 as an indicator for tracking progress on improving maternal health (UNFPA 2008) since family planning can reduce maternal mortality by reducing the number of pregnancies, abortions, and the proportion of births at high risk. Despite these developments, little is known about the determinants of unmet need for contraception (Dixon Mueller and Germaine 1990).

Regarding the family planning in Turkey, the commencement of anti-natalist population policies and family planning programs after mid-sixties have coincided with the world trend in the same time interval. The health perspective, which is the primary focus of the most recent efforts made in London Summit to revitalize the family planning movement in the contemporary world, was the starting point of the family planning programs in Turkey. Actually, the improvement of health conditions has always been taken into account as one of the key features of family planning movement in the world. In practice, however, the scope of the movement was narrowed down to activities solely concentrating on extensive contraceptive use at first (Camarena and Lerner 2005). On the other hand, the emphasis of family planning movement and the related programs taken place in Turkey has predominantly been on maternal and child health. One of the reasons has been significantly high infant and maternal death rates as well as the high prevalence of unsafe abortions in Turkey. The secondary factor can be stated as the unwillingness of the authorities to make the family planning programs highly visible. They have had concerns about accentuating the concept of family planning since it might be perceived as a government intervention to sexual privacy and the sanctity of family

life. Thus, the family planning movement in Turkey has been developed from a health point of view.

In terms of contraceptive prevalence in Turkey, there have been salient improvements in contraceptive use during the last 20 years primarily based on the impact of secular demographic trend as well the as the anti-natalist policies implemented after mid-sixties, the spread of knowledge on family planning methods and the increase in individuals' awareness about negative consequences of rapid population growth. Contraceptive prevalence rate which was about 63 percent between 1988 and 1998, reached a level of 73 percent in 2008 with a rapid increase over a twenty-year period. In addition to these, the utilization of modern methods has shown a continual rising trend and has increased from 31 to 46 percent within the same period. Despite the high knowledge of modern methods of contraception in Turkey[2], the prevalence of withdrawal among the traditional methods, has not changed significantly and has stayed constant at about 26 percent between 1993 and 2008. This indicates that withdrawal has retained its popularity in Turkey. Although the percentage of users of contraceptive methods has increased over the years in Turkey, there has not been an outstanding reduction in the prevalence of traditional methods. Therefore, behavioral change of women has resulted in a shift from the status of nonuser to that of modern method user, which has been stated as the main reason of the progress attained in the prevalence of contraceptive use in the last few years (Koç et al. 2010). Parallel to the improvements in the contraceptive prevalence rate in Turkey, there has been a significant progress in the level of unmet need. A noticeable reduction was experienced from 1988 to 2008. The level of unmet need which was found to be 14 percent in 1988, first halved and then decreased to 6 percent in 2008. These estimates, however, can vary according to the various methodological perspectives. Previous studies (Ergöçmen and Kulu 1989; Ergöçmen and Çavlin-Bozbeyoğlu 2005) have demonstrated the differentiation in the level of unmet need in Turkey but in this dissertation the trends, levels and determinants of

[2] In Turkey, knowledge about modern contraceptive methods has become widespread among currently married women at the time of the survey (98 percent).

unmet need in Turkey have been comprehensively discussed. Besides that, it is going to be the first study that will clarify the underlying factors and determinants of unmet need, and provide an understanding of the target group since the predictors of unmet need (spacing, limiting and total) have remained untouched in Turkey so far.

Accordingly, the aim of this dissertation is to produce estimations based on different approaches or definitions proposed by Westoff and Pebley (1981), Bongaarts (1991), Westoff (2006), Bradley et al. (2012). The second objective is to present the prevalence of and trends in unmet need in Turkey. The third one is to determine the predictors of unmet need for family planning and, therefore, to identify the most disadvantageous groups among women. The final objective is to explore the changes in total fertility rate based on different levels of contraceptive prevalence stemming from the fact that level of unmet need in a country equals the amount of additional contraceptive use needed to achieve women's fertility preferences (Bongaarts 1991). The primary data sets used in the analyses are Turkey Demographic and Health Surveys conducted in 1998 and 2008. In addition to these, data sets of 1993 and 2003 surveys have been utilized as a secondary data source when comparing the national and regional levels of unmet need in Turkey.

In line with the objectives, the research questions of this dissertation are as follows:

- how does the level of unmet need in Turkey vary according to different approaches?
- what are the determinants of unmet need in Turkey?
- how much fertility might be expected to decline if the demand for family planning were to be satisfied?

In this study, there are five hypotheses to be tested. These are:

H1: Unmet need is influenced by demographic and socio economic characteristics of women;
H2: Unmet need is influenced by the values of the community;
H3: Husbands' characteristics have an impact on the level of unmet need;
H4: Women living in poor households, in rural areas and in less developed regions are more likely to have higher levels of unmet need.
H5: Women grown up in educated families are less likely to have unmet need for family planning.

There are four limitations that need to be acknowledged and addressed regarding this study:

1. This study is restricted to available variables in the data set to measure the components of unmet need. For instance, attitude toward family planning and decision making power of women are frequently mentioned as predictors of unmet need. These issues are not fully covered in TDHSs.
2. Sexually active unmarried women could not be included because questions about current contraceptive method were not asked to these women. Therefore, only currently married women were considered.
3. Family planning needs of men are not known.
4. The impact of fulfilled unmet need on fertility rate is very sensitive depending on the data set used in creating the regression equation (TFR=α+ß*CPR)

The dissertation presents the estimates of unmet need in Turkey produced according to different methods, and discusses the evolution of family planning programs and the concept of unmet need with a critical point of view. This dissertation is organized in six parts. Chapter II addresses several stages relating to

the evolution of concepts of unmet need, and criticisms about the nature of unmet need for family planning. Chapter III lays the groundwork for the discussion of family planning movement and the notion of unmet need throughout this study. Chapter IV looks more closely at the conditions that required pronatalist or antinatalist population policies to develop in Turkey. This chapter includes the politics about fertility control or population control as social movements in Turkey, and draws on a set of minimal but essential components of a feminist perspective. Chapter V introduces the data sources, variables used in the analyses and the methodology itself. Chapter VI draws on the findings of descriptive and multivariate analyses. This chapter also includes the effect of unmet need on total fertility rate. Chapter VII involves discussion of the findings.

II. LITERATURE REVIEW

II.1. EVOLUTION OF THE CONCEPT OF UNMET NEED

Many researchers have focused on redefining, modifying and expanding the concept of unmet for family planning since mid-20th century but its basic components have remained unchanged (Westoff 1978; Westoff and Pebley 1981; Westoff and Ochoa 1991; Westtoff 2006). In the broadest sense, unmet need is defined as the proportion of women who are not using a method of contraception either to stop or postpone childbearing. Unmet need has been used for a long time in reference to health as well as other basic needs unfulfilled mainly due to limited economic resources (El-Zeini 1999). One of the earliest appearances of unmet need in demographic literature dates back to 1970 when Scheyer recommended plans for family planning services to perform their missions properly. She highlighted the requirement for governmental participation for gradually disappearing family planning programs meeting considerable needs of poor people ın USA (Scheyer 1970).

Three series of large surveys, the World Fertility Survey (WFS); the Contraceptive Prevalence Survey (CPS); and the Demographic and Health Survey (DHS) supported by United States Agency for International Development (USAID) brought the concept of unmet need to the fore. Estimating the level of unmet need, and efforts to improve the definition and measurement has become a common practice in such surveys (El-Zeini 1999). The level and trend of unmet need has served different purposes. The former could be used as a measure of potential demand for family planning programs whereas the latter could be used for assessing the effectiveness of family planning services (Harbison 1995).

The concept that eventually became unmet need for family planning was first explored in the 1960s, as data from surveys of contraceptive knowledge, attitudes, and practices (KAP) detected a gap between women's reproductive intentions and their contraceptive behavior. When a marked difference was recognized, "KAP-gap" became popular a term in describing inconsistent behaviors of groups (Bongaarts, 1991). On the basis of analysis of women's responses to three KAP surveys in Taiwan, Ronald Freedman and colleagues (Freedman et al. 1972) identified a subset of women who indicated a desire to terminate childbearing but reported no use of contraception. Casterline and Sinding (2000) defined "discrepant behavior" as the gap between the "need" for family planning and the use of contraceptive practices. However, the KAP surveys neither did inquire about spacing preferences nor did they attempt to determine whether a woman was actually exposed to the risk of conceiving. With the commencement of the World Fertility Surveys (WFS), conducted from 1972 to 1984, a substantial improvement was made by virtue of the fact that questions on infecundity, pregnancy and breastfeeding status were included. Hence, the WFS played a pioneering role in identifying the concept of unmet need extensively. In 1978, Westoff published the first comparative estimates of unmet need for family planning based on WFS data from five Asian countries. This new terminology began to supersede the term "KAP-gap" when determining the inconsistency between fertility preferences and contraceptive use (Casterline and Sinding 2000). In his study, he only analyzed the limiting component of unmet need. Spacing component was ignored because in the WFS women were not asked about their spacing desires. Additionally, he did not take into account pregnant and amenorrheic women in the calculation of unmet need because he stated that these women were not currently in need of contraception (Westoff 1978). Subsequently, Westoff and Pebley (1981) showed that different definitions of unmet need produced widely differing estimates for the population perceived to have unmet need for family planning. These measures represented different combinations of various refinements in fecundity status, breastfeeding behavior, type of contraceptive method, desired family size and intention to cease childbearing. Westoff and Pebley, (1981) mainly focus on currently married women who did not want more children. Never-married and formerly married women were excluded due to the fact that

information on birth control practices of these women was not collected. There was a lack of information in calculating the spacing needs and thus more detailed data was required to attain a broader definition of unmet need for family planning with the inclusion of spacing component (Westoff and Pebley 1981)

Contraceptive Prevalence Surveys (CPS), which began in 1978 and ran through 1984, made possible refinements. The CPS added questions about women's interest in postponing or spacing their next births. Thus, it became possible to calculate unmet need for spacing births as well as for limiting births, and to distinguish potential interest in temporary methods from that for permanent and long-term methods (Robey et al. 1996). Anderson and Morris (1981) used the new CPS data to measure the percentage of women of reproductive age who are "exposed to the risk of unintended pregnancy and are not using contraception" in five Latin American countries. Nortman (1982) raised a new point about defining and measuring unmet need by employing CPS data. She argued that women who were pregnant, breastfeeding, or amenorrheic should be included in the definition of unmet need because they were temporarily out of the market for family planning and would soon need contraception again. She developed a model that estimated unmet need for contraception, not just at the moment of the survey, but over the year following the survey, which permitted pregnant women to become exposed to risk again. However, Westoff (1988a) criticized this model in terms of its complexity of calculation and description.

The Demographic and Health Surveys (DHS), commenced in the late 1980s, have further improved the measurement of unmet need. The DHS asks pregnant and amenorrheic women whether their current pregnancies or last live births were intentional, mistimed, or unwanted. Besides, women are directly asked about postpartum amenorrhea, thus avoiding the necessity of using breastfeeding as a proxy. This approach made it possible to classify some pregnant women as having an unmet need for family planning and others, not. Accordingly, Westoff (1988b; 1992)

revised the standard definition of unmet need to include pregnant or amenorrheic women whose pregnancies were mistimed or unwanted. The rationale for this inclusion is that those women would be using contraceptives if their need were met. This algorithm has been applied to several DHS surveys in the country reports and in comparative studies (Westoff and Ochoa 1991; Westoff and Bankole 1995). Bongaarts (1991) argued, however, that the inclusion of these women would yield an overestimate because some pregnant women who were experiencing an unmet need for means of spacing births at the time they became pregnant would have wanted to become pregnant by the time of the interview. He proposed to adjust estimates obtained with standard definition to take into account the fact that: (1) women whose need for spacing was satisfied would sooner or later interrupt contraception in order to become pregnant, and (2) women whose spacing needs were satisfied would themselves experience a reduced need for limiting only at some time later in their reproductive lives, which implies that the total unmet need will be lower than that of standard definition. His proposed estimate was based on 15 countries and was calculated by comparing the average value of unmet need measures with the average of the mid-point of maximum and minimum values estimated by his procedure.

An alternative definition for of unmet need was developed and applied to DHS data for Sri Lanka by DeGraff and Silva (1996). In the vast majority of research, the focus group of unmet need was composed of nonusers of contraceptives who are capable of conceiving, who are exposed to the risk of pregnancy and who wish to avoid or postpone pregnancy (Westoff 1988b). What DeGraff and Silva (1996) did in their study was to replace preference criteria with indicators of increased health risks. According to this approach, women having unmet need were those who did not use contraception, who are capable of conceiving, who are exposed to the risk of pregnancy and who, if they were to become pregnant, would experience an elevated risk of mortality for their expected child, their living children or themselves. They proposed three health-based criteria: length of open birth interval, maternal age and birth order, the most commonly examined explanatory variables in studies of infant and child mortality in developing countries. Therefore,

in this study, high mortality risk was defined as birth interval less than two years, pregnancy among women younger than 20 or older than 34 and higher order births. They focused primarily on infant and child mortality, rather than on maternal mortality. The rationale behind such an attempt was that this measure would be useful when evaluating family planning programs from a health policy perspective. Besides, it was stated that its application would provide insights into the effectiveness of family planning efforts in identifying high-risk women and providing them with appropriate information and contraceptive services (DeGraff and Silva 1996). However, health-based methodology captured only 43-65 percent of preference based unmet need in Sri Lanka, which pointed out that it should not be solely utilized to determine unmet need for contraception.

By the mid-1990s, unmet need for contraception was appeared as a core concept in the family planning and population policy literature. It pointed out widespread demand for family planning services in many countries, a desire to control fertility (Casterline and Sinding 2000) and unwanted pregnancies (Lightbourne 1985). Throughout the 1970s and 1980s, family planning programs spread rapidly by means of unmet need which provided a justification to the expansion of such programs and services (El-Zeini 1999).

Studies in family planning and unmet need, which were popular during 1980s, went out of favour in the first half of 1990s. On the other hand, unmet need gained its popularity during the preparations of 1994 Cairo International Conference on Population and Development (ICPD) (El-Zeini 1999). From the standpoint of women's health advocates, unmet need was a violation of women's right to control their fertility and their sexuality (McCauley et al. 1994; Germain 1997). These demographically derived goals were argued that women were directed to inappropriate methods of family planning and their roles were not only that of an 'acceptor' of contraceptives (Sen and Barroso 1996). In ICPD, women's movement was able to successful to shift the focus of population programs from demographic

goals and targets to women's lives (McIntosh and Finkle 1995). As a result of this effort, the principles underlying international population policies and programs was largely redefined and reflected in the ICPD Programme of Action in Cairo in 1994 (McIntosh and Finkle 1995). Accordingly, reducing unmet need became a target in itself, rather than a means of achieving demographic goals (Sinding et al. 1994; Robey et al. 1996; Sai 1997).

II.2. CRITICISMS TO THE CONCEPT OF UNMET NEED FOR FAMILY PLANNING

Unmet need for family planning has been subject to both conceptual and methodological criticisms. Regarding conceptual scheme of the concept, most women advocates and some demographers have been skeptical about its validity because they have argued that the inconsistency between the fertility preferences and contraceptive behavior is delusive. In other words, such a behavior has neither been perceived nor expressed as contradictory by women, themselves, except for the researchers (Dixon-Mueller and Germain 1992; Dixon-Mueller and Germain 1993; Pritchett 1996; El-Zeini 1999; Camerana and Lerner 2005). In Demographic and Health Surveys or similar surveys, women are not directly asked whether they have a 'need' for family planning. Actually, the researcher deduces that women either have 'met' or 'unmet' need for family planning by comparing the given responses to the questions in different sections of the questionnaire. Moreover, opponents argue that if women really want to regulate their fertility, they will manage to do it in the end (Pritchett 1994; El-Zeini 1999). On the other hand, Casterline and Sinding (2000), Yinger (1998) and Bongaarts (1997) state that large number of pregnancies and births, reported as unintended or unwanted, are sound indicators for unmet need.

Another criticism is that the concept of unmet need for family planning has become more visible under the hegemony of developed countries, especially, that of the U.S (Donaldson 1990), where population-driven forces mainly focused on reducing population growth in developing countries, primarily through fertility control (Camarena and Lerner 2005). Some researchers advocate that unmet need is used as strategic policy tool for designing, justifying, implementing and expanding family planning programs in developing countries (Dixon-Mueller and Germain 1992; Pritchett 1994; El-Zeini 1999; Jain 1999; Camarena and Lerner 2005). In this sense, the concept, itself, has been found to be forceful approach to birth control (Pritchett 1994). According to family planning advocates, reduction of unmet need is one of the primary objectives in fertility decline and the changes in level of unmet need is considered as an important assessment tool for the program outcomes, but the high or low levels does not always indicate a program failure or success (Klijzing 2000). Satisfaction of unmet need for contraception at one point in time does not also mean that women do not have unintended pregnancies. Similarly, lack of decline in unmet need at national level does not necessarily imply that it has not been satisfied at individual level (Jain 1999).

United Nations (1969) declares that couples have has been the basic human right to decide freely and responsibly on the number and timing of children. The word ‘responsibly’ refers to women’s (or couples’) fertility decisions in line with ‘the needs of their children and their responsibilities toward community’. This may probably result in a strong conflict between individual and common interests. Dixon-Mueller (1993) argues that women’s reproductive self-determination, attitudes, intensions and behavior are affected by patriarchal family system, social norms, socio-economic and demographic constraints and, therefore, it is almost impossible to clarify whether contraceptive preferences are women’s own choice or not.

Unmet need has been criticized as being too narrow because contraceptive users who are dissatisfied with their method or by some other criteria are using an

inappropriate method are disregarded (Dixon-Mueller and Germain 1992; Foreit and Mostajo 1993). Women using contraception may have a higher risk of pregnancy due to inconsistent or incorrect use of contraceptive method (Jain 1999). In Vietnam, for instance, the percentage of currently married women with unmet need increased from 14 percent to 36 percent when the need for modern methods has been taken into consideration (Phai et al. 1996). With a similar method, the unmet need for family planning in Turkey was found to be three times higher than the one estimated with the core definition (Ergöçmen and Çavlin-Bozbeyoğlu 2005). As a result of such criticisms, a new approach for the measurement of unmet need and the demand for family planning focusing on modern methods were introduced by Westoff (2006). That is, the prevalence of women using traditional methods is added to total unmet need as non-users. In countries where inefficient methods are extensively used or method discontinuation is high, the effect of need for modern methods is of great importance (Jain 1999).

Moreover, unmet need for contraception is generally based on currently married women who do not use contraceptives. Although estimates of unmet need including unmarried women are provided in Reproductive Health Surveys, which was conducted since 1985 primarily in Latin America and the Carribbean, unmarried women are neglected in most of the cases. The exclusion of unmarried women may yield an underestimation, because they may also be sexually active, not use any method of contraception and have an unmet need of contraception.

Like women, men may wish to postpone or terminate their reproduction. The consequences of pregnancy are different for men than for women. It is more complicated to identify the unmet need of men because a man may have children with more than one woman; meaning that their unmet need is woman-specific. Therefore, information must be obtained men’s fertility preferences and contraceptive practice partner-by-partner (Casterline and Sinding 2000). As

unmarried women, there has been limited empirical research on men's unmet need for family planning in the 1990s (Dodoo et al. 1997; Ngom 1997).

III. THEORETICAL FRAMEWORK

The framework of social movement helps identify stages and transitions of movements as they progress towards either modifications while following the original principles and similar objectives or completely new objectives before they die out. These two patterns are defined by Mauss (1975) as overlapping and revitalization process, respectively. In this dissertation, the concept of unmet need and the evolution of family planning programs have been considered within the scope of social movement theory.

III.1. SOCIAL MOVEMENT THEORY

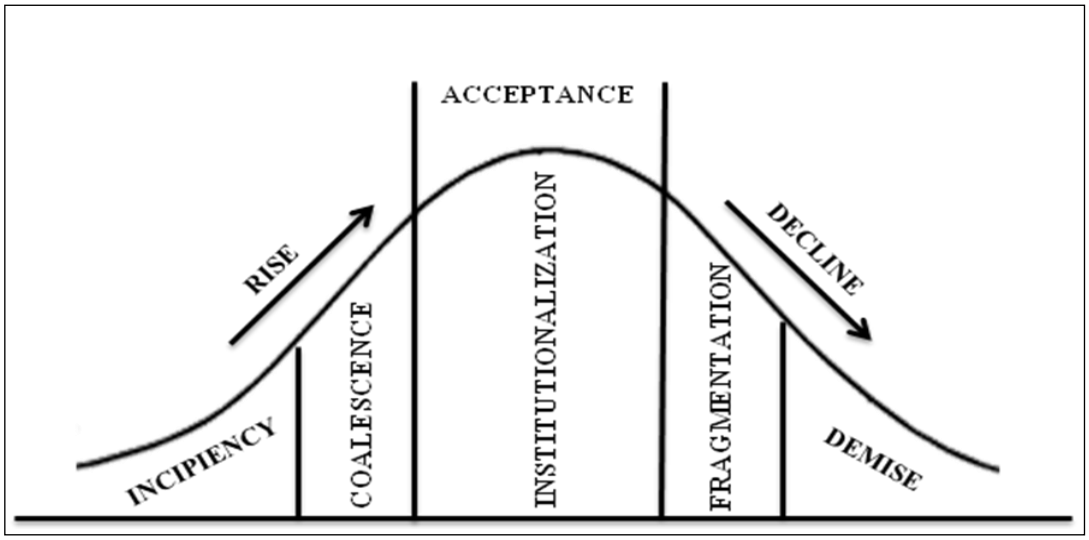
Blumer (1951) defined social movement as "collective enterprises to establish new order of life". Lang and Lang (1961) described it as "*a large-scale, widespread, and continuing, elementary action in pursuit of an objective that effects and shapes the social order in some fundamental aspect*". Tarrow (1994) explained social movements as "*collective challenges, based on common purposes and social solidarities, in sustained interaction with elites, opponents, and authorities*". Based on these definitions, it can be said that social movement refers to the collective action of individuals, groups or organizations with a common interest in a specific political or social issue. The aim of which is to achieve particular goals through social change. Three concepts, that is, political opportunity, cultural framing and organizational resources have become important features in converting social problems into social movements usually by movement leaders. Among these three concepts, cultural framing has been the most effective theme in helping these movements go beyond the territorial boundaries (Barrett and Kurzman 2004). In other words, social problems which have appeared nationally at the beginning have then spread over the continents with common ideals through activist networks and movement

organizations and thus, gaining a global status (Keck and Sikkink 1998; Barrett and Kurzman 2004).

Natural history of a social movement is described as the the "*process of evolution through which a movement typically passes as a result of its interaction with its social environment*" (Mauss 1975). Blumer (1951) is one of the originators of the natural history for social movements, who have suggested different stages social movements often pass through. Since his early work, these stages have been refined and renamed by other researchers but the underlying themes have remained relatively unchanged. Mauss (1975) formulated social movements in five stages, epsecially inspired by radical protest movements. These stages are defined as (1) incipiency, (2) coalescence, (3) institutionalization, (4) fragmentation, and (5) demise. He stated that this kind of classification can be applied to any other social issues as well. The figure (Figure III.1.1) which indicates the five typical stages in the natural history of a social movement has been visualized in such a way that is similar to normal curve, peaking at the stage of "institutionalization". This hypothetical curve would be sharper or flatter than normal for some social movements (Mauss 1975).

In this theoretical perspective, a social problem is defined collectively and a social movement has appeared on the agenda to cope with this problem. Successful mobilization of this movement depends on an ideology or a set of beliefs activated by leaders or social groups in such a way that these beliefs should offer reasonable explanation to members and potential members concerning the causes of the problem and the measures that must be taken to find a solution to the problem. It is of great importance to provide a justification for starting this movement so that it could achieve its goals (Mauss 1975). The most effective tools frequently used in the justification process are generally in the form of slogans and symbols. For instance, the clenched fist atop the female cross symbolizes the women's liberation movement.

Figure III.1.1. Stages in the natural history of a social movement



Source: Mauss A.(1975)

III.2. STAGES OF SOCIAL MOVEMENT

Stage 1: Incipiency

This is the very preliminary stage at which a social problem emerges with a growing discontent of potential participants of the movement, but they have not yet taken any collective actions to redress the situation. This stage is characterized by unorganized efforts and little organizational guidance and control (Blumer 1951).

Stage 2: Coalescence

In this stage, sense of dissatisfaction is more overtly defined by the individuals or groups who become aware of the problem and its potential damaging effects. Hopper (1950) decribed the discontent at this level as "*overt, epidemic and exoteric*", which was previously "*covert, endemic and esoteric*". In other words, it is no longer unorganized or unprofessional (Hopper 1950) and, more people are willing

to contribute to the solution of the problem. Formal and informal organizations begin to develop at local and regional levels.

The important aspects of this stage are the emerging leaders and organizations with clear demands and heightened state of expectancy towards the success of the movement (Hopper 1950; Blanc and Tsui 2005). Due to the growing focus of attention to the perceived threats, the members of the movement are now motivated by a feeling that the measures taken so far are not satisfactory to address the current situation (Blanc and Tsui 2005). Therefore, to cope with a social problem, common strategies start to be developed and adopted in a more organized way.

Stage 3: Institutionalization

"Institutionalization" is the stage where a social movement is reconstituted by people involved in prevailing political ideas and where its demands are integrated into conventional organizations. Institutionalization is believed to be the highest level of development achieved by the supporters of the social movement (Mauss 1975). This stage is mainly characterized by a significant degree of professionalization, specialization and centralization of power via social movement agencies, which are defined by Hyde (1992) as "hybrid organizations in which the explicit pursuit of social change is accomplished through the delivery of services". Jacobson (2000) points out the function of governmental and non-governmetal organizations as "*masters at framing issues so that they command widespread public attention and thus get onto national and international agendas*". This is the stage where their political power is greater than the previous phase.

The success of the social movement in the international arena can be achieved when the rationalization of the movement is defended by the activist networks within the scope of "bodily harm to individuals" and "equality of opportunity" as long as it

goes beyond the specific cultural and political context (Keck and Sikkink 1998). It is, therefore, stated that sustainability of the movement mainly depends on the accomplishment of institutionalization stage (Hopper 1950; Ferree and Hess 1985; Wharton 1987)

Although Staggenborg (1988; 1991) argues that the professionalization and formalization of movement organizations does not necessarily lead to the institutionalization, Ferree and Hess (1985) opposes this view by "if the movement goals could have been achieved through normal channels, there would have been no need to organize outside these channels".

While these agencies may originate from a desire for social change, external funding from government grants and private foundations can be neccesary for the provision and maintenance of alternative services. Such funding may exert strong pressure on the organizations and the target groups to carry out the movement goals.

Stage 4: Fragmentation

Fragmentation will typically occur after a social movement has been largely successful in reaching the movement goals and has achieved a respectful voice within the society. This situation is considered to be ironic because the success, itself, generates this fragmentation (Mauss 1975). Leaders, supporters of the movement and other actors come to believe that the social problem has been mainly solved and the potential threats have largely been eliminated. During this stage, a movement loses its ability to maintain "cohesion, cooperation and compliance" (Sinding 2007). Those who remain in the movement have differing attitudes towards the direction of the movement: some will proceed with the original objectives until they are totally attained while others will commit themselves to modifying the

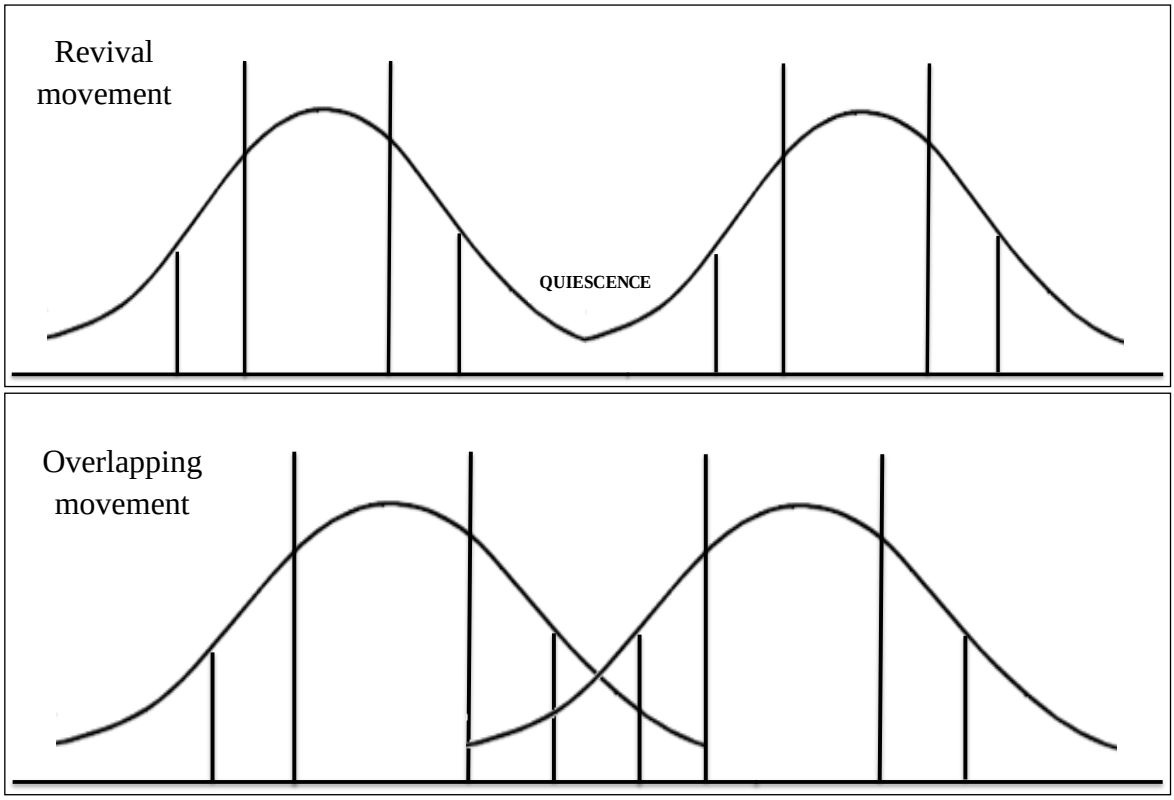
existing goals or setting new ones. The restatement of the situation means new but related causes will be defined or will entirely be disregarded (Mauss 1975).

Stage 5: Demise

"Demise" is the final stage of a movement. Within the life cycle of a social movement, demise is hardly ever recognized by the members of the movement and it may even be interpreted as "success", because major goals have already been fulfilled. Demise might also be perceived as a short-term delay in the social movement whereas this movement is still an ongoing crucial process (Mauss 1975).

The interaction, which has begun due to a combination of cooptation and repression, has shifted from full cooptation in the incipiency stage to massive repression in the stage of demise (Mauss 1975). While this process affects the society at large, the social movement will ultimately experience moribund or fragmentation or newly emerging movements (Mauss 1975; Blanc and Tsui 2005). Two important variations, either *revitalization* or *overlapping*, can be observed during this stage (Figure III.2). In the revival pattern, the movement that is almost dissappearing due to a drastic decline in its popularity is often reanimated in response to new concepts introduced by the relevant interest groups. On the contrary, the overlapping movements appear before the earlier movement has completely died out and share similar objectives with the sequel movement. The major difference between revival and overlapping patterns is that the goals and interests are dissimilar in the revitalization process (Mauss 1975).

Figure III.2.1. Revival and overlapping patterns



Source: Mauss A.(1975)

III.3.LINKAGE BETWEEN SOCIAL MOVEMENT THEORY AND FAMILY PLANNING MOVEMENT

Before implementing the stages of social movement theory to family planning movement, it would be better to understand the key events setting the political context and social background for the emergence of family planning programs.

Family planning is a comprehensive term including all types of birth control programs and various types of medical treatment. The focus of family planning programs can differ from each other as they are closely related to the needs of whom they meet. Hartmann (1995) points out that the starting point of family planning program stimulating enhancement of women's health and their autonomy for their

reproductive preferences is not the same as the one targeting at immediate decline in birth rates.

In the postwar period (after the World War II), high levels of population growth recorded in developing countries, mainly due to large declines in mortality, began to create discomfort among developed countries (Davis 1967; Donaldson 1990; Blanc and Tsui 2005; Sinding 2007). Many of the political leaders and Western intellectuals focus on the the idea that if the population growth left uncontrolled, it would become burdensome for poor countries (Blanc and Tsui 2005; Sinding 2007). Eventually, those elites asserting the impeding effects of overpopulation on economic development began to accentuate the measures needed to slow down the population growth. Macroeconomic models have played an important role in the formation of such ideas. Although some demographers and economists have argued that whether there is a relationship between population growth and socioeconomic development (Cassen 1994), most of the leaders have reacted rapid population growth as a cause of underdevelopment (McIntosh and Finkle 1995). Researchers were not quite sure about the effect of fertility decline on the achievement of economic development in developing countries because they debated that the rate of population growth in poor countries were higher than the one experienced in industrialized countries during their demographic transition, and the reasons playing a catalytic role in such growth was different (McIntosh and Finkle 1995). The most pronounced model on the examination of population growth impact on economic development belongs to Coale and Hoover (1958). Their model states that rapid population growth was a significant barrier in attaining increased capital investment and raising per capita incomes. They argued that overpopulation not only creates investment diversion effect but also prevents productive investments while increasing the unproductive demographic investments.

There are some social scientists who are opposed to the ideas regarding the impeding effect of population growth (Easterlin 1967, Kocher 1973, Simon 1977).

They defend that rapid population growth has a little or no effect on the issue of economic development. However, most policymakers, especially in poor countries heavly relied on the Coale-Hoover model while addressing the causes of deepening poverty and economic underdevelopment (McIntosh and Finkle 1995).

Meanwhile, Ford Foundation have started to finance population activities (Caldwell and Caldwell 1986) and, have given financial support for university-based demography programs aimed at training specialists on the population problems of developing countries (Stycos 1967). By the mid-1950s, population authorities were convinced of the exigencies of birth control efforts (Hodgson and Watkins 1997). Accordingly, new birth control methods and sterilization techniques have been developed to influence and change the fertility behaviors of poor and largely illeterate populations (Caldwell et al. 2002). Despite the oppostions of Catholics and communists voiced at the United Nations World Population Conference held in Rome in 1954 (Donaldson 1988; Hodgson and Watkins 1997), family planning movement gained large governmental supports of developed countries by the end of 1950s.

The emergence of family planning movement is largely based on two individual set of ideas and actions (Sinding 2007). The first of these, which was initiated by Emma Goldman, continued markedly with Margaret Sanger’s birth control movement and followed by the efforts of Marie Stopes and other pioneers in the beginning of the 20th century (Sinding 2007).

When Margaret Sanger introduced the birth control movement, she first identified women's sexual and reproductive health and rights as a cause for social problems (Chesler 1992). She stated that birth control was crucial for women to gain control over their lives. Her ideology of birth control movement is the blend of feminism, neo-Malthusianism and eugenics (Gordon 1990; Hodgson and Watkins

1997). In 1916, Sanger established the first birth control clinic in the United States and in 1921 founded the American Birth Control League, whose mission was to provide education on the prevention of pregnancy. The organization would later be known as the National Birth Control League, and eventually the Planned Parenthood Federation. As time progressed, Margaret Sanger whose primary focus was women's right and empowerment with an emphasis on women's freedom to avoid unwanted pregnancies, gave less attention to feminist arguments. She started to advocate eugenic[3] ideas (Gordon 1990) and stimulate the racist ideology by expressing "*more children from the fit, less from the unfit - that is the chief issue of birth control*" (Stone and Stone 1939). She also argued that population was divided into three groups (Sanger 1921):

- The wealthy and intelligent members of upper classess who already practising birth control for regulating their size of family,
- The responsible and intelligent groups who had the desire to control their fertility but were unable to put these services into practice,
- The irresponsible and reckless groups who were not aware of the consequences of their actions and were mostly "illiterate, diseased, feeble-minded and were the pauper element dependent entirely upon the normal and fit members of society for their support"

Eugenic ideology strongly remained in Sanger's birth control movement throughout the 1930s. Meanwhile, women advocates attacked the birth control movement for being distanced from its feminist roots and movement's euginic ideology was highly criticised for being similar to that of Nazi Germany (Gordon 1990; Hodgson and Watkins 1997). As a result of these reactions, the course of Sanger's birth control movement turned into planned parenthood movement with the

[3] Eugenists were involved in inadequate reproduction of "superior" while promoting reduction of birth rates and strongly supported immigration restriction. They promoted Malthusian and hereditarian explainations for rapid population growth. They argued that high birth rates belonged to "excess" people who were among the poorest and thus implicitly assumed that poverty was an outcome of excess population and "those in poverty deserved to be there" (Gordon 1990).

establishment of Planned Parenthood Federation of America (PPFA) in 1942. This change resulted in the focus being shifted from women to families and children (Gordon 1990).

When PPFA was first founded, the organization did not refer to population contol policy yet, because there was not an agreement on whether overpopulation was a serious problem or not. However, in mid-forties the third world population growth began to seem threatening and accordingly, Sanger wanted to internationalize the planned parenthood movement (Chesler 1992) by participating in family planning meetings held in Stocholm and Seweden at which an urgent request was made for launching international planned parenthood organizations (Hodgson an Watkins 1997). In 1952, International Planned Parenthood Federation (IPPF) was established at the Second International Conference in Bombay, India with the great efforts of Margaret Sanger. In the 1959s, IPPF did not receive a global financial support and its performance in the establishment of family planning clinics in less developed countries was inadequate (Hodgson and Watkins 1997). The mid-sixties was a cornerstone for IPPF since it became the largest non-governmental international family planning organization, and enjoyed great respectability during this period (Sinding 2007).

The second stream of the movement dates back to the 18th century and originated with Thomas Malthus. According to Malthus, world's population cannot surpass the limits of available food and land resources. He believes that population tends to increase faster than the food supply and if the population growth continues to rise, famines, epidemics, scarcity and wars will be the major factors to slow it down. As the substantial cause of rapid population increase, he puts the blame on the "irresponsible" lower class having high fertility rates. On the other hand, he opposes the use of contraceptives for the population control. Instead, he promotes voluntary limitations of population growth such as postponement of marriage, moral restraints and abstaining from procreation. Although his argument regarding the relationship

between population and economic development has been subject to considerable criticisms, the concepts of "overpopulation" or "overconsumption" at the beginning of 20th century has invigorated the ideas of Malthus. The modern manifestation of Malthusianism, namely neo-Malthusianism, recognized in this period reiterates potential costs of economic and political uncertainty stemming from impoverishment and deprivation generated by rapid population growth in poor countries (Sinding 2007). Thus, the suporters of this approach show considerable enthusiasm for the use of contraceptive techniques as a solution to the problem.

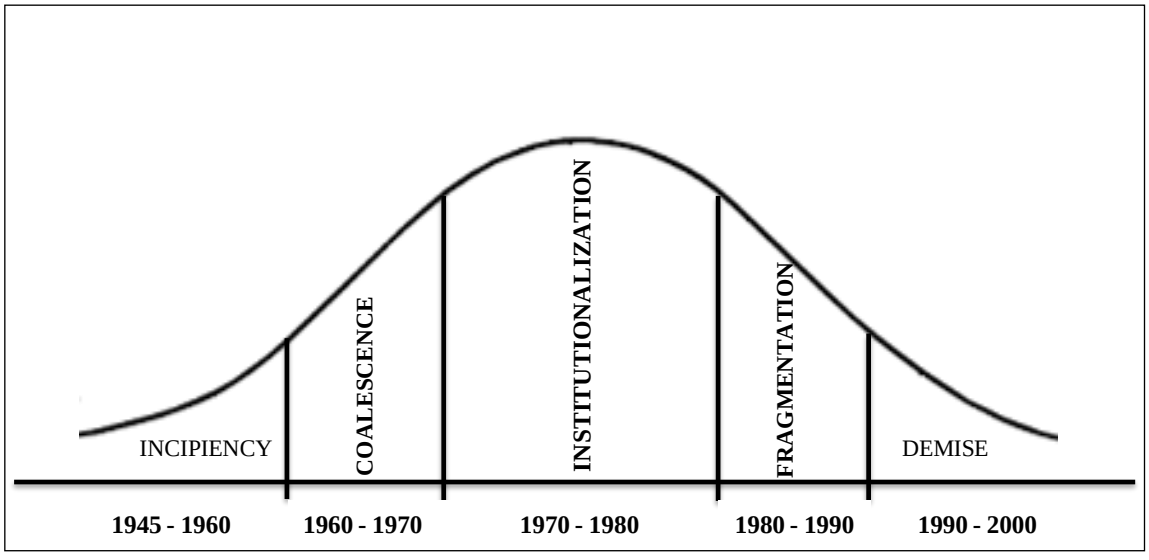
Slowing down the population growth rate in less developed countries was the main issue of United States in particular (Sinding 2007). Concerned academics in elite American universities and foundation leaders considered demographic trends in poor countries to be problematic. For instance, populations of those countries were expressed as exploding by the students of Princeton University and, their economic development were thought to be in jeopardy under the current circumstances (Hodgson and Watkins 1997). Likewise, John D. Rockefeller III, founder of Population Council, not only focused on damaging effects of massive population growth but also strongly supported family planning to overcome potential social hazards and political instability (Davis 1967; Donaldsan 1990; Hartmann 1995; Hodgson and Watkins 1997; Sinding 2007). Due to the imbalance between natural resources and surplus population, he was primarily concerned about the welfare of societies rather than that of individuals (Donaldsan 1990; Hartmann 1995; Sinding 2007). Some researchers believed that the underlying cause of America's strong interest in population growth was to have the necessary power for shaping the postwar world (Donaldson 1990; Sinding 2007). Kirk (1944) explains the rationale behind this motive as follows:

"*Increase of population, and the very mass of the Asiatic population itself, could be ignored in the past as unimportant in the balance of world power. But with the prospect that the Asiatic masses will ultimately learn to forge the tools that will give them power, the differential population trends may become of very great importance*"

The convergence of Sanger's birth control movement and the policy-oriented demographic discipline introduced by the supporters of neo-Malthusianism for the third world population problems provided a consensus on the noncoercive appearence of family planning movement. Although Margaret Sanger was not that keen on the term of family planning since she considered it to be "distracting euphemism", she was one of the zealous supporters of this alliance (Sinding 2007). Hartmann (1995) strictly criticised the developmental process of international family planning strategies on the ground that "people on top decide what is best for the people on the bottom" regardless of women's equity and well-being.

When looking at how family planning movement have through the stages of social movement within the global frame after the World War II, the period of 1945-1960 refers to the conspiency stage of family planning movement. A global consensus on the need of family planning has been reached in 1960-1970. The 1970s-80s were the apex of family planning services provided through worldwide organizations. Family planning movement began to lose its popularity between 1980-1990 and reached the demise stage in 1990-2000 (Figure III.3.1).

Figure III.3.1. Stages in the development of family planning movement



Adapted from Mauss (1975)

The context in which an increasing general concern about rapid population growth constitutes the fundamental aspect of the emergence stage of the international family planning movement. The 1950s were the era of pessimism in developed countries, particularly in the United States, about the Third World population growth. International family planning movement has attained the coalescence stage by mid-1960s (Blanc and Tsui 2005). At this stage, pioneers of the family planning movement have pleaded that problem of 'overpopulation' could not be solved by itself. When examining the demographic trends of less developed nations, fertility decline, which is said to be closely associated with industrialization and urbanization[4], has not reached the desired levels. Thus, developed countries, particularly the United States, have proposed necessary strategies for an accelerated modernization process to eliminate the high fertility rates in poor countries (Hodgson and Watkins 1997). In the early phases of this stage, birth control advocates in United States, led a great effort to internationalize the family planning movement. In order to fulfill this aim, the Agency for International Development was created in 1961. In addition, in 1963, Population Council commenced the publication of *Studies in Family Planning*.

Blanc and Tsui (2005) summarize the features of family planning movement in the coalescence stage as follows:

- decreasing the population growth rate into acceptable levels
- achieving population stabilization in the long run
- attaining those goals by means of family planning programs

[4] Warren Thompson is the pioneer of demographic transition theory who had first expressed transition from high to low birth and death rates. Based on his observations about the birth and death rates of industrialized societies over years, he theorized that countries industrializing and urbanizing would experience the demographic changes Western countries had passed through. That is, a movement from low population growth due to high birth and death rates, to rapid population growth due to high birth rate and low death rate, and to low growth with low birth and death rates

Hartmann (1995) defends that stating “women the world over want family planning” is not an exaggeration to illustrate how international population agencies handle the problem of overpopulation.

Family planning activities peaked in mid-seventies and eighties. It is said to be the golden era of family planning programs (Sinding 2007). This is the decade at which family planning movement has reached its institutionalization stage, and where the vast majority of countries adopted voluntary family planning programs. The success of family planning programs were stated to be the outcome of world cultural forces creating similar institutions and policies within a larger international system (Barrett and Frank 1999; Barrett and Tsui 1999)

International efforts and donor supports to reduce rapid population growth in the Third World were expanded throughout this period (Freedman and Berelson 1976; Barrett and Tsui 1999; Blanc and Tsui 2005; Sinding 2007). The United Nations Fund for Population Activities established by the early 1970s became a dominant actor of family planning support in this period (Blanc and Tsui 2005). Financial support was primarily provided by the United States, itself, which was regarded as the most influential sponsor of the family planning activities. Other developed countries also played a significant role in giving monetary assistance to the poor countries. Moreover, the United Nations allocated some of their funds to population projects while the World Bank encouraged those projects by offering loans (Barrett and Tsui 1999; Sinding 2007).

The emerging consensus in the previous stage was then followed by an active participation of large numbers of governmental and non-governmental organizations both at local and international levels. The formation of such a remarkable worldwide movement and effort resulted in mounting pressure to adopt population policies and

family planning strategies (Sinding 2007) and, thereby having poor countries implement those programs extensively.

Within the same decade, World Population Conference was held in Bucharest in 1974. It was the first international conference in which the causality between population and development was conferred with the representatives of governments (Mauldin et al. 1974). The motivation for holding the Conference came largely from the United States, and some European and Asian countries played a secondary role in this process. They believed that a global conference like this would encourage governments and international organizations to proceed more eagerly in coping with population problems (Finckle and Crane 1975). At the conference, the head of the Indian delegation together with delegates of non-allied countries uttered phrases like "*development is the best contraceptive*" and "*take care of the people, and population will take care of itself*", ignoring the strenuous efforts of Indian government to avert population growth through sterilization (Sinding et al. 1994; Hodgson and Watkins 1997; Sinding 2007). These ideas transformed into a "developmentalist" approach by John D. Rockefeller III connote a complementary birth control policy that would accelerate the development process. This approach was used as a synonym of the phrase "*fertility control is not a prerequisite but a requirement for development and poverty reduction*" (Sinding et al. 1994; Hodgson and Watkins 1997).

Timing of the conference mostly overlapped with the emergence of opposing ideas. Feminists, activists and some leaders of the Third World began to be suspicious about the motivation behind the developed nations' interests in regulating the fertility rates of women in poor countries (Seltzer 2002; Sinding 2007). Particularly, women's rights and health advocates were anxious about conflicts between individual rights and demographic goals (Seltzer 2002). In addition, countries like China, the former Soviet Union, Algeria and Argentina asserted that Western countries have concocted an elaborate story on rapid population growth for keeping developing countries' populations under control. According to these

countries, population growth is a manifestation of imbalances in the development process, not the cause of underdevelopment (Sinding 2007).

The conference at Bucharest is important because it calls on countries to enable the equal participation of women on economic, social and political grounds. The conference resulted in the declaration that "*all couples and individuals have the basic rights to decide freely and responsibly the number and spacing of their children*". Although this resolution seemed to give the priority to human rights rather than population control (Hodgson and Watkins 1997), the responsibilities were assumed to be fulfilled without any coercion posed a tension between the protection of indiviual rights and the common good (Dixon-Mueller 1993)

The fragmentation stage of international family planning movement began after the mid-eighties. This stage was reached after family planning movement had enjoyed great success and high level of respectability in all over the world. Demographic rationale for the inducement to family planning programs, which had been supported until then, began losing their effects when the majority of developing countries were increasingly experiencing large fertility declines and high prevalence of contraceptive use. (Blanc and Tsui 2005). Furthermore, due to the coercive birth control programs implemented in India in the form of forced sterilization and China in the form of one-child policy, family planning programmes have faced a strong challenge from women's health advocates. They strongly argued that contraceptive methods with certain side effects were promoted by these programmes. They also expressed an ethical dilemma about the use of demographic targets and material incentives in government-sponsored programs (Dixon-Mueller 1993; Dixon-Mueller and Germain 1993; Dixon-Mueller and Germain 1994; Mason 1994; Petchesky 1995; Seltzer 2002; Blanc and Tsui 2005; Camerana and Lerner 2005). As a result of increasing reactions to coercive efforts, the Rockefeller and Ford Foundations, the major financial supporters in the private sector, withdrew their large amount of funds in order not to encourage such programs while the fundings of US government for

international population programs were increased. During this period, family planning programs continued to be funded internationally but to a lesser extent. Instead, a considerable proportion of monetary support was provided by the Third World governments, themselves (Caldwell and Caldwell 1986; Hodgson and Watkins 1997).

Two important events with a serious, long-term impact on family planning programs accelerated the fragmentation stage of the movement. The first one was the International Conference on Population held in Mexico city in 1984. This conference was the restatement of the basic principles adopted at Bucharest. It provided a platform for nations on the side of voluntary family planning programs and policy initiatives targetting population stabilization (Sinding 2007). However, The United States' position at the Conference was unexpected. The US delegations proclaimed that they would stop funding international family planning organizations supporting abortion activities (Fox 1986). At the same time, they not only renounced their long-lasting committment in population control and family planning policies, but also asserted that "population is a neutral phenomenon in the development process" (Hodgson and Watkins 1997; Sinding 2007). The rationale and the efforts for international family planning advocated thus far became highly contentious issues after the announcement of United States (Fox 1986).

The second one was the International Conference on Population and Development (ICPD) in 1994 which resulted in a diversion of family planning movement into a new framework. The preparations for the third global population meeting to be held in Cairo started in a setting where massive fertility declines had occurred in many of the developing countries, and where worries about unmanageable population growth had almost disappeared (Sinding 2007). Instead, the rise of concerns about unwanted sterilizations, inappropriate methods of family planning and limited control of women on their bodies, which were perceived as significant threats to women's reproductive freedom, health and rights, became a

turning point in the development of the conference agenda (Garcia-Moreno and Claro 1994; Germain 2000; Sinding 2007). Morover, women's health and rights advocacy groups were increasingly lobbying for the elimination of demographic targets, quotas, and goals from the focus of population programs[5] (Sen, Germain, and Chen 1994; McIntosh and Finkle 1995). Feminists and women advocates were discontented with the solution to the problem of rapid population growth highlighted by the international organizations because they shared the idea that the burden "was being put on the backs of women in developing countries" for resolving it (Seltzer 2000).

As a result of these efforts and reactions, a broader agenda emphasizing the empowerment of women, and achievement of their sexual and reproductive health rights was couched in the Program of Action adopted at the conference (UN 1995). Gender equity was embraced as a separate development goal (Finkle and McIntosh 2002). Any form of coercion was stated to be unacceptable (UN 1995). The phrase "population problem" was not referred to in the Programme of Action, and demographic factors were not even mentioned to substantiate any problem (Hodgson and Watkins 1997). Demographic targets, putting pressure on women, were totally ignored (Sai 1997). The concept of reproductive health, defined as "the capability to reproduce and the freedom to decide if, when and how often to do so" (UN 1995: paragraph 7.2), was considered as the main purpose of population programs, and family planning was only stated within the context of reproductive health care (Ashford 2003).

The direction of family planning programs determined by the leaders of developed nations up to the fragmentation stage was then shaped after Cairo by a broad coalition of non-governmental organizations (NGOs) particularly involved in women's empowerment, reproductive health and rights (Blanc and Tsui 2005). The

[5] This is known as "The Women's Declaration on Population Policies" produced at a meeting in 1992 with the large participation of representatives of women's NGOs (Halfon 2007).

role of these NGOs at the international level and ICPD Program of Action was a watershed because the term "family planning" lost its importance as a focus of policy and was consigned to oblivion (Petchesky 1995; Hodgson and Watkins 1997; Sai 1997; Casterline and Sinding 2000; Blank and Tsui 2005; Sinding 2007).

In the post-Cairo period, many governments were comforted that demographic goals could be achieved without being restricted to population policies determined by numerical figures (Casterline and Sinding 2000) and international agenda has intensively concentrated on the Millennium Development Goals[6] (MDGs) (Blanc and Tsui 2005).

The idea of MDGs was originally revealed by the Organization for Economic Cooperation and Development (OECD). As early as 1996, the OECD played a pioneering role in the development of specific objectives that could be measured and monitored over time. In the strategy paper of OECD, entitled "Shaping the 21st Century", the fact that population policies will be shifted from quantity-control to quality-improvement in the coming century after Cairo is stated as follows (OECD 1996):

"In the year 2000, four-fifths of the people of the world will be living in the developing countries, most with improving conditions. But the number in absolute poverty and despair will still be growing. Those of us in the industrialised countries have a strong moral imperative to respond to the extreme poverty and human suffering [...] We also have a strong self-interest in fostering increased prosperity in the developing countries."

[6] The Millennium Development Goals consist of 8 goals and 18 targets to be achieved by 2015. These inclue reducing extreme poverty, child mortality rates, improving maternal health, gender equality, empowerment of women, fighting epidemics and diseases, ensuring environmental sustainability and building a global partnership for development

After agreement on MDGs by the member states of the United Nations in 2000, funding for international family planning programs has been subject to considerable decline due to the fact that neither family planning nor reproductive health is explicitly regarded as a development goal (UNFPA 2009). Accordingly, both the World Bank and International Monetary Fund have given priority over poverty reduction (Blanc and Tsui 2005). These chain of events indicate that family planning is no longer an appealing concept.

Family planning which was perceived as a solution for rapid population growth at the beginning started to become obsolete over time because it was believed that the problem had been resolved and nothing extra was needed (Blanc and Tsui 2005; UNFPA 2009). As mentioned earlier, Mauss (1975) stated that the demise stage may sometimes be defined as "success" or be rarely recognized by the supporters of the movement. Although there is not a clear consensus of opinion on whether international family planning movement has already reached the demise stage or not, the movement will be substantially changed through either overlapping or revitalization model in the future (Blanc and Tsui 2005).

As mentioned before, family planning programs commenced owing to the globally perceived population problem in developing countries. The initial and the major goal which was to avert rapid population growth through accelerating fertility decline was believed to be fulfilled. Indeed, in the past 40 years, the increase in of contraceptive prevalence rate from 10 to 60 percent and the reduction of fertility in developing countries from six to about three children per woman can be regarded as indicators of a successful international family program (Cleland et al. 2006).

Gusfield (1955) and Messinger (1955) express that pioneers and leaders of a movement try to revive it by redefining new goals or setting new directions instead of permitting it to completely disappear. As to the family planning movement, it is

widely accepted that family planning movement lost its popularity with the Conference at Cairo. Unmet need for family planning, on the other hand, has been explicitly stated as a core rationale for population programs in the ICPD. Moreover, unmet need has been further explicated in the ICPD Programme of Action (UN 1995: paragraphs 7.12 and 7.16) as follows:

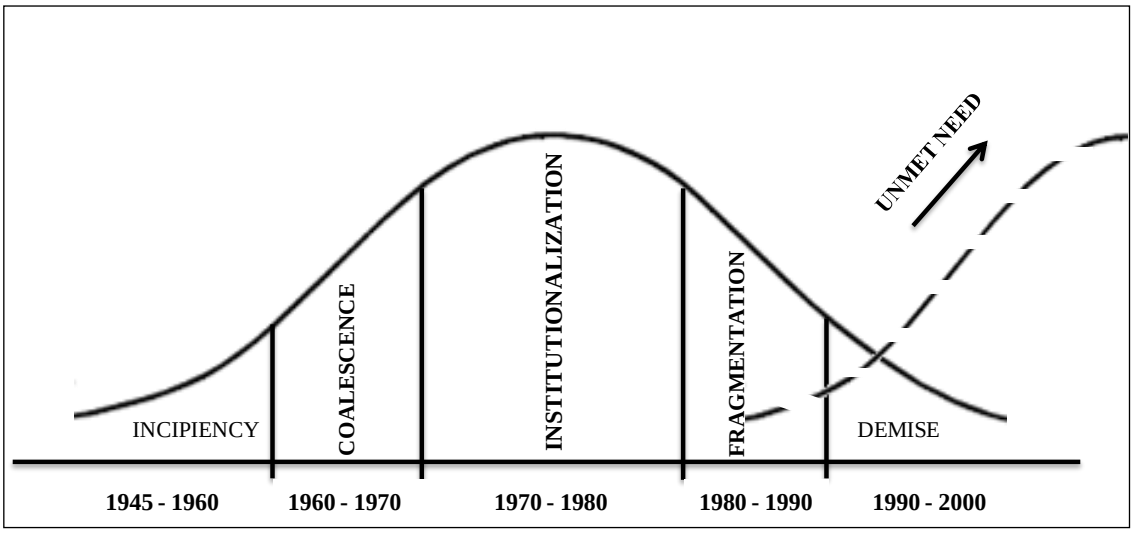
"*Governmental goals for family planning should be defined in terms of unmet needs for information and services [...] All countries should, over the next several years, assess the extent of national unmet need for good-quality family-planning service [...]* "

There is also an attempt to recast the message of family planning programs such as "an unfinished agenda" addressing the level of unwanted fertility, unmet contraceptive need and unsafe abortion, and thus to re-energize the role of voluntary family planning in the development process (Cleland et al 2006; UNFPA 2009). For instance, in West Africa in 2005, a conference on "Repositioning Family Planning" was held in order to point out that there is more than 100 million women worldwide with an unmet need for family planning (Blanc and Tsui 2005).

Although these efforts can be regarded as reinvigoration of moribund family planning activities, and reducing unmet need has been treated as a target in itself, rather than a means for achieving demographic goals in the period of post-Cairo (Sinding et al. 1994; Robey et al. 1996; Sai 1997), in this dissertation, the emergence of the concept "unmet need for family planning" has been regarded as the *overlapping movement* of family planning movement (Figure III.3.2). The reason why unmet need has been considered as overlapping instead of revitalization process is that its validity and its utility as a guide for policy formation and an assessment tool for the quality of family planning programs have gained wide currency especially in the post-Cairo period (Dixon-Mueller and Germain 1992; Pritchett 1994; Jain 1999). The coincidence in time is peculiar to overlapping movements

(Mauss 1975) and in fact, the timing of unmet need becoming a core concept is not accidental. It has had a central role in population policy literature and justification for program efforts when the visibility of family planning movement had almost diminished.

Figure III.3.2. Stages in the development of family planning movement and timing of the emergence of unmet need for family planning



Adapted from Mauss (1975)

IV. POPULATION POLICY AND FAMILY PLANNING IN TURKEY

From the 19th century onwards, Turkey has had a history of various policies and legislations about population and family planning primarily based on the maternal and child health perspective. The social and political background of the steps taken for the population policies implemented from the late 19th century to the end of the 20th century is important to understand the rationale behind them. Accordingly, in this chapter, the law and regulations made during the Ottoman and Republican era, and the political environment in which they were either prohibitively or progressively developed, have been discussed first. Afterwards, the integration of the regulations into national development plans during the "planned period" in Turkey have been explicated. Following this, the stages of social movement theory displayed in Chapter III have been utilized to present the commencement and the disappearance of family planning movement in Turkey.

IV.1. HISTORY OF POPULATION POLICIES IN OTTOMANS AND TURKEY

IV.1.1. THE PRONATALIST POLICIES

During the reign of Ottoman Empire, the concept of family planning had not existed in the sense that it now exists in the contemporary world. Besides, legalization or criminalization of birth control activities or the use of contraceptive methods were not explicitly specified in the judicial system of the Ottomans. On the other hand, abortion – which is considered within the scope of reproductive health and family planning in today's world and, which has been subject to various legal arrangements in different periods – was discussed in detail in the Ottoman law

(TÇSV[7] 1985). In 1838, abortion was stated as a great sin in the edict (*ferman*) on the ground that welfare of a country relied on its population and, the activities terminating pregnancies could lead to serious reductions in the Empire's population (Öztürk 1987; Düzbakar 2006; Miller 2007; Konan 2008). Moreover, it was considered as a homicide after the first 120 days of pregnancy[8] (TÇSV 1985; Bowen 1994).

The 1858 Ottoman Criminal Code was the first legal document in which abortion was officially mentioned, codified and criminalized (TÇSV 1985; Franz 1994; Miller 2007). In the second paragraph of the second section of this law titled "Crimes and Offences Against Persons and Punishment thereof", the penalties of abortion were addressed according to who helped or accelerated the process of abortion (TÇSV 1985; Franz 1994; Miller 2007). The 1858 Criminal Code remained in force until the new criminal code was promulgated in 1926 (Franz 1994; Miller 2007).

After the Balkan Wars (1912-1913), the First World War (1914-1918) and the War of Independence (1919-1922), the newly founded Turkish Republic inherited a 13 million-population from the Ottomans. From 1923 to 1960s, the population policy of Turkey was designed to provide a rapid increase in population (Fişek 1964b; Güriz 1975; Altıok 1978; Peker 1983; Üner 1984; Franz 1994; Akın 2007). Due to the recruitment of male population and heavy human losses at wars, the national

[7] Türkiye Çevre Sorunları Vakfı

[8] Prior to 1858, the approach of Hanafi school was mainly taken into consideration, that is, in the case of necessities or economic difficulties (TÇSV 1985), the Islamic Law of Hanafi School allows abortion before 120 days of pregnancy as most scholars have argued that the fetus is not formed in the uterus and ensouled until the 120 days pass (Bowen 1994). There are also different opinions where abortion might gain acceptance among Sunni schools of Islamic law. For instance, Hanafi and Zaydi schools allows abortion before 120 days whereas Hanbali schools allows abortion before 40 days. Some scholars from Shafi'i school accept abortion until 80 days (as sperm and blood clot) and some allow it before 120 days. The rest of the schools have not ever accepted (Bowen 1994: 164). Although abortion is acceptable within 120 days, Hanafi, Shafi'i and Zaydi schools classify it as reprehensible *(makruh)* and therefore, a crucial reason is needed to justify the abortion (Bowen 1994).

fertility was substantially reduced whereas high levels of infant and child mortality rates were recorded. The postwar conjuncture from which the country's defense needs and shortage of manpower in agriculture arose, pointed out the exigency of increasing fertility for Turkish government.

In the third opening of the Turkish Grand National Assembly in 1922 as well as in his several speeches made later on, Mustafa Kemal Ataturk, while addressing the Turkish Nation, expressed his strong desire to strengthen the general health conditions, to decrease the death rate, to increase the population and, to raise a dynamic generation (Güriz 1975; Altıok 1978). Ataturk's speeches about increasing the population of newly founded Turkish Republic were adopted in the program of the Republican People's Party (CHP). Indeed, Republican People's Party, which was the unique political party of that period and which was in power until 1950, was of great importance for determining and monitoring the pronatalist policies in Turkey (Güriz 1975). For this reason, during early Republican era, the regulations were the continuation of the policies implemented in the late Ottoman period.

In 1926, the Turkish government adopted the 1889 Italian criminal code, which went into more detail on the subject of abortion than the Code Napoleon had. These articles, which remained in effect for less than a decade, operated under a separate chapter heading, "On Abortion," and created a hierarchy of culpability for women who consented to, who did not consent to, or those actively sought abortions, as well as whoever might have aided them. (Güriz 1975, TÇSV 1985, Miller 2007). The new code considered induced abortion as a crime. An amendment to this law was introduced in 1936 which included more severe penalties for induced abortion than the former one and penalized any action which attempted to avoid conception. With the effect of German and Italian trend, the title was changed from "The Crime of Induced Abortion" to "Crimes against the Integrity and Health of Race" (Altıok 1978). In the amendment made in 1953, penalties for abortion were further increased. However, practices of illegal abortion could not be averted (Fişek 1972, Kişnişçi and

Akın 1978). About 20 percent of the pregnancies ended in an induced abortion, which was an excessively high rate of abortion (Altıok 1978).

Regarding the pronatalist policies, Italy played a role model for Turkey. The measures taken and policies implemented by Musssolini in Italy were almost completely adapted by the Turkish government especially after 1930s. It is also known that publications about the measures taken in Italy to provide the development of population in terms of quality and quantity were translated into Turkish and published by General Directorate of Statistic Institute (Güriz 1975).

The aim of Mussolini's population policy was "maximum number of births, minimum number of deaths". His approach was entirely adapted by the Republican People's Party as the Turkish health policy (Güriz 1975). In sympathy with the pronatalist population policy measures of Mussolini[9] and with the effect of deterioration of the demographic situation in the country, the age at first marriage was reduced to 18 and 17 for men and women, respectively, in the Turkish Civil Code of 1926, which was an adaptation of the Swiss Civil Code. In 1938, it was further reduced to 17 for men and 15 for women. In addition to these, there were additional legal regulations directly or indirectly encouraging the population growth in Turkey. The Village Law of 1924 (No.442) set out actions to eradicate contagious diseases and to keep vital records of rural population on a regular basis. Moreover, fiscal incentives were given to international immigrants. The law on Local Administration (No.1426) in 1929 and the Law on Municipalities (No.1580) in 1930 issued a decree for local administrations improving public health, establishing

[9] Mussolini introduced a number of measures to encourage reproduction. He mainly gave priority to mother and child health care. He took measures to prevent migration. He encouraged procreation and marriage. Bachelors between the ages of 22 and 55 were taxed and the income from taxes were transferred into the expenditures of mother and child health care services. Families having more than six children were exempted from taxation. Financial incentives were provided for civil incentives with children (i.e. salary increase, extra payment) (Güriz 1975; Erdal 2011).

maternity hospitals in which health services were available to the public free of charge, and distributing medicines to the poor for free or at a low cost (Güriz 1975; Altıok 1978; Peker 1983). Furthermore, the 1930 General Hygiene Law was one of the most direct intervention of the government on its pronatalist stance. It decreed that Ministry of Health was in charge of antenatal and postnatal care services of women. Besides that, families with six or more children were decided to be given cash awards or medals according to the law. It also prohibited the import and sale of any contraceptive. (Peker 1983; Altıok 1978; Fişek 1963; 1964a; 1986; Fişek and Shorter 1968). Furthermore, the dissemination of birth control practices and their advertisement was outlawed to create a powerful nation. In fact, these regulations were almost similar to the ones implemented during the interwar period in European countries (Ertem 2011).

In addition to legal regulations, the political perspective of that period was best described by the famous author and historiographer, Şevket Süreyya Aydemir. In his article published in 1932 in the journal of "Kadro", he stated

"*[...] We desire to have a populous, prosperous and contented society.*"

From 1923 to 1960s, fertility showed an increasing trend and reached its peak in 1960 and during the same period, fertility rates increased from 5.5 births to 7.0 (Cerit 1989; Taşıran 1997). It is open to debate whether any of these pronatalist measures had a significant impact on increasing fertility. It was argued that laws and legal regulations regarding pronatalist policies did not play an instrumental role in 1929 and 1930s (Peterson 1975). Accordingly, Shorter and Tekçe (1974) highlighted that the increasing trend in crude birth rate until 1935 and its decline afterwards displayed such a smooth movement that this trend did not demonstrate a causal relationship between any legal practice and fertility.

Even the formation of opposition parties did not reveal any queries about the attitude of the government towards pronatalist policies. The Progressive Republican Party[10], known as the first opposition party, stated, (Güriz 1975)

> *"[...] our party believes firmly that the most valuable asset of the country is its population, and aims to increase our population and to protect the lives and health of the people from youngest to the oldest[...]"*

Pronatalist approach did maintain its political power during the multi-party system as well. In addition to the National Development Party (1945), and The Nation Party (1948), the Democratic Party (1946) which ruled Turkey for 10 years (1950-1960) also promoted the population growth. It was no earlier than 1958 that the negative effects of population growth were expressed in Turkey (Altıok 1978).

IV.1.2. THE ANTI-NATALIST POLICIES IN TURKEY

There are three important events which helped raise the social and political awareness about the problem of rapid population growth, and the negative effects of legal regulations forbidding birth control practices. The first one is the article written by Haluk Cillov in the daily newspaper, Milliyet, in 1958, drawing attention to the rapidly growing population in big cities, and the need for birth control. The second is Fakir Baykurt's article in 1959 in the newspaper, Cumhuriyet. His writing was based on the idea that a large population was no longer an indicator of a country's power or its future security. On the contrary, it turned out to be a burden for the society. The final one is the report prepared by a committee under the leadership of Dr. Zekai Tahir Burak. In 1958, he played a leading role in triggering the Ministry of Health to

[10] The Progressive Republican Party (*Terakkiperver Cumhuriyet Fırkası*) was established on 17 November 1924, but was later banned on 5 June 1925 after the Sheikh Said Rebellion.

commission a study about the tendency towards abortion, and the consequences of illegal abortion (Üner and Fişek 1961; Güriz 1975).

The report of the commission revealed that abortion was widely practised despite the severe penalties in the Turkish Penal Code and the majority of these actions did not receive any punishment (Altıok 1978). It proposed that termination of pregnancy should be permitted in case of emergencies and necessities. It further explicated the need for legalization of contraception to prevent unwanted pregnancies by means of harmless contraceptive methods as in other civilized countries (Üner and Fişek 1961). The committee members, on the other hand, highlighted that they did not support the idea of abortion to be legalized (Güriz 1975; Altıok 1978). This report was important because it was the first official document in Turkey that proposed the legalization of family planning (Altıok 1978) although it did not explicitly recommend an amendment to the law about the population policy (Güriz 1975).

In addition to these, in 1959, Nusret Fişek[11] and his colleagues conducted a survey in 137 villages. The findings of this survey showed that the infant mortality rate reached 165 per thousand and maternal mortality was 280 per a hundred thousand (Fişek 1969). This study not only accentuated the role of induced abortion in the causation of maternal deaths, but also reinforced the remarks of the commission about abortion practices in Turkey (Altıok 1978).

Following the military coup in 1960, the authorities did almost a complete turnaround in their opinions of population growth, which commenced new debates about the direction of population policies (Güriz 1975). The representatives of State Planning Organization established in 1960 and the Ministry of Health reached a

[11] He served as Undersecretary of Ministry of Health from 1960 to 1966 after the military coup in 1960.

consensus about the need for a change in pronatalist policies in Turkey (Fişek 1969; Güriz 1975; Altıok 1978). In addition to this, the foundation of antinatalist policies was laid with the preparation of First Five-Year Development Plan and the Population Planning Law (Üner and Fişek 1961; Altıok 1978; Peker 1983).

IV.1.2.1.POPULATION POLICIES AND FAMILY PLANNING APPROACH IN DEVELOPMENT PLANS

The pronatalist policy implemented during the early republican era reversed the desired trend in population growth towards an uncontrolled capacity as of mid-20th century. Following the establishment of State Planning Organization in 1960, planned development period was started in Turkey. The economic and social underdevelopment was attributed to the rapid population growth, and the measures for reducing the growth rate was emphasized in the national plans. Regarding the family planning programs, although the scope of these programs was primarily the mother and child health and the success of each development plan in achieving goals was uncertain, progressive steps were tried to be taken. On the other hand, each plan gave important hints about the tendency of authorities and governments for family planning policies.

IV.1.2.1.1. First Five-Year Development Plan (1963-1967):

The negative effect of population growth on economic development, which was largely expressed in the international arena within the same period, was reflected in the first development plan. It was stated that population growth which was considerably important in the past, henceforth impeded the economic progress of the country since the rate of increase in gross national product and per capita income could not catch up with this rapid growth. Accordingly, the crucial importance of a new population policy and mechanisms for family planning to slow down the pace of

the increasing population were explicitly advocated (Güriz 1975; Altıok 1978; Peker 1983; Franz 1994).

The proposed measures in the plan were (Güriz 1975; Altıok 1978):

- repealing the prohibition amendment of law, thus making the import, sale and distribution of contraceptive methods legal;
- implementing family planning programs;
- training health personnel about family planning;
- facilitating the distribution of necessary devices and medicines free of charge.

The concept of family planning had sparked off considerable debate in the parliament. The State Planning Organization proposed the name of the strategy as "Family Planning Program" in the original draft of the plan. On the other hand, it was argued that such a wording might imply the invasion of privacy. As a result, the government preferred a more neutral concept, that is, "Population Planning" and then, embraced the recommended revisions and antinatalist approach in the plan (Altıok 1978).

Furthermore, the Law on Population Planning was prepared between 1961 and 1962. It was enacted five years after its preparation stage and remained unchanged until the 1980s (Altıok 1978). According to the bill, individuals were free to decide how many children they would like to have and they were allowed to use contraceptives to achieve their fertility desires. The primary responsibility for implementing the program, training the health personnel in contraceptive management, and raising the awareness of the society was given to the Ministry of Health. The law also indicated the strict medical conditions under which abortion or

sterilization would be allowed as well as the penalties for violations (Güriz 1975; Altıok 1978).

Güriz (1975) stated that the annual programme for 1965 could be regarded as an indicator of the country's falling behind the economic development targets. During the time spent between the preparation (1961-62) and the enactment (1965) of the Population Planning Law, there was a reticence on the part of the political leaders to talk about population and family planning issues which were considered as politically difficult topics (Altıok 1978). In fact, it might be stated that the concerns about the probable public reaction to the concept of "family planning" and the subtantial divergence of opinion within the parliament caused delay in the approval of the bill to a larger extent.

In the annual plan of 1963, population planning was regarded as a requirement due to the fact that limited resources were allocated to demographic investments instead of economic investments, which would, otherwise, have interrupted the economic development in Turkey. It was further clarified that the concept of population planning should not have been regarded as a government intervention about childbearing. Rather, it should be considered as a "democratic" way to *decide freely when and how many children the families would like to have* (Güriz 1975). Such explanations have indicated the politicians' hesitation to accept these reforms as well as the serious doubts in the society about the rationale behind them.

In early 1960s, regarding the unwillingness of the parliament to accept the new bill, the government made demands on the Population Council to analyze the demographic factors in Turkey as well as to reveal the public readiness for the idea of nationwide family planning program (Metiner 1966). The knowledge, attitude, and

practice (KAP) survey[12], which was the first representative survey in Turkey, was carried out in a consortium with the Ministry of Health and Population Council[13] (Metiner 1966; Franz 1994; Akın 2007). The survey results revealed that the majority was in need of contraception and in favor of government sponsored family planning programs (Metiner 1966; Franz 1994; Akın 2007). Meanwhile, the supporters of family planning mostly among doctors and lawyers established the Family Planning Association of Turkey in 1963 (TAPD).

After a two-year lag in the ratification of the Population Planning Law (No.557), which provided the legal framework for funding and implementing nationwide family planning programs, was enacted by the National Assembly on April 1st, 1965 (Metiner 1966; Franz 1994). Although the name of the law was declared as "Population Planning", the primary objective and the policy was, in fact, family planning. The reforms introduced by the new law as in the following (TÇSV 1985):

* Individuals would have the freedom to decide on the number and timing of children
* Restraints imposed on family planning programs and birth-control incentives would cease
* The Ministry of Health and Social Welfare was authorized to establish a special organization to obtain, produce, or arrange for the production of contraceptive drugs and devices, and to take measures for the free distribution of these drugs and devices or to provide their sale at less than cost price to those persons in need.
* Abortion and sterilization was only allowed in cases of medical necessity

[12] More than 5,000 people in nearly 300 villages and cities were interviewed in this survey (Akın 2007)

[13] In late 1963, a dolar budget was prepared by Population Council and 4.5 million lira was provided by the Ministry of Health (Metiner 1966)

Within the same year, the Ministry of Health established the General Directorate of Family Planning. In 1982, to facilitate the effective service provision, the directorates of mother and child health, and family planning were merged under name of General Directorate of Mother/Child Health and Family Planning (TÇSV 1985).

Even after the introduction of the law, most of the members of the parliament displayed reluctance to explain their position about the population problem and family planning (Altıok 1978; Franz 1994).

The main themes of publications during the 1960s and early 1970s were mostly related to urbanization, employment, migration, nutrition but not to overpopulation or family planning (Altıok 1978). Moreover, the discussion on population and family planning occurred informally (Franz 1994). Family planning strategies and their requisites were propagated in academic writings as well as in periodic conferences sponsored by the Ministry of Health, Hacettepe University Institute of Population Studies, which was founded by the grant from Ford Foundation in 1966 (Altıok 1978; Franz 1994).

The problem of overpopulation was mostly debated by women advocates and professional organizations. Rarely was family planning cited as a solution for rapidly growing population. Moreover, it was not seen as a key factor for economic development by the authorities, and it was criticized for not being regarded as a human right. Ideological debates about family planning giving harm to women's health and its being dictated to developing countries like Turkey by the foreign organizations in developed countries took place as well (Altıok 1978). For instance, under Demirel government, family planning was not referred to as a government policy in the parliament; the debate about the regulation of Ministry of Health in 1967, however, was an exception (Franz 1994). Demirel clarified that family

planning was misunderstood, and the main concern was not the reduction of population, but mother and child health (Altıok 1978).

In fact, these discussions, and the delays in implementing the law have indicated how authorities and policy makers were reluctant to utter the concept of family planning in order not to make an impression as if they favored antinatalist policies.

IV.1.2.1.2. Second Five-Year Development Plan (1968-1972)

Overpopulation was mentioned again as a barrier to economic development, and the importance of improving mother and child care was underlined. The approach was shifted from “population planning” to “family planning” (Güngördü 2003). Besides that, the scope of the family planning programs was extended (Altıok 1978), and the principles of these programs were thoroughly explained in the plan (Güriz 1975). Moreover, this plan prepared a ground for the establishment of mobile teams to provide rural population with health services (Fişek 1969; Altıok 1978; Akın 2007).

IV.1.2.1.3. Third Five-Year Development Plan (1973-1977)

It was observed in the third plan that population growth was an issue to be solved in the long run. Besides, separating family planning services from health services was considered to be an inappropriate way in practice, and therefore, it was decided that these two services be merged while emphasizing the significance of institutional cooperation (Güriz 1975; Altıok 1978; Güngördü 2003). On the other hand, this plan did not offerx a new policy or a measure different from the prior plans (Güngördü 2003).

IV.1.2.1.1.4. Fourth Five-Year Development Plan (1978-1983)

Population problem was defined as an outcome of the balance lost among mutually interacting economic, demographic and social factors (SPO 1979; Peker 1983). High infant mortality rates and insufficient provision of mother and child care services were regarded as serious population problems. The significance of the integration of family planning services with mother and child services was reiterated in the plan (Güngördü 2003).

The fourth planning period overlapped with the military coup of 1980. For this reason, the development plan was modified to support the private sector and export-oriented investments. On the other hand, due to the economic and political chaos of the late 1970s, the objectives stated in the plan were not attained (Metz 1996).

When the military seized power again in 1980, Kenan Evren's motto, that is, "Two children are enough" (Franz 1994), has given the signs of new regulations about family planning. Accordingly, a new constitution was established and the concept of "family planning" was stated formally for the first time in the 1982 Constitution, which was the supreme law of Turkey. In the Article 41 under the heading of "Protection of the Family", it was stated as in the following (TÇSV 1985)

> *"The family is the foundation of the Turkish society and based on the equality between the spouses. The state shall take the necessary measures to ensure the peace and welfare of the family, especially where the protection of the mother and children is involved, and recognizing the need for education in the practical application of family planning."*

Although the new constitution expanded the scope of these programs, and offered alternatives to the individuals, some judicial authorities criticized it. They argued that the State could not force individuals to procreation or sterilization, which was, otherwise, against the fundamental rights and freedoms protected by the constitution (TÇSV 1985).

Following these changes and debates, in May 1983, the Turkish military government approved the Family Planning Law (No. 2827) while repealing the 1965 law. The new law liberalized induced abortion under the supervision of the State up to the tenth week of pregnancy (TÇSV 1985). In fact, this meant that a state-controlled family planning was put into practice with the enactment of the second family planning in 1983 (Franz 2000). Another reform introduced by this law was the authorization given to general practitioners, nurses and midwives along with specialist medical practitioners regarding the provision of family planning services (TÇSV 1985:120). This was an important legal regulation for the effective and efficient provision of these services in rural areas (TÇSV 1985), because in the former law, health professionals other than obstetricians/medical doctors were not allowed to either distribute birth control devices or insert IUDs (Altıok 1978). Besides that, sterilization permitted in cases of medical necessity in the 1963 law was liberalized upon individuals' requests (TÇSV 1978).

The anti-natalist view of governance in Turkey after Kenan Evren has not maintained its significance because no political leader has been concerned with family planning so actively. Vehbi Koç, who was founder of Turkish Family Health and Planning Foundation, and who strongly supported family planning like the American businessman, John Rockefeller III, criticized the government being neglectful of birth control activities against population growth (Franz 1994). In fact, the government's lack of interest in family planning was reflected in the following development plans.

IV.1.2.1.5. Fifth Five-Year Development Plan (1985-1989):

Turgut Özal government postponed the fifth five-year plan for up to one year to weigh the structural reform of antinatalist ideology launched in 1983 (Metz 1996). In this plan, the inclusion of family planning services in other medical services were mentioned, but a clear practice of family planning program was not specified. The welfare of the population and its improvement was stated as the main principle of this development plan (Franz 1994; Güngördü 2003; Üner 1997). In addition to the negative relationship between population growth and welfare, the interaction between socio-economic changes and population mobility as well as population growth was initially pointed out in the fifth five-year plan (SPO 1987).

IV.1.2.1.6. Sixth Five-Year Development Plan (1990-1994):

The downward trend in population growth and fertility reduction initiated during the period of the fifth five-year plan was assumed to continue (Franz 1994). Implementation of appropriate policies and programs compatible with sustainable economic and social development strategies were proposed to achieve the desired growth rate (Güngördü 2003). While taking into account the changes in the population structure, the establishment of institutions to conduct demographic surveys and to provide demographic background was offered as well (SPO 1989; Üner 1997). The major principle of this plan was the “sustainable development”, and family planning was referred to within the primary health care system. Regarding the provision of health care services, the priority was given to regions where fertility and infant and maternal mortality rates were high, and where the utilization of these services was insufficient (SPO 1989).

IV.1.2.1.7. Seventh Five-Year Development Plan (1996-2000):

Sustainable development and reduced population growth rate consistent with the structure of the population became the fundamental principle of the plan (SPO 1995). Housing, health care, educational and infrastructure needs were stated to be raised as a result of rapid population growth (Güngördü 2003). It was also mentioned in the plan that widening access to the family planning services and increasing the efficiency of service provision were still the major issues needed to be solved (SPO 1995). Among several structural change programmes in the plan, which were primarily related to strategies to attain rapid increase in individuals' welfare by reducing population growth rate, and to establish appropriate population structure accorded with the development goals, four of them directly referred to population issues, that is, education reform, health reform, population and family planning, labor force and labor market efficiency.

To narrow down the gap among regions regarding the use of contraceptive methods, and to decrease the maternal and infant mortality due to risky pregnancies was among the objectives of the plan to be achieved at the end of the plan period (SPO 1995). Besides that, strengthening the coordination among institutions to effectively and efficiently provide services and collecting data concerning population and family planning was among the issues given high priority to in the seventh plan (SPO 1995).

One of the important aspects of this plan was that family planning was considered as an issue disconnected with health care services whereas in the former plan it was presented under the heading of health section (Koç 2006).

IV.1.2.1.8. Eighth Five-Year Development Plan (2001-2005):

Health was defined as the fundamentals of social development, and Improving the quality of life and achieving an extended life expectancy was regarded as the main concerns in that respect. The concept of "reproductive health" was referred to for the first time in the development plan. Furthermore, a subcomission for the reproductive health and family planning was established to expand the activities limited to family planning. Besides that, sexual and reproductive health of young people, adolescents' health, maternal health and HIV/AIDS were the other topics included in the reproductive health care services (SPO 2000; Güngördü 2003).

IV.1.2.1.9. Ninth Five-Year Development Plan (2007-2013):

The ninth plan predominantly focused on aging. It further emphasized the need for a young and dynamic population structure. On the other hand, neither reproductive health nor family planning was mentioned as a development goal. Moreover, this plan did make no reference to population policy either (SPO 2006).

The tenth development plan for the forthcoming period (2014-2018) is in the preparation stage, and it seems doubtful that strategies for reproductive health or family planning would be included in the plan, because in the recent years it looks as if pronatalism has been prioritizing at any cost, echoing the motto, "at least three children to have a dynamic and young population". Box IV.1 provides a timeline of major events in Turkey.

In conclusion, although the necessary measures and the definite goals were explicated in each development plan, the policies and programmes implemented during each plan period largely failed to achieve these official goals. Furthermore, in the development plans, there was a clear focus shift away from the problems related

to overpopulation, and such issues gradually lost their importance. Moreover, the population growth and its negative consequences, which were comprehensively scrutinized in the first five-year development plan, were reduced to a narrow scope while being discussed in maternal and child health (Üner 1997).

BOX IV.1. Timeline of major events in Turkey

PRONATALIST POLICIES

1923 : Implementation of pronatalist population policies to encourage rapid population growth
1926 : Adoption of 1889 Italian Penal Code in which induced abortion was considered as a crime
: age at first marriage was reduced to 18 for men and 17 for women, and further reduced to 17 and 15 in Turkish Civil Code
1929 : Law on Municipalities and Decree for Local Administrations
1930 : General Hygiene Law
1936 : Severe penalties were included under the heading of "Crime against the integrity and health of race"

1958 : Articles in newspapers highlighted the adverse consequences of rapid population growth (Fakir Baykurt and Haluk Cillov)
1959 : The report of committee about the high prevalence of illegal abortion practices, which was prepared under the surpervision of Dr. Zekai Tahir Burak
: Nusret Fişek's study revealed that infant mortality reached 165 per thousand and maternal mortality was 280 per a hundred thousand
1960 : Military coup and a complete turnaround in pronatalist policies
: Dr. Nusret Fişek became the undersecretary of the Ministry of Health
: Establishment of State Planning Organization
1961-62 : Preparation of the Law on Population Planning
1963 : Experts from Population Council showed the public readiness for the idea of national family planning program in Turkey
1965 : Population Planning Law (No. 557) was enacted by the National Assembly, which provided a legal framework for funding and implementing family planning programs
: General Directorate of Family Planning was established
1966 : Hacettpe University Institute of Population Studies was founded by the grant from
1967–68 : Mobile teams were established to proivde rural population with health services
1980 : Military coup and activities to strengthen the former antinatalist policies
1982 : Activities related to mother and child health and family planning were merged under the name of General Directorate of Mother/Child Health and Family Planning
1983 : Turkish military government approved Family Planning Law (No. 2827) while repealing the 1965 Law.
* legalization of induced abortion up tı 10 weeks upon request
*liberalization of sterilization upon request
*permission given to all health professionals to insert IUD

ANTINATALIST POLICIES

2000s : Contraceptive prevalence rate increased significantly and reached 73 percent. Infant mortality Sharp declines were experienced in infant and maternal mortality and unsafe abortions. Total fertility rate fell to a level of 2.16 as of 2008.

PRONATALIST POLICIES AGAIN?

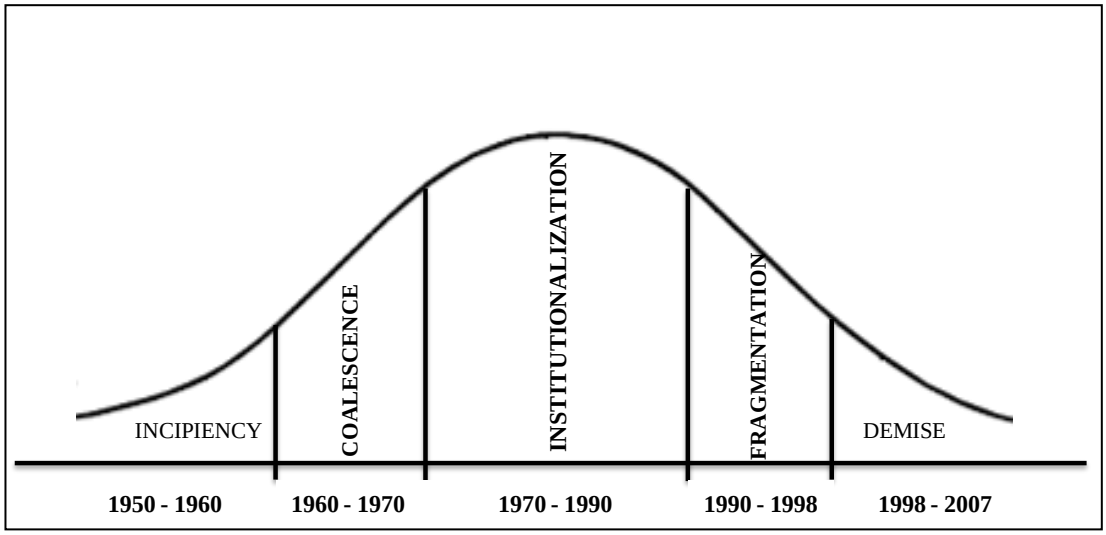
2007-2013 : Aging has become the major concern. Strong emphasis on the need for young and dynamic population against aging No reference to either reproductive health or family planning.

Adapted from Akın (2007), p.87.

IV.2. DEVELOPMENT OF FAMILY PLANNING MOVEMENT IN TURKEY

As it was mentioned in Chapter 3, the family planning movement in the world was considered within the scope of social movement theory, and it was discussed in detail according to the five stages the family planning movement was assumed to follow (see Figure III.3.1 and Figure III.3.2). Likewise in Turkey, the commencement, development and "termination" stages of family planning movement have proceeded a similar pattern in many respects (Figure IV.2.1).

Figure IV.2.1. Development of family planning movement in Turkey



Adapted from Mauss (1975)

Until the beginning of the 1950s in Turkey, a large population was thought to be the indicator of a strong nation both militarily and economically (Barrett and Frank 1999). By the late 1950s, however, professionals (survey conducted by Fişek, report of Zekai Tahir Burak) drew the attention to the importance of the issue along with the reactions on print media (Cillov's and Baykurt's article). Following these individual efforts to initiate a collective action, the family planning movement in Turkey was accelerated by the establishment of the State Planning Organization in

1960. Therefore, the coalescene stage could be accepted to begin between the 1960s and 1970s. In this period, the dissemination of the first five-year development plan became a milestone because it raised awareness about the negative consequences of population growth. In line with the trend in the world at that time, rapid population growth was regarded as the major impediment to economic development in the first development plan. In addition to the political advancement in that regard, institutions as well as non-governmental organizations were started to be established. In the mid-60s, the supporters of family planning movement, mostly among doctors and lawyers, established the Family Planning Association of Turkey (TAPD). At the same time, the Institute of Population Studies were founded by getting a financial assistance from Ford Foundation. As mentioned in the previous section, the Population Council sent an expert team on request to reveal the need for family planning programmes in Turkey. In 1965, Turkey's first family planning law was legislated although it was not approved by the parliament unanimously.

The importance given to family planning programs during the incipiency and coalescence stages can also be observed in the allocation of government funds to family planning programs. Throughout these periods, the financial support given by the government was gradually increased and quadrupled between 1964 and 1970 (Table IV.2.1). Although these figures do not reflect the total expenditure on family planning activities, it is useful to give a rough idea about political approach to this issue.

Table IV.2.1. Financial allocation from the government to fund family planning activities

Year	US Dollars ($)
1964	420 000
1965	585 000
1966	755 000
1967	844 000
1968	1 944 000
1969	1 475 000
1970	1 870 000

Source: Fendall, N.R.E. (1971)

During the institutionalization stage, there was a conspicuous support from international organizations in order to accelarate the family planning movement in

Turkey. USAID became the leading donor for population activities. The United Nations Population Fund (UNFPA), the European Union (EU), the Japanese International Cooperation Agency (JICA), the International Planned Parenthood Federation (IPPF), the Swedish International Development Agency (SIDA) and the German Technical Cooperation Agency (GTZ) were among the other donors. At the beginning of the 1970s, the donor organizations allocated $2.9 million for national family planning programs in Turkey (Table IV.2.2).

Table IV.2.2. Fund allocation from international organizations to Turkey as of 1970

Donor Organization	**US Dollars ($)**
Population Council	1 446 000
Ford Foundation	375 000
Swedish International Developmental Agency	200 000
Rockefeller Foundation	250 000
U.S. Agency for International Development	571 000
International Planned Parenthood Federation	68 000
Pathfinder Fund	2 600
TOTAL	**2 912 600**

Source: Fendall, N.R.E. (1971), p.1019

In addition to the international organizations, several non-governmental organizations supporting birth-control programs were founded between 1970 and 1990. The ones that contributed actively to the improvement of such programs were the Environment Foundation of Turkey (1978), regional office of Pathfinder[14] in Turkey (1980), Turkish Family Health and Planning Foundation (1985), Turkey Mother and Child Health and Family Planning Foundation (1987) and Human Resource Development Foundation (1988). In fact, the institutionalization period in

[14] Pathfinder International is a non-profit family planning organization committed to increasing the number of people in developing countries who have access to, and voluntarily use family planning services. It operates through a US-based headquarters office in Boston MA and 3 regional offices in Kenya, Turkey and Mexico (http://www.pathfind.org/).

Turkey coincided with the two important world population conferences in Bucharest (1974) and Mexico (1984), and their focus largely altered the approach towards family planning in Turkey as they did in other countries as well. In other words, the major concern in the first two development plans was the disappointment in raising per capita income to a desired level since the rapid population growth in Turkey could not have been slowed down (SPO 1967). In fact, the causal link between economic underdevelopment and rapid population growth was almost altered in the subsequent plans as mentioned before. World population conferences indicated that the barrier to economic development was mainly the imbalanced distribution and utilization of resources, not the population growth itself. Accordingly, in the third five-year plan the relationship between the population policies and economic development was revised, and the scope of population policy was expanded as "*all mechanisms and programmes affected demographic variables, population size, its distribution, growth and quality to achieve economic, social and demographic objectives*" (SPO 1975). Rapid population growth was not referred to as having an inhibiting effect on development. It was further explicated that economic and social progressions were the determinants of population in terms of quality and quantity (Özberk 2003). With the effect of global conferences, it was expected that increasing economic and social welfare would reduce mortality, motivate women to go beyond their traditional roles in social life, and such economic improvement would, therefore, slow down the population growth rate (Özberk 2003). Parallel to the global approach towards economic development and overpopulation, in the period of fourth five-year plan, the widespread improvement of population welfare was believed to accelerate the reduction of population growth rate (SPO 1981).

After the 1990s, the course of family planning movement and population policies completely changed in the whole world. Improvement of woman's status, sustainable development, environmental issues and reproductive health took the priority over family planning approach. Actually, this decade also experienced the fragmentation of family planning movement in Turkey as it did in the whole world, which was predemoninantly triggered by the conference held in Cairo in 1994.

Afterwards, the scope of global family planning movement oriented towards reproductive health manner while investing in women. In line with these changes, the importance of women's participation in economic growth and education was emphasized in the development plan of 1994 (SPO 1994; 1995). Furthermore, attention was focused on the integration of reproductive health approach into the functional roles of the Mother and Child Health and Family Planning (MCH/FP) division. The Population Planning Advisory Committee, being founded according to the 1983 Law and coming into effect only after 1993, turned out to be Reproductive Health and Family Planning Advisory Committee by expanding its focus and activities after Cairo. Indeed, the strategies for the implementation of the recommendations adopted at ICPD were echoed in the seventh development plan (Akın and Köseli 1995).

In addition to these, National Family Planning Service Guide was prepared and disseminated nationwide for the first time in 1994. Two years after its publication, Woman's Health and Family Planning Service Network (KAPS) was established to encourage the participation of voluntary agencies and private sector regarding reproductive health and family planning (USAID 1995). Within the same year, the National Strategic Plan for Women's Health and Family Planning was prepared following the ICPD to focus the attention towards women's status and reproductive health.

In addition to the aforementioned activities leading to the fragmentation stage of family planning movement in Turkey, the USAID phaseout operations in 1996 played a significant role in accelarating the retreat from family planning. There was an apparent downward trend in USAID funding for Turkey as of 1996. The total program budget was curtailed from $7.2 million in 1995 to $5.6 million in 1996 (USAID 1995). Throughout this phaseout period, Turkey experienced significant

alterations in the political arena as well. The Welfare Party[15], identified as the islamically oriented party, formed a coalition government and ruled the country from 1995 to 1997. Although Necmettin Erbakan was forced to resign in 1997 being replaced by a civilian government, the conservative political ideology lobbied between 1995 and 1997 prevented national MCH/FP program leaders from taking concrete steps for family planning. In fact, the right-wing politicies and political nationalism resulted in an unsupportive stance against family planning within the health system. On the other hand, the secular authority interpreted this conservative agenda as the concerns of nationalists about reducing the global role and power of Turkey in the international arena through promoting family planning while slowing down its population growth. Therefore, it was assumed that the survival of family planning program in Turkey mostly relied on its low visibility on the political ground (Sine, Clyde and Baser 2004).

These social and political trends prepared the ground for the demise stage of the family planning movement. In 1998, the National Action Plan for Women's Health and Family Planning was ratified, and implemented until 2000s (MoH 2010). Within the same period, the Reproductive Rights and Health Program began in Turkey according to the protocol made between Willows Foundation[16] and Ministry of Health to increase the knowledge of women as well as their husbands' about reproductive rights and health, and to give priority to the most disadvantaged groups in the utilization of health care services. Meanwhile, in accordance with the political and social needs, the action plan formerly implemented was revised and updated in 2005 under the name of "National Strategic Action Plan for Sexual and Reproductive Health". Based on the action plan, the Ministry of Health in collaboration with the European Commission commenced the Turkey Reproductive Health Programme between 2003 and 2007 as well (MoH 2010).

[15] Refah Partisi-RP

[16] The Willows Foundation was established in 1997 in Turkey as a nonprofit organization to increase women's access to the most appropriate and comprehensive reproductive health information, and to high-quality services.

Actually, the latest strategic action plan has disseminated the targets and priorities for the period of 2005-2015. Moreover, it has publicized necessary actions to reduce maternal mortality, prevent unwanted pregnancies, improve youth health, prevent sexually transmitted diseases, and decrease regional disparities in health (MoH 2010). One of the important aspects of this plan is that the planning, monitoring and evaluation processes of family planning programs, which have prioritised and been mainly limited to maternal and child health so far, have started to put a definite emphasis on unmet need and its reduction, and thus, unwanted pregnancies. In the second national MDGs report of Turkey, the new measures have aimed at reducing the level of unmet need for family planning below 3 percent as of 2014 (Alata et al., 2010). More challenging targets about unmet need have been set in the latest strategic plan. It has been foreseen that regional disparities in the level of unmet need would have been decreased by 50 percent in 2008, and the need for family planning in the whole country as well as in all regions and residences would be completely fulfilled as of 2013 (MoH 2010).

As Foucault (2004) mentioned, human body has become the foremost objective of state intervention, and when considering the approaches towards population regulation starting with the Ottoman era, his idea exactly points out the policies implemented in pre and post- Republican era. For instance, when abortion was criminalized in 1858, 1926 and 1938 within the scope of pronatalist policies, the primary focus of the Ottoman Empire and Turkish government was military and political power and, the welfare of the country rather than the rights and welfare of the individuals. Moreover, reproduction was treated as *"the pillar of national integrity*" (Miller 2007). Feminists and women activists argued that during the 19th and 20th centuries in the Ottoman Empire and Turkey, banning regulations about sexual and reproductive rights prevented women from performing their social and political roles in the patriarchal systems while they were regarded as political actors as long as they fulfilled their reproductive duties (Miller 2007). By means of the gradual legalization of abortion and preventive contraceptive methods in the late 20th

century, individuals have not only been dominated by "*pure political and ideological manipulation*", but also through the control over their bodies (Curtis 2002). In fact, the manner behind the criminalization and legalization of family planning activies can be best explained by the Foucault's argument about the concept of bio-politics and population. That is, medicine and hygiene practices of governments become a mechanism for social control. Furthermore, to avoid infectious diseases, to avert mortality rates and to increase life expectancies, states introduce medical interventions for the sake of the population, and they implement authoritative regulations which have been formerly treated as illegal, and thus, penalized (Foucault 2000).

Since the early Republican era, the concept of "family" has been considered as the chief element of family planning programs and activities. Thus, instead of the phrase "birth control", family planning has been preferred in all legal and offical documents to avoid misinterpretion of birth control as an intervention to sexual privacy (Franz 1994). On the other hand, such concerns have contradicted with the political efforts to control women's bodies, because women's reproductive behavior has been treated as a safeguard for the honor and the national liberty in all the legislations about family planning in Turkey (Miller 2007). It has also been argued that the womb has not been possessed by the woman, herself, (Miller 2007) but it has been the extention of the collective well being of the government (Curtis 2002). Regarding the manner in dealing with family planning, the framework of family planning programs has solely been limited to married women and men by ignoring the needs of individual woman and man or unmarried groups in Turkey (TÇSV 1985). Moreover, the social status of woman has been referred to only within the context of 'family' (Özberk 2003). Assigning maternal and reproductive roles to women has oversimplified female identity (Ertem 2011).

Feminists have stated that woman's reproductive behavior and the control of her body has been seen as a collective object of the governments to achieve political

goals set by either pronatalist or antinatalist population policies (Özberk 2003; Miller 2007; Akşit 2010; Ertem 2011). In fact, the contributory role of women in procreation has predominantly been emphasized in recent years in Turkey, and the latest political stance implies that women's body will be used again as an instrument for the future social, political and economic welfare of the country.

V. DATA SOURCES AND METHODOLOGY

V.1. DATA SOURCES

The analyses to estimate the level and determinants of unmet need for family planning were mainly carried out with the data sets of Turkey Demographic and Health Surveys (TDHS) conducted by Hacettepe University Institute of Population Studies in 1998 and 2008. The rationale behind using these two surveys ten-year apart is to observe potential variations more clearly. As secondary data sources, TDHS-1993 and TDHS-2003 were used to understand whether there has been a change of national trends in unmet need in Turkey. These nationally representative surveys, as a part of the international DHS project, have been designed to provide information on trends and levels in fertility, infant and child mortality, family planning and maternal and child health for Turkey as a whole. The sampling approach used in these surveys is almost identical and characterized as weighted, multistage, stratified cluster sampling. Such sample design helps produce important estimates of various demographic and health indicators for the whole nation, for the urban and rural areas, and for the five major regions of the country (West, South, Central, North and East). Starting with TDHS-2003, some indicators can also be given for 12 geographical regions (NUTS1) which were adopted during the Turkey's integration process to the European Union (HUIPS 2004). Not only the sample design, but also the questionnaires used in these surveys also resembles to a great extent, which provides comparability among surveys.

V.1.1. Turkish Demographic and Health Survey 1993 (TDHS-1993)

For TDHS-1993, 10,631 households were selected. Although the coverage of the survey sample was 10,631 households, at the time of survey only 8,900 were available for the interview. Out of these 8,900, the survey was successfully completed with 8,619 households. Among the interviewed households, 6,862 eligible

women were identified, of whom 95 percent (6,519 women) were interviewed. The overall response rate for TDHS-1993 was 92 percent. Out of 500 selected clusters, 478 clusters were successfully interviewed (HUIPS 1994).

The fieldwork began in August 1993 and was completed in October 1993. Data collection was carried out by 17 teams each of which was consisted of 4-5 interviewers a field editor, a measurer and a team supervisor. Four regional coordinators visited the teams on a continuous basis alternately. The teams visited 68 of the 76 provinces in Turkey.

The TDHS-1993 was composed of two main questionnaires that were the Household Questionnaire and the Individual Questionnaire for ever-married women of reproductive ages. The household Questionnaire was used to enumerate all usuall members of and visitors to the selected households and collect information relating to the socioeconomic position of the households. In addititon to the provison of basic demographic data for Turkish households, information needed to identify the women eligible for individual interviews was collected.

The individual Questionnaire was designed to gather information on reproduction, marriage, contraception, pregnancy and breastfeeding, immunisation and health, fertility preferences, husband's background and status of woman, values, attitudes and beliefs and anthropometry (HUIPS 1994).

V.1.2. Turkish Demographic and Health Survey 1998 (TDHS-1998)

The sample size of TDHS-1998 was 9,970 households in 480 clusters. However, at the time of the survey, 8,596 households were regarded as available for the household interview. Out of which 8,059 households were successfully

interviewed (94 percent). Among the interviewed households, 9,468 women were identified as eligible for individual interview, of which 8,576 women were successfully interviewed (91 percent). For the male interview, a total of 4,983 husbands were selected. In the households interviewed, 3,043 husbands were identified as eligible for individual interview. Out of these, 1,971 husbands (65 percent) were interviewed (HUIPS 1999). In fact, it was the first survey conducted among demographic and health surveys in which women regardless of their marital status and their husbands were interviewed.

The field study was completed between August 1998 and November 1998. Sixteen teams worked in data collection process. Each team consisted of 4-5 interviewers, a field editor, a measurer and a team supervisor. Four regional coordinators visited the teams on a continuous basis alternately. The teams visited 76 of the 80 provinces in Turkey.

In TDHS-1998, as a data collection tool, four questionnaires were used. These are the Household Questionnaire and the Individual Questionnaire for ever-married women of reproductive ages, for never-married women and for husbands. The household questionnaire was used to enumerate all usual members of and visitors to the selected households and collect information relating to the socioeconomic position of the households. In addition to the provison of basic demographic data for Turkish households, information needed to identify the women and the husbands eligible for individual interviews were collected. In the household questionnaire, there were questions related to the welfare of the elderly people. Individual Questionnaire for ever-married women was similar to the one used in TDHS-1993. The only difference was that in TDHS-1993, a new section named "Sexually transmitted diseases and AIDS" was added. The Individual Questionnaire for never-married women covers all the sections in ever-married questionnaires except for the use of contraception, maternal care and breastfeeding, immunization and health, and husband's background. There was an additonal section about

migration in never-married questionnaire. In the male questionnaire, questions about their background characteristics, reproduction, knowledge and use of family planning, marriage, fertility preferences, sexually transmitted diseases and AIDS were asked.

V.1.3. Turkish Demographic and Health Survey 2003 (TDHS-2003)

The target sample size of TDHS-2003 was 13,049 in 688 clusters. Nevertheless, 11,659 households were found to be available. Among these, interviews were completed with 10,836 households (93 percent) in which 8,447 women were identified as eligible for the individual questionnaire. In TDHS-2003, 8,075 (96 percent) women were successfully interviewed out of 8,447.

In TDHS-2003, 14 teams were established for data collection. Each team consisted of three to five interviewer, one field editor, one male measurer and a team supervisor. The teams were visited regularly by regional coordinators during the survey. Data collection was completed between December 2003 and May 2004

Similar to TDHS-1993, two questionnaires were designed: Household Questionnaire and Ever-Married Women's Questionnaire. The household questionnaire was used to enumerate all usual members of and visitors to the selected households and collect information relating to the socioeconomic position of the households. In addititon to the provison of basic demographic data for households, information needed to identify the women eligible for individual interviews was collected. Some additional information about never-married women between the ages of 15-49 ages were recorded as well. There were also questions related to the welfare of the elderly people. Unlike TDHS-1993 and TDHS-1998, in the household questionnaire, there existed a module for metropolitan İstanbul.

The Individual Questionnaire was designed in the same manner to gather information on reproduction, marriage, knowledge and the use of conraceptive methods. Besides these, questions about maternal care and breastfeeding, immunisation and acute respiratory infections, fertility preferences, husband's background, woman's status, sexually transmitted diseases and AIDS were asked.

V.1.4. Turkish Demographic and Health Survey 2008 (TDHS-2008)

The TDHS-2008 is the most recent survey. It was conducted in 634 clusters A similar procedure used in the previous surveys was also followed in 2008. In total, 13,521 households were selected, and 11,911 of these households were regarded as occupied housing units in the listing phase. Interviews were completed with 10,525 households (88 percent) in which 7,405 ever-married women in reproductive ages (15-49) were successfully interviewed (93 percent) out of 8,003 eligible women. The overall response rate for TDHS-2008 was 82 percent (HUIPS 2009).

The field study began in October 2008 and was completed in the first week of December 2008. In the data collection process, 19 teams participated in 81 provinces. In each team there were five female interviewers, a male measurer, a field editor and a team supervisor. Regional coordinators visited the teams on a continuous basis during the fieldwork.

Data was collected through face-to-face interviews by using two questionnares. As in the previous ones, the household questionnaire was used to enumerate the members of and visitors to the selected households, and to collect information on socio-economic characteristics. Additional data was gathered for never-married women and the elderly (60 or higher) as well. It was an important instrument to identify ever-married women between the ages of 15 and 49.

Detailed information about eligible women was collected through the individual questionnaire in which background characteristics, reproduction, family planning fertility preferences, child and maternal health were the major topics. In addition to birth history, marriage history, migration history and work history was originally adopted to the TDHS-2008. Questions on postnatal care started to be asked for the first time in this survey.

Table V.1.1. Basic information for the last four nationwide demographic surveys in Turkey

	SURVEY CHARACTERISTICS				
SURVEYS	**FROM**	**TO**	**SURVEY SAMPLE**	**LEVEL OF ANALYSIS**	**OUESTIONNAIRE TYPE**
TDHS-1993	August 1993	October 1993	8,619 households 6,519 ever-married women (15-49)	national urban-rural 5-region	household ever-married
TDHS-1998	August 1998	November 1998	8,059 households 8,576 all women (15-49) 1,971 husbands	national urban-rural 5-region	household ever-married never-married husband
TDHS-2003	December 2003	May 2004	10,836 households 8,075 ever-married women (15-49)	national urban-rural 5-region 12-region	household ever-married
TDHS-2008	October 2008	December 2008	10,525 households 7,405 ever-married women (15-49)	national[17] urban-rural[18] 5-region 12-region	household ever-married

Source: HUIPS 1994; HUIPS 1999; HUIPS 2004; HUIPS 2009

[17] West, South, Central, North and East

[18] İstanbul, West Marmara, Aegean, East Marmara, West Anatolia, Mediterrean, Central Anatolia, West Black Sea, East Black Sea, Northeast Anatolia, Central East Anatoli and Southeast Anatolia

V.2. CONSTRUCTION OF VARIABLES

In analyses (descriptive and multivariate analyses), individual data sets of 1998 and 2008 surveys were utilized. In TDHSs, data is generally collected from ever-married women, with the exception of TDHS-1998. In TDHS-1998, never married women were also covered together with ever-married women[19]. For this reason, the unit of analysis was restricted to currently married women in reproductive ages in this thesis. The criteria of marital status reduced the number of women from 8576 to 5921 and 7405 to 6999 in TDHS-1998 and TDHS-2008, respectively.

Variables in these analyses are grouped into individual level, community level, spousal level, parental level and household level (Figure V.2.1 and Figure V.2.2). The individual level is comprised of socio-economic factors, socio-demographic factors, and reproductive behavior of women. Social network variables, cultural factors and women's attitudes towards some gender roles are listed under the community level factors. At the spousal level, socio-economic characteristics of husbands are taken into consideration. Education of the respondent's mother and presence of consanguinity between women's parents form the parental level. Household socio-economic characteristics refer to the household level factors that are region, type of residence and wealth status. These levels were used in both TDHS-1998 and TDHS-2008. Nevertheless, parental level factors were excepted from TDHS-1998 because the information about mother's education and parental consanguinity was not available. Further, variables included in descriptive and regression analyses were not identical because some questions asked in one survey but were not covered in the other.

[19] TDHS-1998, regarding the family planning, never-married women were only asked about the knowledge of contraceptive methods, not their reproductive and contraceptive practices.

For instance, religion, respondents' and their husbands' approval of family planning was included in TDHS-1998 but not in TDHS-2008. Nearly all community level variables differ from each other in TDHS-1998 and TDHS-2008. Among the factors in this level, traditionality in the formation of marriage and attitudes of women towards some gender roles were the same. Besides that, in TDHS-1998, there were more direct questions measuring the role of the mass media and social networks in family planning in addition to the questions assessing the attitudes of both women and their husbands towards family planning and use of contraceptive methods. Hence, variables about these topics were included in community and spousal level accordingly. As these questions were not available in TDHS-2008, a different approach was used to compensate for the attitude and belief assessment questions on family planning in TDHS-1998. In TDHS-2008, there were several questions designated to evaluate the life style of women. The ones related to the use of the internet, TV watching habits, women's gathering, their use of the headscarf, fast and salah practices were utilized as a proxy for mass media and religion available in 1998.

Remaining variables used in the anaylses were the same to a greater extent in two surveys. Detailed schema of the levels and variables are given in Figure V.2.1 and Figure V.2.2. A comprehensive explanation of each variable sets was discussed in Section V.2.1-V.2.6.

The analytical framework is given in Figure V.2.3. It was assumed that individual level factors were affected by community level, spousal level, parental and household level factors. The possible mutual relationship among variable sets was shown with two-headed arrows. All of these were believed to have an impact on desire to control fertility, and thus unmet need for family planning. This framework displays the order of the variable sets being introduced in regression models, and does not imply a hierarchical structure.

Figure V.2.1. Variables used in TDHS-1998

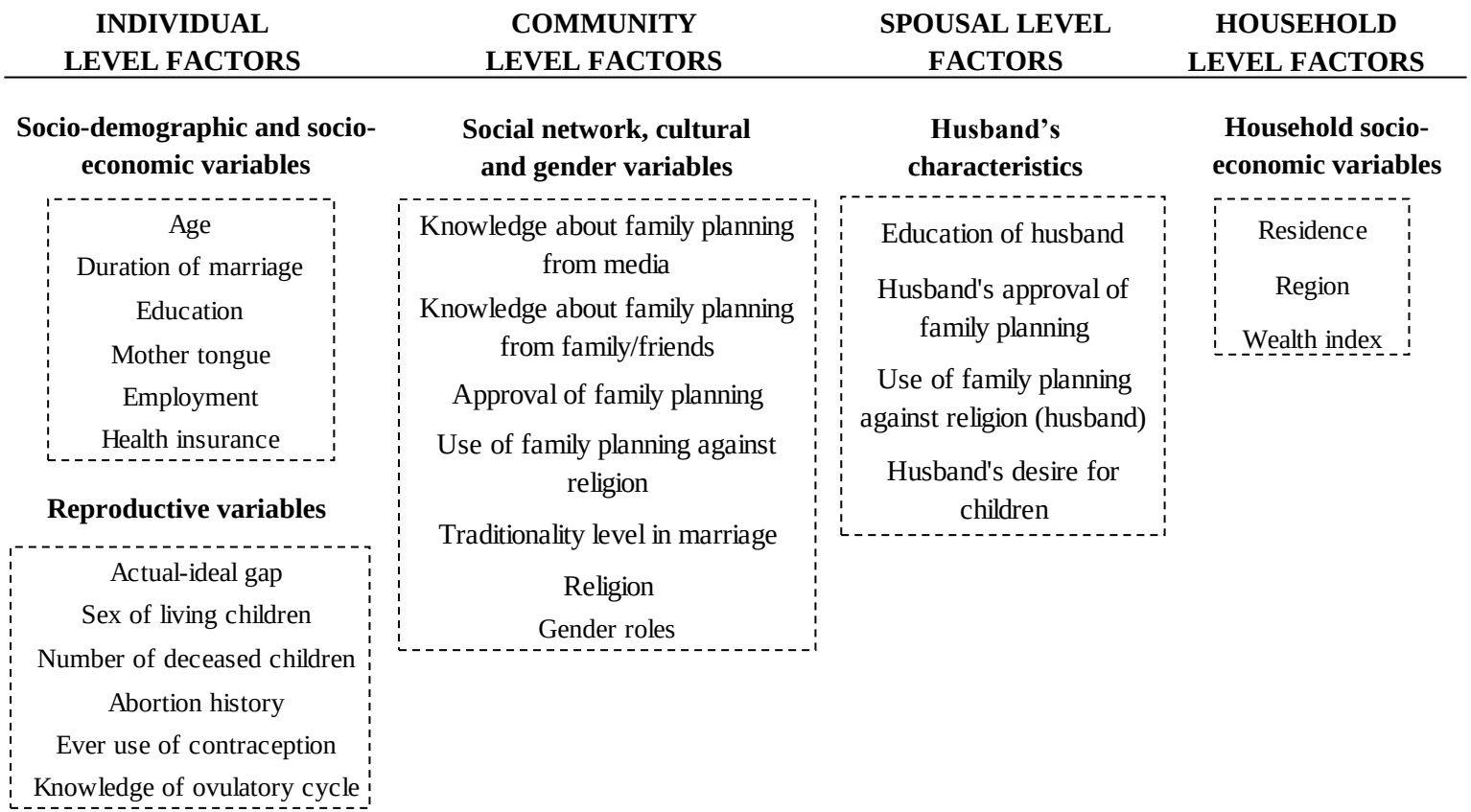


Figure V.2.2. Variables used in TDHS-2008

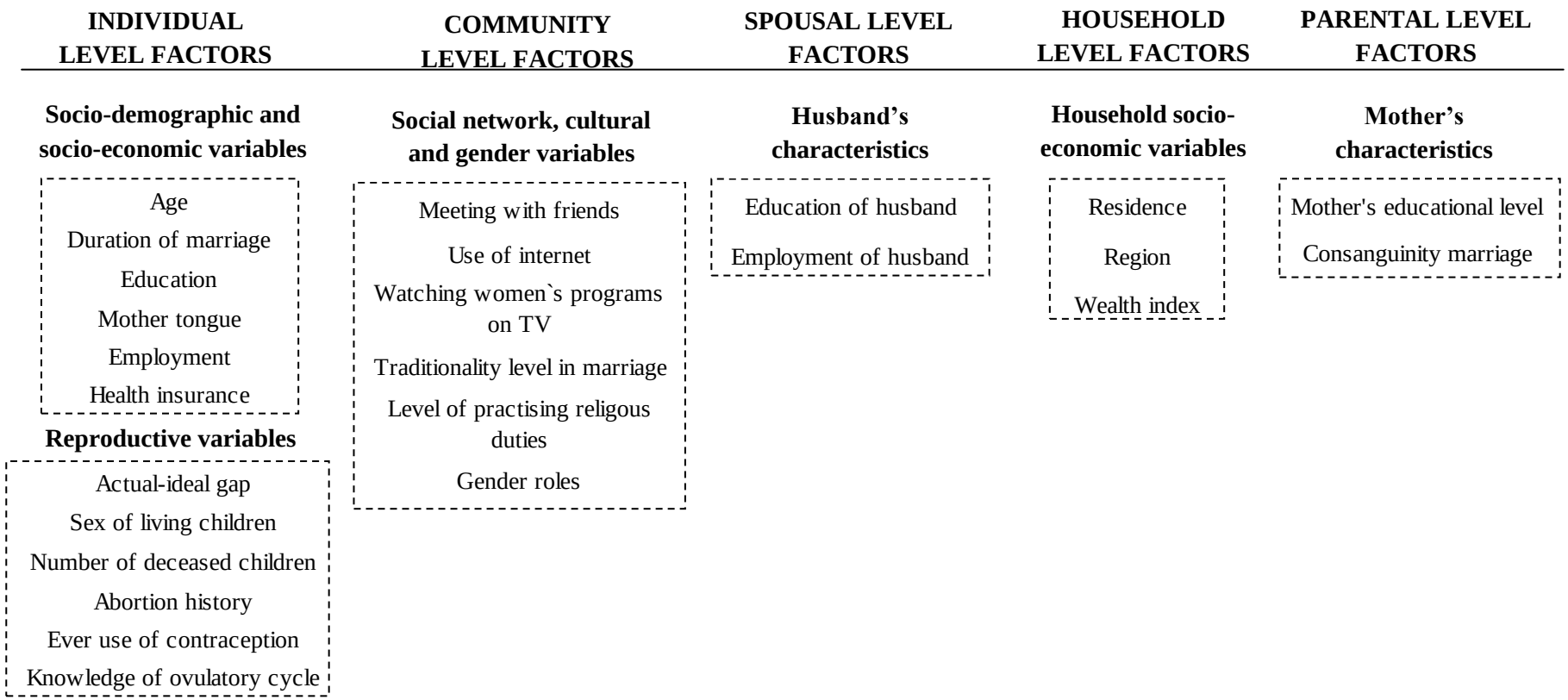
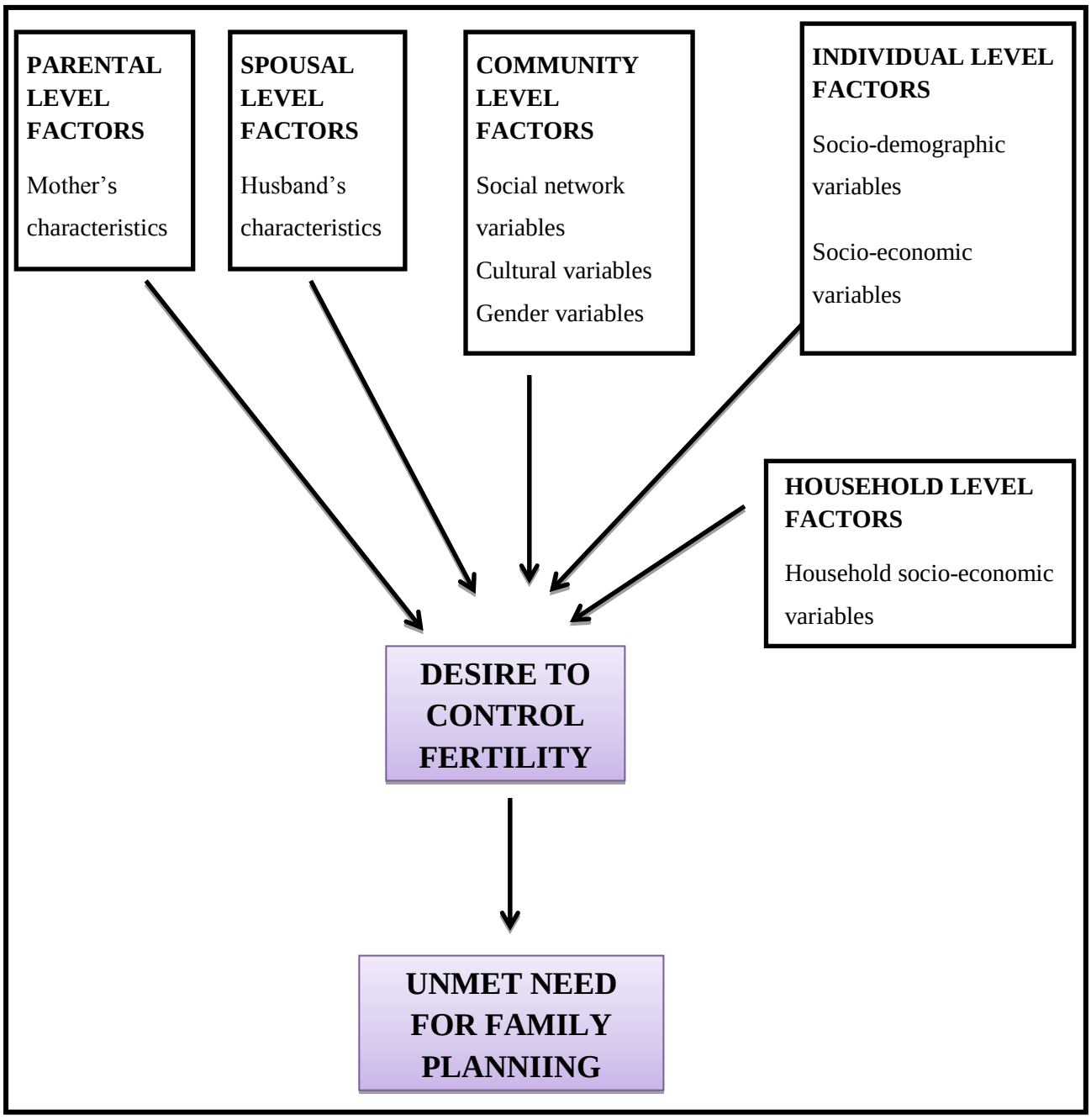


Figure V.2.3. Analytical framework of unmet need for family planning



V.2.1. Socio-demographic and economic variables

Previous studies indicated that not only the total unmet need for family planning but also its two components -spacing and limiting- displayed obvious variations between younger and older women (Pasha et al. 2001; Westoff 2006; Ojakaa 2008). Their focus on family planning services may be totally different from each other, that is, unmet need for spacing may be higher among young women while limiting purposes may become more prominent for the older ones. Accordingly, the current age of mother was included in both descriptive and multivariate analyses to detect cohort effects on the level of unmet need. The age variable was categorized as "<25", "25-34" and ">34".

Educational level of women is also critical in health seeking behaviour such as reproductive health, child and maternal health. It is widely acceptable that women with higher education become more aware of family planning services and are more inclined towards delayed motherhood. As they spend most of their time at school, they have the oppurtunity to weigh the benefits of smaller families against the costs of having many children (Wolff et al. 2000). Moreover, they gain necessary knowledge helping them to make informed choices about their reproductive behaviour and thus, reduce unmet need (Pasha et al. 2001; Westoff 2006; Ojakaa 2008). Ghana and Nigeria are an exception to this rule due to the fact that no remarkable discrepancy was observed between educated and uneducated women concerning the unmet need (Robey et al. 1996; Igwegbe et al. 2009). On the other hand, in other studies unmet need was found to be significantly lower among women having secondary or higher education (Devi, Rastogi and Retherford 1996; Stash 1999; Bhandari et al. 2006).

Most studies have highlighted the link between women's economic roles and their control over both the resources and their own life (Caldwell 1978; Acharya and Bennett 1983). They have also documented the effect of women's working status on

their reproductive health (Bloom et al. 2001; Jejeebhoy and Sathar 2001; Ghuman 2003; Elfstrom and Stephenson 2012). In fact, the relationship between the desire to control fertility and women's eoconomic freedom dates back to the second demographic transition. For instance, Becker (1993) stated that opportunity cost of motherhood could lead to a change in women's attitudes towards family size. In addition, increasing desire for self-fulfilment is believed to act as a catalyst for fertility reduction and the diffusion of contraceptive methods (Van de Kaa 1987; 1988; Lesthaeghe 1991; 1992). Concerning the association between work status and unmet need for family planning, researchers found that unmet need was significantly affected by the economic status of women (Khan et al. 2008; Ojakaa 2008; Igwegbe et al. 2009; Hailemariam and Haddis 2011).

Correspondingly, work status, education and health insurance of women, which altogether facilitate greater autonomy in seeking family planning services, were utilized as independent variables with the assumption that they may lead to a differentiation among women with unmet need.

Whether the mother tongue was a drawback for the Kurdish people or for people other than Turkish was also analyzed. Accordingly, the mother tongue of women was categorized as "Turkish", "Kurdish" and "other". Women whose mother tongue was Kurdish were subdivided into two categories according to their skills in speaking Turkish, that is, "Kurdish, Turkish speakers" and "Kurdish, non-Turkish speakers".

The use of contraception can also be affected by the duration of marriage. During the first years, the need for family planning might be low or birth spacing might become prominent. The longer the marriage lasts, women's needs for limiting their fertility might gain importance. Due to this, the length of time currently married

women had spent in their most recent marriage was first calculated and then recoded into four categories as “0-5”, “6-10”, “11-15” and “16+”.

V.2.2. Reproductive variables

Various studies have shown that the total number of living children was stated to be the most significant predictor of unmet need (Pasha et al. 2001; Bhandari et al. 2006; Aryal et al. 2008; Khan et al. 2008; Ojakaa 2008; Igwegbe et al. 2009). In addition to the number of surviving children, ideal number of family size was also presented among the most important determinants of unmet need for family planning (Korra 2002). Instead of using these two variables separately, the difference between the actual and ideal number of children was taken into consideration with the assumption that such a difference could provide a more clear understanding of women’s unmet need for spacing and limiting. It was calculated simply by subtracting the actual from the ideal number of children. Feyisetan and Casterline (2000) called this difference “actual-ideal gap”, which was initially used by Westoff and Pebley (1981). This gulf indicated the extent to which desired family size was attained. In other words, if the difference is zero or closer to zero, it means that achieved fertility is in harmony with desired fertility. A negative number shows that the desired fertility has not been realized so far, whereas a positive number indicates that desired fertility has surpassed the actual size (Feyisetan and Casterline 2000).

Furthermore, regarding the variables indicating the reproductive behavior of women, sex of living children have considerable influence on contraceptive-dcision making and, in turn, is a good predictor of contraceptive behavior (Kulkarni and Choe 1998; Bhandari et al. 2006, Sahoo 2007). For instance, families with one child of each sex are said to have low levels of unmet need (Kawsar et al. 2008-2009). In another study it was documented that spouses had at least two sons, with or without a daughter, before they had started using a method (Rajaretnam and Deshpande 1994).

Therefore, the sex composition of children in a family may affect the tendency towards the use of contraceptive methods and thus, unmet need. The association between sex of living children and unmet need can be used as an evidence of preference for male children (Bhandari et al. 2006), which influences spouses' decisions about family planning (Choudhury 1979; Gadalla et al. 1985; Arnold 1992). Furthermore, there is a consensus among researchers that child loss[20] is likely to influence the need for family planning because they generally want to replace dead children with having more births. In other words, having a deceased child is said to play a reducing effect on the level of unmet need for spacing and limiting. The rationale behind this is that women desire to replace the dead child immediately or they want to continue giving birth as a kind of precaution for the probable future deaths of their children (Park et al. 1979; Sah 1991; Devi et al. 1996; Pant 1997; Fitaw et al. 2004; Hailemariam and Haddis 2011). In accordance with other studies, these variables were taken into consideration in descriptive and regression analyses.

Apart from these, studies on different countries revealed a strong correlation between the use of modern contraceptives and the abortion rate (Westoff 2005). Concerning the association between abortion occured as a result of unwanted pregnancies and unmet need, it was pointed out that the tendency of women who had an unmet need for limiting was mainly towards abortion (Casterline et al. 2003). Thus, women's experience of having abortion was used to see its effect on the level of unmet need in Turkey.

The lack of knowledge on contraceptive methods was widely stated as a substantial contributing factor in unmet need for family planning (Bongaarts and Bruce 1995; Devi et al. 1996; Casterline and Sinding 2000; Hailemariam and Haddis 2011). Despite its considerable importance, it was not included in the analyses because women's familiarity with contraceptives was almost universal in each

[20] The number of children who have died

survey. Instead of this, the information on ever use of contraception and the knowledge of ovulatory cycle a woman is most likely to conceive was preferred. The rationale behind this is that women with unmet need for family planning were expected to reply incorrectly to the question about the fertile period in the ovulatory cycle.

V.2.3. Social network, cultural and gender variables

Studies displayed that having heard of family planning through media such as television, radio and newspaper, and discussion of family planning with friends/parents contributed to the contraceptive use and thus averted the level of unmet need (Khan et al. 2008; Ojakaa 2008; Hailemariam and Haddis 2011).

Accordingly, in TDHS-1998, women were asked about their opinions and also that of their husbands on contraceptive use. They were further inquired whether the use of contraceptive methods were acceptable or not according to their religious beliefs. Such information is also important because objection to family planning on religious grounds were thought to be significant barriers to the use of contraceptive methods (Devi et al. 1996). Besides, questions about women's discussion with their friends or relatives, and their exposure to print media, television and radio in terms of family planning were asked as well. Based on these data, following variables were included in the analyses:

a) women’s approval of family planning,
b) religious perspective of women on family planning,
c) heard of family planning from media,
d) discussion of family planning with friends/relatives,
e) husband’s approval of family planning,
f) religious perspective of husbands on family planning

The variables about husbands' attitude towards family planning was considered in spousal level factors. Unfortunately, attitude questions indicating the way of thinking of men and women about the utilization of family planning services were not included in TDHS-2008. Additionally, it did not involve the inquiries about the mass media and discussion of contraceptive practices. Hence, their impact on reducing unmet need could not be measured. For this reason, in TDHS-2008, some lifestyle questions on whether women were in the habit of using the internet, watching TV programmes for women and meeting with their friends were used as a proxy for evaluating the effect of mass media and friends' confabulations on family planning.

Fertility level and use of family planning can be highly variable among different religious groups (Schuler et al. 1994; Devi et al. 1996). On the other hand, researchers do not reach a consensus about the effect of religion on unmet need. Korra (2002), Khan et al. (2008), Ojakaa (2008) and Igwegbe et al. (2009) did not refer to it as a good predictor of unmet need while others found significant association between unmet need and religion (Bhandari et al. 2006; Hailemariam and Haddis 2011; Mekonnen and Worku 2011). Among demographic and health surveys in Turkey, information on religion was collected only in TDHS-1998 and it was used as an independent variable in explaning the determinants of unmet need in 1998. Due to the fact that such data was not available in TDHS-2008, an index describing the level of pracising religious duties was created by means of factor analysis. The set of variables related to daily routines of women were used to get a single variable. These include the practices of formal worship (salah i.e. namaz and fast) in Islam in addition to wearing the headscarf. Besides that, attendance to Quran courses was also used in the factor analysis. These four variables then formed "level of practising religious duties" and categorized as "low", "moderate" and "high". The aim was to observe whether these rituals deter women from using contraceptive methods and thus increase their unmet need for family planning.

Another index created for descriptive and regression analyses is traditionality in the formation of marriage. The following variables were considered in creating this index:

1) Type of ceremony – this was categorized as whether women had only religious ceremony (coded 1) or civil ceremony[21] (coded 0),
2) Marriage arrangement – if decision was made by woman and her husband, it was coded zero or otherwise one[22],
3) Bridesmoney – if given it was coded 1 or otherwise zero,
4) Consanguinious marriage – if women and men were biologically related it was coded 1 or otherwise 0.

These indices were then recoded into three categories, namely "low", "moderate" and "high". The reason for using factor analysis is to provide a more objective basis when scaling the variables. The results obtained by principal component analysis were also similar to those of factor analysis. It should be mentioned that before creating indices, each variable was first entered into the regression model one by one, and when they found to be insignificant, they were combined to produce indices for traditionalit in the formation of marriage and the level of practising religious duties.

Furthermore, culturally accepted gender roles is stated to be the determinant in fertility decisions and reproductive behaviors (Ezeh 1993; Bankole 1995; Feyisetan et al. 1998; Zulu 1998; Kulczycki 2008). In TDHS-1998 and TDHS-2008, there were several questions on assessing the women's acceptance of male superiority. Although the statements presented to women within this context were

[21] This included women who had only civil ceremony, civil and religious ceremony, and who did not have either.

[22] Women's consent was not taken into consideration while recoding because it was thought that this information did not clarify the desire for that marriage objectively.

not directly related to the use of contraception, three of them, “men are wiser than women”, “important decisions in the family should be made by the male member of the family” and “a woman should not argue with her husband even if she does not share the same views with him” were utilized in the analyses. Therefore, it was hypothesized that gender-based imbalances may restrict the women’s ability to negotiate and their independence on contraceptive decision-making.

V.2.4. Husband’s characteristics

Partner communication about family planning is considered to be one of the significant aspects of fertility and contraceptive decision-making (Salway 1994; Oakley and Bogue 1995; Casterline and Sinding 2000; Kulczycki 2008). Women who reported that they had discussions about family planning with their husbands or partners were more likely to be using contraceptive methods than the women who reported they had never discussed family planning (Sharan and Valente 2002; Stephenson et al. 2007; Wablembo et al. 2011). Although spousal communication plays a key role in reducing unmet need and improving contraceptive prevalence rate, it may sometimes become a barrier to women’s deciding independently especially when partners or husbands disapprove of contraceptive methods (Biddlecom and Fapohunda 1998; Terefe and Larson 1993; Omwago and Khasakhala 1998; Fişek and Sümbüloğlu 1978; Becker 1996). As mentioned before, the variables related to husbands’ attitude for using contraception was only analyzed in TDHS-1998, because there was no information about partner involvement in the questionnaire of TDHS-2008.

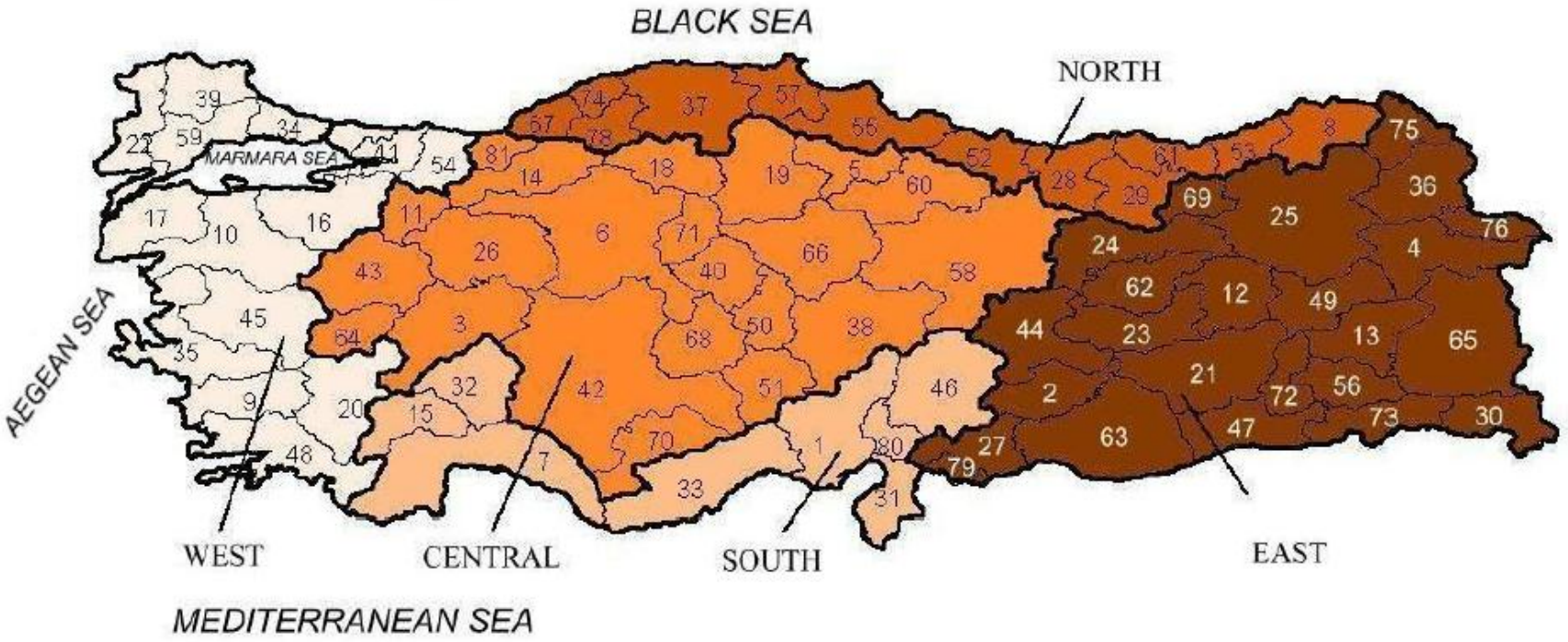
Moreover, women’s attitude towards contraceptives depends not only on their individual characteristics but also on the characteristics of their husbands (Ezeh 1992). Within this respect, husband’s employment status, education and their desire for children were taken into consideration. Education is the only common variable in two surveys among the spousal-level factors.

V.2.5. Household socio-economic variables

The basis for the conventional regional breakdown within Turkey depends on its diverse geographical, climatic, cultural and socio-economic characteristics. To reflect the variations in different parts of the country, Turkey is divided into five regions, namely West, South, Central, North and East. This regional breakdown is frequently in social surveys in order to understand the demographic, social, cultural and economic differences.

From TDHS-1998 to TDHS-2008, provinces vary with regard to number and regional distribution. For instance, the survey sample of TDHS-2008 covered 81 provinces while the number of provinces was 80 in TDHS-1998. The reason for this discrepancy is that Düzce was excluded in 1998 due to its administrative status. In addition, some revisions were made in the distribution of provinces in five regions. Gümüşhane, Sivas and Kahramanmaraş, which were in the East region in TDHS-1998 were considered in the North, Central and East in TDHS-2008, respectively. Moreover, Kilis, Gaziantep and Muğla were the provinces of the South region in TDHS-1998 whereas in TDHS-2008, Muğla was regarded in the West region and the other in the East region. Figure V.2.4 shows the provinces in each of the regions according to the latest survey.

Figure V.2.4. Five-Region Division of Turkey according to the TDHS-2008



REGIONS AND PROVINCES

01 WEST	*02 SOUTH*	*03 CENTRAL*		*04 NORTH*	*05 EAST*	
09 Aydın	01 Adana	03 Afyon	60 Tokat	08 Artvin	02 Adıyaman	62 Tunceli
10 Balıkesir	07 Antalya	05 Amasya	64 Uşak	28 Giresun	04 Ağrı	63 Şanlıurfa
16 Bursa	15 Burdur	06 Ankara	66 Yozgat	29 Gümüşhane	12 Bingöl	65 Van
17 Çanakkale	31 Hatay	11 Bilecik	68 Aksaray	37 Kastamonu	13 Bitlis	69 Bayburt
20 Denizli	32 Isparta	14 Bolu	70 Karaman	52 Ordu	21 Diyarbakır	72 Batman
22 Edirne	33 İçel	18 Çankırı	71 Kırıkkale	53 Rize	23 Elazığ	73 Şırnak
34 İstanbul	46 K.Maraş	19 Çorum	81 Düzce	55 Samsun	24 Erzincan	75 Ardahan
35 İzmir	80 Osmaniye	26 Eskişehir		57 Sinop	25 Erzurum	76 Iğdır
39 Kırklareli		38 Kayseri		61 Trabzon	27 Gaziantep	79 Kilis
41 Kocaeli		40 Kırşehir		67 Zonguldak	30 Hakkari	
45 Manisa		42 Konya		74 Bartın	36 Kars	
48 Muğla		43 Kütahya		78 Karabük	44 Malatya	
54 Sakarya		50 Nevşehir			47 Mardin	
59 Tekirdağ		51 Niğde			49 Muş	
77 Yalova		58 Sivas			56 Siirt	

Another variable used in the analyses is rural-urban breakdown. Different criteria have been used to describe the urban and rural settlements in Turkey. In demographic surveys of the 1970s, a population size of 2,000 was used to differentiate urban settlements from rural settlements. In the 1980s, the cut-off point went up to 10,000 and then to 20,000 in the 1990s.

The urban-rural definitions are identical in TDHS-1998 and TDHS-2008. The urban frame of these surveys consisted of provincial centers, district centers and other settlements with populations larger than 10,000, regardless of their administrative status. District centers, sub-districts and villages excluded from the urban frame formed the rural territory (HUIPS 1999; HUIPS 2009).

For TDHS-1998, the initial information on all the settlements in Turkey was obtained from the 1997 Population Count and 2000 General Population Census. Unlike TDHS-1998, in TDHS-2008, the source of information was the 2007 Address-Based Population Registration System[23] (ABPRS-2007) which provided a computerized list of all provincial centers, district centers, sub-districts and villages, and their populations (HUIPS 1999; HUIPS 2009).

When explaining the differentiation in the utilization of family planning services and other health services, researchers (Westoff and Ochoa 1991; Westoff 2006; Khan et al. 2008; Ojakaa 2008) have mostly used the place of residence to point out the inequalities with the following assumptions:

[23] The Address-Based Population Registration System is an innovation in registry system of Turkey. In this system every person with citizen ID number is assigned and then registered with a specific address. Apart from this, a new address database (UAVT-NADB) was developed by municipalities in collabaration with Turkish Statistical Institute for the establishment of this system.

- § family planning services are highly available and easily accessible in urban areas
- § desire for children is greater in rural places
- § better educational and employment facilities that help women gain autonomy are attainable in urban areas.

Wealth status of a household is another important variable used in the analyses. Data of income cannot be easily collected because such information directly gathered through quantitative surveys may not fulfill the criteria for reliability, validity and accuracy. For this reason, wealth index is generated from the ownership of durable goods and housing characteristics such as source of drinking water, sanitation facilities and the type of flooring material. Then it is classified into five quintiles from the poorest to the richest (poorest, poor, middle, rich, richest). After creating them, it is possible to establish a three-category wealth index (poor, middle, rich) by simply aggregating the first two and the last two quintiles. This asset-based index is widely used as an effective proxy for the income level of households (Filmer and Pritchett 1999; 2001). Not only that, a close association between household wealth and reproductive health indicators has extensively been referred to in many studies (Westoff 2006; Gakidou and Vayena 2007; Stephenson et al. 2007; Sahoo 2007; Khan et al. 2008; Ojakaa 2008; Burgard and Lee-Rife 2009; Wablembo et al. 2011; Elfstrom and Stephenson 2012).

Women's future intentions to use contraception either for spacing or limiting may depend on the achievement of their fertility goals and can be used as a good predictor of subsequent contraceptive behavior among non-users (Westoff and Bankole 1995; Curtis and Westoff 1996). On the other hand, a converse example in Zambia where women's intentions to use contraception did not provide a good prediction of unmet need has invalidated what others have considered to be true (Yinger 1998). Moreover, in DHSs, instead of asking women about their desires to use a method presently, the questions focus only on the future use of contraception

(Khan et al. 2008). This information in the assessment of unmet need is subjected to criticism to some extent, and tuhs, it has not been included in analyzing the levels and determinants of unmet need in Turkey.

V.2.6. Characteristics of respondent's mother

At this level, education of the respondent's mother, and probable presence of consanguinity between women's parents were utilized. However, due to the lack of this information in TDHS-1998, it was only considered for TDHS-2008.

V.3. METHODOLOGY

The anayses are composed of four stages. First, total unmet need and its two components (spacing and limiting) were estimated based on different perspectives. These include criteria of Westoff and Pebley (1981), Bongaarts' approach, core definition used in demographic and health surveys, and revised definition proposed by MEASURE DHS. The need for modern methods were also considered in 1998 and 2008. The aim of using different approaches is to reveal how estimates of unmet need vary according to alternative techniques. Second, descriptive analysis was used to explain the level of unmet need for family planning among women with different characteristics in 1998 and 2008. Third, a regression analysis was carried out to determine the predictors of total unmet need, unmet need for spacing and limiting. At the final stage, a regression equation was calculated for total fertility rate and contraceptive prevalance rate to estimate how reducing levels of unmet need and increasing level of contraceptive use would affect fertility rates.

V.3.I. CONCEPT-BASED ESTIMATIONS

V.3.1.1.Estimation of unmet need according to the definitions of Westoff and Pebley

Westoff and Pebley (1981) proposed different alternatives when KAP surveys was first introduced. The following table illustrates the alternative definitions used by them.

Table V.3.1. Definitions of 11 measures of unmet need proposed by Westoff and Pebley (1981)

	Measure										
	1	2	3	4	5	6	7	8	9	10	11
Wants no more children	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Desired no.≤ actual			✓				✓		✓	✓	✓
Fecund, not pregnant				✓	✓	✓	✓	✓	✓	✓	✓
Not breastfeeding						✓		✓	✓		✓
Not using effective method	✓				✓	✓				✓	✓
Not using any method		✓	✓				✓	✓	✓		
Not breastfeeding for one year or less											

V.3.1.2. Unmet need based on the original (core) definition used in demographic and health surveys

This process is outlined in the following algorithm and a schematic diagram of unmet need for family planning is presented in Figure V.3.1:

• Step 1 - Contraceptive Use Status: Among currently married women in reproductive ages, the percentage not using contraception is calculated.

• Step 2 - Pregnancy and Amenorrheic Status: From the group selected in Step 1, percentage of those pregnant or amenorrheic, and the percentage of those not pregnant or not amenorrheic is determined.

• Step 3 - Wantedness of current or last pregnancies: When pregnant or amenorrheic women is identified, these women are then subcategorized according to the planning status (planned, mistimed, unwanted) of their current pregnancies or the last pregnancies ended with a live birth.

• Step 4 - Fecundity status: For those who are not pregnant and amenorrheic, fecundity status is identified. The rationale is that infecund women do not expose to risk of conceiving and therefore they should be regarded within the group having no need for family planning. In DHS, infecundity is determined through calendar data where available. A women is defined as infecund if she has been continuously married, not using contraception for past 5 years and has not had a birth in the past 5 years. In addition to those criteria, regardless of having any child, women who have never menstruated during their life are regarded as infecund.

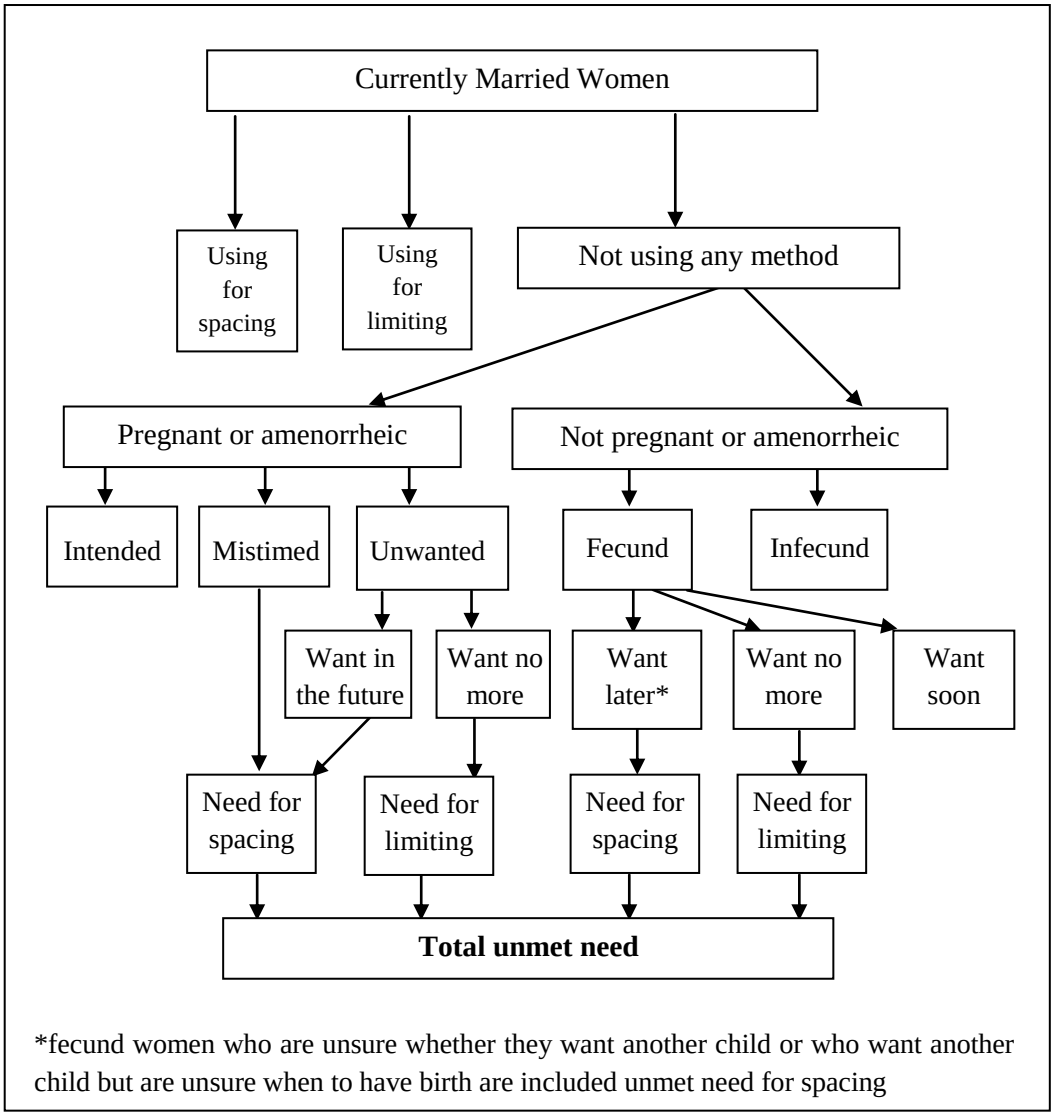
• Step 5 - Future fertility intensions of fecund women: For the fecund group identified in Step 4, the percentage of those who want to postpone childbearing (want later/spacers) and those who want to limit (want no more children/limiters) are calculated based on their future fertility intentions.

• Step 6 - Unmet need for spacing: includes pregnant women whose pregnancy was mistimed; amenorrheic women whose last birth was mistimed; fecund women whose neither pregnant nor amenorrheic, who are not using any contraceptive method and who want childbearing later. This group further involves

the ones who are unsure whether they want another children or who want another child but unsure when to have the birth.

• Step 7 - Unmet need for limiting: includes pregnant women whose pregnancy was unwanted; amenorrheic women whose last birth was unwanted; fecund women whose neither pregnant nor amenorrheic, who are not using any contraceptive method and who do not want no more children.

Figure V.3.1. Unmet need for family planning among currently married women



*fecund women who are unsure whether they want another child or who want another child but are unsure when to have birth are included unmet need for spacing

V.3.1.3. Bongaarts' approach

The starting point of this approach is the procedure of Westoff. The aim of his alternative measurement is to reduce the need for limiting that results from satisfying spacing demands and to adjust spacing needs due to overestimation. According to this, maximum and minimum estimates of total unmet need are estimated. That is,

$$U_{max} = L + SP/M \qquad U_{min} = L + S'P/M$$

where:

L = proportion of married women with an unmet need for limiting calculated by Westoff's method[24]

S = proportion of married women with an unmet need for spacing calculated by Westoff's method

P = proportion of married women aged 40-44 who have not yet reached their desired family size

M = proportion of all married women who have not yet reached their desired family size (i.e., the proportion who are spacers)

S' = the unmet need for spacing as calculated by Westoff after pregnant and amenorrheic women are excluded.

Based on this approach, the spacing component is estimated as the average of S and S', and the limiting component is obtained by subtracting this new estimate of the unmet need for spacing from the total.

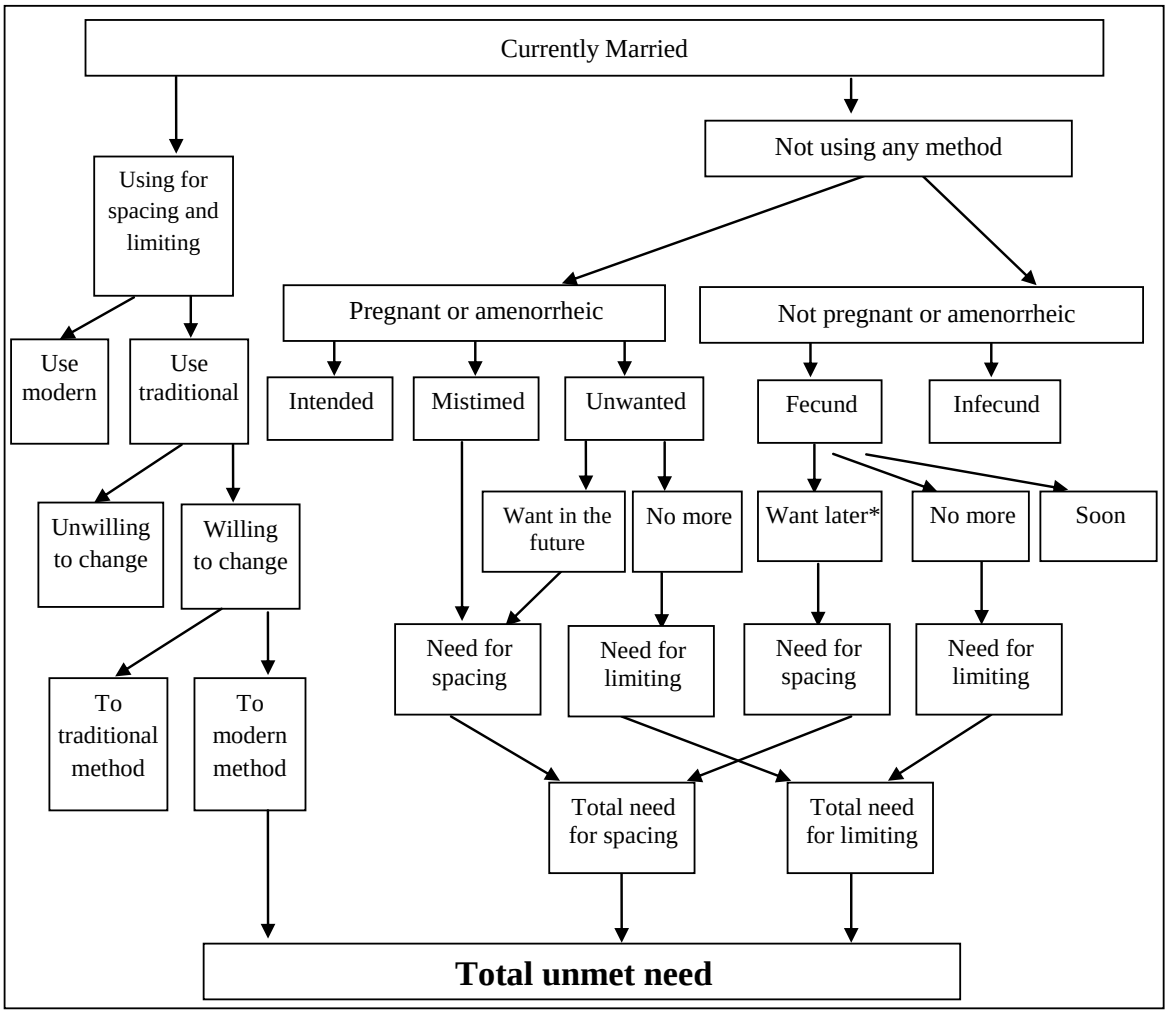
[24] Westoff (1988b) included

V.3.1.4. Unmet need and the demand for modern methods

An additional measure of unmet need and the demand for family planning focusing on modern methods was introduced at this stage. This approach can provide valuable results in countries like Turkey where there is considerable use of traditional methods. The procedure followed in this study is slightly different from the one used by Westoff (2006). His proposed indicator for unmet need for modern methods regards the users of withdrawal, periodic abstinence and other folkloric methods as non-users; and their prevalence is added to total unmet need (Westoff 2006). On the other hand, in this study, instead of treating all traditional users as non-users, women who stated their desire to change the traditional method they were using to any modern method was taken into consideration. Hence, total unmet need (Figure V.3.2) refers to unmet need of both non-users and traditional method users for a "*better*[25]" method (Ergöçmen and Çavlin-Bozbeyoğlu 2005).

[25] Bradley et al. (2012)

Figure V.3.2. Unmet need for family planning among currently married women with the inclusion of need for modern methods



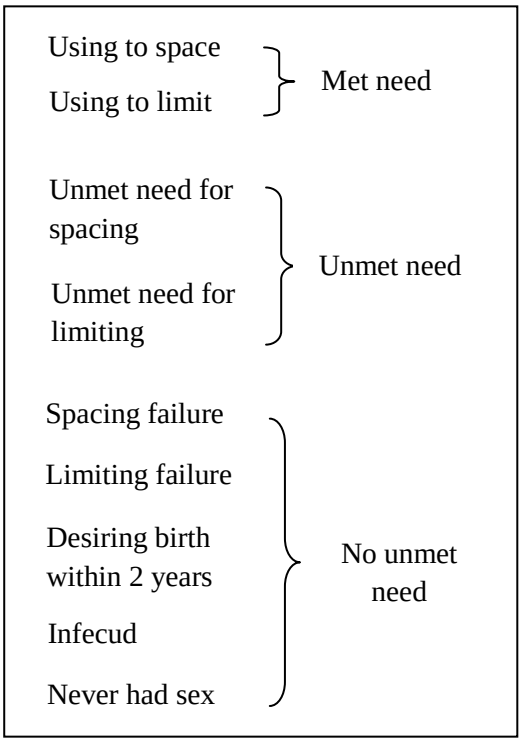
V.3.1.5. Revised definition of unmet need for family planning[26]

The revised definition has been proposed by an expert group to have an indicator producing consistent estimates across time and among countries. The revisions require almost a complete change in the methodology of unmet need. In fact, the major difference between the original and revised definition is that calendar data is no longer used in the calculation of unmet need. Because of the irregular use

[26] Bradley et al. (2012)

of calendar data across some countries, which ruins the standardization, experts have decided to abandon the use of it in the unmet need algorithm. This means that fecundity status of women, and the current pregnancies or last live births occured due to contraceptive failure will be considered in a different manner. In the original definition, exposure to unmet need was calculated from the calendar data and the necessary variables had been created during the data processing phase of a survey. Figure V.3.3 present the categories of the variable (v624) and their equivalents in unmet need according to the original definition.

Figure V.3.3. Categories of the v624



In the following table (Table V.3.2) a comparative classification of infecundity status and contraceptive failure in original and revised definition is illustrated.

Table V.3.2. Original definition versus revised definition according to infecundity status and contraceptive failure

Original definition	Revised definition
Based on the calendar data, if current pregnancy or last live birth was due to contraceptive failure, women are regarded in the category of spacing failure or limiting failure, not in the unmet need.	**Calendar data is not used.** Current pregnancies or last live births due to contraceptive failure are no longer subdivided. ➢ *Unmet need for spacing* includes all curent pregnancies or last live births wanted later ➢ *Unmet need for limiting* includes all curent pregnancies or last live births unwanted *(irrespective of their occurance due to method failure)*
Based on the calendar data, if a woman has been continuously married and not using contraception for past 5 years and has not had a birth in the past 5 years, that woman is considered *infecund.*	**Calendar data is not used.** if a woman was first married five or more years ago, never used contraception, and has not had a birth in the past 5 years, that woman is considered *infecund*.
Never menstruated women = *infecund*	Never menstruated women are divided into two according to childlessness: ➢ If a women never mensturates but gave birth in the last 5 years, she is regarded as *fecund* ➢ If a women never mensturates and have no births in the last 5 years, she is regarded as *infecund*
Never menstruated, but their period returned after their last birth and gave birth in the last 5 years = *infecund*.	Never menstruated, but their period returned after their last birth and gave birth in the last 5 years = *fecund*.

Source: Bradley et al. 2012

Table V.3.2. Original definition versus revised definition according to infecundity status and contraceptive failure (*continued*)

Original definition	Revised definition
Last period was before their last birth, but have never given birth = *fecund*.	Last period was before their last birth, but have never given birth = in*fecund*.
Women who responded that they were menopausal or hysterectomized when they were asked why they are not currently using a method of contraception are regarded as *infecund* in both definitions.	
Women who responded that they were menopausal or hysterectomized when they were asked about their last period are regarded as *infecund* in both definitions.	

Source: Bradley et al. 2012

Another important change has been made in the duration of postpartum amehorrhea. In the original definition, postpartum amenorrhea refers to the duration for up to five years after the last live birth, and women who are amenorrheic are categorized based on the wantedness of their last live birth. Women who are not amenorrheic are then identified whether they are fecund or infecund. Thereby, future fertility intensions of these women become important to understand their needs for family planning. On the other hand, in the revised deifinition, women whose monthly period has not returned since their last birth should be considered postpartum amenorrheic for up to 23 months (where month 0 is the month of birth) after that birth. If women's period has not returned since their most current live birth which occurred two or more years prior to the survey data, they no longer involved in postpartum amenorrhea. The rationale behind shortening the duration of amenorrhea is stated by the experts that the proportion of amenorrheic women has been overestimated in the original definition. To illustrate, a woman who gave birth 4 years prior to the survey date and whose period had not yet returned used to be considered postpartum amenorrheic, and the unmet need status used to be identified based on the information about wantedness of the last birth. In the revised definition, however, women with a birth in the last 3-5 years preceding the survey date whose

period had not yet returned since their last birth are considered fecund, unless one of the other fecundity checks identifies them as infecund. Accordingly, the criterion for infecundity has also been changed to avoid categorizing women whose period has not returned after a birth in the last 3-5 years as infecund because in the original definition women who had her last menstrual period 6 months before are regarded as infecund. In the revised definition, this is replaced by the condition "Women whose last menstrual period was ≥ 6 months ago AND are not postpartum amenorrheic (0-59 months) = infecund."

Table V.3.3. Original definition versus revised definition according to postpartum period

Original definition	**Revised definition**
Women who gave birth in the last ***five*** years prior to survey date, and whose menstrual period has not returned since their most recent birth are considered postpartum amenorrheic. Their unmet need status ise based on the wantedness of their last birth.	Women who gave birth in the last ***two*** years (***0-23 months***) prior to survey date, and whose menstrual period has not returned since their most recent birth are considered postpartum amenorrheic. Their unmet need status is based on the wantedness of their last birth.
	Women who gave birth in the last ***3-5*** years (***24-59 months***) prior to survey date, and whose menstrual period has not returned since their most recent birth are ***not*** considered postpartum amenorrheic. If these women fulfill the fecundity criterion, their unmet need status will be based on their future fertility preferences.

Source: Bradley et al. 2012

Furthermore**,** in the original data, missing data on both future fertility preferences of fecund women and wantedness of current pregnancy/last live birth of pregnant/amenorheic women are categorized as having unmet need for spacing. In the revised definition, all missing data on planning status of a child and future desires are remained as missing variable for the unmet need category.

Table V.3.4. Original definition versus revised definition according to the adjustments made for missing data

Original definition	**Revised definition**
Missing data on wantedness of current pregnancy of pregnant women = **unmet need for spacing.**	Missing data on wantedness of current pregnancy of pregnant women = **missing.**
Missing data on wantedness of last live birth of amenorrheic women = **unmet need for spacing.**	Missing data on wantedness of last live birth of amenorrheic women = **missing.**
Missing data on future fertility preferences of fecund women = **unmet need for spacing.**	Missing data on future fertility preferences of fecund women = **missing.**

Source: Bradley et al. 2012

The last revision in the definition of unmet need includes the inconsistencies between responses given to planning status of current pregnancy or last live birth and future desires of pregnant or amenorrheic women. In the original definition, if pregnant and amenorrheic women stated that their current pregnancy or last birth was unwanted but want additional child in the future, they are classified as having an unmet need for spacing rather than limiting. In the revised definition, this modification was removed from the algorithm due to the fact such algorithm requires both retrospective and prospective data whereas unmet need status of all other women are based on either retrospective or prospective data, but not both.

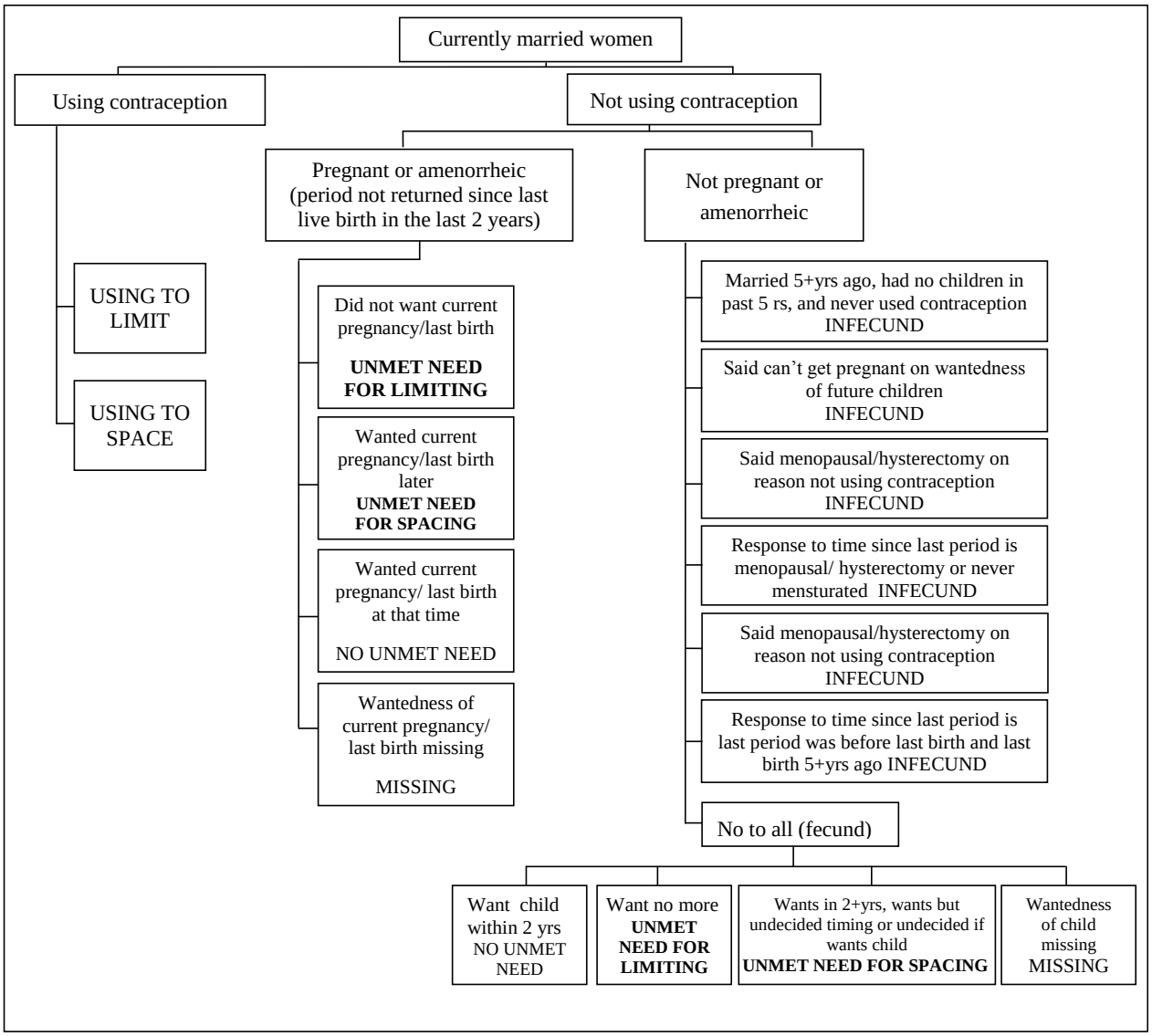
In fact, such revision does not affect the estimates of total unmet need, but shifts some women who were classified as having an unmet need for spacing in the original definition to having an unmet need for limiting (Bradley et al. 2012).

Table V.3.5. Original definition versus revised definition according to planning of future births

Original definition	Revised definition
Women who are pregnant or amenorrheic stated ➢ that their current pregnancy or last live birth was unwanted, and they do not want another child in the future or are undecided whether they want another in the future = **unmet need for limiting** ➢ that their current pregnancy or last live birth was unwanted, but they want another child in the future = **unmet need for spacing**	***Irrespective of whether future desires of pregnant or amenorrheic women***, their unmet status are determined according to the wantedness of the current pregnancy or last live births: ➢ current pregnancy or last live birth was unwanted = **unmet need for limiting** ➢ current pregnancy or last live birth was mistimed = **unmet need for spacing**

Source: Bradley et al. 2012

Figure V.3.4. Revised definition of unmet need



Source: Bradley et al. 2012

V.4. MULTIVARIATE ANALYSIS

The elimination of unmet need is important to improve maternal and child health (Sinding et al. 1994; Westoff and Bankole 1995). To reduce the risk of having unmet need, it is crucial to identify the underlying factors of unmet need. Beyond the barriers related to the physical accessibility to family planning services, there are also other barriers that arise from the socio-economic and cultural environment in which women live (Bertrand et al 1995; Foreit et al. 1978). Therefore, in addition to descriptive analysis, multivariate analysis was required to determine the predictors of unmet need for family planning in Turkey by using the data sets of TDHS-1998 and TDHS-2008. Since the TDHSs have complex sampling designs, three main features that are stratification, clustering and sampling weight need to be account in the multivariate analyses. It is very common in TDHSs to divide the population into distinct subpopulations, referred to as strata. Within each stratum, a separate sample is selected from the sampling units independently. The variance of the estimate will decrease if the sampling units within each stratum are homogeneous. Failure to account for the stratication in the analysis will result in overestimation of the p-values and wide confidence interval. The second common feature in complex survey data is clustering. In multistage clustering, the total population is first divided into cluster, then a sample is selected that are called primary sampling units (PSUs). Further sample selection occurs within PSUs and so on. Finally, sampling weight is used as the measure of how many units in the population which the sampled PSU represents. In general, failure to account for the clustering in the analysis may lead to underestimation of variabilities. For this reason, the determinants of unmet need were identified through complex logistic regression procedure in Statistical Packages for Social Sciences (SPSS) to analyze complex survey data of TDHS-1998 and TDHS-2008 appropriately.

The general regression model took the form:

$$Y = b_0 + b_1\alpha_1 + b_2\alpha_2 + ... + b_k\alpha_k$$

where, *Y* is the dependent variable, b_0 is the constant term, α_1, α_2 , ... α_k are the independent variables and b_1 , b_2 ,... b_k are the regression coefficients for the independent variables.

The relevance of a particular independent variable as a predictor of unmet need was determined by the p-values, and odds ratio was used to understand how much more likely a woman would be expected to have unmet need for family planning. To assess the proportion of variance explained by the predictors pseudo-maximum likelihood is used which involves both stratification and possibly several stages of cluster sampling (Archera et al. 2007).

The regression analyses were performed separately for unmet need spacing, unmet need for limiting and total unmet need. To do this each variable is dichotomised, that is,

- women with an unmet need for spacing are coded as 1, all other women who neither have an unmet need for spacing nor limiting coded as 0,
- women with an unmet need for limiting are coded as 1, all other women who neither have an unmet need for spacing nor limiting coded as 0,
- women with an unmet need (spacing + limiting) are coded as 1, all other women are coded as 0.

The base population is currently married women within the reproductive ages (15-49). Before performing regression analysis, multicollinearity[27] test was done to see whether independent variables were correlated or not. For multicollinearity test, all categorical independent variables whose more than 2 categories were recoded so that they were dichotomized. These were the dummy variables to be used in the multicollinearity test. Then, linear regression in SPSS was run where dummy variables formed the independents, and dichotomized unmet need categories referred the dependent variable. After this procedure, the variance inflation factors[28] (VIF) that indicates a problem with multicollinearity were controlled whether they were assigned a value equal to or greater than 10. The independent variables used in this study did not found to be collinear.

V.5. ESTIMATING THE DEMOGRAPHIC IMPACT OF FULFILLING UNMET NEED

One of the important features of the unmet need is its effect on the degree to which fertilty declines. Researchers have believed that the potential reductions in unmet need might result in the reduction of future fertility (Sinding et al. 1994; Westoff and Bankole 1995; Westoff 2006; Khan et al. 2008).

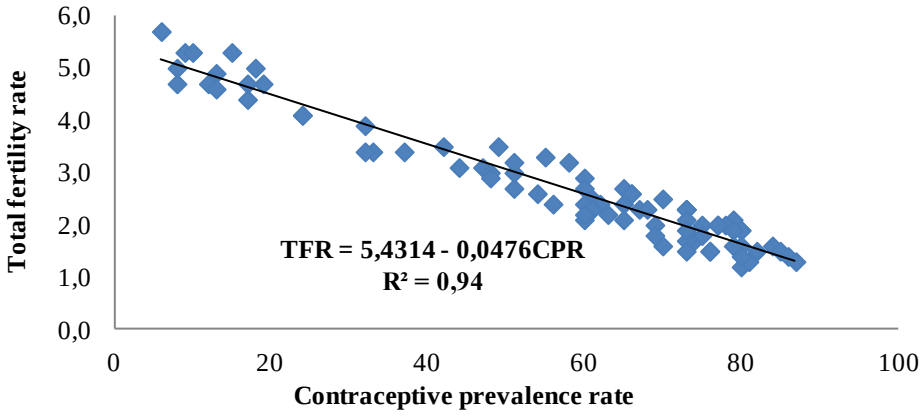
To estimate the potential impact of unmet need, the advantage of the high correlation between contraceptive prevalence rate and total fetility rate (TFR) was taken. It is stated that depending on the sample, the correlation between these two ranges from 0.84 to 0.94 (Ross and Frankenberg 1993; Westoff and Bankole 1995,

[27] Multicollinearity occurs when two or more predictors in the model are correlated and provide redundant information

[28] index that measures how much the variance of an estimated regression coefficient is increased because of collinearity.

Westoff 2006). The aim is to estimate the contraceptive prevalence (all methods) that would hypothetically result from the reduction of unmet need, and predict the level of TFR for the estimated level of contraceptive use via regression equation calculated on the most recent total fertility rate (TFR) and current contraceptive prevalence (CPR). At this stage, the data was taken from the 2011 World Data Sheet, and the information on contraceptive prevalence rate and total fertility rate of 86 countries was utilized. The overall correlation was found to be 0.94. The regression equation used to measure the probable impact is TFR=5.4314 – 0.0476*CPR. Figure V.5.1 shows TFR plotted against contraceptive use in countries. It should be mentioned that the intention here was not related to forecasting, but instead to demonstrate the impact of reducing unmet need. Besides that, the change in TFR observed in this analysis did not infer an alteration in other factors that might play a significant role in fertility projections (Bradley et al. 2012)

Figure V.5.1. Correlation of contraceptive use and total fertility rate



There are some studies that confined the analysis to the prevalence of modern methods, but such approach significantly reduces the strength of the association (Westoff 2006). Moreover, some researchers also propose that when assessing the impact of fulfilling unmet need on fertility, contraceptive use for limiting should be taken into account because of the relatively high correlation between contraceptive

use for limiting and fertility (Bradley et al. 2012). On the other, in this study contraceptive prevalence rate of all methods were considered in the regression analysis because restricting the data either to modern methods or CPR for limiting purpose reduces the R-squared of the equation. Although a low correlation is said to prevail between fertility and contraceptive use for spacing (Bradley et al. 2012), the data on CPR did not restricted to limiting based on the assumption that spacers tend to become limiters at some point (Westoff and Koffman 2010).

VI. RESULTS

This chapter outlines the findings of descriptive and multivariate analyses. Firstly, the estimates of unmet need calculated on the basis of alternative ways were discussed. Secondly, two approaches (original versus revised) were compared, and the level of and the trends in unmet need from 1993 to 2008 were then illustrated in Section VI.2. Following this comparison, the results of descriptive analysis based on the original definition were presented for the data sets of TDHS-1998 and TDHS-2008 in Section VI.3. Afterwards, the determinants of unmet need calculated in the manner of original algorithm were submitted in Section VI.4. Lastly, the impact of fulfilling unmet need was discussed.

VI.1.CONCEPT-BASED RESULTS

VI.1.1. ESTIMATE OF UNMET NEED ACCORDING TO DEFINITIONS PROPOSED BY WESTOFF AND PEBLEY

Different computational procedures aforementioned in Chapter IV were applied based on different approaches in estimating the level of unmet need for family planning. The first step was the utilization of the definitions proposed by Westoff and Pebley (1981). Table VI.1.1 and Table VI.1.2 present the findings of alternative ways used in TDHS-1998 and TDHS-2008, respectively. It is obvious that the preliminary efforts in achieving the most probable estimate displayed huge variations in each component of unmet need. For instance, in TDHS-1998, the unmet need for limiting could vary from 20 percent to 3 percent. The gap between different estimates for spacing needs was also notable (from 6 to 0.1 percent) although its level fluctuated in lower percentages when compared to limiting need. A similar situation was valid for TDHS-2008 as welll, and each component had a wide range of estimates displaying large discrepancies among alternative definitions.

Table VI.1.1. Estimates of unmet need based on Westoff –Pebley approach , TDHS-1998

	INDICATORS										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Limiting	20.3	17.8	11.4	5.2	19.3	17.5	3.9	3.8	3.0	16.0	14.5
Spacing	3.9	6.4	0.4	2.6	3.7	2.9	0.2	1.5	0.1	0.3	0.2
Total	24.2	24.2	11.8	7.8	23.0	20.4	4.1	5.3	3.1	16.3	14.7

Table VI.1.2. Estimates of unmet need based on Westoff –Pebley approach, TDHS-2008

	INDICATORS										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Limiting	20.1	12.8	7.9	3.1	19.3	17.6	2.5	2.5	2.0	14.8	13.3
Spacing	4.5	4.0	0.2	1.1	4.2	2.8	0.1	0.7	0.0	0.4	0.3
Total	24.6	16.8	8.1	4.2	23.5	20.4	2.6	3.2	2.0	15.2	13.6

VI.1.2. ORIGINAL DEFINITION OF UNMET NEED

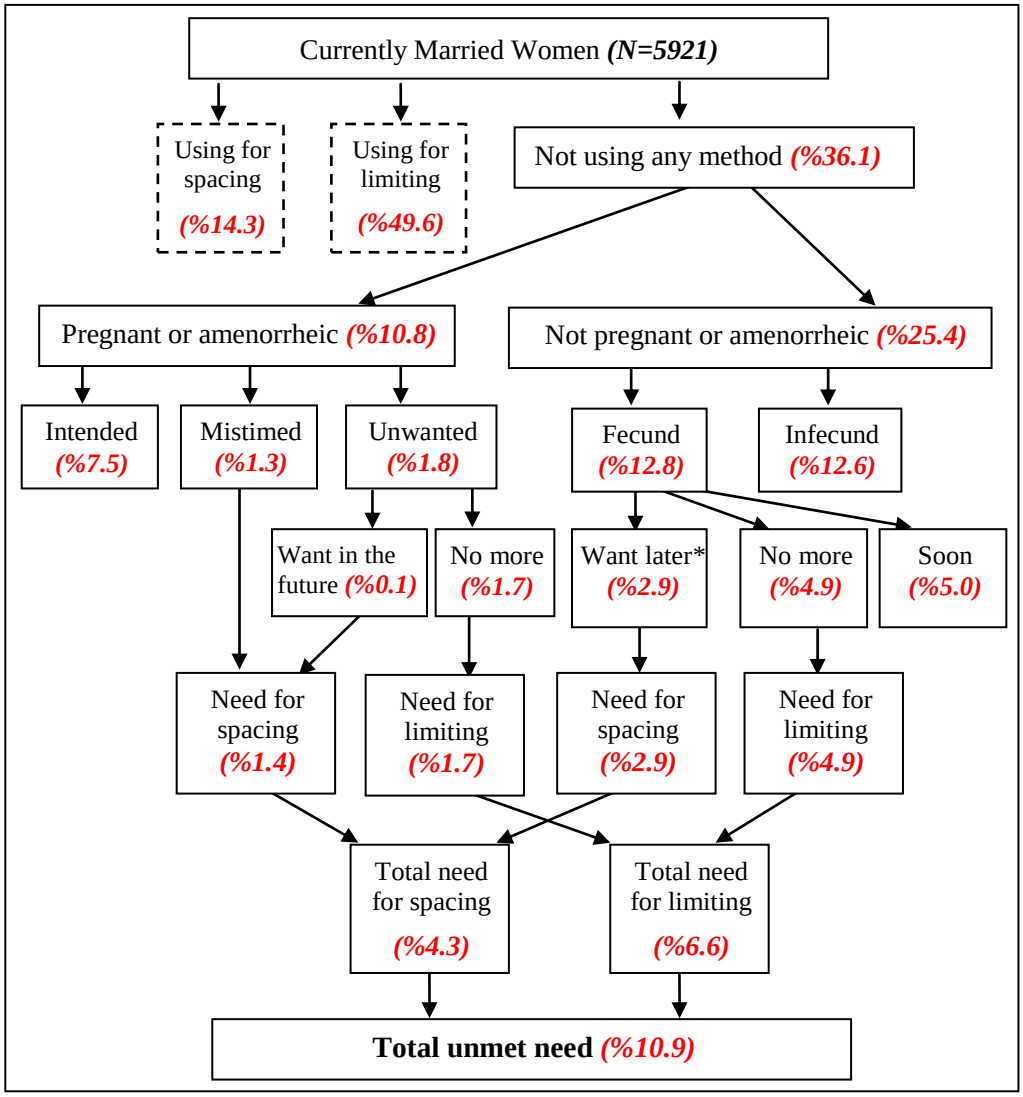
Second method utilized in this study was the original definition used in demographic and health surveys to estimate the level of unmet need in 1998 and 2008 (Figure VI.1.1 and Figure VI.1.2, respectively). Roughly, the computational procedure can be divided into four steps: 1) separation of pregnant/amenorrheic women from unpregnant/not amenorrheic; 2) wantedness of the current pregnancy or the last live birth of pregnant or amenorrheic women; 3) determination of fecund and infecund women; 4) timing of future childbearing intensions of fecund women.

Based on this approach, in TDHS-1998, among 8576 women interviewed, 5921 were married at the time of the survey. When currently married women were categorized according to the use of any contraceptive methods, 36 percent of them was identified as non-users of birth control methods (Figure VI.1.1). These women were then subdivided according to their status of pregnancy or amenorrhea. In TDHS-1998, approximately 11 percent was found to be either currently pregnant or

amenorrheic, and 25 percent was neither. After determining the pregnancy status, the wantedness of and future intentions for childbearing was specified. While pregnant women were asked about the planning status of their current pregnancy, amenorrheic women were asked about the wantedness of their last live birth. Accordingly, among currently pregnant or amenorrheic women in TDHS-1998, 8 percent stated the timely occurance of their current pregnancy or their last live birth. On the other hand, 1 percent would have desired this situation to happen later, and 1.8 percent did never want to have. A further subdivision was made based on the future intentions of the ones who had never planned to have a child. Indeed, the majority (1.7 percent) was still determinant about unwantedness of additional child, and only 0.1 percent expressed their willingness for childbearing in the forthcoming years. Therefore, 1.4 percent of pregnant or amenorrheic women had unmet need for spacing and 1.7 percent had limiting needs.

The right side of the Figure VI.1.2 is related to the computational procedure of the unmet need of women neither pregnant nor amenorrheic (25 percent). At first, their fecundity status was ascertained. Women in this group were almost uniformly distributed regarding their fecundity, that is, 12.8 percent was found to be fecund and 12.6 percent was infecund. Fecund women were further divided into three categories according to their future desires for having a child. The TDHS-1998 data revealed that 5 percent was inclined to get pregnant as soon as possible whereas 3 percent wanted to wait at least 2 years for another child and 5 percent did not want any more. Thus, the unmet need of fecund women amounted to 7 percent of which 3 percent corresponds to spacing need and 5 percent to limiting needs. When considering the aggregate level, total unmet need for family planning was found to be 11 percent in which 4 percent was accounted for spacing and 7 percent for limiting.

Figure VI.1.1. *Original definition* of unmet need for family planning currently married women 15-49, TDHS-1998

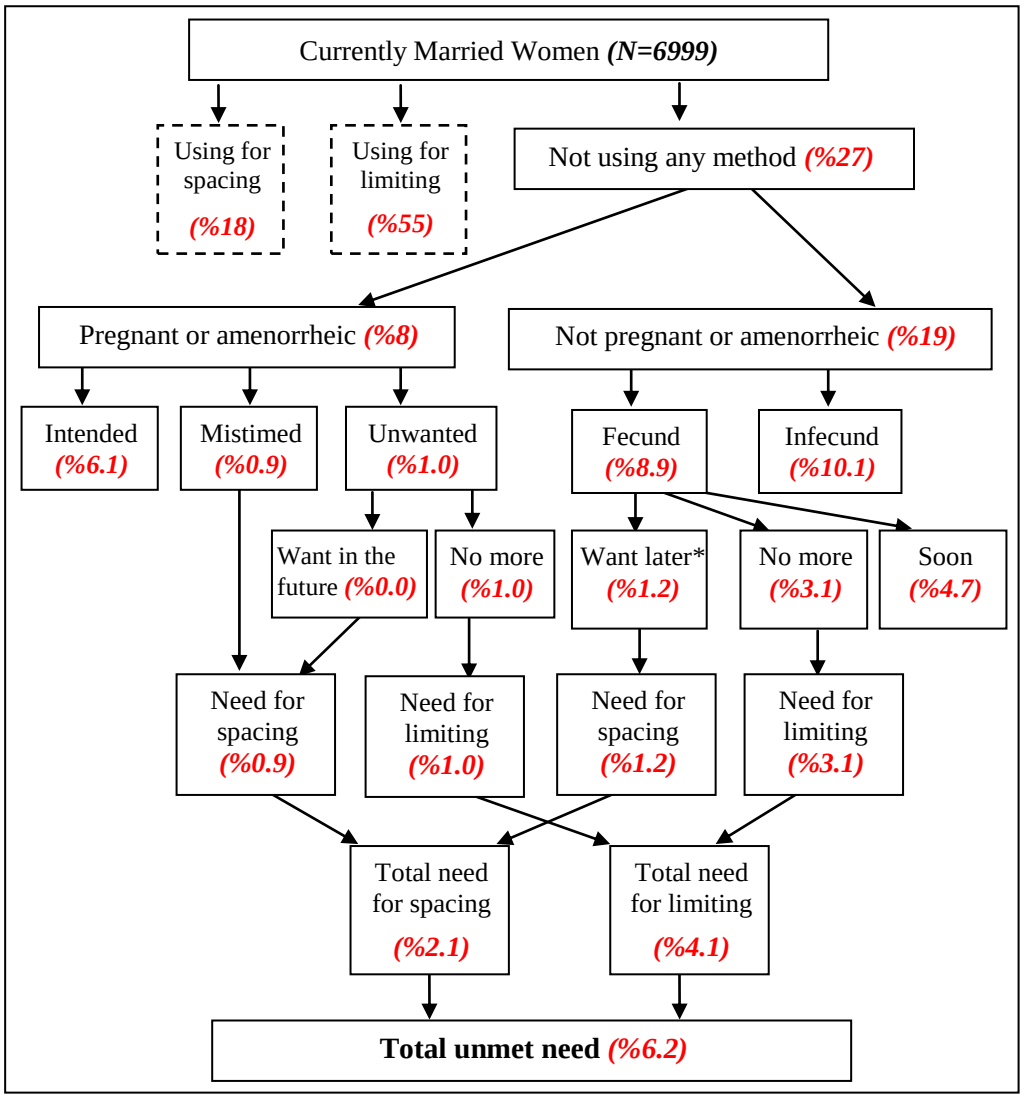


*fecund women who are unsure whether they want another child or who want another child but are unsure when to have birth are included unmet need for spacing

Figure VI.1.2 shows the percentages of all categories taken into consideration while estimating the level of unmet need for TDHS-2008. The figures for contraceptive users, nonusers and unmet need have displayed an improvement during the 10-year period. While the overall use of contraception increased from 64 percent to 73 percent, the proportion of women practising a method to terminate their fertility rose by slightly more than the ones using to postpone during the same period. In

TDHS-2008, 17 percent of currently married women (8 percent was pregnant or amenorrheic, 9 percent was fecund) were taken into consideration. Among these, the ones who wanted to stop childbearing but not using contraception were found to be 4 percent, and 2 percent of them had unfulfilled needs for spacing births. Hence, their sum constituted the total unmet need, which was 6 percent.

Figure VI.1.2. *Original definition* of unmet need for family planning, currently married women 15-49, TDHS-2008



*fecund women who are unsure whether they want another child or who want another child but are unsure when to have birth are included unmet need for spacing

VI.1.3. BONGAARTS' APPROACH

At this stage, the level of unmet need was estimated by adjusting the spacing based on the approach proposed by Bongaarts. In this procedure, limiting needs were stated to be overestimated because the real unmet need for limiting would have been low if the spacing needs of women were satisfied in the course of time. As it is observed from Figure VI.1.3 and Figure VI.1.4, in both surveys, Bongaarts' methodology produced lower estimates for limiting needs and total unmet need when compared to the original definition. On the other hand, spacing component experienced an increase in this approach. In TDHS-1998, the level of unmet need for limiting was significantly reduced from 7 percent to 2 percent whereas, spacing need revealed a one point increase and thus, total unmet need declined from 11 percent to 8 percent. Regarding TDHS-2008 (Figure VI.1.4), although there was an obvious difference between the two methods, the discrepancy was not very much distinctive as it did in TDHS-1998. One of the reasons is that the level of each component was significantly reduced during the inter-survey period. In fact, the adjusted level of spacing (2.7 percent) did not largely differ from the original approach (2.1 percent). The proportion of women considered as having needs to terminate their fertility which was originally found to be 4 percent was almost halved (2.1 percent) according to this approach.

Figure VI.1.3. Unmet need based on Bongaarts' approach and original definition married 15-49, TDHS-1998

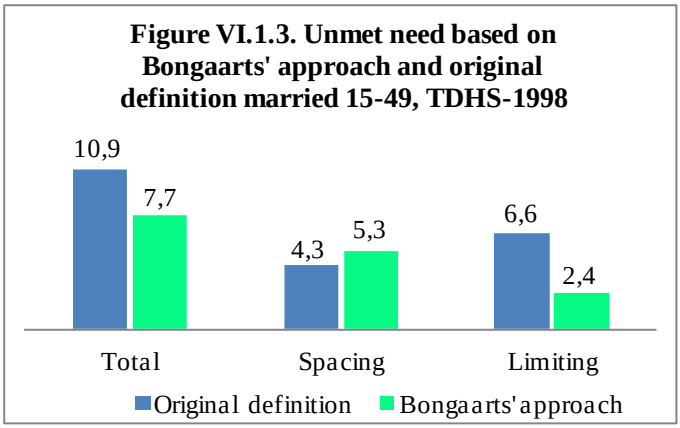
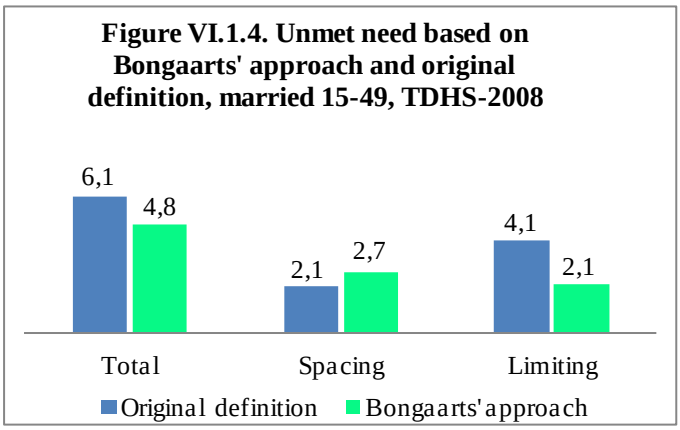


Figure VI.1.4. Unmet need based on Bongaarts' approach and original definition, married 15-49, TDHS-2008

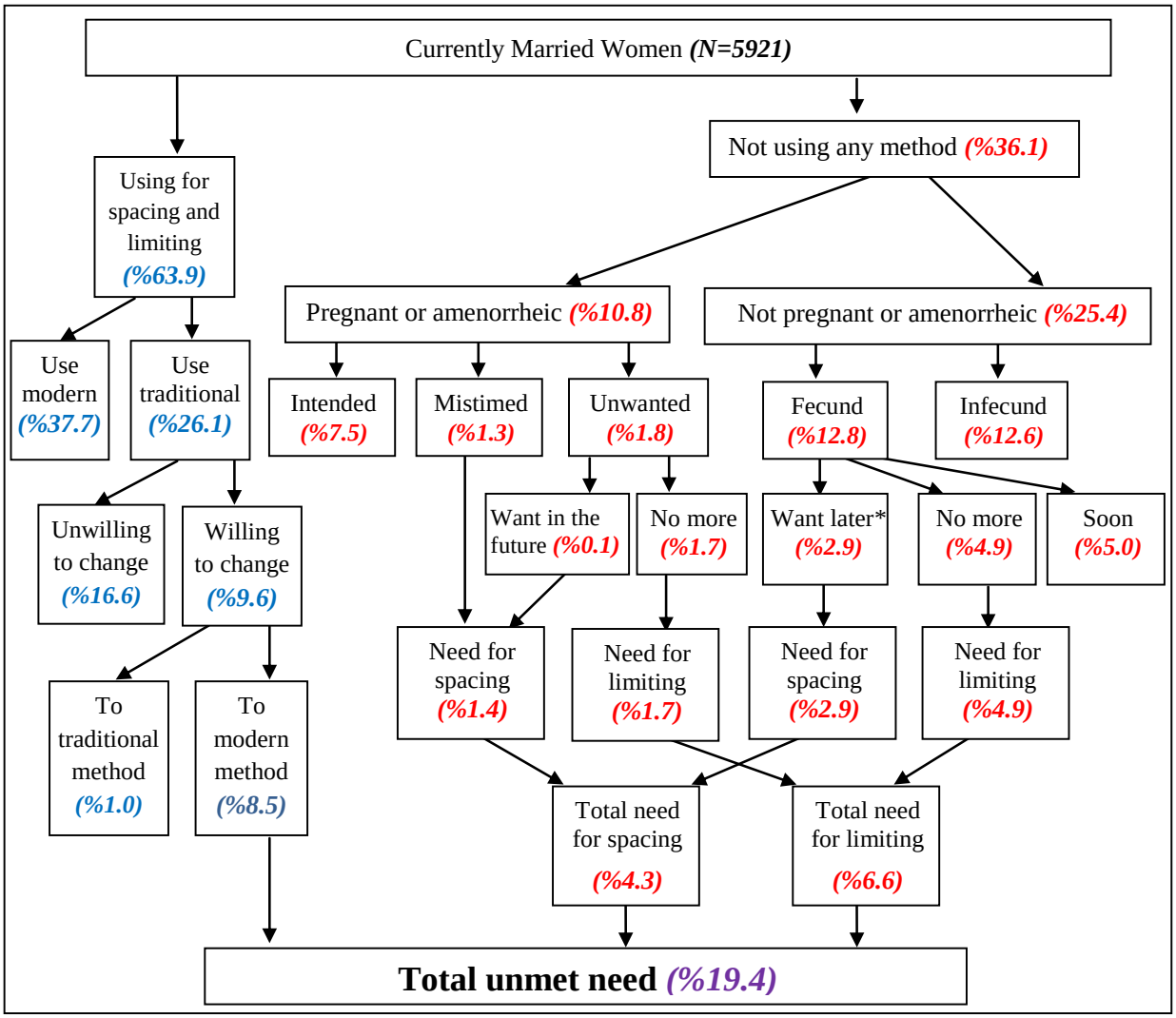


VI.1.4. EXTENDED DEFINITION OF UNMET NEED

The fourth procedure introduces the effect of the need for modern contraceptive methods on total unmet need. The major difference between the extended and orgininal defition is that not only the needs of nonusers but also the contraceptive users are taken into account. In 1998, women using either for spacing or limiting were amounted to 64 percent of which 26 percent relied on traditional methods (Figure VI.1.5). Among the traditional method users, drop-out of the method was not under consideration for the 17 percent. On the other hand, approximately 10 percent expressed their willingness to change the current method they used. Hence, 8.5 percent of these women was inclined to make a shift towards more efficient methods. This indicated the need for modern methods. Simply adding this percentage of women together with the ones found in the original definition gave the total unmet need for family planning, which was 19 percent in TDHS-1998.

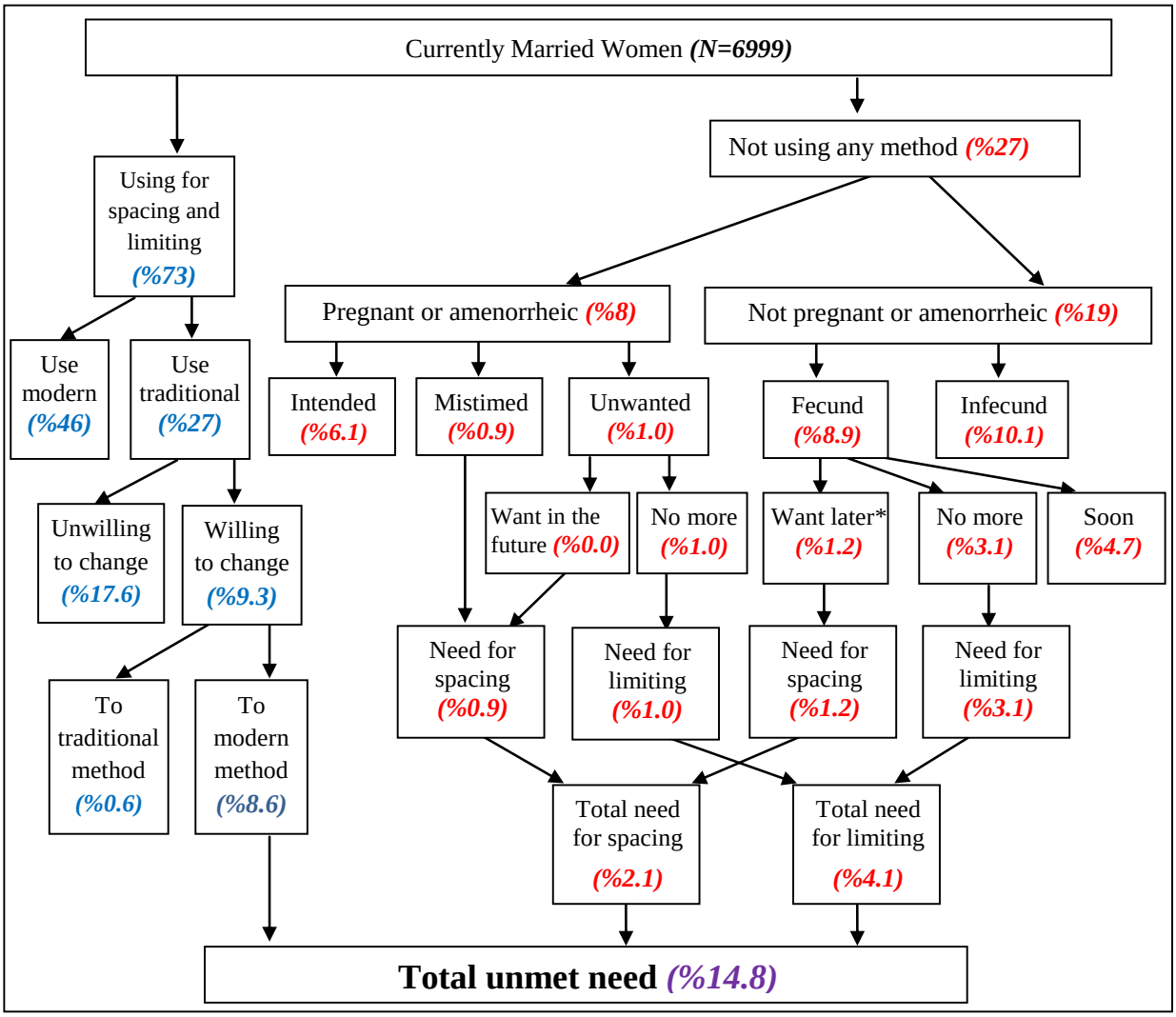
By using the same procedure in TDHS-2008, the total unmet need went up to 15 percent from 6 percent with the inclusion of need for modern methods (Figure VI.1.6). Although the estimate of unmet need in 2008 based on this approach was found to be lower than that of 1998, the level of the need for modern methods did not display any change during a 10-year period. In other words, the need for modern methods was still 8.6 percent in 2008. The reason is that the proportion of traditional method users stabilized around 27, and the tendency to switch from traditional to modern methods showed a similiar trend during inter survey period.

Figure VI.1.5. *Extented definition* of unmet need for family planning including the need for modern methods, currently married women 15-49, TDHS-1998



*fecund women who are unsure whether they want another child or who want another child but are unsure when to have birth are included unmet need for spacing

Figure VI.1.6. *Extented definition* of unmet need for family planning including the need for modern methods, currently married women 15-49, TDHS-2008



*fecund women who are unsure whether they want another child or who want another child but are unsure when to have birth are included unmet need for spacing

VI.1.1.4. REVISED DEFINITION OF UNMET NEED

In the final approach, the level of unmet need in Turkey was estimated by using a modified algorithm as described in Chapter IV. The major difference between the revised and original definition was observed when determining the wantedness an and future intentions of childbearing of pregnant or amenorrheic women, and fecund women. Figure VI.1.7 and Figure VI.1.8 introduce the percentages in each category of the revised estimate for TDHS-1998 and TDHS-2008.

According to this model, 2.2 percent and 1.9 percent of pregnant or amenorrheic women had an unmet need for limiting and spacing in 1998, respectively (Figure VI.1.7). The proportion of women regarded as fecund was higher in the revised definition (15 percent) than the original definition (12.8 percent). Among these women, 6.8 percent wanted to terminate their fertility and 3 percent wanted to postpone their childbearing behavior at least two years. Overall, the revised estimate for the total unmet need was found to be 14 percent in TDHS-1998.

For TDHS-2008, the estimates are lower than TDHS-1998 but higher than the original definition (Figure VI.1.8). Regarding the pregnant or amenorrheic women, 1.1 percent had spacing needs, 1.5 percent was prone to end their fertility. Among 11 percent of fecund women, 1.3 percent wanted to increase the length of birth interval and 4.5 percent preferred to stop childbearing. As the total unmet need is the sum of spacing and limiting needs, the revised estimate was referred to a 8.3 percent of need to be fulfilled.

Figure VI.1.7. *Revised definition* of unmet need for family planning, currently married women 15-49, TDHS-1998

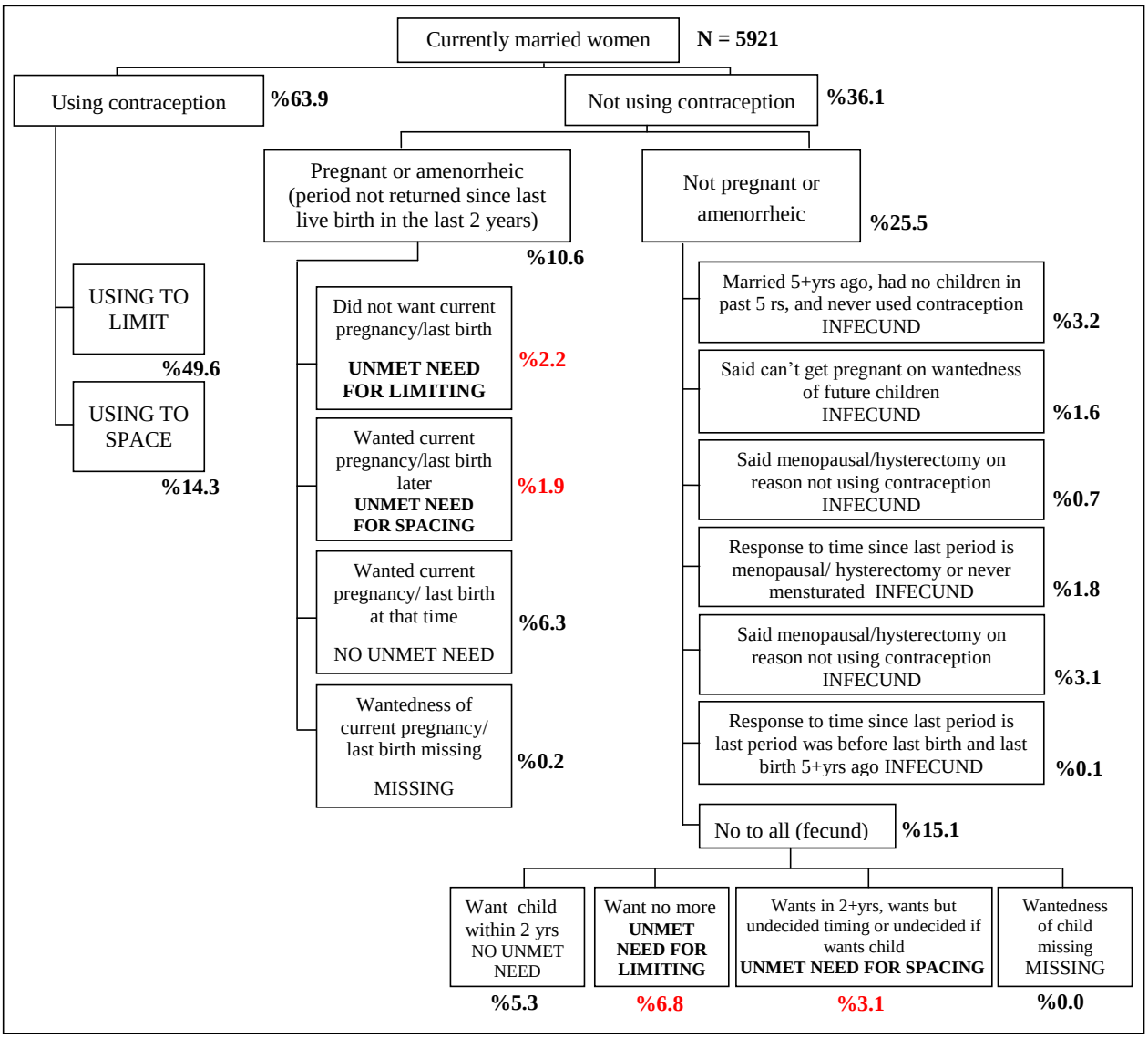
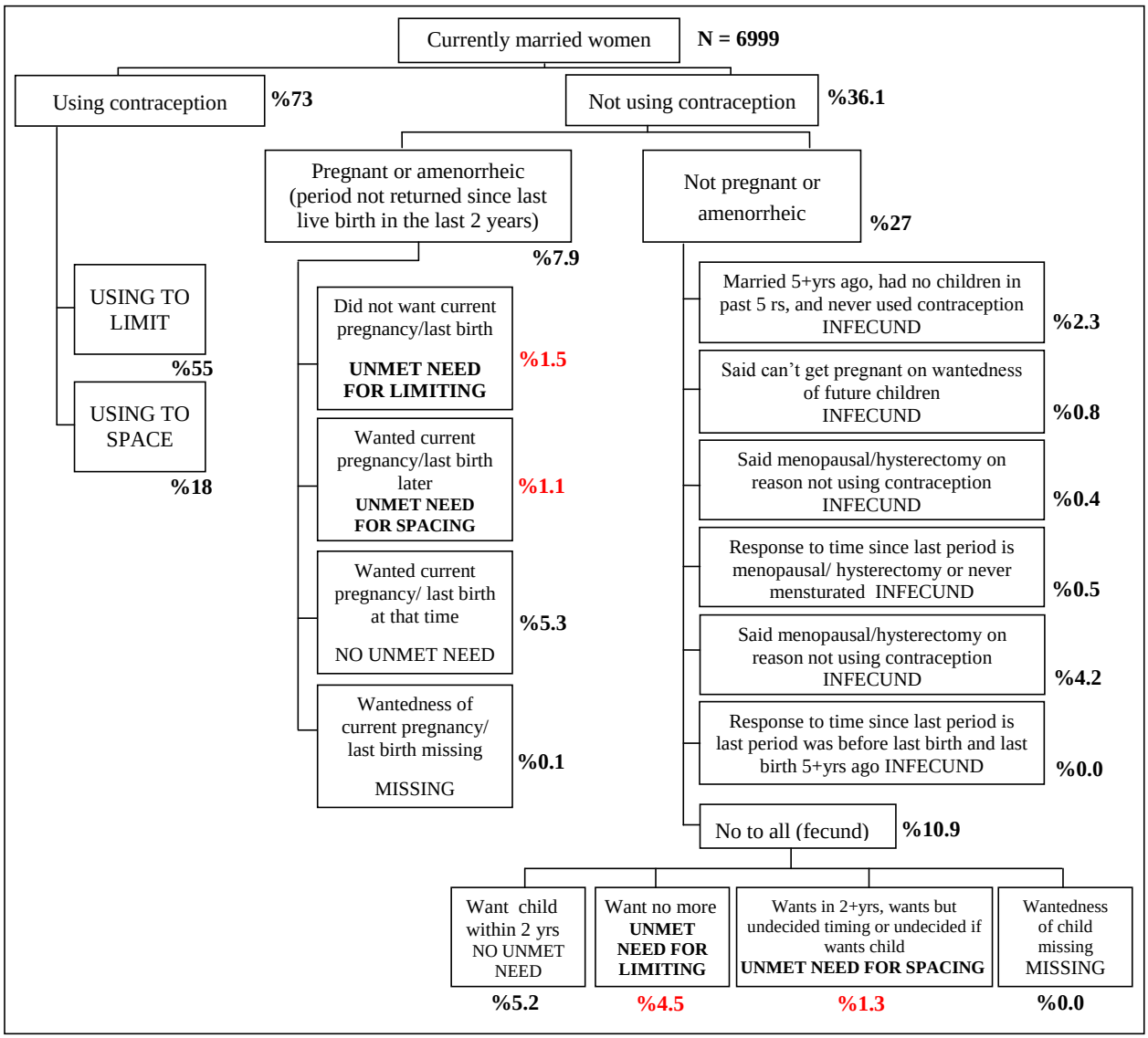


Figure VI.1.8. *Revised definition* of unmet need for family planning, currently married women 15-49, TDHS-2008



VI.2. ORIGINAL DEFINITION VERSUS REVISED DEFINITION

Although it is not possible to determine which algorithm produces the best estimate for the level of unmet need, modifications are done to improve the shortcomings of the previous approaches. Before analyzing the trends in unmet need between 1993 and 2008, the estimates of each component obtained from original and revised algorithms were first discussed.

It is obvious that the methodology of the revised definition resulted in higher levels of unmet need for spacing, limiting and for the total when compared to that of original definition (Figure VI.2.1 and Figure VI.2.2). In fact, total unmet need and its limiting component apparently varied depending on the algorithm used.

Figure VI.2.1. Original and revised definitions for unmet need for family planning, married women 15-49, TDHS-1998

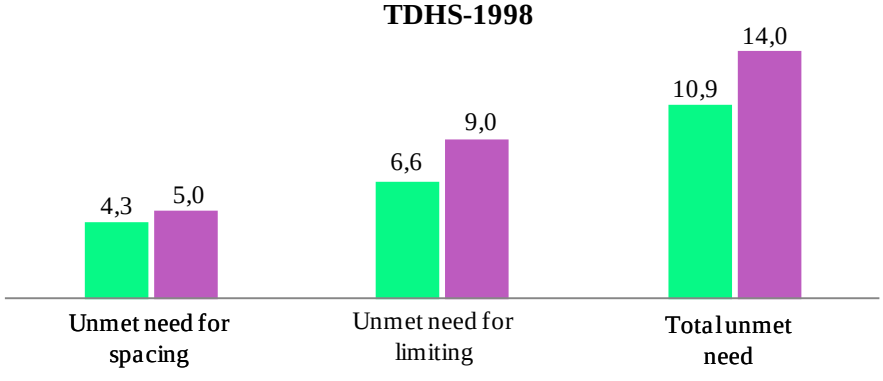


Figure VI.2.2. Original and revised definitions for unmet need for family planning, married women 15-49, TDHS-2008

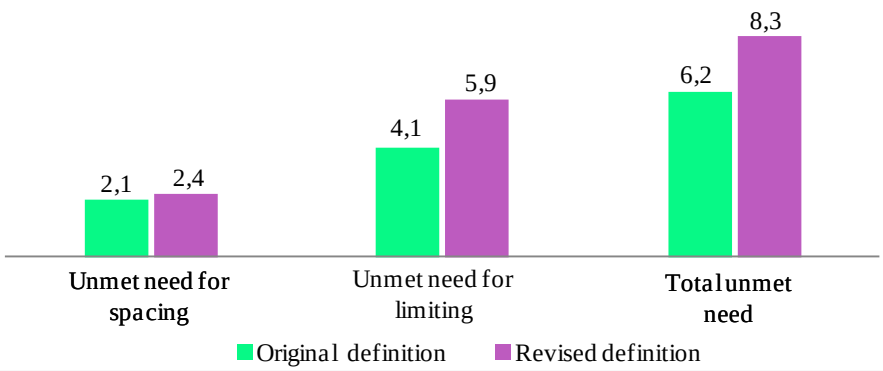


Figure VI.2.3, Figure VI.2.4, Figure VI.2.5 shows the change in unmet need within survey years. Regarding the spacing needs of married women, it reduced by 45 percent between 1993 and 2008 regardless of the calculation technique (Figure VI.2.3). A similar trend is also true for the limiting and total needs. Both of them went down to a relatively low level from a percentage of 8 and 11, respectively. On the other hand, the new approach produced larger estimates than the original one, and this discrepancy between the original and the revised was more pronounced for the total unmet need and the limiting. For spacing need, two approach generated closer approximations, and considering the TDHS-2008, two estimates were almost similar. Overall, it can be inferred that a significant progress was made over a 15-

Figure VI.2.3 Unmet need for spacing based on original and revised definitions, married women 15-49

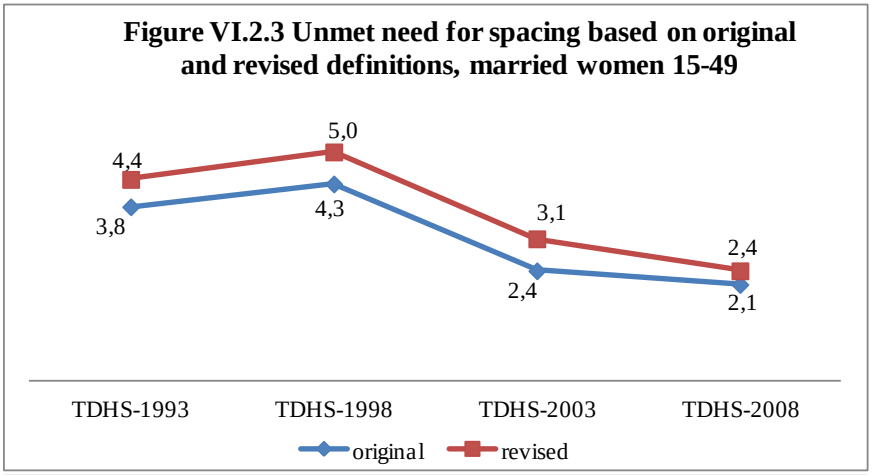


Figure VI.2.4. Unmet need for limiting based on original and revised definitions, married women 15-49

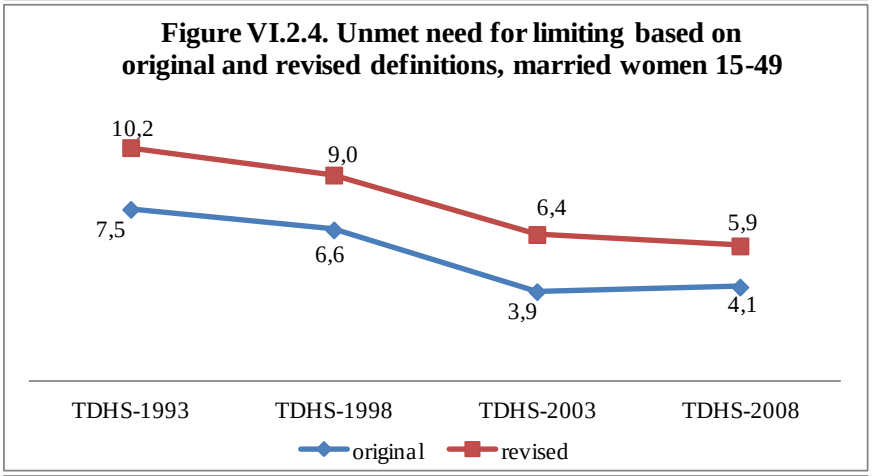
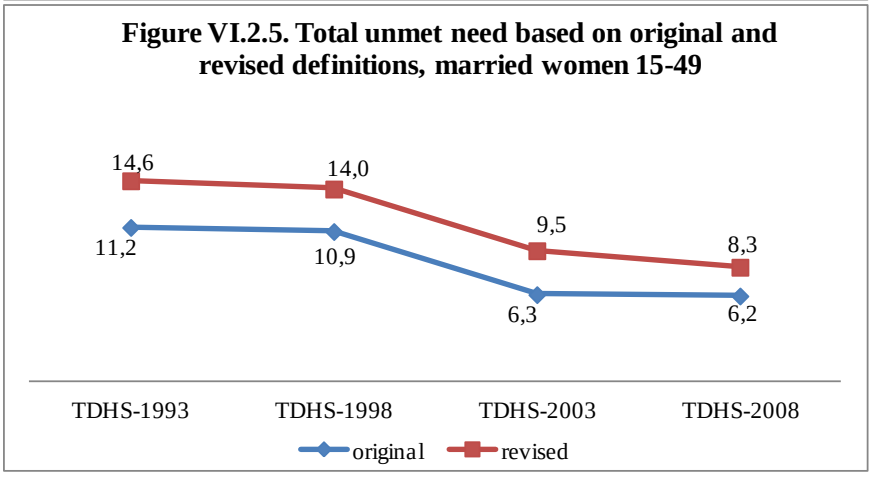


Figure VI.2.5. Total unmet need based on original and revised definitions, married women 15-49



year period regarding unmet need, and such progression is totally related to the noticeable improvement in contraceptive prevalence rates.

VI.3. DESCRIPTIVE RESULTS

As women's need for family planning varies according to different socio-economic and socio-demographic factors, in this section the percentage of currently married women with an unmet need for family planning is presented by selected characteristics according to the original definition.

VI.3.1. Results based on common variables in TDHS-1998 and TDHS-2008

The relationship between age and unmet need for spacing and for limiting is remarkably consistent between TDHS-1998 and 2008 (Figure VI.3.1 and Figure VI.3.2) although the levels in each age category is significantly lower in TDHS-2008 when compared to that of TDHS-1998.

Both surveys show that unmet need for spacing decreases with age while unmet need for limiting increases. Women who are in the early stages of childbearing are more in need of family planning for spacing purposes than older women who are more focused on limiting their fertility. The level of both the total unmet need and its two components is slightly in lower levels among the oldest women who have almost completed their fertility and who are reaching menopause, at which point they no longer need family planning at all. In fact, total unmet need is almost equal to the level of unmet need for limiting at this point.

Total unmet need that reaches its peak among women aged between 15-19 (23 percent and 15 percent in TDHS-1998 and TDHS-2008, respectively), declines among women aged 20-24 and varies little after the age of 24. Furthermore, the unmet need for spacing decreases with age. It drops from 20 percent among the youngest group of women to 2 percent among women aged 30 and over. Indeed, it markedly declines after the age of 25-29. On the other hand, there is a positive relationship between the unmet need for limiting and age. Unlike the spacing component, it increases from 3 to 8 percent between the ages of 15-30, and then stabilizes at 7 percent after the age of 40.

Figure VI.3.1. Unmet need for spacing and limiting by age, married women 15-49, TDHS-1998

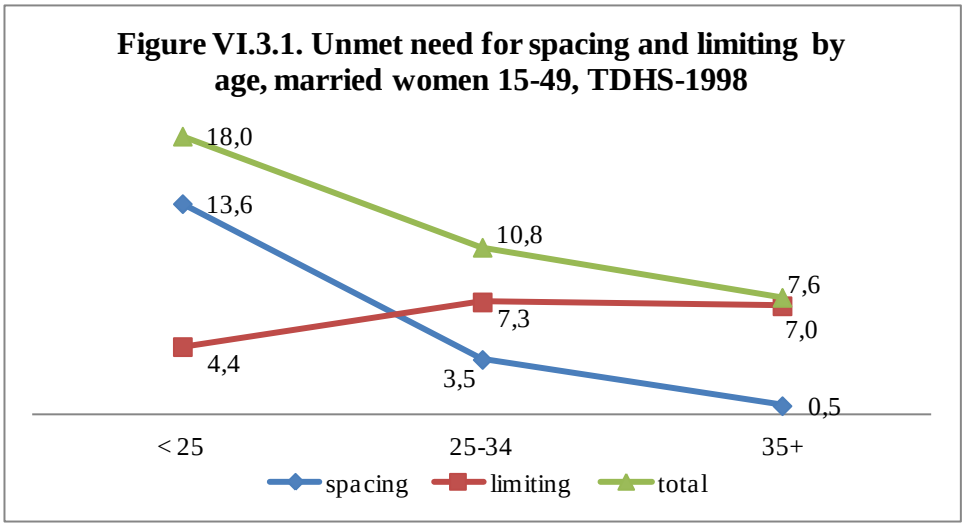
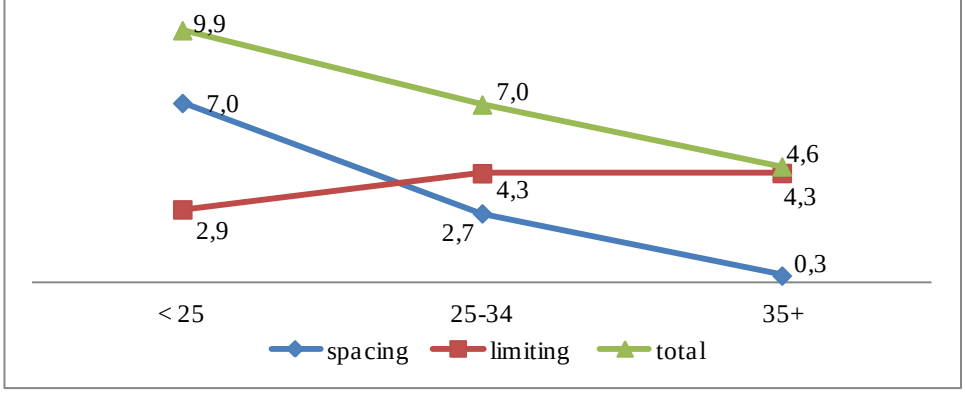


Figure VI.3.2. Unmet need for spacing and limiting by age, married women 15-49, TDHS-2008



The patterns for unmet need by parity are very similar to those by age because, as would be expected, age and parity are closely linked. As women have more children, their unmet need for spacing births tends to decrease, while unmet need for limiting increases (Figure VI.3.3 and Figure VI.3.4). Over a ten-year period, there is a considerable improvement in the levels of unmet need. In each survey, unmet need for limiting is lower than one percent for women at parity zero, and does gradually increase until they have one child. At this point, unmet need for spacing fully contributes to the level of total unmet need. When women have two or three children, limiting purposes increase sharply whereas unmet need for spacing is at very low levels.

Figure VI.3.3. Unmet need for spacing and limiting by parity, married women 15-49, TDHS-1998

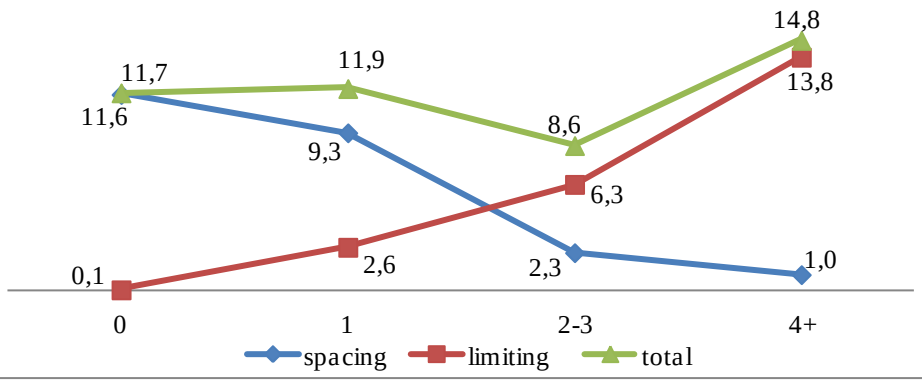
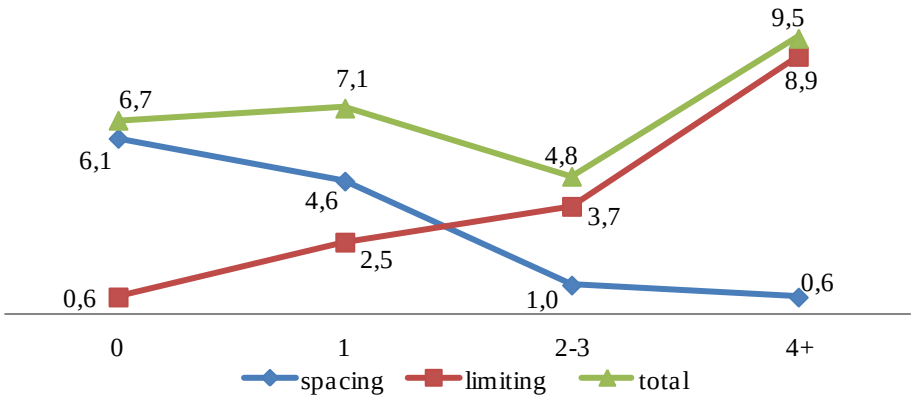


Figure VI.3.4. Unmet need for spacing and limiting by parity, married women 15-49, TDHS-2008



These findings are also in line with the mean ideal number of children[29], which indicates that when women achieve their fertility goals, family planning needs for limiting purposes become more important. This pattern can obviously be seen in Figure VI.3.5 and Figure VI.3.6. That is, family planning needs are closely related to whether or not women have achieved the number of children they desire. Although the levels are higher in TDHS-1998 than in TDHS-2008, the relationship between the tendency of women towards attaining their fertility goals and unmet need for family planning does not change very markedly over the ten years. When the desired fertility is yet to be attained unmet need for spacing is more likely higher. On the other hand, when the desired fertility has been exceeded, demand for limiting fertility gains importance. In fact, those who state that they want no additional children are those who have already achieved or exceeded their ideal family size. The ones whose actual family size is smaller than the desired are more likely to plan conceiving within two years or at least to wait for some time (Figure VI.3.7 and Figure VI.3.8).

As regards the number of deceased children and unmet need for family planning, described in Section V.2, women whose children have died are said to conceive within a shorter period after death and their unmet need for family planning is expected to be considerably less. The pattern observed in TDHS-1998 and TDHS-2008 is somewhat different from the ones reported by the researchers. Unmet need for limiting is substantially higher among women having at least one dead child in each survey Figure (VI.3.9 and Figure VI.3.10). In TDHS-1998, for instance, unmet need for limiting accounts for practically 55 percent of the total unmet need among women with no child loss whereas the proportion of limiting purposes in the total unmet need rises by 80 percent among women having at least one dead child. A similar pattern is also observed in TDHS-2008 albeit at different levels of unmet need. The primary reason for this is that the concentration of deceased children is

[29] Mean ideal number of children is 2.5 for currently married women in both survey, which does not change very much between 1998 and 2008.

much lower in the younger age groups compared to that of the deceased ones in the older age groups whose family planning needs are focused on limiting the fertility.

Figure VI.3.5. Unmet need for spacing and limiting by actual-ideal gap, married women 15-49, TDHS-1998

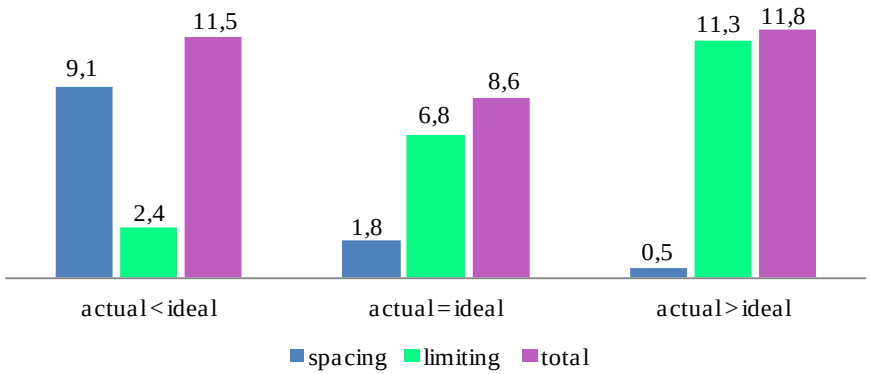


Figure VI.3.6. Unmet need for spacing and limiting by actual-ideal gap, married women 15-49, TDHS-2008

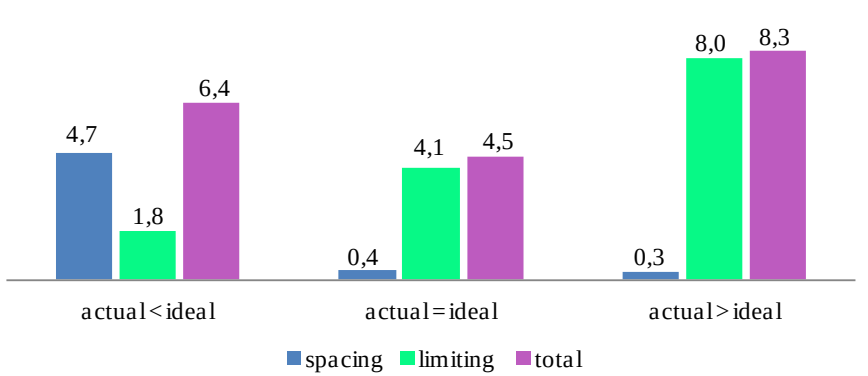


Figure VI.3.7. Desire for more children by actual-ideal gap, married women 15-49, TDHS-1998

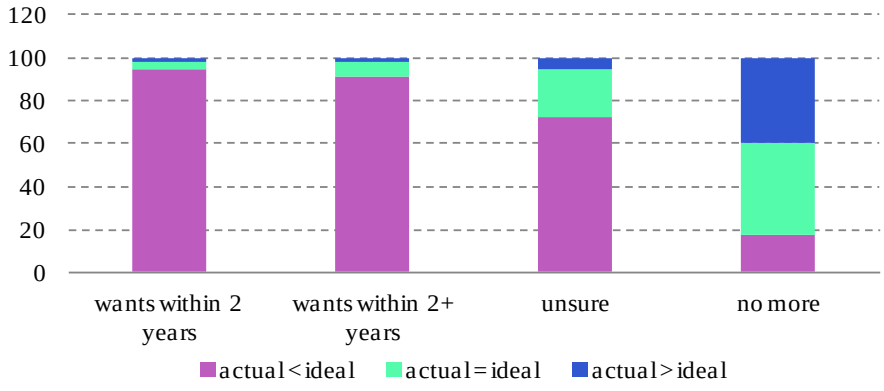


Figure VI.3.8. Desire for more children by actual-ideal gap, married women 15-49, TDHS-2008

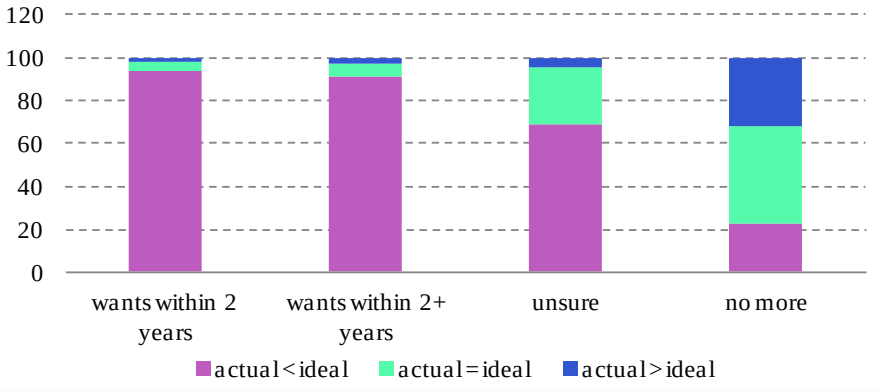


Figure VI.3.9. Unmet need for spacing and limiting by deceased children, married women 15-49, TDHS-1998

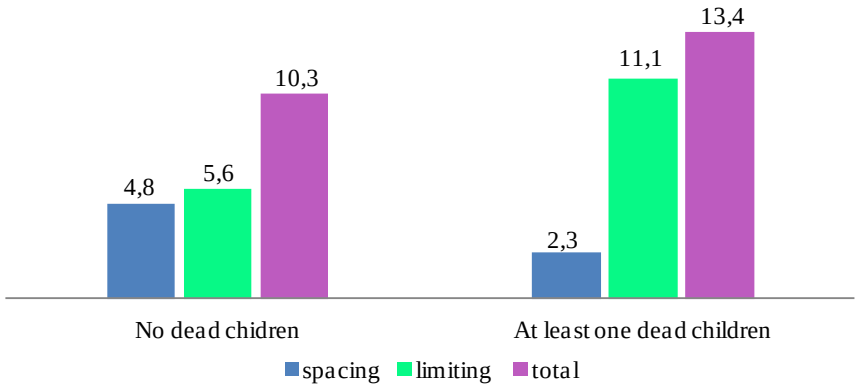


Figure VI.3.10. Unmet need for spacing and limiting by deceased children, married women 15-49, TDHS-2008

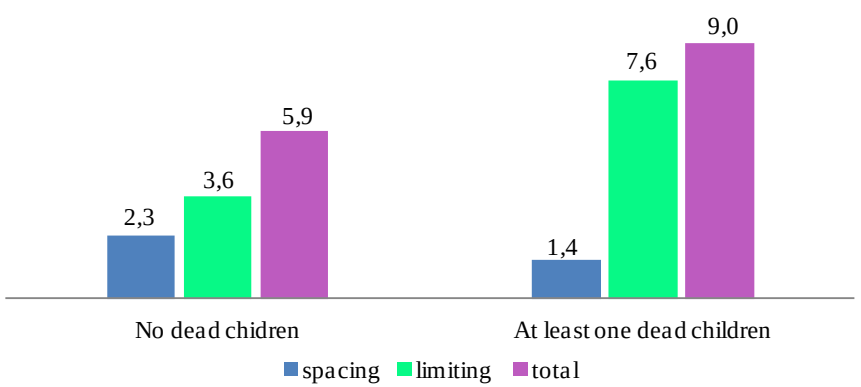


Figure VI.3.11. Unmet need for spacing and limiting by sex of living children, married women 15-49, TDHS-1998

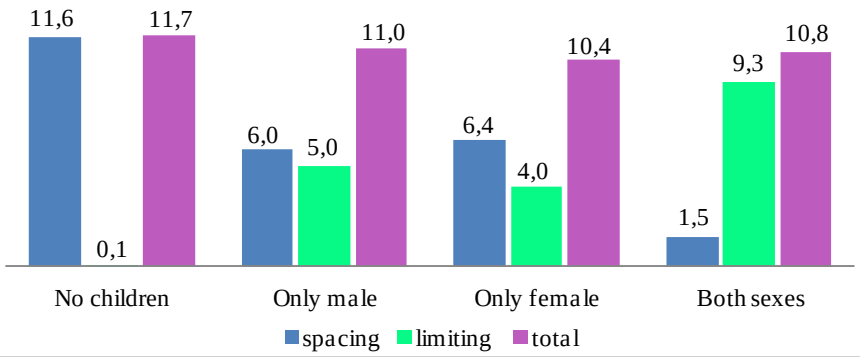
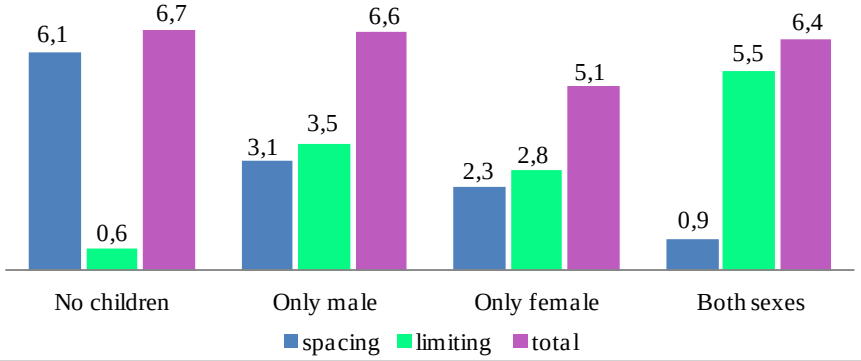


Figure VI.3.12. Unmet need for spacing and limiting by sex of living children, married women 15-49, TDHS-2008



When the sex composition of children among currently married women is taken into account (Figure VI.3.11 and Figure VI.3.12), in TDHS-1998, women having only female children are more likely to be in need of spacing their births (6.4 percent) when compared to their limiting purposes (4 percent). When there is only male children, unmet need for limiting (5 percent) is slightly higher than the women having only female children (4 percent). The highest unmet need for limiting belongs to the women with at least one child of each sex. Although, the total unmet need and its two components are significantly lower in TDHS-2008 when compared to TDHS-1998, a similar pattern also prevails in TDHS-2008. Therefore, based on these results, it is hard to say there is a strong association between male preference and unmet need.

Table VI.3.1, Figure VI.3.13 and Figure VI.3.14 demostrates the link between sex composition and unmet need more comprehensively. It is beyond the scope of this dissertation to exhibit the relation of sex preference and unmet need, but it might be helpful to understand the probable motives for not using contraceptive methods that might trigger the unmet need. In fact, the following table and figures present a kind of sex ratio of living children women with an unmet need have had. As expected, for women without any children, unmet need for limiting is very low. Unmet need for limiting begins to increase after women have a son, which is more apparent in TDHS-2008 (33 percent). As women have more sons with no daughters, unmet need for limiting become more and more conspicuous. For instance, in TDHS-1998, the unmet need completely refers to limiting purposes among women with no daughters but 3 or more sons. On the other hand, when women have no sons, unmet need for limiting gradually increases compared to women with no daughters. Spacing needs of women with only two daughters are obviously higher than those having only two sons. These figures might imply a association between sex preference towards male children and unmet need for family planning, but further analyses are needed to display such a relationship.

Table VI.3.1. Relation of sex preference to unmet need for limiting and spacing among currently married women 15-49 with an unmet need

	TDHS-1998 (n=645)		TDHS-2008 (n=436)	
	Unmet need for:		Unmet need for:	
	spacing	limiting	spacing	limiting
No children (1)	99	1	91	9
One son No daughters (2)	74	26	67	33
Two sons No daughters (3)	33	67	15	85
Three or more No daughters (4)	0	100	27	73
One daughter **No sons** (5)	83	17	59	41
Two daughters **No sons** (6)	43	57	39	61
Three or more **No sons** (7)	21	79	9	91
Both sexes (8)	14	86	14	86

Figure VI.3.13. Relation of sex to unmet need among currently married women with an unmet need, TDHS-1998

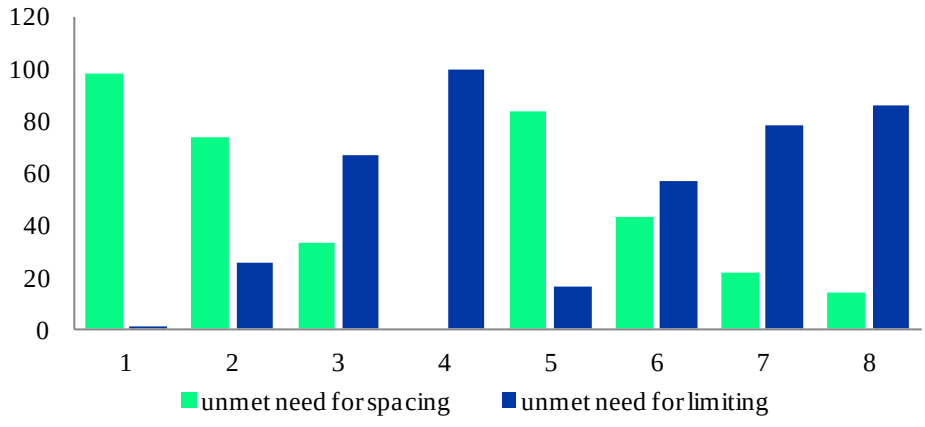
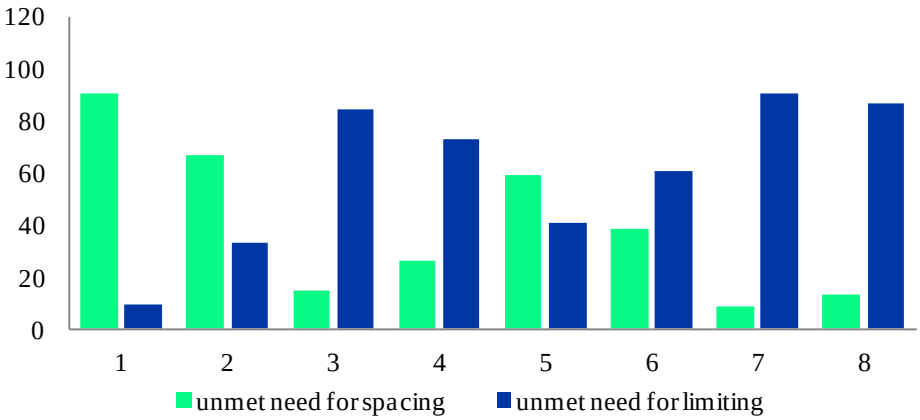


Figure VI.3.14. Relation of sex to unmet need among currently married women with an unmet need, TDHS-2008



The pattern for unmet need by the duration of marriage is similar to those by age and parity. Unmet need varies according to the time spent at marriage (Figure VI.3.15 and Figure VI.3.16). As marital duration increases, unmet need for spacing decreases while unmet need for limiting increases. On the other hand, there is a negative association between the duration of marriage and total unmet need, that is, total unmet need follows a declining trend in a long lasting marriage.

During the first years of marriage, women want to wait for childbearing or want to space birth intervals probably due to socio-economic reasons and their fertility goals. Therefore, their unmet need for spacing is higher compared to their limiting needs. Over the first five years of marriage, the percentage of women having unmet need for spacing is around 14 percent and 7 percent in TDHS-1998 and TDHS-2008, respectively, and there is hardly any women with spacing needs among the ones married 10 years or more. Unmet need for limiting among more than 10-year married women is also halved between the period of 1998 and 2008. In fact, these are the women who have already achieved their demographic targets.

Figure VI.3.15. Unmet need for spacing and limiting by duration of marriage, married women 15-49, TDHS-1998

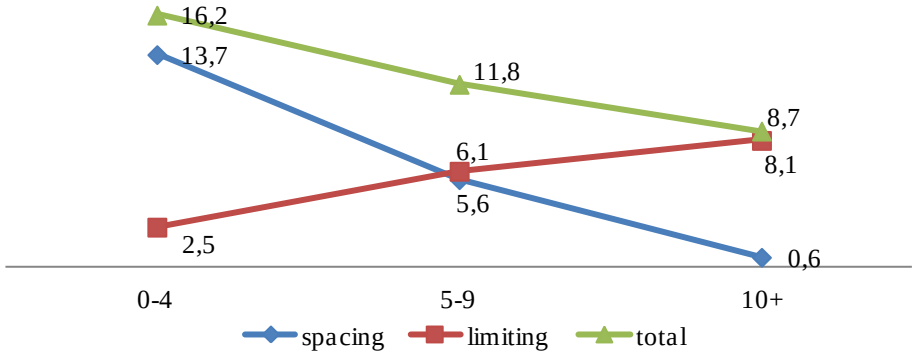
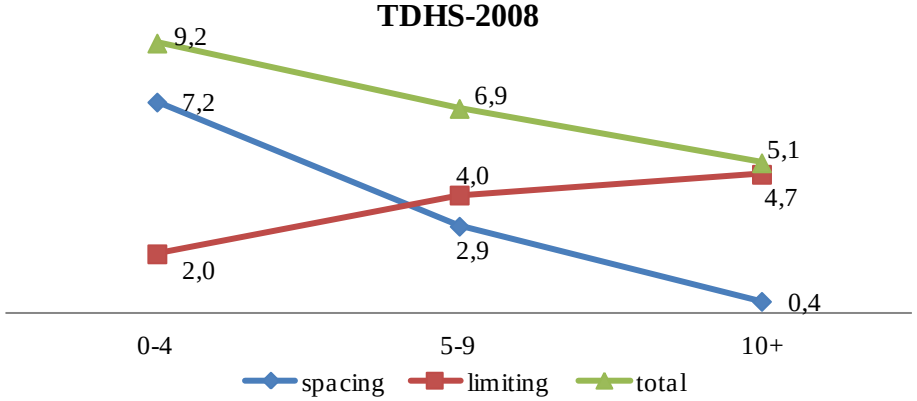


Figure VI.3.16. Unmet need for spacing and limiting by duration of marriage, married women 15-49, TDHS-2008



As seen in Figure VI.3.17 and Figure VI.3.18, there is an inverse relationship between womens's education and unmet need. As the education level of women increases, they are more likely to use contraceptive methods and, in turn, have considerably less unmet need. In fact, education plays a key role in increasing women's autonomy in making rational decisions about their own lives.

In both surveys, the levels of unmet need peak among women with no education. Moreover, there is a noticeable decline in unmet need among women with the first level primary education compared to the unmet need of uneducated women

in TDHS-1998 as well as in TDHS-2008. This points out that a slight increase in women's educational level leads to a marked improvement among non-users of family planning, which is largely reflected in limiting needs and total unmet need. Regarding the highly educated women, their total unmet need mainly depends on their spacing purposes (5.3 percent in TDHS-1998; 2.7 percent in TDHS-2008), and only two percent have unmet need for limiting.

Figure VI.3.17. Unmet need for spacing and limiting by education, married women 15-49, TDHS-1998

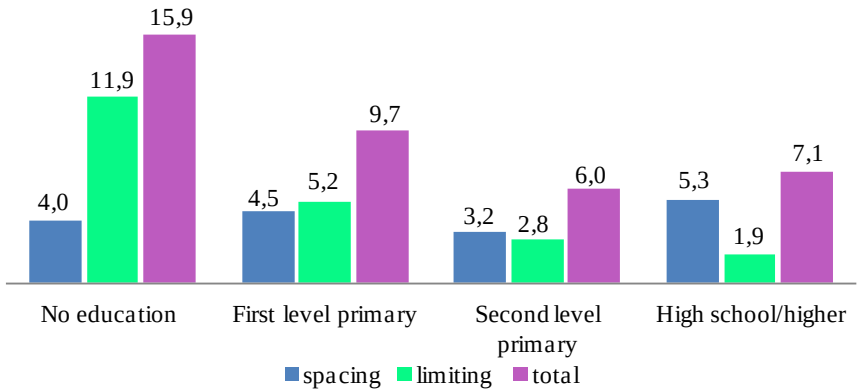


Figure VI.3.18. Unmet need for spacing and limiting by education, married women 15-49, TDHS-2008

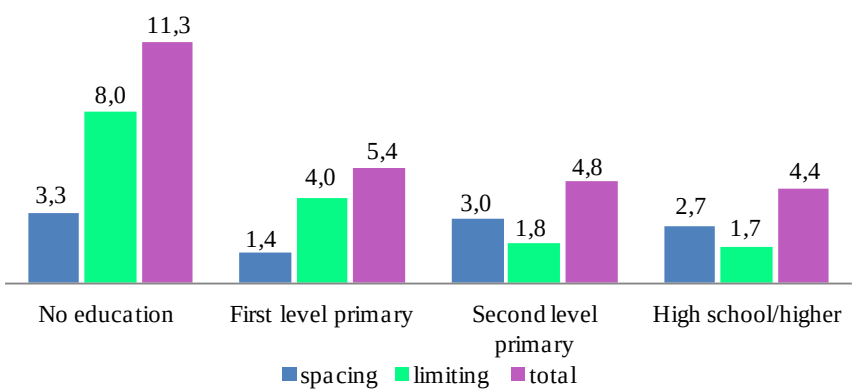


Figure VI.3.19. Unmet need for spacing and limiting by mother tongue, married women 15-49, TDHS-1998

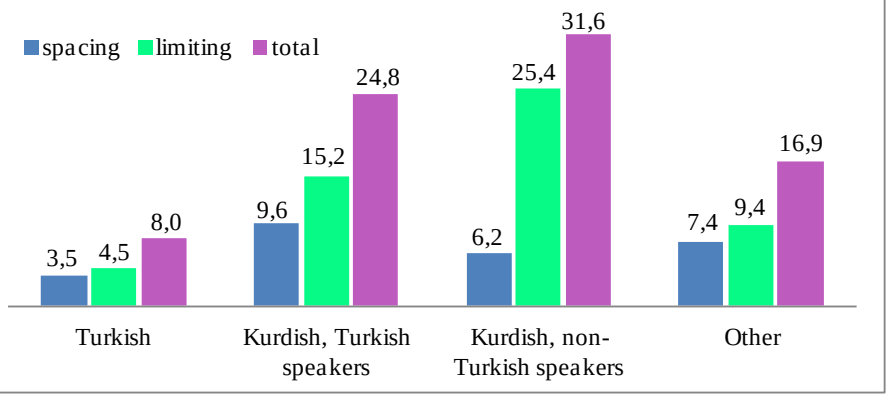
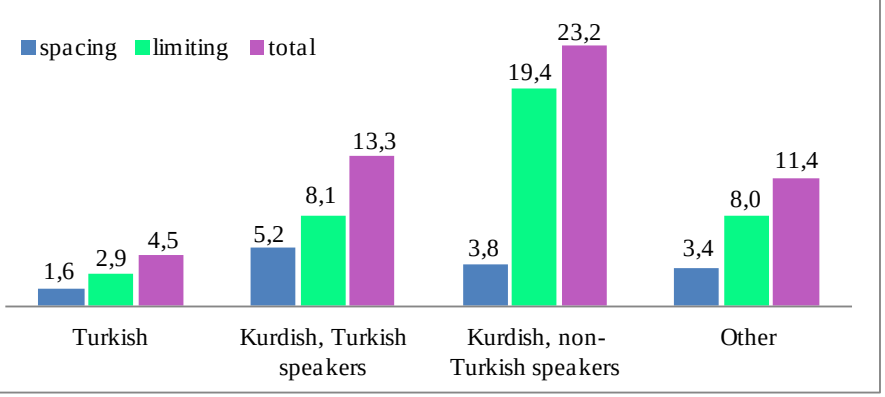


Figure VI.3.20. Unmet need for spacing and limiting by mother tongue, married women 15-49, TDHS-2008



Both Figure VI.3.19 and Figure VI.3.20 compare the levels of unmet need according to women's mother tongue. It is displayed that total unmet need as well as the demand for limiting and spacing purposes apparently differ among women. During a ten-year period, unmet need among women whose mother tongue is either Turkish or other than Turkish substantially declines because their met need rises, which points out an improvement in the proportion of women using family planning methods. On the other hand, the highest levels among Kurdish women is salient. As women whose mother tongue is Kurdish are less likely to use contraceptive methods compared to Turkish women, their needs for family planning become more conspicious. This situation becomes more obvious when they are subcategorized as Turkish and non-Turkish speakers. Kurdish women who do not speak Turkish seem more disadvantageous in accessing family planning services and their demand for limiting purposes is more pronounced than their spacing needs.

Unmet need also varies according to women's employment status (Figure VI.3.21 and Figure VI.3.22) and health insurance. The level of unmet need for family planning among women not currently working at the time of survey is the highest in each survey although their percentage has reduced from 12 to 7 over the ten years. On the other hand, due to the fact that working women are more likely to use contraceptive methods, their unmet need is lower than the others. There is also a salient difference among subcategories of working status. That is, the demand for family planning of working women without a social security and the ones not working is similar to a large extent, and it is considerably high when compared to those of having social security. In a similar way, women without health insurance (Table VI.3.23 and Table VI.3.24) have the highest level of unmet need for family planning in each survey (16 percent in TDHS-1998; 7 percent in TDHS-2008).

Figure VI.3.21. Unmet need for spacing and limiting by employment, married women 15-49, TDHS-1998

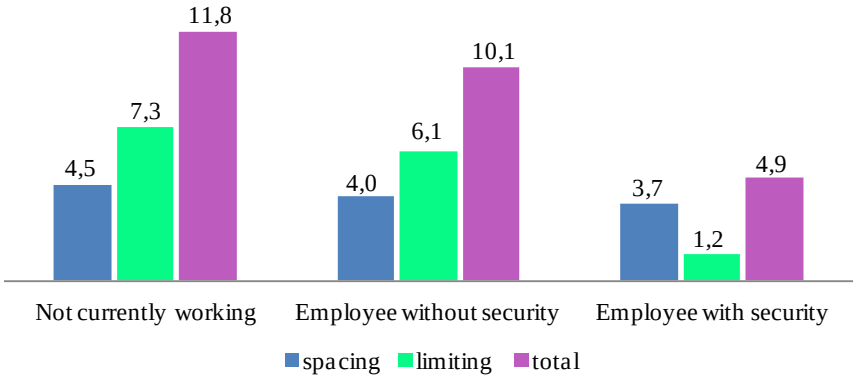


Figure VI.3.22. Unmet need for spacing and limiting by employment, married women 15-49, TDHS-2008

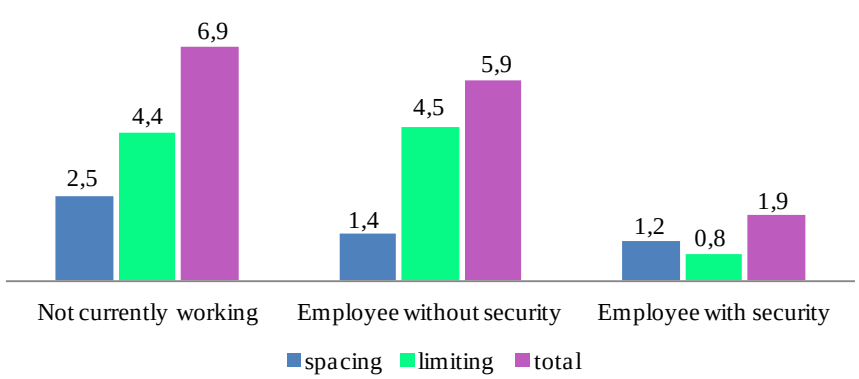


Figure VI.3.23. Unmet need for spacing and limiting by health insurance, married women 15-49, TDHS-1998

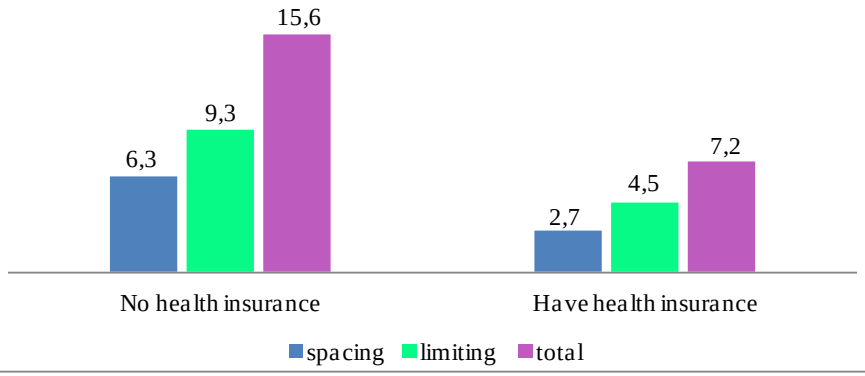
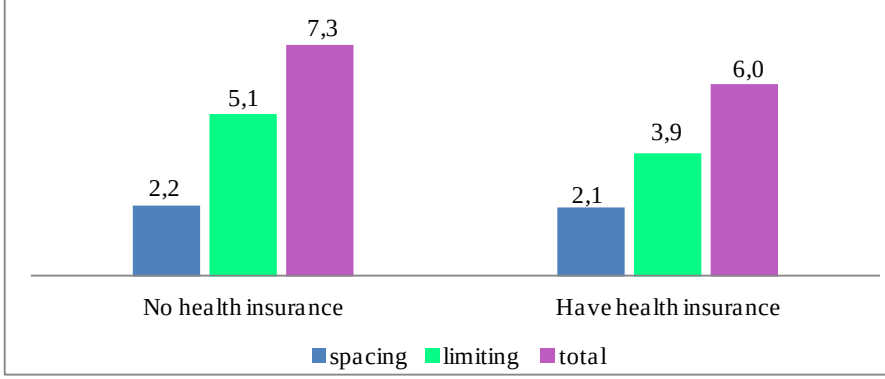


Figure VI.3.24. Unmet need for spacing and limiting by health insurance, married women 15-49, TDHS-2008



As unmet need is closely related tolarge numbers of unintended pregnancies and unplanned births, prevention of such pregnancies through induced abortion rather than contraception may be used as an indication of demand for family planning services. In Turkey, however, the relationship between unmet need and induced abortion is far from being consistent (Figure VI.3.25 and Figure VI.3.26). Women with no induced abortion have higher unmet needs for family planning (12 percent in TDHS-1998; 7 percent in TDHS-2008) than those having at least one induced abortion (8 percent in TDHS-1998; 4 percent in TDHS-2008). These results reveal that there is not an explicit tendency towards induced abortion that can be perceived among women who desire to postpone or terminate childbearing. This may be related to the fact that women do not report the exact number of induced abortion they have ever had.

Figure VI.3.25. Unmet need for spacing and limiting by abortion, married women 15-49, TDHS-1998

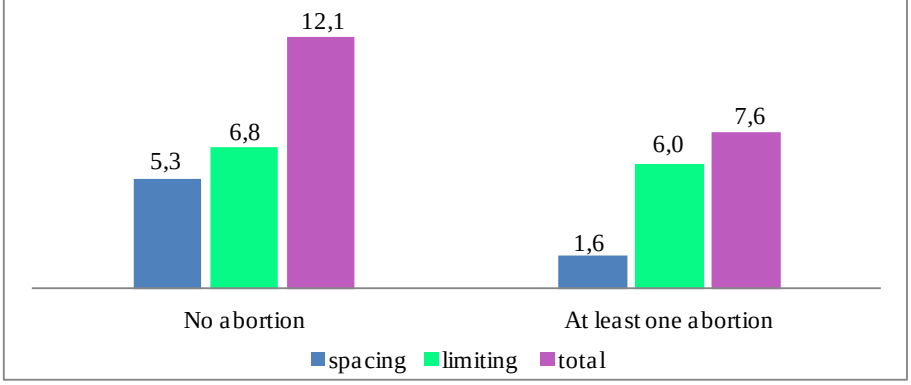
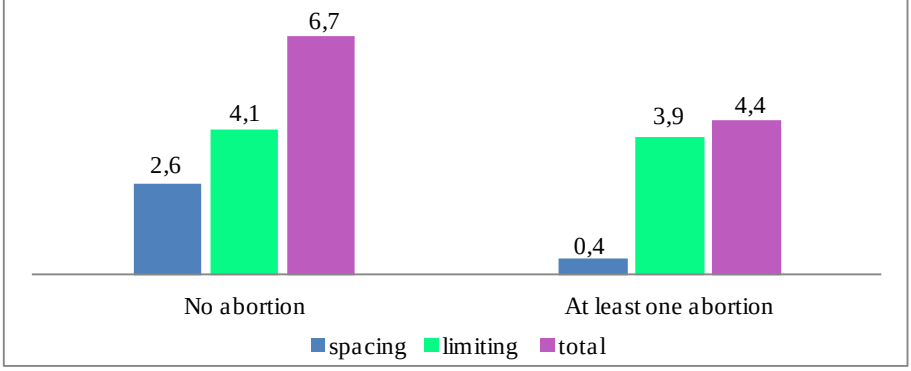


Figure VI.3.26. Unmet need for spacing and limiting by abortion, married women 15-49, TDHS-2008



In TDHSs, in addition to current contraceptive behavior, women are also asked about whether they had ever used contraception during their lives. This information can be a useful tool in understanding unmet need for family planning. In both surveys, the level of unmet need remarkably alters depending on whether women have ever experienced any contraceptive methods. In fact, among the women with an unmet need, 38 percent have not ever used a method in 1998. Their proportion decreases to 25 percent in TDHS-2008 (Figure VI.3.27). During this period, the percentage of women who said that they have ever tried of a method rises from 48 to 60. Accordingly, unmet need is at its highest among women who had never use any method in 1998 and 2008 (27 percent and 18 percent, respectively) and it is nearly four times higher than those who had used a modern method in the past (Figure VI.3.29 and Figure VI.3.30).

Figure VI.3.27. Ever use of contraceptive methods among women with an unmet need

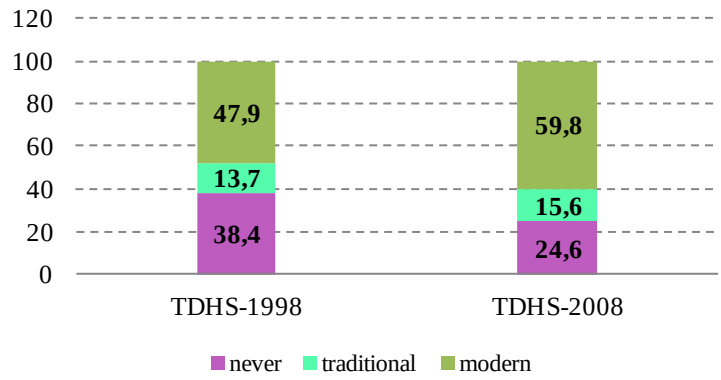
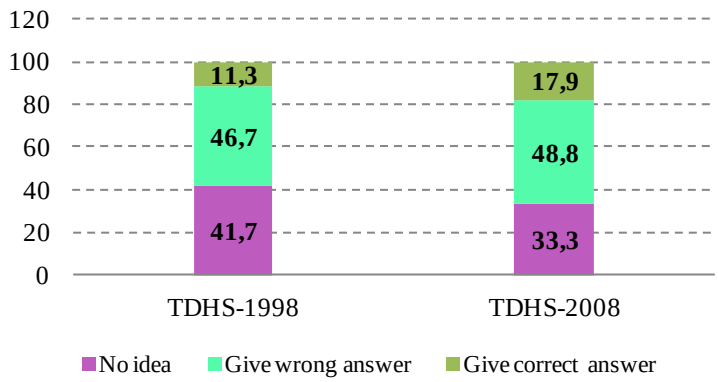


Figure VI.3.28. Knowledge of ovulatory cycle among women with an unmet need



In TDHSs, women were asked about their most fertile periods (Figure VI.3.28). According to this, the percentage of women were aware of the most fertile period has increased by 7 points from 1998 to 2008. The percentage of women who was unsure or had no idea

about ovulatory cycle has declined almost by the same proportion. On the other hand, there has not been a significant change among women who gave wrong answer to the related question.

Regarding the women having an unmet need, only a small proportion gave correct answers to that question. and the trend had not changed very much over the ten years. There is also an interesting association between the unmet need and the knowledge about ovulatory cycle (Figure VI.3.31 and Figure VI.3.32). When women do not have any idea about their most fertile period, they are more likely to have an unmet need for family planning, particularly for limiting. In each survey, the levels of unmet need indicates no sharp distinction between women having no knowledge at all and the ones giving wrong answers. Conversely, well-informed women about ovulatory cycle tend to have significantly low levels of unmet need.

Figure VI.3.29. Unmet need for spacing and limiting by ever use of a method, married women 15-49, TDHS-1998

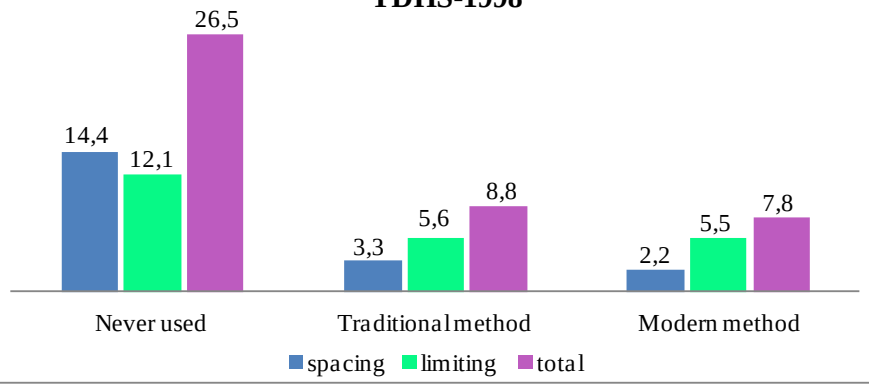


Figure VI.3.30. Unmet need for spacing and limiting by ever use of a method, married women 15-49, TDHS-2008

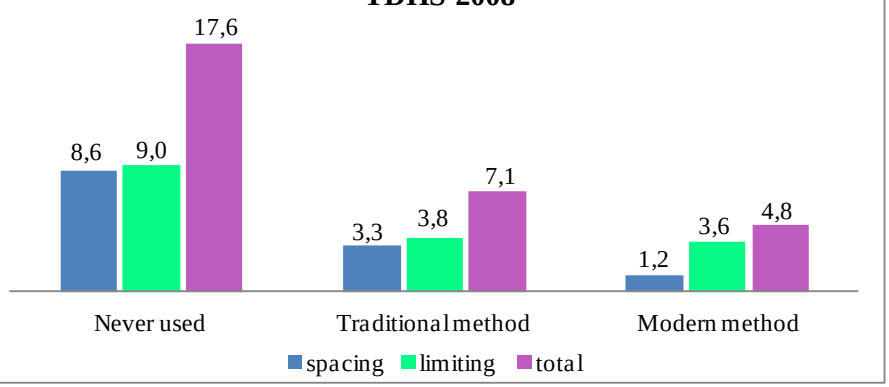


Figure VI.3.31. Unmet need for spacing and limiting by knowledge of ovulatory cycle, married women 15-49, TDHS-1998

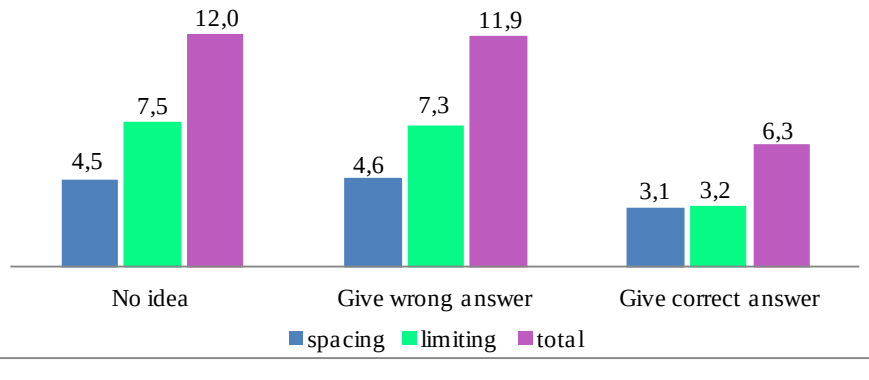
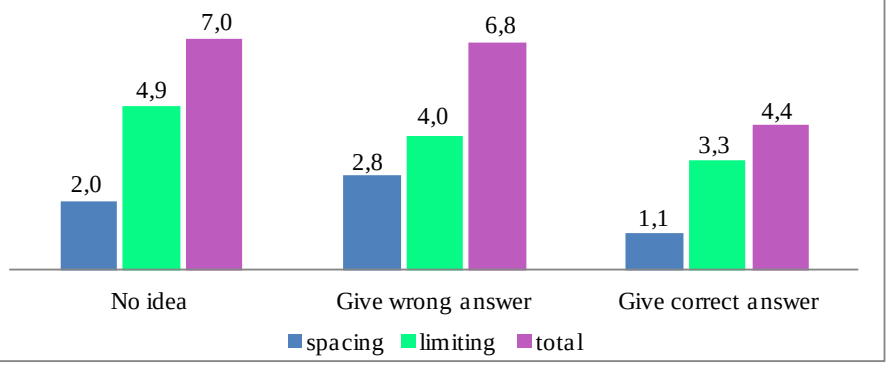


Figure VI.3.32. Unmet need for spacing and limiting by knowledge of ovulatory cycle, married women 15-49, TDHS-2008



As it is mentioned in Chaper V.2, the indices have been created for the traditionality level in the formation of marriage, and for gender roles particularly related to the decision-making processes. Regarding the traditionality, in TDHS-1998 (Figure VI.3.33), there is a pronounced difference between the women whose marriage formation reflects traditionality and the marriage of those reflecting more modernity. A resembling pattern also exists in TDHS-2008 (Figure VI.3.34). Although the levels of unmet need have shown improvement since 1998, women in high traditional marriages tend to have more unmet need for family planning,

When women highly agree on the male superiority, they become more disadvantegous in terms of unmet need (Figure VI.3.35 and Figure VI.3.36). In TDHS-1998, the levels of unmet need are very close to each other regarding the women who are moderately or highly in favor of male superiority. The unmet need obviously decreases and almost is halved for women who dissent from the views “men are wiser”, “important decisions must be given by males” and “a woman should not argue with her husband even if she disagrees with him” in TDHS-1998. In a similar way, unmet need for limiting (6 percent) and the total unmet need (8 percent) is higher among women who approve of male authority in decision-making in TDHS-2008 (Figure VI.3.36). For all other women, variation in the components of unmet need (space, limit, total) is small but perceptible.

Figure VI.3.33. Unmet need for spacing and limiting by traditionality in the formation of marriage, married women 15-49, TDHS-1998

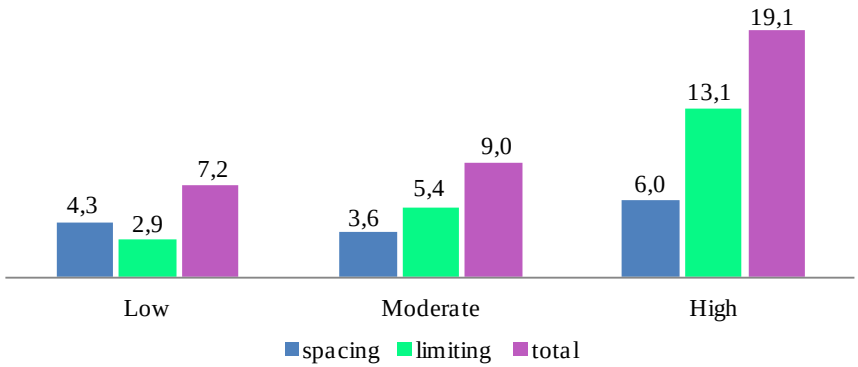


Figure VI.3.34. Unmet need for spacing and limiting by traditionality in the formation of marriage, married women 15-49, TDHS-2008

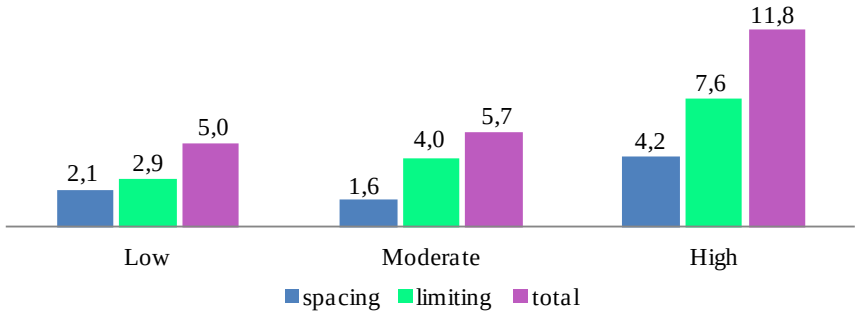


Figure VI.3.35. Unmet need for spacing and limiting by attitudes toward some gender roles, married women 15-49, TDHS-1998

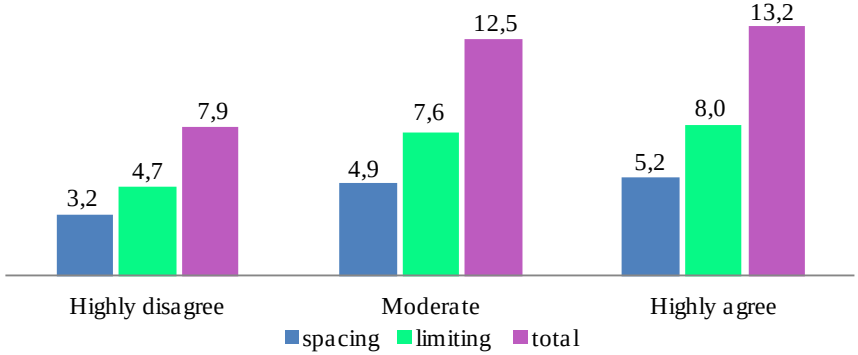


Figure VI.3.36. Unmet need for spacing and limiting by attitudes toward some gender roles, married women 15-49, TDHS-2008

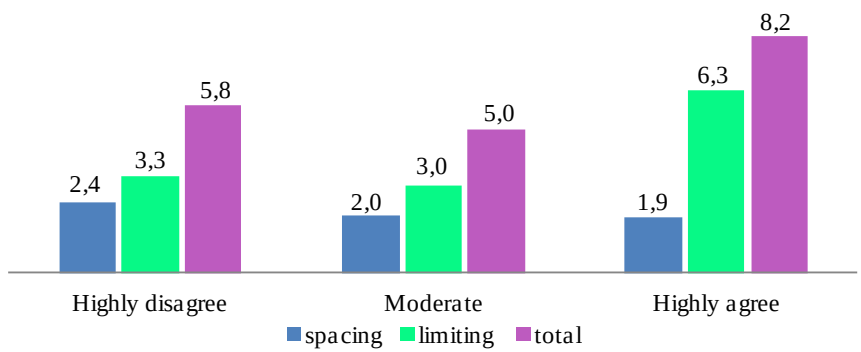


Figure VI.3.37 and Figure VI.3.38 present the unmet need for spacing and limiting according to husbands' education. It is evident that women's unmet need increases with the decline in the education of their husbands. In TDHS-1998, it has been found that 18 percent of women with uneducated husbands, 15 percent of which referring to limiting and 3 percent to spacing, have an unmet need for family planning. One-third of reduction has occured in the proportion of women with an unmet need (6 percent) as their husbands are more educated. From 1998 to 2008, particularly the limiting component and therefore, the total unmet need declines among women who have less educated husbands.

Figure VI.3.37. Unmet need for spacing and limiting by education of husband, married women 15-49, TDHS-1998

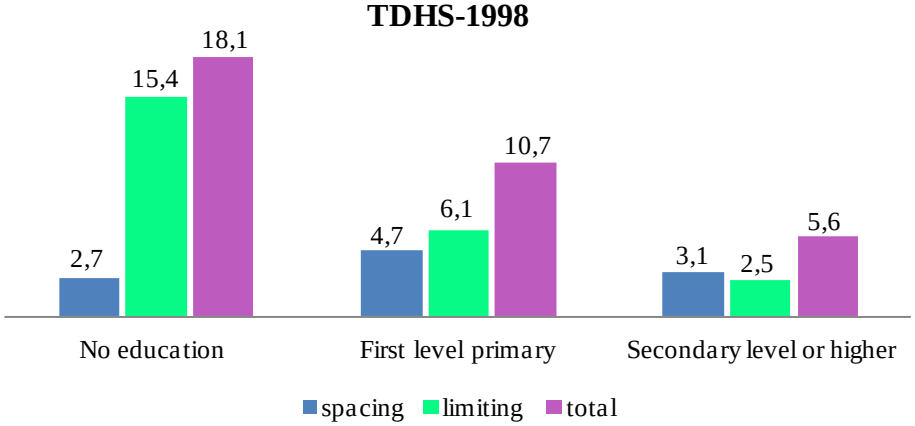


Figure VI.3.38. Unmet need for spacing and limiting by education of husband, married women 15-49, TDHS-2008

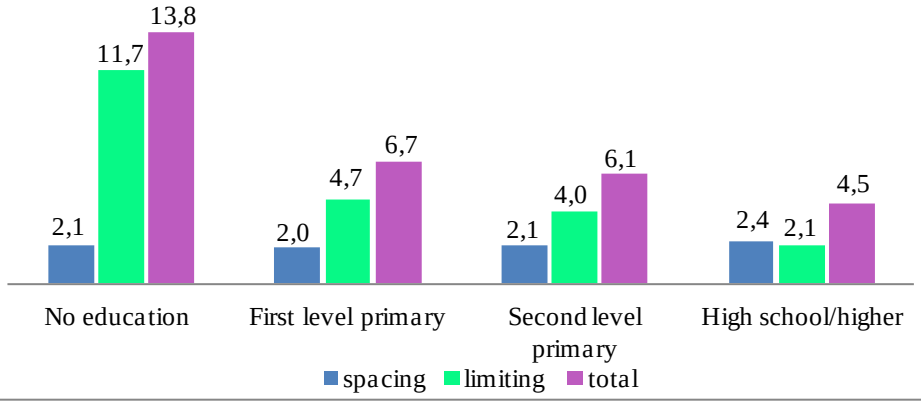


Figure VI.3.39. Unmet need for spacing and limiting by place of residence, married women 15-49, TDHS-1998

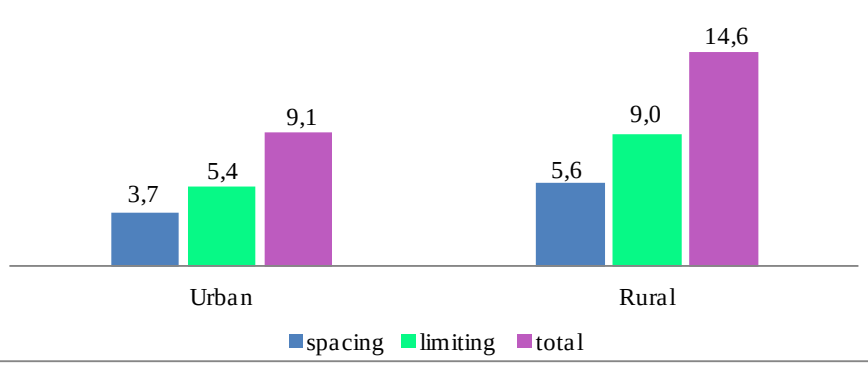


Figure VI.3.40. Unmet need for spacing and limiting by place of residence, married women 15-49, TDHS-2008

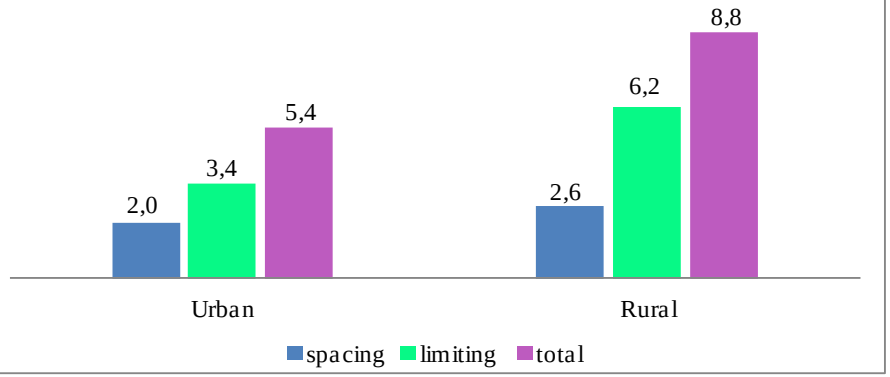


Figure VI.3.41. Unmet need for spacing and limiting region, married women 15-49, TDHS-1998

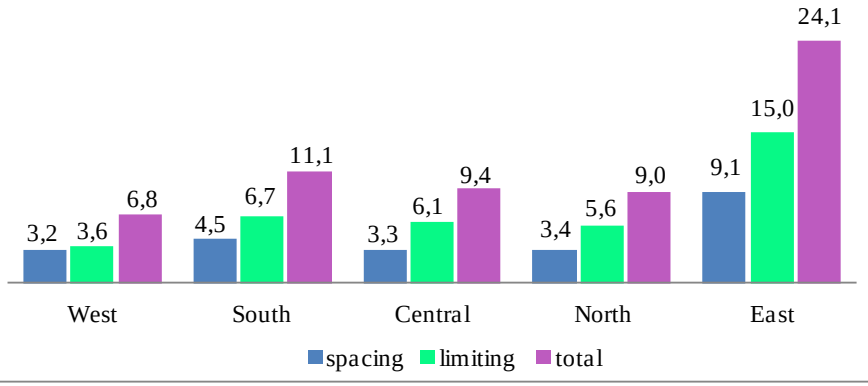


Figure VI.3.42. Unmet need for spacing and limiting region, married women 15-49, TDHS-2008

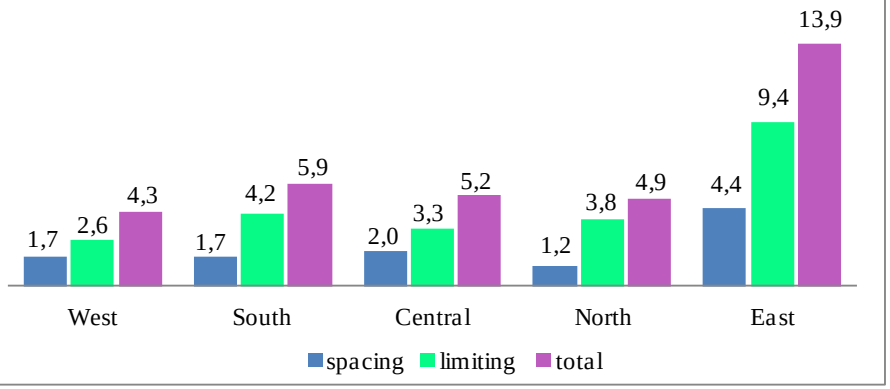


Figure VI.3.39 and Figure VI.3.40 diplays a pronounced difference in unmet need by place of residence. In TDHS-1998 and TDHS-2008, both total unmet need and its components are higher in rural areas than in urban areas, due to relatively lower met need (Figure VI.3.43). In fact, the level of unmet need among rural women is above the national average (10.9 in 1998; 6.2 in 2008) in each survey. Besides that, although the unmet need in urban areas are relatively low, the levels prevails just below the national average.

Figure VI.3.43. Met need for family planning among currently married women by place of residence

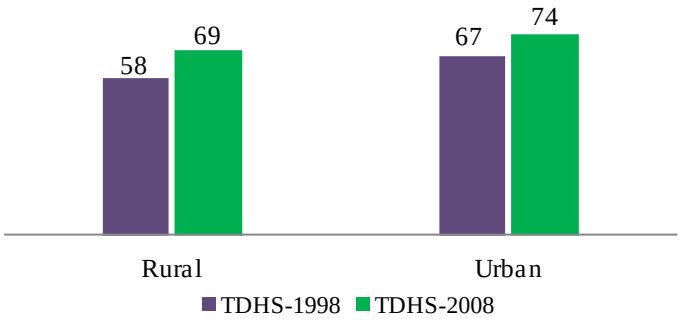
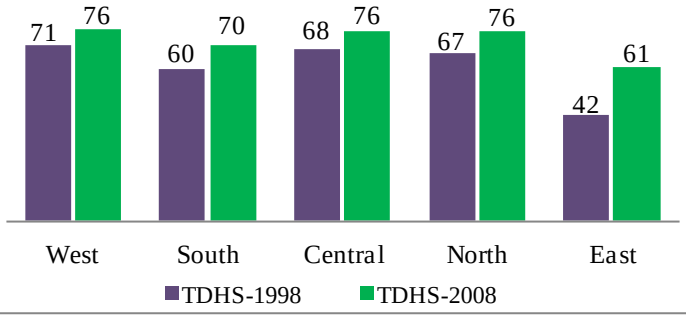


Figure VI.3.44. Met need for family planning among currently married women by region



Concerning the regional differences (Figure VI.3.41 and Figure VI.3.42), the order of the regions from the highest to the lowest unmet need in TDHS-1998 is East, South. Central, North and the West. This pattern remains unchanged in TDHS-2008, though in reduced levels. Moreover, contraceptive prevalence rate and, in turn, met need shows a regional progress from 1998 to 2008 (Figure VI.3.44). The major improvement is obvious especially in the East region. As in the other socio-demographic indicators, the gap between the East and the West region is again very huge in each survey. Besides that, limiting component of unmet need is much more pronounced in the East, not only due to high levels of fertility but also due to

relatively low levels of contraceptive prevalence, that is, a pattern which is in stark contrast with the West region.

Figure VI.3.45. Unmet need for spacing and limiting by household wealth, married women 15-49, TDHS-1998

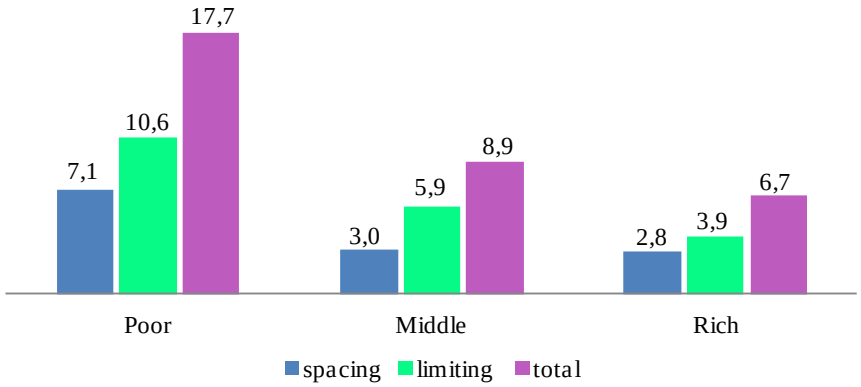
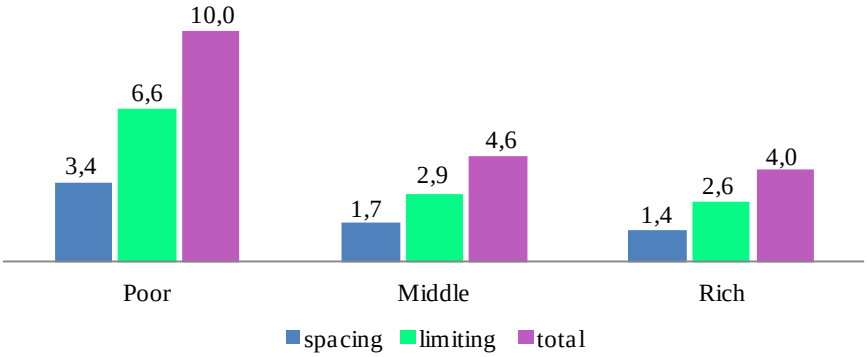


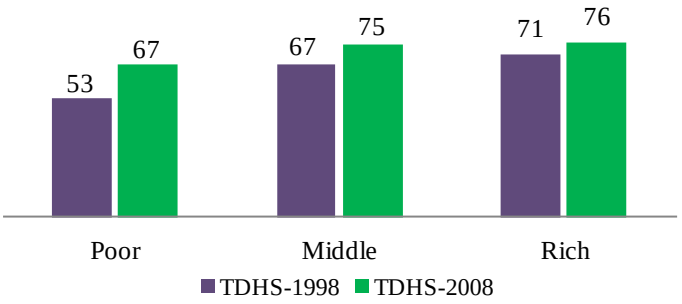
Figure VI.3.46. Unmet need for spacing and limiting by household wealth, married women 15-49, TDHS-2008



According to the household wealth level, unmet need is lowest among women in the wealthiest quintile (Figure VI.3.45 and Figure VI.3.46). It is seen from the figures that unmet need decreases as wealth increases. In TDHS-1998, 18 percent of women in the lowest wealth level is regarded as having unmet need for family planning (11 percent from limiting, 7 percent from spacing). Both the total unmet need and its two components are reduced by more than half for women living in the wealthiest households (8 perent, 4 percent and 3 percent, respectively). In TDHS-2008, there has been a notable development to the levels of unmet need especially in poor and middle wealth quintiles. This is probably because contraceptive prevalence

rate increases over the ten years. In fact, improving wealth level results in achievement of high prevalence of contraceptive use (Figure VI.3.47) and, in turn, reduction of unmet need for family planning. On the other hand, it should be noted that there is a negative association between the wealth status and reporting of unwanted pregnancies. For instance, in TDHS-1998, only 15 percent of the women in the wealthiest quintile reported their most recent pregnancy as unwanted, whereas about 27 percent of those in the poorest quintile reported their pregnancy as unwanted. In TDHS, the same levels have been maintained as well (11 percent and 26 percent respectively). One of the probable reasons might be the unwillingness of wealthiest women to report their unwanted pregnancies. The other one, which is more likely to reflect the reality, is that timing of their births are well-planned due to adequate use of contraceptive methods.

Figure VI.3.47. Met need for family planning among currently married women by wealth quintile



VI.3.2. RESULTS BASED ON UNCOMMON VARIABLES IN TDHS-1998 AND TDHS-2008

VI.3.2.1. TDHS-1998

In TDHS-1998 women were asked about whether they were exposed to any messages about family planning in the mass media including the radio, television and print media. As seen from Figure VI.3.48, media exposure exerts a considerable influence on unmet need. Women who are exposed to any kind of media messages have lower unmet need for family planning (9 percent) compared with women who have had no media exposure at all (14 percent). Besides that, discussions with friends/families do not seem to largely affect the levels of unmet need (Figure VI.3.49).

This survey consisted of questions asking respondents whether they approved of family planning and whether their (last) spouse approved or disapproved of couples using a method to avoid pregnancy, or if they did not have any idea about these. Besides, they were further asked about their own opinion and the opinion of their last (current) husband about the appropriateness of family planning based on religion. Women who approve of family planning are less likely to have unmet need (Figure VI.3.50). On the other hand, women who disapprove of family planning or who have no idea about it more specifically have unmet need (24 percent and 17 percent, respectively). Those who state their objection to the use of family planning due to religious concerns (Figure VI.3.51) also have higher levels of unmet need (16 percent).

Regarding the husbands' approval and religious considerations about family planning (Figure VI.3.52 and Figure VI.3.53, respectively), the percentage of women having unmet is striking when their husbands are against family planning on religious grounds (17 percent). This proportion increases to 21 percent when

husbands do not support the idea of family planning. In addition, husbands' future desires for children seem to have some impact on women's unmet need, but a prominent differentiation is not observed unlike many other variables (Figure (VI.3.54).

Figure VI.3.48. Unmet need for spacing and limiting by exposure to mass media about family planning, married women 15-49, TDHS-1998

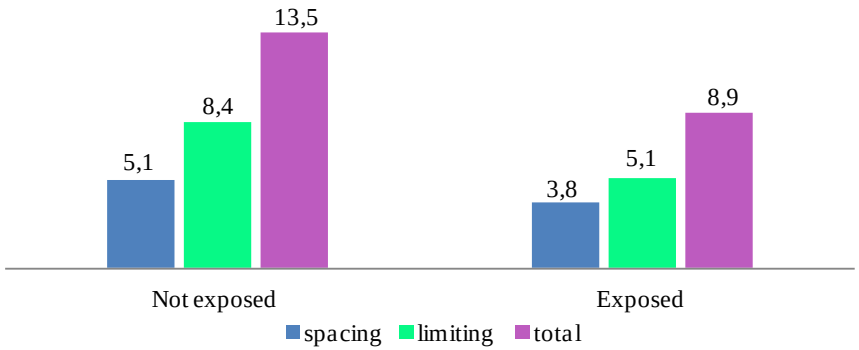


Figure VI.3.49. Unmet need for spacing and limiting by discussion with friends about family planning, married women 15-49, TDHS-1998

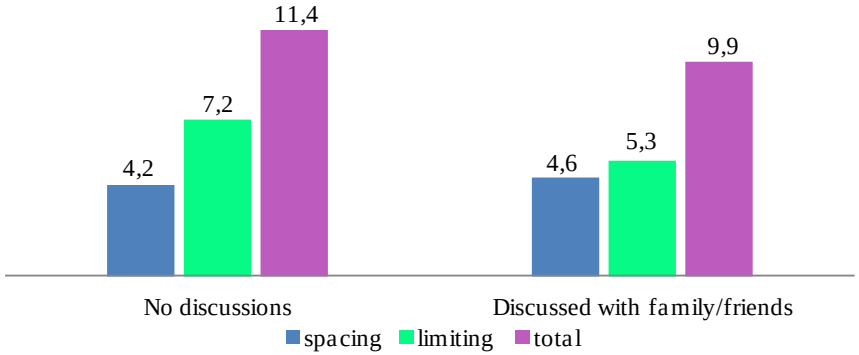


Figure VI.3.50. Unmet need for spacing and limiting by women's approval of family planning, married women 15-49, TDHS-1998

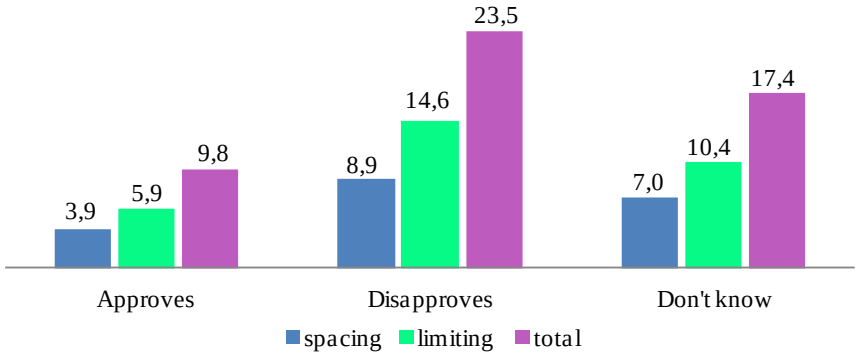


Figure VI.3.51. Unmet need for spacing and limiting by women's religious concerns about family planning, married women 15-49, TDHS-1998

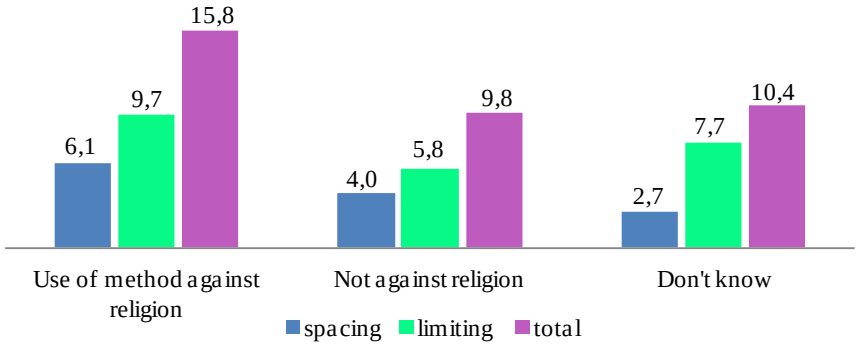


Figure VI.3.52. Unmet need for spacing and limiting by husband's approval of family planning, married women 15-49, TDHS-1998

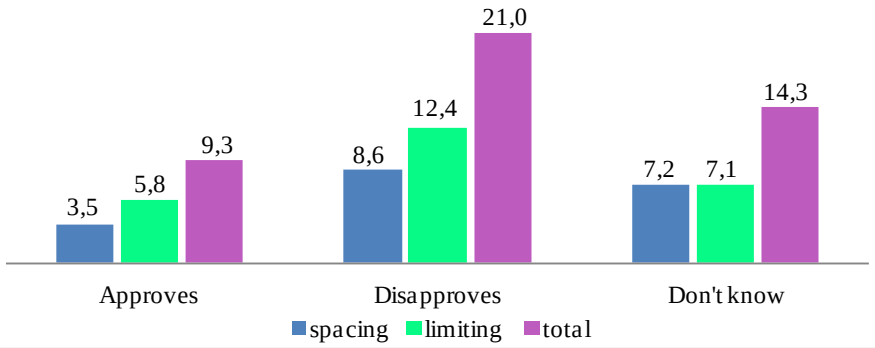


Figure VI.3.53. Unmet need for spacing and limiting by husband's religious concerns about family planning, married women 15-49, TDHS-1998

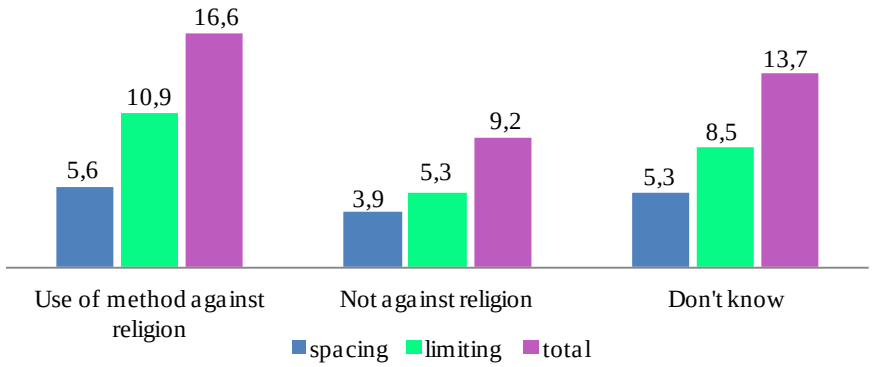
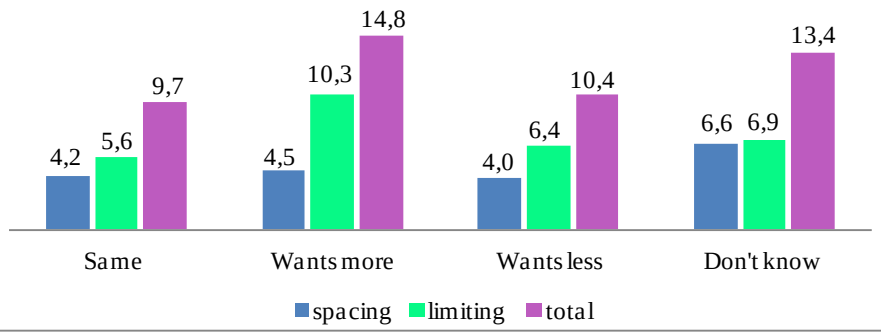


Figure VI.3.54. Unmet need for spacing and limiting by husband's desires for child, married women 15-49, TDHS-1998



VI.3.2.2 TDHS-2008

The TDHS-2008 involves several questions that evaluate women's daily life style. Among these questions, only three variables (the internet use, women gathering activities and TV watching habits), which may have an impact on the level of unmet need, were utilized. The discrepancy between women who socializes with their female friends (4 percent) and who do not (7 percent) is highly noticeable (Figure VI.3.55). A similar pattern is also valid for the internet use (Figure VI.3.56). The total unmet need for women who use the internet is amounted to 4 percent whereas for the ones not using it increases to 7 percent. Figure VI.3.57 compares the variation of unmet need according to women's TV watching habits. Contrary to the expectations, women who watch TV programmes (7 percent) are more likely to be in need of family planning when compared to those not watching them (5 percent).

Level of practicing religious duties is another index created as a kind of proxy for religion which was only included in TDHS-1998 (Figure VI.3.58). There seems to be a positive association between unmet need for family planning and the practise of religious duties. That is, as the level of practicing rises from low to high, women's unmet need also increases.

The link between the employment status of husbands and unmet need of women follows a similar pattern to the link between women's working status and their unmet need. In other words, husband's unemployment status or working without a social security yields an increasing unmet need of women (Figure VI.3.59). In addition, women whose mother is uneducated are in more risk of having unmet need (7 percent). On the other hand, there is not also a discernible decline in the level of unmet need of women whose mothers have a secondary or higher education (6 percent).

Figure VI.3.55. Unmet need for spacing and limiting by women gathering event, married women 15-49, TDHS-2008

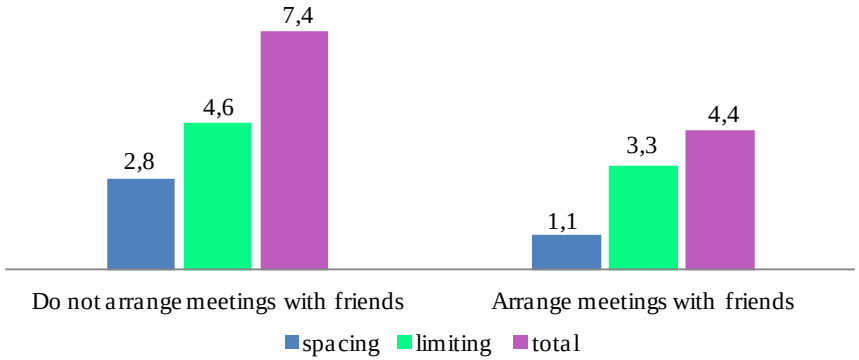


Figure VI.3.56. Unmet need for spacing and limiting by use of internet, married women 15-49, TDHS-2008

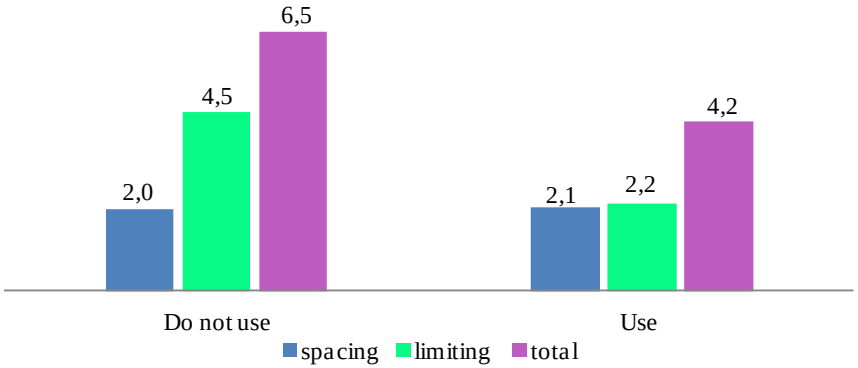


Figure VI.3.57. Unmet need for spacing and limiting by watching women's programs on TV, internet, married women 15-49, TDHS-2008

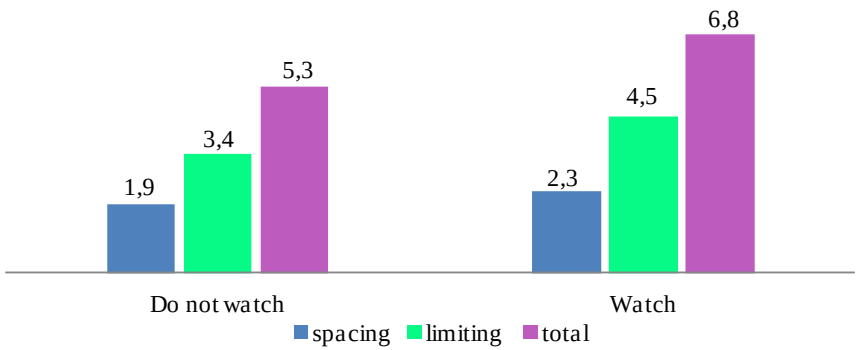


Figure VI.3.58. Unmet need for spacing and limiting by level of practicing religious duties, married women 15-49, TDHS-2008

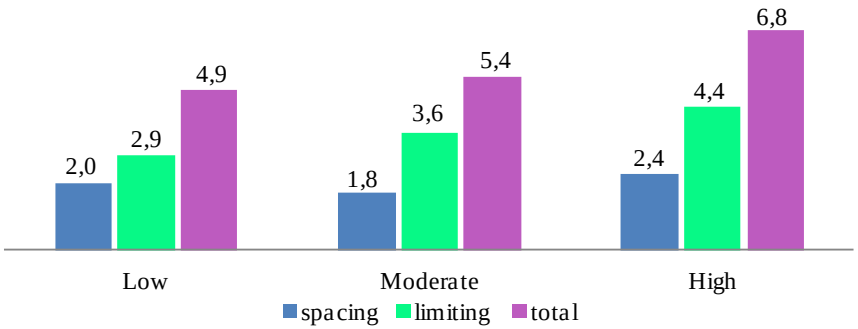


Figure VI.3.59. Unmet need for spacing and limiting by husband's employment, married women 15-49, TDHS-2008

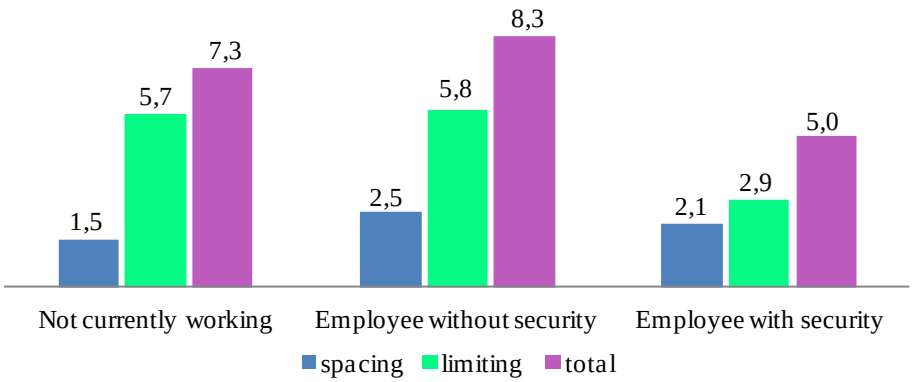


Figure VI.3.60. Unmet need for spacing and limiting by mother's education, married women 15-49, TDHS-2008

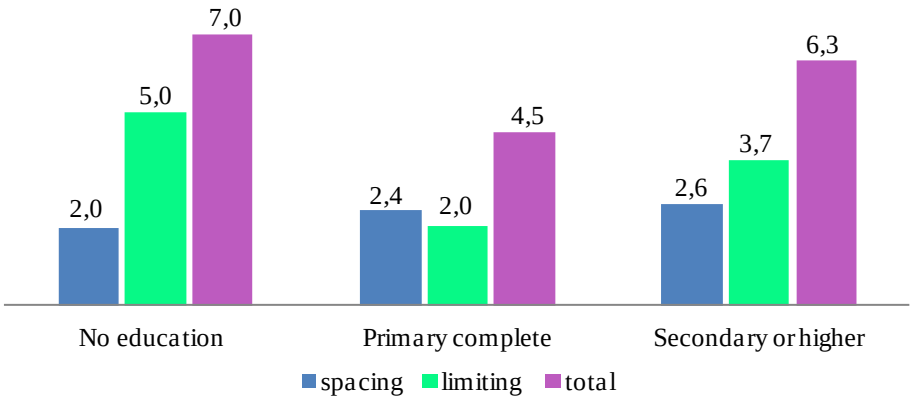
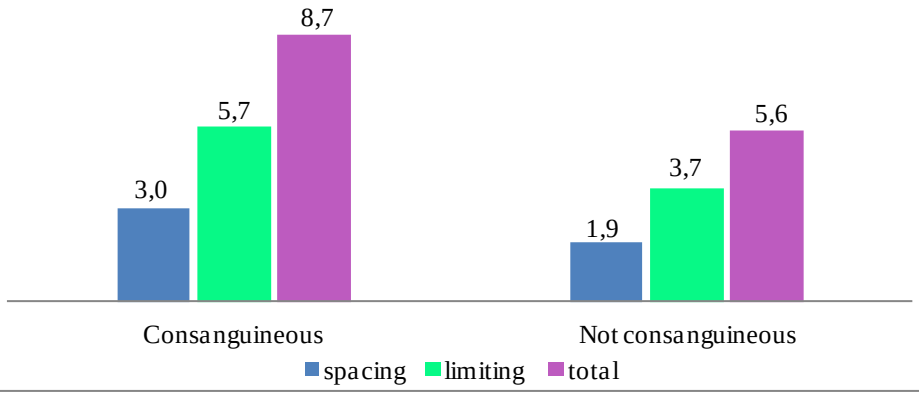


Figure VI.3.61. Unmet need for spacing and limiting by consanguinity between parents, married women 15-49, TDHS-2008



VI.4. RESULTS OF MULTIVARIATE ANALYSES

Multivariate analyses were done based on the data sets of TDHS-1998 and 2008 and the variables explained in Section V.2. The reference groups in regression models are composed of women who are expected to have low levels of unmet need, and are shown in italics. In the following section predictors of unmet need for family planning are introduced.

VI.4.1 Determinants of unmet need for family planning in TDHS-1998

Table VI.4.1, Table VI.4.2 and Table VI.4.3 demonstrate the odds ratio and their significance for unmet need for spacing, unmet need for limiting, and the total unmet need, respectively. Table VI.4.4 compares the effects of independent variables on the three components of unmet need in the final model.

Unlike TDH-2008, the parental level factors were not used in TDHS-1998 because this information was not available in 1998. The remaining variable sets were introduced to the regression model in the same order.

Model 1

In the first model, the relationship betweeen socio-economic and demographic variables and unmet need were examined. Regarding the unmet need for spacing, both the education and employment status of women were found to be insignifant. On the other hand, age, duration of marriage, mother tongue and health insurance displayed a strong association with the spacing component of unmet need. Among these, the duration of marriage was the most influential determinant of spacing. Relative to women who had spent at least 10 years within their marriage,

women were 12 times and 6 times more likely to be confronted with spacing needs during the first and second five years of marriage, respectively. In addition, women in the youngest age group were three times more likely to have family planning need for spacing purposes compared to the older women. When comparing the women whose mother tongue is Turkish to those of other than Turkish, the likelihood of having unmet need for spacing was twice as high for the second group. Moreover, the lack of health insurance showed a significant increase in the probability of being in the category of unmet need for spacing purposes (OR: 1.56). The explanatory power (pseudo R square was 0.238) of this model for spacing was immense.

The model for limiting displayed a resembling pattern to some extent. Similar to spacing purposes, mother tongue and health insurance raised the possibility of the occurance of limiting needs among nonusers. In this model, mother tongue was the most predominant factor among the others. Furthermore, there was a close relationship between the duration of marriage and the unmet need for limiting, that is, as the time spent within the marriage decreases the likelihood of having unmet need for limiting also decreases. Another significant factor for limiting was the employment status of women. Relative to women who were employed outside the home and had a social security, unemployed women (OR:3.13) were significantly more inclined to have unmet need for the termination of their fertility. Although employed women without a social security seemed to have relatively higher unmet need for limiting (OR: 2.65), the differentiation between the two groups of women with or without a social secutity was not found to be significant.

Regarding the total unmet need, age of women, mother tongue and health insurance were significant predictors for total unmet need. Mother tongue also maintained its persistent effect on total unmet need as it did on limiting. The likelihood of having total unmet need significantly increased for women who had no health security, whose mother tongue was other than Turkish, and who were in the youngest age group.

Model 2

Additional variables related to reproduction were included in the model in order to measure their effect on unmet need. These variables substantially raised the pseudo R square of each model for unmet need. For spacing, it increased from 0.238 to 0.288, for limiting, from 0.117 to 0.183 and for the total, from 0.108 to 0.147. The significant variables in the previous model remained unchanged for all of the three components. On the other hand, the duration of marriage lost its importance for limiting while becoming significant for the total unmet need. Women who were married for five years at most were more prone to unmet need relative to the ones married over 10 years. Among the reproduction based factors, total unmet need together with the unmet need for limiting and spacing varied significantly according to ever use of contraception, sex of living children and the gap between actual and ideal number of children. The direction of relationship between actual-ideal gap and the components of unmet need mainly depended on the fulfilment of women's desires about fertility. For instance, the likelihood of having unmet need for spacing the births significantly increased and was relatively doubled when the difference was negative. The unmet need for limiting, however, was inversely associated with this gap, that is, women were less likely to be in need of terminating the fertility. The scheme was twofold for the total unmet need. When the ideal number had not been attained yet, the likelihood of having unmet need decreased. On the other hand,when there was a surplus, women were more likely to have an unmet need (OR: 1.412) compared to the women whose actual and ideal number were equal to each other.

When sex of living children was taken into consideration, compared to women with no children, spacing needs were became prominent particularly for those having only male children. Both women having children in each sex and the ones having only female children were more likely to have unmet need for spacing and somehat lower than the ones having only male children. The huge difference among women is conspicious concerning the unmet need for limiting. As the reference category for this variables consists of childless women, this reveals a

highly significant variation. Limiting needs were the most dominant for women having only male children and for the ones having both sexes when compared to the childless ones. A similar pattern is also valid for the total unmet need. The total unmet need was significantly higher particularly for those having at least one male child.

The levels of having unmet need (spacing, limiting and total) significantly altered between women who had never used a method and the ones ever tried of a modern method. Among the three components, never practising a method raised the likelihood of unmet need to prevail among these women (for spacing OR is 4.786, for limiting OR is 3.740 and for the total OR equals to 3.794).

On the other hand, abortion, knowledge of ovulatory cycle and number of dead children displayed no significant association with the components of unmet need. The only exception was observed between the total unmet need and the number of dead children, indicating that the total unmet need was more likely to prevail among women having a dead child (OR: 1.357).

Model 3

This is the stage at which the mass media, discussions on family planning with family or friends, the approval of family planning methods, religious considerations about contraceptive use, traditionality in the formation of marriage, acceptance of gender roles, and religion were taken into account as independent variables while controlling the socio-economic and demographic factors as well. The variables in this model explained 30 percent of the variability in unmet for spacing, 20 percent in limiting and 16 percent in the total unmet need.

The majority of the variables among community level factors did not show statistical significance in the third model. In fact, the spacing component could not be explained by means of these newly added variables. Besides that, health insurance which was previously a significant determinant of unmet need for spacing lost its importance after the inclusion of community based factors. For the spacing component in this model, age, duration of marriage, mother tongue, actual-ideal gap, sex of living children and ever use of contraception remained the predictors of postponement tendency of nonusers.

Regarding the limiting, traditionality in marriage together with the prior factors were found to be significant. The higher the traditionality in the formation of marriage was (OR: 1.728), the higher the likelihood of having unmet need for limiting. Similar to limiting, the composition of determinants of the total unmet need did not change very much. The significance of the variables in the previous model were maintained. However, the number of dead children became insignificant. Besides that, there was a negative relationship between the total unmet need and being exposed to media messages about family planning. No media interaction (OR:1.309) significantly increased the likelihood of having unmet need..

Model 4

In this model, the effect of husband's characteristics were analyzed together with the other explanatory variables in previous models. Concerning the spacing component, husband's characteristics did not indicate a significant variation in the level of unmet need for spacing. The only effect of the couple level factors on this model was the slight increase of pseudo R square (0.306). On the contrary, husband's objection to the use of family planning on religious grounds was found to be a significant predictor of unmet need for limiting. When women's husbands were opposed to the utilization of family planning services due to religious norms, the likelihood of having unmet need for limiting was twice as high as the ones whose

husbands found it to be appropriate. Besides, women's opposition to family planning methods regarding religious considerations, which was insignificant in the prior method, displayed a significant link with limiting. Unlike husband's opposition, there was a negative relationship between women's religious concerns about family planning and unmet need for limiting purposes. In other words, the likelihood of having unmet need for limiting decreased as women oppossed to family planning because of religious aspects (OR: 0.49).

Husband's characteristics did not exhibit a significant variation in the total unmet need as they did in the spacing component. Suprisingly, women's religious conncerns about family planning became statistically significant, the effect of which was not meaningful in the previous model. Women who opposed to family planning methods on religious grounds or who did not express an opinion were less likely to have unmet need when compared to those who stated their utilization as acceptable.

Final Model

In the final phase, in addition to the other variables, the type of place of residence, region and household wealth status were included. These household level variables did not have a significant effect on limiting and spacing components. In the final model for spacing, pseudo R square remained almost unchanged (0.312). The predictors were age, duration of marriage, actual-ideal gap, sex of living children and ever use of contraception. For limiting, significant variables, which are composed of mother tongue, employment status, health insurance, actual-ideal gap, sex of living children, ever use of contraception, women's and husbands' opposition to family planning on religious grounds maintained their statistical importance as in the previous model except for the traditionality level in the formation of marriage. The household characteristics in the final model had an impact only on the total unmet need, that is, wealth status appeared to be a significant predictor of the total unmet need. Women living in the poorest households (OR:1.397) were more likely to have

unmet need relative to the women in the wealthiest households. With the inclusion of household level factors, 17 percent of the variation in the total unmet need was explained through these variables.

Table VI.4.1. Determinants of unmet need for spacing based on original definition, TDHS-1998

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,006**		**0,002**		**0,000**		**0,000**		**0,000**
<25	3,28	0,026	4,04	0,004	4,87	0,002	4,74	0,001	4,43	0,002
25-34	1,99	0,170	2,40	0,050	2,72	0,034	2,66	0,034	2,54	0,046
35+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Marriage duration		**0,000**		**0,000**		**0,000**		**0,000**		**0,000**
0-4	12,22	0,000	5,93	0,000	5,85	0,000	6,00	0,000	5,52	0,000
5-9	5,76	0,000	4,20	0,000	4,16	0,000	4,14	0,000	3,90	0,000
10+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Education of women		**0,304**		**0,655**		**0,727**		**0,545**		**0,502**
No educ/incomp. prim.	0,99	0,983	0,67	0,474	0,56	0,333	0,43	0,189	0,38	0,137
First level primary	0,82	0,655	0,64	0,365	0,55	0,277	0,43	0,146	0,40	0,128
Second level primary	0,57	0,260	0,52	0,237	0,51	0,260	0,42	0,169	0,41	0,159
High school/higher	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Mother tongue		**0,001**		**0,016**		**0,037**		**0,045**		**0,159**
Turkish	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	2,32	0,000	1,71	0,009	1,68	0,019	1,70	0,018	1,35	0,174
Kurdish, non-Turkish speakers	2,23	0,049	0,75	0,593	0,72	0,552	0,71	0,541	0,53	0,275
Other	2,31	0,031	1,44	0,353	1,02	0,956	0,98	0,966	0,83	0,665
Employment		**0,486**		**0,345**		**0,668**		**0,756**		**0,913**
Not currently working	0,83	0,690	0,68	0,417	0,77	0,617	0,78	0,634	0,79	0,670
Employee without security	1,05	0,926	0,88	0,793	0,91	0,857	0,88	0,821	0,79	0,692
Employee with security	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Health insurance		**0,010**		**0,034**		**0,076**		**0,089**		**0,156**
No	1,56	0,010	1,49	0,034	1,39	0,076	1,37	0,089	1,30	0,156
Yes	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Actual-ideal gap				**0,019**		**0,032**		**0,041**		**0,032**
actual < ideal			1,75	0,022	1,68	0,035	1,63	0,054	1,66	0,041
actual = ideal			*1,00*		*1,00*		*1,00*		*1,00*	
actual > ideal			0,65	0,245	0,68	0,302	0,66	0,271	0,66	0,266
Sex of living children				**0,005**		**0,008**		**0,010**		**0,020**
None			*1,00*		*1,00*		*1,00*		*1,00*	
Only male			2,42	0,000	2,38	0,001	2,34	0,001	2,21	0,002
Only female			2,12	0,006	2,11	0,009	2,07	0,012	1,98	0,020
Both sexes			2,12	0,017	2,00	0,030	1,91	0,045	1,78	0,076
Deceased children				**0,408**		**0,734**		**0,685**		**0,921**
0			1,00		1,00		1,00		1,00	
1+			1,24	0,408	1,10	0,734	1,12	0,685	1,03	0,921
Abortion history				**0,901**		**0,963**		**0,973**		**0,995**
Yes			1,04	0,901	0,99	0,963	0,99	0,973	1,00	0,995
No			*1,00*		*1,00*		*1,00*		*1,00*	
Ever-use of contraceptives				**0,000**		**0,000**		**0,000**		**0,000**
Never			4,79	0,000	4,48	0,000	4,22	0,000	3,90	0,000
Traditional			0,88	0,643	0,82	0,438	0,79	0,369	0,80	0,384
Modern			*1,00*		*1,00*		*1,00*		*1,00*	

Table VI.4.1. Determinants of unmet need for spacing based on original definition, TDHS-1998 *(continued)*

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Knowledge of ovulatory cycle				**0,582**		**0,524**		**0,556**		**0,746**
Give correct answer			*1,00*		*1,00*		*1,00*		*1,00*	
Give wrong answer			1,14	0,587	1,12	0,627	1,09	0,732	1,05	0,839
No idea			0,93	0,744	0,89	0,619	0,87	0,559	0,90	0,659
Knowledge about FP from media						**0,060**		**0,089**		**0,133**
No					1,38	0,060	1,34	0,089	1,30	0,133
Yes					*1,00*		*1,00*		*1,00*	
Knowledge about FP from family/friends						**0,440**		**0,386**		**0,429**
No					0,87	0,440	0,86	0,386	0,87	0,429
Yes					*1,00*		*1,00*		*1,00*	
Approval of family planning						**0,555**		**0,763**		**0,735**
Approves					*1,00*		*1,00*		*1,00*	
Disapproves					1,44	0,280	1,06	0,867	1,02	0,948
DK					1,04	0,919	0,79	0,515	0,76	0,462
Woman's religious concerns about FP						**0,085**		**0,092**		**0,096**
Yes/some methods					0,88	0,540	0,84	0,591	0,83	0,550
No					*1,00*		*1,00*		*1,00*	
DK					0,38	0,031	0,39	0,038	0,40	0,045
Traditionality level in marriage						**0,607**		**0,572**		**0,429**
Low					*1,00*		*1,00*		*1,00*	
Moderate					1,22	0,332	1,22	0,326	1,16	0,484
High					1,09	0,751	1,05	0,847	0,86	0,573
Gender roles						**0,460**		**0,553**		**0,581**
Low					*1,00*		*1,00*		*1,00*	
Moderate					1,25	0,308	1,19	0,446	1,19	0,426
High					1,40	0,224	1,35	0,276	1,34	0,301
Religion						**0,727**		**0,728**		**0,666**
Sunni					*1,00*		*1,00*		*1,00*	
Alawi					1,01	0,984	0,97	0,937	0,99	0,979
Other muslim					1,02	0,913	1,00	0,984	1,00	0,992
Answered DK					1,35	0,272	1,32	0,297	1,35	0,251
Education of husband								**0,592**		**0,565**
No educ/incomp. prim.							1,31	0,616	1,31	0,614
First level primary							1,48	0,340	1,50	0,330
Second level or higher							*1,00*		*1,00*	
Husband's approval of family planning								**0,058**		**0,088**
Approves							*1,00*		*1,00*	
Disapproves							1,78	0,026	1,70	0,038
DK							1,58	0,128	1,53	0,170

Table VI.4.1. Determinants of unmet need for spacing based on original definition, TDHS-1998 *(continued)*

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Husband's religious concerns about FP								**0,995**		**0,991**
Yes/some methods							0,98	0,961	0,96	0,893
No							*1,00*		*1,00*	
DK							0,97	0,924	0,98	0,958
Husband's desire for children								**0,943**		**0,906**
Same							*1,00*		*1,00*	
Wants more							1,07	0,735	1,07	0,741
Wants less							1,16	0,567	1,20	0,485
DK							1,03	0,930	1,06	0,866
Residence										**0,338**
Urban									*1,00*	
Rural									1,19	0,338
Region										**0,091**
West									*1,00*	
South									1,06	0,820
Central									0,93	0,792
North									1,10	0,733
East									1,71	0,025
Wealth index										**0,218**
Poor									1,33	0,206
Middle									0,93	0,799
Rich									*1,00*	
Nagelkerke R-square		0,238		0,288		0,300		0,306		0,312

Table VI.4.2. Determinants of unmet need for limiting based on original definition, TDHS-1998

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,407**		**0,232**		**0,348**		**0,304**		**0,417**
<25	1,32	0,292	1,44	0,190	1,37	0,269	1,38	0,270	1,30	0,361
25-34	1,24	0,214	1,39	0,096	1,32	0,156	1,36	0,126	1,30	0,190
35+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Marriage duration		**0,000**		**0,793**		**0,760**		**0,757**		**0,572**
0-4	0,29	0,000	0,81	0,496	0,79	0,459	0,79	0,456	0,72	0,304
5-9	0,68	0,046	0,94	0,742	0,93	0,734	0,91	0,669	0,85	0,450
10+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Education of women		**0,515**		**0,999**		**0,927**		**0,783**		**0,697**
No educ/incomp. prim.	1,26	0,705	0,92	0,921	0,74	0,714	0,64	0,586	0,61	0,551
First level primary	1,06	0,927	0,94	0,938	0,79	0,772	0,72	0,682	0,71	0,671
Second level primary	0,84	0,781	0,95	0,947	0,92	0,913	0,88	0,866	0,87	0,857
High school/higher	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Mother tongue		**0,000**		**0,000**		**0,000**		**0,000**		**0,001**
Turkish	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	3,06	0,000	2,87	0,000	2,59	0,000	2,55	0,000	2,41	0,000
Kurdish, non-Turkish speakers	4,58	0,000	2,10	0,002	2,05	0,006	1,93	0,009	1,68	0,057
Other	1,80	0,056	1,61	0,130	1,28	0,439	1,22	0,546	1,16	0,679
Employment		**0,039**		**0,034**		**0,052**		**0,046**		**0,023**
Not currently working	3,13	0,028	3,71	0,040	3,82	0,034	3,85	0,032	3,96	0,033
Employee without security	2,65	0,076	2,93	0,103	3,11	0,079	3,11	0,078	2,93	0,106
Employee with security	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Health insurance		**0,000**		**0,005**		**0,008**		**0,013**		**0,045**
No	1,72	0,000	1,49	0,005	1,48	0,008	1,45	0,013	1,36	0,045
Yes	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Actual-ideal gap				**0,000**		**0,000**		**0,000**		**0,000**
actual < ideal			0,35	0,000	0,34	0,000	0,34	0,000	0,34	0,000
actual = ideal			*1,00*		*1,00*		*1,00*		*1,00*	
actual > ideal			1,31	0,068	1,24	0,157	1,20	0,242	1,14	0,406
Sex of living children				**0,001**		**0,001**		**0,001**		**0,001**
None			*1,00*		*1,00*		*1,00*		*1,00*	
Only male			70,52	0,000	73,80	0,000	74,70	0,000	74,45	0,000
Only female			53,61	0,000	53,31	0,000	52,93	0,000	53,46	0,000
Both sexes			69,39	0,000	69,91	0,000	69,32	0,000	66,16	0,000
Deceased children				**0,062**		**0,211**		**0,299**		**0,385**
0			1,00		1,00		1,00		1,00	
1+			1,30	0,062	1,20	0,211	1,16	0,299	1,14	0,385
Abortion history				**0,529**		**0,382**		**0,483**		**0,728**
Yes			0,90	0,529	0,87	0,382	0,89	0,483	0,94	0,728
No			*1,00*		*1,00*		*1,00*		*1,00*	
Ever-use of contraceptives				**0,000**		**0,000**		**0,000**		**0,000**
Never			3,74	0,000	3,82	0,000	3,87	0,000	3,72	0,000
Traditional			1,22	0,272	1,21	0,306	1,22	0,294	1,22	0,311
Modern			*1,00*		*1,00*		*1,00*		*1,00*	

Table VI.4.2. Determinants of unmet need for limiting based on original definition, TDHS-1998 *(continued)*

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Knowledge of ovulatory cycle				**0,291**		**0,383**		**0,460**		**0,500**
Give correct answer			*1,00*		*1,00*		*1,00*		*1,00*	
Give wrong answer			1,29	0,209	1,22	0,316	1,19	0,396	1,17	0,448
No idea			1,41	0,116	1,36	0,167	1,32	0,216	1,30	0,244
Knowledge about FP from media						**0,089**		**0,096**		**0,113**
No					1,27	0,089	1,27	0,096	1,25	0,113
Yes					*1,00*		*1,00*		*1,00*	
Knowledge about FP from family/friends						**0,606**		**0,648**		**0,608**
No					0,92	0,606	0,93	0,648	0,92	0,608
Yes					*1,00*		*1,00*		*1,00*	
Approval of family planning						**0,372**		**0,722**		**0,691**
Approves					*1,00*		*1,00*		*1,00*	
Disapproves					1,07	0,792	1,06	0,843	1,08	0,788
DK					0,70	0,192	0,81	0,477	0,81	0,467
Woman's religious concerns about FP						**0,158**		**0,010**		**0,009**
Yes/some methods					0,71	0,056	0,49	0,002	0,49	0,002
No					*1,00*		*1,00*		*1,00*	
DK					0,98	0,944	0,79	0,397	0,82	0,477
Traditionality level in marriage						**0,015**		**0,025**		**0,096**
Low					*1,00*		*1,00*		*1,00*	
Moderate					1,15	0,498	1,14	0,505	1,04	0,840
High					1,73	0,014	1,68	0,020	1,46	0,102
Gender roles						**0,604**		**0,619**		**0,327**
Low					*1,00*		*1,00*		*1,00*	
Moderate					1,09	0,562	1,06	0,679	0,92	0,606
High					0,94	0,735	0,92	0,624	0,77	0,156
Religion						**0,301**		**0,237**		**0,274**
Sunni					*1,00*		*1,00*		*1,00*	
Alawi					1,79	0,087	1,87	0,064	1,88	0,074
Other muslim					1,20	0,204	1,22	0,182	1,18	0,281
Answered DK					1,14	0,585	1,12	0,646	1,02	0,918
Education of husband								**0,248**		**0,268**
No educ/incomp. prim.							1,62	0,188	1,64	0,196
First level primary							1,23	0,519	1,25	0,503
Second level or higher							*1,00*		*1,00*	
Husband's approval of family planning								**0,187**		**0,181**
Approves							*1,00*		*1,00*	
Disapproves							0,95	0,822	0,93	0,761
DK							0,59	0,082	0,58	0,074

Table VI.4.2. Determinants of unmet need for limiting based on original definition, TDHS-1998 *(continued)*

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Husband's religious concerns about FP								**0,036**		**0,046**
Yes/some methods							1,63	0,018	1,63	0,023
No							*1,00*		*1,00*	
DK							1,58	0,067	1,56	0,074
Husband's desire for children								**0,497**		**0,560**
Same							*1,00*		*1,00*	
Wants more							1,25	0,207	1,25	0,229
Wants less							0,98	0,940	0,99	0,958
DK							0,98	0,938	1,01	0,974
Residence										**0,820**
Urban									*1,00*	
Rural									1,04	0,820
Region										**0,220**
West									*1,00*	
South									1,52	0,079
Central									1,73	0,024
North									1,57	0,095
East									1,65	0,055
Wealth index										**0,135**
Poor									1,47	0,059
Middle									1,13	0,541
Rich									*1,00*	
Nagelkerke R-square		0,117		0,183		0,195		0,201		0,211

Table VI.4.3. Determinants of total unmet need based on original definition, TDHS-1998

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,007**		**0,002**		**0,001**		**0,001**		**0,003**
<25	1,87	0,002	2,10	0,000	2,11	0,000	2,11	0,000	2,01	0,001
25-34	1,34	0,079	1,49	0,026	1,45	0,038	1,47	0,033	1,42	0,052
35+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Marriage duration		**0,131**		**0,007**		**0,011**		**0,009**		**0,026**
0-4	1,38	0,071	1,85	0,002	1,80	0,003	1,83	0,003	1,69	0,010
5-9	1,07	0,652	1,29	0,128	1,28	0,151	1,26	0,181	1,18	0,346
10+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Education of women		**0,144**		**0,705**		**0,635**		**0,398**		**0,333**
No educ/incomp. prim.	0,99	0,985	0,63	0,289	0,54	0,193	0,45	0,097	0,42	0,083
First level primary	0,83	0,597	0,63	0,275	0,57	0,214	0,48	0,121	0,47	0,119
Second level primary	0,62	0,229	0,58	0,235	0,58	0,273	0,53	0,201	0,52	0,204
High school/higher	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Mother tongue		**0,000**		**0,000**		**0,000**		**0,000**		**0,000**
Turkish	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	2,76	0,000	2,31	0,000	2,12	0,000	2,11	0,000	1,86	0,000
Kurdish, non-Turkish speakers	3,96	0,000	1,72	0,017	1,63	0,033	1,57	0,044	1,24	0,376
Other	1,99	0,007	1,52	0,099	1,13	0,619	1,09	0,718	0,98	0,944
Employment		**0,458**		**0,565**		**0,418**		**0,385**		**0,188**
Not currently working	1,50	0,216	1,37	0,348	1,51	0,241	1,53	0,229	1,56	0,225
Employee without security	1,47	0,268	1,29	0,471	1,40	0,363	1,41	0,361	1,30	0,496
Employee with security	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Health insurance		**0,000**		**0,001**		**0,002**		**0,004**		**0,018**
No	1,65	0,000	1,48	0,001	1,44	0,002	1,40	0,004	1,32	0,018
Yes	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Actual-ideal gap				**0,001**		**0,001**		**0,001**		**0,003**
actual < ideal			0,70	0,013	0,68	0,009	0,67	0,009	0,68	0,010
actual = ideal			*1,00*		*1,00*		*1,00*		*1,00*	
actual > ideal			1,41	0,014	1,36	0,030	1,33	0,048	1,28	0,085
Sex of living children				**0,000**		**0,000**		**0,000**		**0,001**
None			*1,00*		*1,00*		*1,00*		*1,00*	
Only male			2,52	0,000	2,58	0,000	2,59	0,000	2,47	0,000
Only female			2,13	0,001	2,16	0,001	2,16	0,001	2,11	0,002
Both sexes			2,53	0,000	2,51	0,000	2,48	0,000	2,29	0,000
Deceased children				**0,021**		**0,087**		**0,137**		**0,221**
0			1,00		1,00		1,00		1,00	
1+			1,36	0,021	1,26	0,087	1,23	0,137	1,18	0,221
Abortion history				**0,653**		**0,476**		**0,575**		**0,825**
Yes			0,94	0,653	0,90	0,476	0,92	0,575	0,97	0,825
No			*1,00*		*1,00*		*1,00*		*1,00*	
Ever-use of contraceptives				**0,000**		**0,000**		**0,000**		**0,000**
Never			3,79	0,000	3,72	0,000	3,67	0,000	3,42	0,000
Traditional			1,07	0,689	1,05	0,779	1,04	0,827	1,03	0,843
Modern			*1,00*		*1,00*		*1,00*		*1,00*	

Table VI.4.3. Determinants of total unmet need based on original definition, TDHS-1998
(continued)

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Knowledge of ovulatory cycle				**0,440**		**0,597**		**0,691**		**0,739**
Give correct answer			*1,00*		*1,00*		*1,00*		*1,00*	
Give wrong answer			1,22	0,208	1,17	0,317	1,14	0,399	1,12	0,481
No idea			1,20	0,266	1,15	0,381	1,13	0,456	1,13	0,455
Knowledge about FP from media						**0,014**		**0,022**		**0,027**
No					1,31	0,014	1,29	0,022	1,28	0,027
Yes					*1,00*		*1,00*		*1,00*	
Knowledge about FP from family/friends						**0,385**		**0,378**		**0,377**
No					0,90	0,385	0,90	0,378	0,90	0,377
Yes					*1,00*		*1,00*		*1,00*	
Approval of family planning						**0,368**		**0,575**		**0,527**
Approves					*1,00*		*1,00*		*1,00*	
Disapproves					1,22	0,338	1,06	0,810	1,06	0,808
DK					0,85	0,396	0,82	0,352	0,80	0,314
Woman's religious concerns about FP						**0,083**		**0,013**		**0,017**
Yes/some methods					0,76	0,067	0,59	0,013	0,60	0,016
No					*1,00*		*1,00*		*1,00*	
DK					0,76	0,169	0,64	0,053	0,66	0,069
Traditionality level in marriage						**0,066**		**0,114**		**0,435**
Low					*1,00*		*1,00*		*1,00*	
Moderate					1,12	0,449	1,10	0,516	1,02	0,889
High					1,45	0,029	1,40	0,053	1,21	0,285
Gender roles						**0,497**		**0,587**		**0,743**
Low					*1,00*		*1,00*		*1,00*	
Moderate					1,16	0,246	1,14	0,314	1,04	0,746
High					1,08	0,615	1,06	0,683	0,95	0,740
Religion						**0,447**		**0,450**		**0,498**
Sunni					*1,00*		*1,00*		*1,00*	
Alawi					1,51	0,131	1,52	0,124	1,54	0,135
Other muslim					1,14	0,266	1,14	0,268	1,12	0,345
Answered DK					1,19	0,376	1,16	0,439	1,12	0,554
Education of husband								**0,315**		**0,344**
No educ/incomp. prim.							1,54	0,157	1,54	0,163
First level primary							1,29	0,341	1,31	0,316
Second level or higher							*1,00*		*1,00*	
Husband's approval of family planning								**0,399**		**0,447**
Approves							*1,00*		*1,00*	
Disapproves							1,21	0,273	1,18	0,341
DK							0,94	0,775	0,92	0,699

Table VI.4.3. Determinants of total unmet need based on original definition, TDHS-1998
(continued)

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Husband's religious concerns about FP								**0,132**		**0,171**
Yes/some methods							1,36	0,065	1,33	0,092
No							*1,00*		*1,00*	
DK							1,33	0,136	1,31	0,148
Husband's desire for children								**0,825**		**0,849**
Same							*1,00*		*1,00*	
Wants more							1,13	0,376	1,13	0,397
Wants less							1,01	0,939	1,02	0,923
DK							1,00	0,996	1,02	0,939
Residence										**0,426**
Urban									*1,00*	
Rural									1,10	0,426
Region										**0,098**
West									*1,00*	
South									1,30	0,118
Central									1,32	0,111
North									1,27	0,194
East									1,67	0,005
Wealth index										**0,040**
Poor									1,40	0,031
Middle									1,06	0,705
Rich									*1,00*	
Nagelkerke R-square		0,108		0,147		0,157		0,161		0,170

Table VI.4.4. Determinants of unmet need for spacing, unmet need for limiting and total unmet need according to the final model, TDHS-1998

	Unmet need for:					
	Spacing		Limiting		Total	
	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,000**		**0,417**		**0,003**
<25	4,43	0,002	1,30	0,361	2,01	0,001
25-34	2,54	0,046	1,30	0,190	1,42	0,052
35+	*1,00*		*1,00*		*1,00*	
Marriage duration		**0,000**		**0,572**		**0,026**
0-4	5,52	0,000	0,72	0,304	1,69	0,010
5-9	3,90	0,000	0,85	0,450	1,18	0,346
10+	*1,00*		*1,00*		*1,00*	
Education of women		**0,502**		**0,697**		**0,333**
No educ/incomp. prim.	0,38	0,137	0,61	0,551	0,42	0,083
First level primary	0,40	0,128	0,71	0,671	0,47	0,119
Second level primary	0,41	0,159	0,87	0,857	0,52	0,204
High school/higher	*1,00*		*1,00*		*1,00*	
Mother tongue		**0,159**		**0,001**		**0,000**
Turkish	*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	1,35	0,174	2,41	0,000	1,86	0,000
Kurdish, non-Turkish speakers	0,53	0,275	1,68	0,057	1,24	0,376
Other	0,83	0,665	1,16	0,679	0,98	0,944
Employment		**0,913**		**0,023**		**0,188**
Not currently working	0,79	0,670	3,96	0,033	1,56	0,225
Employee without security	0,79	0,692	2,93	0,106	1,30	0,496
Employee with security	*1,00*		*1,00*		*1,00*	
Health insurance		**0,156**		**0,045**		**0,018**
No	1,30	0,156	1,36	0,045	1,32	0,018
Yes	*1,00*		*1,00*		*1,00*	
Actual-ideal gap		**0,032**		**0,000**		**0,003**
actual < ideal	1,66	0,041	0,34	0,000	0,68	0,010
actual = ideal	*1,00*		*1,00*		*1,00*	
actual > ideal	0,66	0,266	1,14	0,406	1,28	0,085
Sex of living children		**0,020**		**0,001**		**0,001**
None	*1,00*		*1,00*		*1,00*	
Only male	2,21	0,002	74,45	0,000	2,47	0,000
Only female	1,98	0,020	53,46	0,000	2,11	0,002
Both sexes	1,78	0,076	66,16	0,000	2,29	0,000
Deceased children		**0,921**		**0,385**		**0,221**
0	1,00		1,00		1,00	
1+	1,03	0,921	1,14	0,385	1,18	0,221
Abortion history		**0,995**		**0,728**		**0,825**
Yes	1,00	0,995	0,94	0,728	0,97	0,825
No	*1,00*		*1,00*		*1,00*	

TableVI.4.4. Determinants of unmet need for spacing, unmet need for limiting and total unmet need according to the final model, TDHS-1998 *(continued)*

	Unmet need for:					
	Spacing		Limiting		Total	
	Odds	Sign.	Odds	Sign.	Odds	Sign.
Ever-use of contraceptives		**0,000**		**0,000**		**0,000**
Never	3,90	0,000	3,72	0,000	3,42	0,000
Traditional	0,80	0,384	1,22	0,311	1,03	0,843
Modern	*1,00*		*1,00*		*1,00*	
Knowledge of ovulatory cycle		**0,746**		**0,500**		**0,739**
Give correct answer	*1,00*		*1,00*		*1,00*	
Give wrong answer	1,05	0,839	1,17	0,448	1,12	0,481
No idea	0,90	0,659	1,30	0,244	1,13	0,455
Knowledge about FP from media		**0,133**		**0,113**		**0,027**
No	1,30	0,133	1,25	0,113	1,28	0,027
Yes	*1,00*		*1,00*		*1,00*	
Knowledge about FP from family/friends		**0,429**		**0,608**		**0,377**
No	0,87	0,429	0,92	0,608	0,90	0,377
Yes	*1,00*		*1,00*		*1,00*	
Approval of family planning		**0,735**		**0,691**		**0,527**
Approves	*1,00*		*1,00*		*1,00*	
Disapproves	1,02	0,948	1,08	0,788	1,06	0,808
DK	0,76	0,462	0,81	0,467	0,80	0,314
Woman's religious concerns about FP		**0,096**		**0,009**		**0,017**
Yes/some methods	0,83	0,550	0,49	0,002	0,60	0,016
No	*1,00*		*1,00*		*1,00*	
DK	0,40	0,045	0,82	0,477	0,66	0,069
Traditionality level in marriage		**0,429**		**0,096**		**0,435**
Low	*1,00*		*1,00*		*1,00*	
Moderate	1,16	0,484	1,04	0,840	1,02	0,889
High	0,86	0,573	1,46	0,102	1,21	0,285
Gender roles		**0,581**		**0,327**		**0,743**
Low	*1,00*		*1,00*		*1,00*	
Moderate	1,19	0,426	0,92	0,606	1,04	0,746
High	1,34	0,301	0,77	0,156	0,95	0,740
Religion		**0,666**		**0,274**		**0,498**
Sunni	*1,00*		*1,00*		*1,00*	
Alawi	0,99	0,979	1,88	0,074	1,54	0,135
Other muslim	1,00	0,992	1,18	0,281	1,12	0,345
Answered DK	1,35	0,251	1,02	0,918	1,12	0,554

Table VI.4.4. Determinants of unmet need for spacing, unmet need for limiting and total unmet need according to the final model, TDHS-1998 *(continued)*

Education of husband		**0,565**		**0,268**		**0,344**
No educ/incomp. prim.	1,31	0,614	1,64	0,196	1,54	0,163
First level primary	1,50	0,330	1,25	0,503	1,31	0,316
Second level or higher	*1,00*		*1,00*		*1,00*	
Husband's approval of family planning		**0,088**		**0,181**		**0,447**
Approves	*1,00*		*1,00*		*1,00*	
Disapproves	1,70	0,038	0,93	0,761	1,18	0,341
DK	1,53	0,170	0,58	0,074	0,92	0,699
Husband's religious concerns about FP		**0,991**		**0,046**		**0,171**
Yes/some methods	0,96	0,893	1,63	0,023	1,33	0,092
No	*1,00*		*1,00*		*1,00*	
DK	0,98	0,958	1,56	0,074	1,31	0,148
Husband's desire for children		**0,906**		**0,560**		**0,849**
Same	*1,00*		*1,00*		*1,00*	
Wants more	1,07	0,741	1,25	0,229	1,13	0,397
Wants less	1,20	0,485	0,99	0,958	1,02	0,923
DK	1,06	0,866	1,01	0,974	1,02	0,939
Residence		**0,338**		**0,820**		**0,426**
Urban	*1,00*		*1,00*		*1,00*	
Rural	1,19	0,338	1,04	0,820	1,10	0,426
Region		**0,091**		**0,220**		**0,098**
West	*1,00*		*1,00*		*1,00*	
South	1,06	0,820	1,52	0,079	1,30	0,118
Central	0,93	0,792	1,73	0,024	1,32	0,111
North	1,10	0,733	1,57	0,095	1,27	0,194
East	1,71	0,025	1,65	0,055	1,67	0,005
Wealth index		**0,218**		**0,135**		**0,040**
Poor	1,33	0,206	1,47	0,059	1,40	0,031
Middle	0,93	0,799	1,13	0,541	1,06	0,705
Rich	*1,00*		*1,00*		*1,00*	
Nagelkerke R-square		0,312		0,211		0,170

VI.4.2. Determinants of unmet need for family planning in TDHS-2008

Table VI.4.5, Table VI.4.6 and Table VI.4.7 present the effects of the individual level, community level, couple level factors together with household level and parental level factors on unmet need for spacing, limiting and total unmet need, respectively. Table VI.4.8 compares the effect of independent variables on unmet need based on the final model.

Model 1

The variables in the first model were exactly the same as those in TDHS-2008. Regarding the unmet need for spacing (Table VI.4.5), all the variables except for the employment status and health insurance were found to be significant. In this model, the most influential independent factor was the duration of marriage. The results indicated that women within their first five years of marriage were 9 times more likely to have unmet need for spacing. Unmet need for spacing was also significantly high for the ones within their second five years of marriage.

Following the marital duration, the age of women had a strong impact on spacing needs. For instance, the relative odds of spacing need were five times higher among younger women. The odd ratio of 25-34, was somewhat smaller than the younger age group but the differentiation was still significant.Moreover, the relationship between mother tongue and unmet need for spacing was found to be meaningful. Kurdish women were more prone to have spacing needs than Turkish women. Besides that, non Turkish speakers among Kurdish women were 4 times more likely to have needs for postponing their births when compared to their counterparts in the reference group. Another important variable was the employment status of women. The likelihood of having unmet need for spacing was 3 times higher for both the women who did not have a job and the ones working without a social security. Education of women was found to be an important variable ($p<0.05$),

but there was no significant differentiation among its categories. The pseudo R^2 for this model was 0.20.

The relationship between unmet need for limiting and the independent variables in the first model can only be explained statistically by the mother tongue of women (Table VI.4.6). It was the only significant factor in this model. Limiting needs were predominantly high among Kurdish women and it was six times higher for women who could not speak Turkish. On the other hand, limiting purposes varied among the categories of insignificant variables as well. For instance, unlike spacing needs, recently married women (0-4 years) had significantly low levels of unmet need for limiting. In addition, employment status was likely to increase the likelihood of having needs for limiting their fertility. The model's pseudo R^2 was found to be 0.08.

For the total unmet need (Table VI.4.7), mother tongue ($p \leq 0.01$) was still the most important predictor. It was followed by employment status ($p<0.05$), age ($p<0.05$) and education ($p<0.05$). It should be highlighted that although education was found to be one of the significant determinants, there was not a meaningful variation among educational categories in terms of total unmet need. Relative to women with a job, women who did not work or who did work without a social security had significantly greater odds of having unmet need for family planning (OR: 2.85 for each). Similarly, when compared to Turkish women, women whose mother tongue was other than Turkish displayed substantially greater odds of having unmet need. Despite the fact that more than half of the variables in the model were found to be statistically significant, only 8 percent of the variation in the total unmet need was explained by means of these variables.

Based on the findings in the first model, it can be concluded that mother tongue has a strong impact on utilizing the family planning services. Among Kurdish

women, non-Turkish speakers seem to be the most disadvantagous group. There is an inverse relationship between education and unmet need for spacing the births but it does not have that much impact on the total unmet need and unmet need for limiting.

Model 2

At this stage, in addition to the socio-demographic variables, reproductive variables were actual-ideal gap, sex of living children, number of deceased children, abortion history, ever use of contraception and knowledge of ovulatory cycle. With the inclusion of new independent variables, pseudo R^2 of the second model for spacing, limiting and total unmet need considerably rose to, 0.276, 0.13 and 0.116, respectively. The gap between the actual and ideal number of living children, and ever use of contraception were the common determinants for all of the three.

In this model, ever use of contraception appeared to be one of the most significant determinants of unmet need, and the likelihood of having unmet need among women who had never used a contraceptive method was 5 times higher than the women who had previously tried modern methods regarding the each component of unmet need (spacing, limiting and total). In addition, the relative odds of unmet need for spacing and the total unmet need were twice as much for the women ever used a traditional method. Moreover, the inconsistency between the actual numbers and the ideal numbers was another decisive factor in the second model. In fact, it was the most influencial determinant regarding the unmet need for spacing. When women had fallen behind their fertility goals (that is, actual-ideal < 0), this increased the possibility of having unmet need for spacing five times as much. Besides that, knowledge about ovulatory cycle displayed a significant positive relationships with women's odds of having unmet need for family planning. The duration of marriage, age, education and mother tongue were still among the determinants of spacing purposes. There was also a significant association between the sex of living children and unmet need. For each of the three component of unmet need, it became one of

the most important predictors and did not lose its importance while controlling the effect of other factors.

In addition to mother tongue, the underlying factors significantly affecting the unmet need for limiting were ever use of contraception, actual-ideal gap and the sex of living children. As would be expected, women without any children did not have a tendency to limit their fertility. Thus, the unmet need for limiting was negatively associated with childless women. This was also true for the women who had not attained their target family size. On the other hand, women whose number of living children surpassed their ideal number, were more inclined to have unmet need for limiting.

Actual-ideal gap also became a contributing factor in total unmet need when women had as many children as they wanted or more. For these women, total unmet need increased twice as much when compared to those having attained their ideal number of children. The determinants of total unmet need in the first model remained unchanged except for the education. Instead of this, duration of marriage gained significant importance and doubled the risk of having unmet need for women within the first five years of their marriage.

Model 3

In addition to the independent variables in the previous stage, community-based factors were utilized in the third model. These additional factors did slightly increase the explanatory power of the models designed for the total unmet need (pseudo $r^2 = 0.122$) and unmet need for limiting (pseudo $r^2 = 0.137$). On the other hand, pseudo R square for spacing indicated that 31 percent of the variability in the level of unmet need for spacing was explained through the significant variables in the third model. Although the explanatory variables contributed to the models' R square

to a varying extent, use of the internet, TV watching habits, women's gathering, traditionality in the formation of marriage and the levels of practising religious duties displayed no statistical significance for each component of unmet need.

The variation in unmet need for spacing was explicated through larger numbers of variables when compared to the total unmet need and unmet need for limiting. The age of women and duration of marriage among the socio-economic and demographic factors, actual-ideal gap, ever use of contraception and knowledge of ovulatory cycle among reproductive level variables remained significant in this model. Nevertheless, education and mother tongue lost their importance. Further, the sex of living children and number of dead children, which were insignificant in the previous model, became significantly important. Contrary to the literature emphasizing the reducing effect of child loss on unmet need, women were more likely to postpone the future births without using a contraceptive method (OR: 2.094) if they had lost their child. Regarding the community level factors, acceptance of male superiority in decision-making process and socializing with female friends affected the non-users' spacing needs. When the index of gender roles was taken into consideration, the likelihood of having unmet need for spacing decreased according to the womens' high or moderate acceptance of male prerogative. Furthermore, spacing needs of women who did not use contraceptive methods were more likely to be affected by women gathering activities. The possibility of having unmet need for spacing among women who did not come together at home with female friends increased twofold, because it is most probable that social interaction raises women's awareness and may result in the alteration of women's fertility preferences.

On the other hand, community based variables did not indicate a significant differentiation among women who wanted to terminate their fertility while not using any contraception.The variables found to be significant in the second model for limiting (mother tongue, actual-ideal gap, sex of children and ever use of contraception) stayed the same.

Moreover, the determinants of the total unmet need practically maintained their importace as they did in the prior model. However, with the inclusion of community level factors, education became an insignificant variable whereas women gathering event emerged as an influential predictor of the total unmet need

Model 4

Model 4 examines couple level factors, education and employment status of husbands, that may have a probable impact on unmet need for family planning. Unfortunately, no association was revealed between the unmet need (spacing, limiting and total) and husband's characteristics. Besides that, the determinants that were valid in the prior models for each of the three components of unmet need continued to be statistically significant.

Model 5

In this model, two additional variables were included, which are the education of mother and the consanguinity among women's parents. The impact of these independent variables were mainly observed on unmet need for limiting and, they were not substantially effective predictors of the total unmet need and unmet need for spacing. Concerning the unmet need for limiting, the educational level of women's mothers significantly reduced the tendency of nonusers towards the termination of childbearing compared to the women with well- educated mothers. In other words, the lower the education of women's mothers, the smaller the probability of limiting the fertility among the ones who did not use birth control methods.

Final Model

Model 6 was the final model that demostrated the determinants of unmet need for family planning in Turkey as of 2008. At this stage, place of residence, region and wealth status were introduced. Pseudo R squares of the final models for spacing, limiting and total unmet need were found to be 0.324, 0.156 and 0.133, respectively. Except for the contribution to the explanatory power of the models, household level factors did not capture a significant differentiation in unmet need for family planning.

To conclude,based on these multivariate findings, the difference between the actual and ideal number of children, sex of living children and ever use of contraception revealed to be the common determinants of total unmet need, unmet need for spacing and limiting. In addition to these, age of women, duration of marriage, knowledge about ovulatory cycle, women gathering events and acceptance level of gender roles were significant predictors of unmet need for spacing. Regarding the unmet need for limiting, rather than the educational level of women, the education of their mother was found to be significant. Besides that, mother tongue was also an important factor in explaning the differences among women. The determinants of total unmet need are somehow a combination of those of limiting and spacing. Marital duration, mother tongue and women gathering activities were among the significant variables indicating a close association with the total unmet need. Additionally, employment status of women appeared to be an important predictor of total unmet need.

Table VI.4.5. Determinants of unmet need for spacing based on original definition, TDHS-2008

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V		MODEL VI	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,001**		**0,001**		**0,004**		**0,006**		**0,016**		**0,024**
<25	4,56	0,001	4,07	0,002	4,18	0,003	4,00	0,004	3,57	0,012	3,49	0,016
25-34	4,00	0,000	3,97	0,000	3,79	0,001	3,57	0,002	3,35	0,004	3,23	0,007
35+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Marriage duration		**0,000**		**0,001**		**0,001**		**0,001**		**0,001**		**0,001**
0-4	9,18	0,000	4,76	0,000	4,25	0,000	4,26	0,000	4,32	0,000	4,19	0,000
5-9	4,04	0,000	3,08	0,002	2,95	0,005	2,97	0,006	2,89	0,007	2,86	0,009
10+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Education of women		**0,020**		**0,006**		**0,070**		**0,078**		**0,075**		**0,085**
No educ/incomp. prim.	1,19	0,645	0,81	0,537	0,64	0,284	0,68	0,365	0,62	0,274	0,64	0,320
First level primary	0,63	0,116	0,45	0,006	0,45	0,018	0,47	0,023	0,45	0,018	0,46	0,026
Second level primary	0,65	0,320	0,49	0,095	0,43	0,090	0,46	0,108	0,43	0,093	0,41	0,078
High school/higher	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Mother tongue		**0,000**		**0,018**		**0,088**		**0,108**		**0,240**		**0,248**
Turkish	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	2,39	0,001	1,94	0,003	1,67	0,065	1,72	0,056	1,67	0,148	1,69	0,140
Kurdish, non-Turkish speakers	4,50	0,000	2,73	0,020	3,48	0,018	3,46	0,023	3,26	0,045	3,19	0,049
Other	1,98	0,100	1,16	0,714	1,25	0,603	1,26	0,582	1,30	0,559	1,33	0,544
Employment		**0,173**		**0,391**		**0,552**		**0,527**		**0,530**		**0,533**
Not currently working	2,69	0,066	2,11	0,170	1,92	0,281	1,98	0,258	2,00	0,260	1,98	0,262
Employee without security	2,94	0,070	2,15	0,215	1,99	0,299	1,99	0,299	1,98	0,310	1,99	0,306
Employee with security	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Health insurance		**0,227**		**0,297**		**0,110**		**0,147**		**0,157**		**0,154**
No	0,72	0,227	0,74	0,297	0,61	0,110	0,62	0,147	0,63	0,157	0,63	0,154
Yes	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Actual-ideal gap				**0,000**		**0,000**		**0,000**		**0,000**		**0,000**
actual < ideal			5,39	0,001	4,45	0,002	4,46	0,002	4,72	0,001	4,85	0,002
actual = ideal			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
actual > ideal			0,67	0,464	0,47	0,191	0,48	0,207	0,47	0,194	0,48	0,210
Sex of living children				**0,084**		**0,019**		**0,014**		**0,011**		**0,008**
None			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Only male			2,12	0,032	2,64	0,007	2,71	0,005	2,65	0,005	2,69	0,004
Only female			1,33	0,447	1,39	0,379	1,40	0,367	1,37	0,418	1,37	0,423
Both sexes			2,63	0,045	2,43	0,040	2,44	0,034	2,38	0,038	2,38	0,039
Deceased children				**0,115**		**0,043**		**0,046**		**0,050**		**0,054**
0			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
1+			1,83	0,115	2,09	0,043	2,08	0,046	2,16	0,050	2,12	0,054
Abortion history				**0,563**		**0,644**		**0,612**		**0,617**		**0,557**
Yes			0,75	0,563	0,79	0,644	0,77	0,612	0,78	0,617	0,74	0,557
No			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Ever-use of contraceptives				**0,000**		**0,000**		**0,000**		**0,000**		**0,000**
Never			4,38	0,000	5,41	0,000	5,68	0,000	5,53	0,000	5,54	0,000
Traditional			1,80	0,046	2,02	0,034	2,05	0,032	2,06	0,037	2,04	0,041
Modern			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Knowledge of ovulatory cycle				**0,023**		**0,014**		**0,011**		**0,011**		**0,009**
Give correct answer			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Give wrong answer			2,41	0,007	2,71	0,004	2,78	0,003	2,86	0,003	2,90	0,003
No idea			1,95	0,056	2,20	0,043	2,21	0,042	2,13	0,056	2,12	0,059

Table VI.4.5. Determinants of unmet need for spacing based on original definition, TDHS-2008
(continued)

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V		MODEL VI	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Meeting with friends						**0,007**		**0,006**		**0,009**		**0,005**
No					1,90	0,007	1,92	0,006	1,85	0,009	1,94	0,005
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Use of internet						**0,848**		**0,876**		**0,812**		**0,770**
No					0,94	0,848	0,95	0,876	0,91	0,812	0,90	0,770
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Watching women`s programs on TV						**0,381**		**0,357**		**0,377**		**0,361**
No					0,82	0,381	0,81	0,357	0,82	0,377	0,81	0,361
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Traditionality level in marriage						**0,156**		**0,124**		**0,191**		**0,214**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					0,92	0,768	0,91	0,740	0,89	0,677	0,86	0,594
High					1,62	0,163	1,68	0,130	1,57	0,191	1,51	0,234
Level of practising religous duties						**0,220**		**0,196**		**0,203**		**0,198**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					0,73	0,521	0,74	0,536	0,75	0,575	0,71	0,496
High					1,16	0,768	1,19	0,728	1,23	0,689	1,16	0,779
Gender roles						**0,005**		**0,006**		**0,004**		**0,004**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					0,58	0,033	0,60	0,046	0,61	0,055	0,60	0,042
High					0,46	0,002	0,46	0,002	0,45	0,001	0,45	0,001
Education of husband								**0,190**		**0,147**		**0,146**
No educ/incomp. prim.							0,56	0,204	0,51	0,155	0,53	0,187
First level primary							0,89	0,591	0,81	0,364	0,80	0,337
Second level primary							0,55	0,058	0,52	0,036	0,52	0,031
High school/higher							*1,00*		*1,00*		*1,00*	
Employment of husband								**0,639**		**0,555**		**0,547**
Not currently working							0,78	0,466	0,70	0,309	0,71	0,317
Employee without security							1,09	0,744	1,00	0,992	1,02	0,938
Employee with security							*1,00*		*1,00*		*1,00*	
Residence										**0,826**		**0,715**
Urban									*1,00*		*1,00*	
Rural									0,95	0,826	0,92	0,715
Region										**0,429**		**0,427**
West									*1,00*		*1,00*	
South									0,78	0,520	0,79	0,545
Central									1,25	0,473	1,25	0,480
North									0,59	0,238	0,58	0,219
East									0,91	0,760	0,89	0,723
Wealth index										**0,058**		**0,051**
Poor									1,72	0,110	1,75	0,104
Middle									0,72	0,345	0,72	0,335
Rich									*1,00*		*1,00*	
Mother's educational level												**0,56**
No educ/incomp. prim.											1,37	0,552
Primary complete											1,66	0,333
Secondary/higher											*1,00*	
Consanguinity among women's parents												**0,30**
Yes											1,30	0,304
No											*1,00*	
Nagelkerke R-square		0,201		0,276		0,307		0,312		0,321		0,324

Table VI.4.6. Determinants of unmet need for limiting based on original definition, TDHS-2008

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V		MODEL VI	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,350**		**0,231**		**0,583**		**0,665**		**0,819**		**0,811**
<25	1,20	0,600	1,49	0,276	1,17	0,686	1,12	0,777	1,07	0,874	1,10	0,818
25-34	1,28	0,153	1,40	0,089	1,24	0,304	1,21	0,376	1,14	0,544	1,15	0,523
35+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Marriage duration		**0,101**		**0,871**		**0,907**		**0,740**		**0,791**		**0,825**
0-4	0,47	0,034	1,06	0,892	1,20	0,670	1,33	0,510	1,29	0,562	1,25	0,610
5-9	0,87	0,506	1,12	0,616	1,08	0,744	1,18	0,488	1,16	0,543	1,15	0,569
10+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Education of women		**0,058**		**0,115**		**0,186**		**0,412**		**0,349**		**0,335**
No educ/incomp. prim.	1,87	0,022	1,56	0,099	1,56	0,169	1,19	0,573	1,19	0,573	1,26	0,492
First level primary	1,58	0,089	1,55	0,082	1,70	0,081	1,37	0,270	1,41	0,232	1,52	0,176
Second level primary	0,88	0,784	0,84	0,701	0,92	0,855	0,78	0,607	0,79	0,626	0,88	0,788
High school/higher	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Mother tongue		**0,000**		**0,000**		**0,000**		**0,000**		**0,006**		**0,007**
Turkish	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	2,37	0,000	2,00	0,000	2,10	0,001	2,08	0,001	1,85	0,022	1,78	0,029
Kurdish, non-Turkish speakers	5,72	0,000	3,33	0,000	4,11	0,000	3,73	0,000	2,95	0,001	2,92	0,001
Other	2,46	0,001	2,37	0,003	2,26	0,008	2,27	0,008	1,93	0,044	1,89	0,058
Employment		**0,065**		**0,137**		**0,113**		**0,156**		**0,149**		**0,095**
Not currently working	3,20	0,019	2,82	0,046	2,96	0,037	2,72	0,054	2,72	0,057	2,93	0,032
Employee without security	3,09	0,026	2,78	0,053	2,80	0,054	2,58	0,074	2,40	0,108	2,64	0,064
Employee with security	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Health insurance		**0,393**		**0,353**		**0,633**		**0,848**		**0,753**		**0,752**
No	1,16	0,393	1,18	0,353	1,09	0,633	1,04	0,848	1,06	0,753	1,06	0,752
Yes	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Actual-ideal gap				**0,000**		**0,000**		**0,000**		**0,000**		**0,000**
actual < ideal			0,39	0,000	0,37	0,000	0,33	0,000	0,33	0,000	0,34	0,000
actual = ideal			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
actual > ideal			1,49	0,012	1,68	0,003	1,66	0,004	1,62	0,007	1,60	0,008
Sex of living children				**0,007**		**0,017**		**0,018**		**0,022**		**0,026**
None			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Only male			8,35	0,001	7,39	0,002	7,08	0,002	6,79	0,003	6,88	0,003
Only female			6,06	0,005	5,52	0,010	5,34	0,011	5,20	0,014	5,55	0,010
Both sexes			7,41	0,001	5,98	0,006	5,45	0,009	5,11	0,013	5,45	0,009
Deceased children				**0,137**		**0,325**		**0,321**		**0,407**		**0,431**
0			*1,34*	*0,137*	*1,24*	*0,325*	*1,25*	*0,321*	*1,21*	*0,407*	*1,00*	
1+			1,00		1,00		1,00		1,00		1,20	0,431
Abortion history				**0,980**		**0,919**		**0,988**		**0,844**		**0,853**
Yes			0,99	0,980	0,98	0,919	1,00	0,988	1,04	0,844	1,04	0,853
No			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Ever-use of contraceptives				**0,000**		**0,000**		**0,000**		**0,000**		**0,000**
Never			4,64	0,000	4,59	0,000	4,49	0,000	4,21	0,000	4,16	0,000
Traditional			1,15	0,458	1,12	0,594	1,14	0,536	1,10	0,667	1,11	0,618
Modern			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Knowledge of ovulatory cycle				**0,148**		**0,126**		**0,178**		**0,126**		**0,122**
Give correct answer			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Give wrong answer			0,65	0,054	0,65	0,064	0,67	0,088	0,65	0,063	0,64	0,053
No idea			0,67	0,084	0,61	0,051	0,63	0,075	0,61	0,051	0,61	0,055

Table VI.4.6. Determinants of unmet need for limiting based on original definition, TDHS-2008
(continued)

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V		MODEL VI	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Meeting with friends						**0,345**		**0,533**		**0,527**		**0,575**
No					1,18	0,345	1,12	0,533	1,12	0,527	1,10	0,575
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Use of internet						**1,000**		**0,852**		**0,893**		**0,822**
No					1,00	1,000	1,05	0,852	1,04	0,893	1,06	0,822
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Watching women`s programs on TV						**0,519**		**0,437**		**0,542**		**0,643**
No					0,89	0,519	0,86	0,437	0,89	0,542	0,91	0,643
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Traditionality level in marriage						**0,715**		**0,811**		**0,630**		**0,632**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					0,86	0,431	0,90	0,575	0,86	0,415	0,84	0,373
High					0,85	0,485	0,87	0,540	0,80	0,354	0,82	0,389
Level of practising religous duties						**0,497**		**0,457**		**0,426**		**0,321**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					1,38	0,452	1,38	0,465	1,34	0,500	1,53	0,331
High					1,08	0,864	1,06	0,897	1,01	0,990	1,14	0,789
Gender roles						**0,210**		**0,198**		**0,200**		**0,216**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					0,74	0,133	0,74	0,135	0,73	0,116	0,72	0,107
High					1,11	0,580	1,12	0,546	1,08	0,674	1,04	0,820
Education of husband								**0,221**		**0,159**		**0,168**
No educ/incomp. prim.							1,80	0,121	1,92	0,099	1,85	0,122
First level primary							1,31	0,237	1,38	0,181	1,33	0,243
Second level primary							1,63	0,057	1,74	0,035	1,75	0,037
High school/higher							*1,00*		*1,00*		*1,00*	
Employment of husband								**0,758**		**0,890**		**0,880**
Not currently working							1,22	0,492	1,15	0,641	1,15	0,633
Employee without security							1,10	0,575	1,02	0,910	1,02	0,931
Employee with security							*1,00*		*1,00*		*1,00*	
Residence										**0,506**		**0,454**
Urban									*1,00*		*1,00*	
Rural									1,13	0,506	1,15	0,454
Region										**0,383**		**0,516**
West									*1,00*		*1,00*	
South									1,36	0,294	1,32	0,361
Central									1,27	0,368	1,18	0,526
North									1,47	0,201	1,39	0,273
East									1,65	0,051	1,56	0,091
Wealth index										**0,433**		**0,402**
Poor									1,04	0,884	1,09	0,747
Middle									0,78	0,393	0,80	0,445
Rich									*1,00*		*1,00*	
Mother's educational level												**0,024**
No educ/incomp. prim.											0,36	0,019
Primary complete											0,29	0,006
Secondary/higher											*1,00*	
Consanguinity among women's parents												**0,223**
Yes											1,24	0,223
No											*1,00*	
Nagelkerke R-square		0,076		0,134		0,137		0,144		0,150		0,156

Table VI.4.7. Determinants of total unmet need based on original definition, TDHS-2008

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V		MODEL VI	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,033**		**0,021**		**0,118**		**0,165**		**0,312**		**0,318**
<25	1,58	0,072	1,72	0,040	1,62	0,090	1,56	0,120	1,44	0,223	1,45	0,220
25-34	1,48	0,011	1,56	0,007	1,42	0,049	1,38	0,070	1,30	0,140	1,31	0,144
35+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Marriage duration		**0,080**		**0,025**		**0,031**		**0,016**		**0,018**		**0,024**
0-4	1,63	0,024	2,09	0,007	2,04	0,008	2,17	0,004	2,15	0,005	2,10	0,006
5-9	1,21	0,263	1,38	0,072	1,36	0,124	1,44	0,057	1,42	0,076	1,40	0,086
10+	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Education of women		**0,037**		**0,308**		**0,492**		**0,451**		**0,432**		**0,540**
No educ/incomp. prim.	1,43	0,098	1,02	0,914	0,91	0,710	0,80	0,382	0,78	0,327	0,80	0,423
First level primary	1,06	0,762	0,90	0,558	0,91	0,680	0,82	0,357	0,83	0,373	0,86	0,495
Second level primary	0,76	0,349	0,65	0,139	0,64	0,156	0,60	0,105	0,60	0,106	0,64	0,160
High school/higher	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Mother tongue		**0,000**		**0,000**		**0,000**		**0,000**		**0,001**		**0,001**
Turkish	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	2,34	0,000	1,99	0,000	1,97	0,000	1,95	0,000	1,76	0,011	1,71	0,014
Kurdish, non-Turkish speakers	5,25	0,000	3,15	0,000	3,65	0,000	3,45	0,000	2,84	0,000	2,85	0,000
Other	2,29	0,000	1,91	0,009	1,94	0,014	1,94	0,015	1,77	0,046	1,73	0,057
Employment		**0,014**		**0,042**		**0,052**		**0,070**		**0,062**		**0,050**
Not currently working	2,84	0,003	2,47	0,012	2,54	0,016	2,42	0,022	2,46	0,021	2,56	0,016
Employee without security	2,85	0,007	2,46	0,022	2,43	0,032	2,33	0,043	2,23	0,056	2,35	0,041
Employee with security	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Health insurance		**0,997**		**0,948**		**0,630**		**0,546**		**0,587**		**0,601**
No	1,00	0,997	1,01	0,948	0,92	0,630	0,90	0,546	0,91	0,587	0,91	0,601
Yes	*1,00*		*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Actual-ideal gap				**0,002**		**0,001**		**0,000**		**0,001**		**0,002**
actual < ideal			0,88	0,461	0,84	0,345	0,81	0,219	0,82	0,247	0,83	0,301
actual = ideal			*1,52*	*0,004*	*1,00*		*1,00*		*1,62*	*0,004*	*1,00*	
actual > ideal			1,00		1,66	0,003	1,65	0,003	1,00		1,58	0,005
Sex of living children				**0,011**		**0,004**		**0,004**		**0,004**		**0,007**
None			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Only male			2,62	0,002	2,81	0,001	2,77	0,002	2,69	0,003	2,69	0,003
Only female			1,75	0,075	1,76	0,078	1,74	0,087	1,69	0,109	1,77	0,084
Both sexes			2,41	0,015	2,23	0,029	2,11	0,044	2,01	0,057	2,08	0,046
Deceased children				**0,066**		**0,148**		**0,141**		**0,181**		**0,184**
0			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
1+			1,39	0,066	1,34	0,148	1,35	0,141	1,32	0,181	1,32	0,184
Abortion history				**0,887**		**0,973**		**0,957**		**0,819**		**0,821**
Yes			0,97	0,887	0,99	0,973	1,01	0,957	1,05	0,819	1,05	0,821
No			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Ever-use of contraceptives				**0,000**		**0,000**		**0,000**		**0,000**		**0,000**
Never			4,10	0,000	4,42	0,000	4,38	0,000	4,15	0,000	4,05	0,000
Traditional			1,36	0,039	1,44	0,031	1,45	0,026	1,42	0,037	1,43	0,036
Modern			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Knowledge of ovulatory cycle				**0,881**		**0,600**		**0,585**		**0,582**		**0,672**
Give correct answer			*1,00*		*1,00*		*1,00*		*1,00*		*1,00*	
Give wrong answer			1,05	0,820	1,11	0,621	1,15	0,527	1,12	0,597	1,10	0,666
No idea			0,99	0,947	0,97	0,892	1,00	0,986	0,97	0,911	0,97	0,904

Table VI.4.7. Determinants of total unmet need based on original definition, TDHS-2008
(continued)

	MODEL I		MODEL II		MODEL III		MODEL IV		MODEL V		MODEL VI	
	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.	Odds	Sign.
Meeting with friends						**0,011**		**0,023**		**0,028**		**0,030**
No					1,40	0,011	1,35	0,023	1,33	0,028	1,34	0,030
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Use of internet						**0,670**		**0,809**		**0,771**		**0,841**
No					0,91	0,670	0,95	0,809	0,94	0,771	0,95	0,841
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Watching women`s programs on TV						**0,252**		**0,217**		**0,296**		**0,381**
No					0,86	0,252	0,84	0,217	0,87	0,296	0,89	0,381
Yes					*1,00*		*1,00*		*1,00*		*1,00*	
Traditionality level in marriage						**0,411**		**0,480**		**0,566**		**0,472**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					0,90	0,519	0,93	0,654	0,91	0,512	0,89	0,436
High					1,10	0,622	1,12	0,550	1,05	0,806	1,05	0,799
Level of practising religous duties						**0,828**		**0,868**		**0,910**		**0,839**
Low					*1,00*		*1,00*		*1,00*		*1,00*	
Moderate					1,12	0,717	1,12	0,733	1,10	0,777	1,18	0,600
High					1,20	0,563	1,18	0,609	1,15	0,674	1,21	0,556
Gender roles						**0,060**		**0,072**		**0,066**		**0,057**
Low					*1,00*		*1,00*		*0,69*	*0,024*	*1,00*	
Moderate					0,69	0,021	0,69	0,024	0,82	0,203	0,68	0,022
High					0,83	0,229	0,84	0,250	1,00		0,80	0,157
Education of husband								**0,820**		**0,817**		**0,824**
No educ/incomp. prim.							1,27	0,409	1,27	0,432	1,24	0,477
First level primary							1,11	0,499	1,11	0,524	1,08	0,638
Second level primary							1,12	0,558	1,15	0,474	1,16	0,439
High school/higher							*1,00*		*1,00*		*1,00*	
Employment of husband								**0,895**		**0,988**		**0,990**
Not currently working							1,08	0,749	0,99	0,975	1,00	0,999
Employee without security							1,07	0,649	0,98	0,883	0,98	0,900
Employee with security							*1,00*		*1,00*		*1,00*	
Residence										**0,692**		**0,682**
Urban									*1,00*		*1,00*	
Rural									1,06	0,692	1,07	0,682
Region										**0,688**		**0,802**
West									*1,00*		*1,00*	
South									1,08	0,735	1,05	0,825
Central									1,16	0,465	1,10	0,632
North									1,06	0,826	1,02	0,945
East									1,33	0,152	1,27	0,234
Wealth index										**0,067**		**0,052**
Poor									1,23	0,375	1,29	0,288
Middle									0,79	0,299	0,81	0,360
Rich									*1,00*		*1,00*	
Mother's educational level												**0,412**
No educ/incomp. prim.											0,64	0,239
Primary complete											0,60	0,183
Secondary/higher											*1,00*	
Consanguinity among women's parents												**0,079**
Yes											1,28	0,079
No											*1,00*	
Nagelkerke R-square		0,078		0,116		0,122		0,124		0,129		0,133

Table VI.4.8. Determinants of unmet need for spacing, unmet need for limiting and total unmet need according to the final model, TDHS-2008

	Unmet need for:					
	Spacing		Limiting		Total	
	Odds	Sign.	Odds	Sign.	Odds	Sign.
Age		**0,024**		**0,811**		**0,318**
<25	3,49	0,016	1,10	0,818	1,45	0,220
25-34	3,23	0,007	1,15	0,523	1,31	0,144
35+	*1,00*		*1,00*		*1,00*	
Marriage duration		**0,001**		**0,825**		**0,024**
0-4	4,19	0,000	1,25	0,610	2,10	0,006
5-9	2,86	0,009	1,15	0,569	1,40	0,086
10+	*1,00*		*1,00*		*1,00*	
Education of women		**0,085**		**0,335**		**0,540**
No educ/incomp. prim.	0,64	0,320	1,26	0,492	0,80	0,423
First level primary	0,46	0,026	1,52	0,176	0,86	0,495
Second level primary	0,41	0,078	0,88	0,788	0,64	0,160
High school/higher	*1,00*		*1,00*		*1,00*	
Mother tongue		**0,248**		**0,007**		**0,001**
Turkish	*1,00*		*1,00*		*1,00*	
Kurdish, Turkish speakers	1,69	0,140	1,78	0,029	1,71	0,014
Kurdish, non-Turkish speakers	3,19	0,049	2,92	0,001	2,85	0,000
Other	1,33	0,544	1,89	0,058	1,73	0,057
Employment		**0,533**		**0,095**		**0,050**
Not currently working	1,98	0,262	2,93	0,032	2,56	0,016
Employee without security	1,99	0,306	2,64	0,064	2,35	0,041
Employee with security	*1,00*		*1,00*		*1,00*	
Health insurance		**0,154**		**0,752**		**0,601**
No	0,63	0,154	1,06	0,752	0,91	0,601
Yes	*1,00*		*1,00*		*1,00*	
Actual-ideal gap		**0,000**		**0,000**		**0,002**
actual < ideal	4,85	0,002	0,34	0,000	0,83	0,301
actual = ideal	*1,00*		*1,00*		*1,00*	
actual > ideal	0,48	0,210	1,60	0,008	1,58	0,005
Sex of living children		**0,008**		**0,026**		**0,007**
None	*1,00*		*1,00*		*1,00*	
Only male	2,69	0,004	6,88	0,003	2,69	0,003
Only female	1,37	0,423	5,55	0,010	1,77	0,084
Both sexes	2,38	0,039	5,45	0,009	2,08	0,046
Deceased children		**0,054**		**0,431**		**0,184**
0	*1,00*		*1,00*		*1,00*	
1+	2,12	0,054	1,20	0,431	1,32	0,184
Abortion history		**0,557**		**0,853**		**0,821**
Yes	0,74	0,557	1,04	0,853	1,05	0,821
No	*1,00*		*1,00*		*1,00*	
Ever-use of contraceptives		**0,000**		**0,000**		**0,000**
Never	5,54	0,000	4,16	0,000	4,05	0,000
Traditional	2,04	0,041	1,11	0,618	1,43	0,036
Modern	*1,00*		*1,00*		*1,00*	
Knowledge of ovulatory cycle		**0,009**		**0,122**		**0,672**
Give correct answer	*1,00*		*1,00*		*1,00*	
Give wrong answer	2,90	0,003	0,64	0,053	1,10	0,666
No idea	2,12	0,059	0,61	0,055	0,97	0,904

Table VI.4.8. Determinants of unmet need for spacing, unmet need for limiting and total unmet need according to the final model, TDHS-2008 *(continued)*

	Unmet need for:					
	Spacing		Limiting		Total	
	Odds	Sign.	Odds	Sign.	Odds	Sign.
Meeting with friends		**0,005**		**0,575**		**0,030**
No	1,94	0,005	1,10	0,575	1,34	0,030
Yes	*1,00*		*1,00*		*1,00*	
Use of internet		**0,770**		**0,822**		**0,841**
No	0,90	0,770	1,06	0,822	0,95	0,841
Yes	*1,00*		*1,00*		*1,00*	
Watching women`s programs on TV		**0,361**		**0,643**		**0,381**
No	0,81	0,361	0,91	0,643	0,89	0,381
Yes	*1,00*		*1,00*		*1,00*	
Traditionality level in marriage		**0,214**		**0,632**		**0,472**
Low	*1,00*		*1,00*		*1,00*	
Moderate	0,86	0,594	0,84	0,373	0,89	0,436
High	1,51	0,234	0,82	0,389	1,05	0,799
Level of practising religous duties		**0,198**		**0,321**		**0,839**
Low	*1,00*		*1,00*		*1,00*	
Moderate	0,71	0,496	1,53	0,331	1,18	0,600
High	1,16	0,779	1,14	0,789	1,21	0,556
Gender roles		**0,004**		**0,216**		**0,057**
Low	*1,00*		*1,00*		*1,00*	
Moderate	0,60	0,042	0,72	0,107	0,68	0,022
High	0,45	0,001	1,04	0,820	0,80	0,157
Education of husband		**0,146**		**0,168**		**0,824**
No educ/incomp. prim.	0,53	0,187	1,85	0,122	1,24	0,477
First level primary	0,80	0,337	1,33	0,243	1,08	0,638
Second level primary	0,52	0,031	1,75	0,037	1,16	0,439
High school/higher	*1,00*		*1,00*		*1,00*	
Employment of husband		**0,547**		**0,880**		**0,990**
Not currently working	0,71	0,317	1,15	0,633	1,00	0,999
Employee without security	1,02	0,938	1,02	0,931	0,98	0,900
Employee with security	*1,00*		*1,00*		*1,00*	
Residence		**0,715**		**0,454**		**0,682**
Urban	*1,00*		*1,00*		*1,00*	
Rural	0,92	0,715	1,15	0,454	1,07	0,682
Region		**0,427**		**0,516**		**0,802**
West	*1,00*		*1,00*		*1,00*	
South	0,79	0,545	1,32	0,361	1,05	0,825
Central	1,25	0,480	1,18	0,526	1,10	0,632
North	0,58	0,219	1,39	0,273	1,02	0,945
East	0,89	0,723	1,56	0,091	1,27	0,234
Wealth index		**0,051**		**0,402**		**0,052**
Poor	1,75	0,104	1,09	0,747	1,29	0,288
Middle	0,72	0,335	0,80	0,445	0,81	0,360
Rich	*1,00*		*1,00*		*1,00*	
Mother's educational level		**0,56**		**0,024**		**0,412**
No educ/incomp. prim.	1,37	0,552	0,36	0,019	0,64	0,239
Primary complete	1,66	0,333	0,29	0,006	0,60	0,183
Secondary/higher	*1,00*		*1,00*		*1,00*	
Consanguinity among women's parents		**0,30**		**0,223**		**0,079**
Yes	1,30	0,304	1,24	0,223	1,28	0,079
No	*1,00*		*1,00*		*1,00*	
Nagelkerke R-square		0,324		0,156		0,133

VI.5. DEMOGRAPHIC IMPACT OF FULFILLING UNMET NEED

As it has been touched on Section V.5 that contraceptive prevalence rate and total fertility rates are highly correlated with each other. For this reason it is believed that improvement in the level of unmet need might bring about fertility reduction (Sinding et al. 1994; Westoff and Bankole 1995; Westoff 2006; Khan et al. 2008).

Table VI.5.1 and Table VI.5.2 present the different levels of TFR that has been obtained depending on the probable improvement in the original and revised definition of unmet need. To create the following tables, the regression equation, TFR=5.4314 – 0.0476*CPR, which was explained in Section IV.5 in detail has been used. R-squared indicating the strength of the association is 0.94 for this model. It should be reiterated that the estimates presented in this section do not refer to the projection of future fertility level of Turkey. It is just a simple demonstration of the impact of satisfying the contraceptive needs of nonusers on total fertility. The scenarios proposed here are in line with the targets set by the MoH in the "National Strategic Action Plan for Sexual and Reproductive Health" about unmet need. They have envisaged a 50 percent and 100 percent decline as of 2008 and 2013, respectively (see page 25).

Using the original definition of unmet need (Table VI.5.1), the predicted TFR would decline from 2.2 children per woman to 1.7 children indicating a relative decline of 23 percent in the best-case scenario, that is fully satisfied unmet need. This picture has not changed very much according to the revised definition (Table VI.5.2). In fact, a complete disappearance of unmet need is not a very realistic expectation. For this reason, other possibilities have also taken into account. If the total unmet need was halved, adjusted TFR would be 1.8 children regardless of the formulation types being used in calculating the unmet need. The predicted TFR would be around 1.9 children per women in both definitions if the percent of decrease was below 20.

Actually, either using the original definition or revised definition of unmet need, the results were almost identical for the adjusted TFRs. This finding indicates that the modified algorithms do not have an impact on the estimated demographic impact of satisfying unmet need. On the other hand, the difference between the current and predicted TFR stemming from fulfilling the needs for family planning is prominent. Even for the worse scenario where there was no change in meeting the needs, the predicted TFR would be below the replacement level.

Table VI.5.1. Estimated impact of reducing unmet need (original definition) on fertility among currently married women in TDHS-2008

	Total demand	**Adjusted umet need**	**Adjusted current use**	**Current TFR**	**Predicted TFR**
No change in unmet need	79,2	6,2	73,0	2,16	1,96
If:					
Total unmet need fully reduced	79,2	0,0	79,2	2,16	1,66
%50 of total unmet need reduced and converted to FP use	79,2	3,1	76,1	2,16	1,81
%20 of total unmet need reduced and converted to FP use	79,2	5,0	74,2	2,16	1,90
%10 of total unmet need reduced and converted to FP use	79,2	5,6	73,6	2,16	1,93

Table VI.5.2. Estimated impact of reducing unmet need (revised definition) on fertility among currently married women in TDHS-2008

	Total demand	**Adjusted umet need**	**Adjusted current use**	**Current TFR**	**Predicted TFR**
No change in unmet need	81,3	8,3	73,0	2,16	1,96
If:					
Total unmet need fully reduced	81,3	0,0	81,3	2,16	1,56
%50 of total unmet need reduced and converted to FP use	81,3	4,2	77,2	2,16	1,76
%20 of total unmet need reduced and converted to FP use	81,3	6,6	74,7	2,16	1,88
%10 of total unmet need reduced and converted to FP use	81,3	7,5	73,8	2,16	1,92

VII. CONCLUSION

In the late 19th century, it was totally out of the question for the population growth to be considered as an "overpopulation" problem. In those years, large populations in Western countries were accepted as a sign of military strength and opportunity for territoral expansion. After the World War II, national power and supremacy started to be measured in terms of economic development (i.e. per capita income). By the late 1960s, population growth had become a burden rather than a strength, and the meaning of overpopulation, that is poverty, disease, environmental degredation and rapid immigration, had been converted into "*world culture*" by the efforts of population control advocates. This was followed by international conferences and foundation of international organizations, at which population experts promulgated the exigency of regulation of population growth through pessimistic theories about the negative effects of overpopulation. Barrett and Frank (1999) also pointed out that the shift from pronatalist to antinatalist ideology gained legitimacy with the efforts of non-governmental actors in international arena via social engineering in linking world and national objectives. On the other hand, the success of family planning irrespective of the motives behind its emergence cannot be ignored. Bongaarts et al (1990) presented that future population growth would be considerably higher than the current expectations[30] in the absence of an organized family planning programs. Based on the medium variant prospects, world population is expected to reach 9.3 billion in the middle of this century and 10.1 billion in 2100 (UN 2012). According to the projections in the absence of family planning, the population total for the developing world had been projected to reach 11.5 billion in 2050 and 14.6 billion in 2100 (Bongaarts et al. 1990).

[30] The World Bank projection assumes that fertility will decline further in the future, gradually approaching a stable level near two births per woman in the middle of the twenty-first century

In the postwar period, the donor assistance was enourmously high in terms of funding, contraceptive supplies, personnel and demographic training in order to alter the demographic conditions of developing countries (Barret and Tsui 1999). Knowles et al. (1993) stated that the total assistance for family planning programs reached almost $1 billion dollars by 1990. This is the amount that have been donated by governments of developed countries and other private agencies only. During the 20th centurty, it is known that about $5 billion has been spend on family planning in the Third World (Hartmann 1995). The United States spent more than a quarter-billion dollars on population programs in 1990, and almost a half billion dollars by 1997 through its Agency for International Development (UNFPA 1998). Although the US government support for birth control in developing countries was subjected to persistent objection from its taxpayers, Piotrow (1973) argued that the rationale was explained as financing family planning programs in countries where poor people "*so clearly wanted it and need it*". It is obvious that even if there has been a demand for birth control, family planning programs have mainly originated by the suppliers from developed countries. Paradoxically, today's shrinking developed countries that had been strong advocates of family planning movement in the past are now promoting population growth and fertility increase (Blank and Tsui 2005).

When developing countries increasingly experienced large fertility declines and started to converge with developed countries in terms of high contraceptive prevalence and other indicators, the demographic rationale for family planning began to lose its effect (Blanc and Tsui 2005; Camarena and Lerner 2005). In fact, this was the time at which the concept of unmet need commenced to gain priority in the international arena.

The concept of unmet need for family planning has prevailed for several years, and its levels can vary widely depending on both the changes made in its definitions and the approach towards its calculations (Westoff and Ryder 1977; Westoff 1978; Westoff and Pebley 1981; Westoff 1988b; Bongaarts 1991; Westoff

and Ochoa 1991; DeGraff and De Silva 1996; Govindasamy and Boadi 2000; Westoff 2006). Bradley et al. (2012) admitted that unmet need has been treated with the greatest respect in recent years by donors while family planning movement is reanimating. The efforts made in order for the family planning programmes to regain their prior importance have coincided primarily with the inclusion of unmet need as an millennium development goal indicator. The level of unmet need is used by policymakers and program planners as a yardstick against which to monitor the progress of countries in the achievement of development goals (Bradley et al. 2012).

Although it is difficult to attain one single best estimate for unmet need (Westoff and Pebley 1981), survey estimates should be comparable over time and across countries. The estimates based on different perspectives may result in misleading or unreliable comparisons. In fact, unmet need is a highly complicated subject in terms of both interpretation and calculation. It does not reflect the individual need of a woman, her desire to use contraception or the factors affecting her contraceptive use. Instead, it serves as an aggregate-level measure in a country (Bradley et al. 2012).

According to Robey et al. (1996), knowing the group of women who are likely to have unmet need and also their characteristics can help design meeting unmet need programme. Similar to other developing countries, in Turkey, the level of unmet need has dropped dramatically for the last ten years. In both TDHS-1998 and TDHS-2008, a clear relationships exists between reproductive behavior of women and the level of unmet need when unmet need is divided into its components (spacing, limiting and total). The most prominent variables among reproductive factors are the sex of living children, ever use of contraception and the gap between actual and ideal numbers. These are the common predictors of each component of unmet need in the two surveys. Regarding the unmet need for spacing, the age of woman and the time spent within marriage has significantly affected the likelihood of having spacing needs in 1998 and 2008. In addition to these, in TDHS-2008, an

inaccurate knowledge about the most fertile period in an ovulatory cycle increases the possibility of having unmet need for spacing. Even if the women with unmet need are not current users of contraceptives, but if they are aware of that period, this might affect the abstinence from sexual intercourse and in turn, unplanned pregnancies. Women's gathering activities are another important factor for unmet need according to the findings of TDHS-2008. This might have a positive impact similar to those of mass media messages about family planning. That is, social interaction with female friends might increase women's awareness about family planning, contraceptive methods and wantedness of future births.

The limiting component can be explained with more variables in TDHS-1998 when compared to that of TDHS-2008. Together with the common predictors of unmet need, mother tongue has been found to be an important aspect of limiting. Women whose mother tongue is Kurdish seem to be more disadvantegous in terms of planning their births and contraceptive use. Moreover, in TDHS-1998, employment, health insurance, husbands' and women's religious concerns are among other influential factors.

Women's employment status has been recognized as one of the important socioeconomic factors affecting unmet need for limiting. The needs of women to terminate their fertility have significantly increased if they have not had a job. Indeed, many studies indicate a negative relationship between fertility and women's employment (Mason and Palan 1981; Rodriguez and Cleland 1981; Rosenberg 1983; Hoffman 1985; UN 1985; Calhoun 1989; Okpala 1989, Bernhardt 1993; Felmlee 1993) but the causal direction is said to be ambiguous (Mason 1974; Ni Bhrolchain 1980; Cramer 1980; Sweet 1981). It is widely accepted that childbearing has an inhibiting effect on women's labor force activities (Bernhardt 1993). On the other hand, women's employment status has been stated to be a good predictor of their expected fertility (Bumpass and Westoff 1970; Ryder and Westoff 1971). Accordingly, women with work outside the home may less likely have unwanted

births as they are more inclined to plan the timing of their births which in turn, affects the level of unmet need.

Both women's and their husbands' oppositions to family planning due to religous considerations have also an impact on the likelihood of having unmet need, particularly on the limiting component, but the direction of relationship is different depending on whose religious concerns are taken into account. For instance, women's objections about family planning on religious grounds have had a decreasing effect on unmet need for limiting whereas husbands' oppositions have increased the possibility of limiting needs. It is obvious that when women express their opposition to contaceptive methods due to religious norms, they are most probably against regulating their fertility. Their reason for not using a method is apparent and therefore they may not refer to their children as unplanned or unwanted. On the other hand, husbands' objection results in an increased likelihood of having unmet need for limiting. Even if women want to terminate their fertility and use a method, they are more prone to be confronted with limiting needs as they are affected by their husbands' religious concerns. It should be mentioned that husband's approval of family planning, their desire for children and their religious concerns about family planning have been expressed by their wives, not by themselves. For this reason, husband's characteristics might have a different impact on unmet need when the answers to opinion questions about family planning are given by husbands themselves, because several studies have pointed out significant disparities between men's and women's reports about contraceptive use, attitudes toward family planning, and fertility preferences and intentions (Coombs and Chang 1981; Koenig et al. 1984). Besides, there has not been a clear distinction among different religious groups due to the fact that the majority of the respondents were Muslim.

An unforseen result has been revealed in TDHS-2008. The educational level of women's mothers[31] has been found to be closely associated with unmet need for limiting. This finding has not been expected becasue it has been thought that women's education would have been the influential predictor of unmet need.

Regarding the total level of unmet need, its determinants are the combination of the ones for the spacing and limiting components. In addition to these, there are additional factors which have not been associated with the unmet need for spacing and limiting. That is, not being exposed to media messages about family planning and living in poor households has significantly raised the possibility of having unmet need.

Multivariate analyses have indicated that individual characteristics of women and the reproductive-level factors seem to have a more critical impact on the components of unmet need. The region, type of place of residence, the majority of cultural factors and husbands' characteristics have not presented a considerable importance on unmet need for family planning.

The most immediate effect of reducing unmet need comes through the increasing level of contraceptive prevalence rate, which leads to changes in overall fertility. It should be highlighted that the growing number of women using contraceptive methods is not the only way for averting fertility. In addition to contraceptive use, the proportion of women in union, level of induced abortion, and the duration of postpartum insusceptibility, which are defined as the proximate determinants, have a direct impact on fertility as well (Bongaarts 1978). Thus, changes in the level of contraceptive use are one of the substantial factors among other demographic, social, economic, cultural and physical factors.

[31] This information is not available in TDHS-1998

The simulation of fulfilled unmet need is largely used to explicate its impact on total fertility rate (Westoff and Bankole 1995; Westoff 2006; Khan et al. 2008, Bradley et al. 2012). The demographic impact of satisfying unmet need for family planning can be more noticeable especially when the level of unmet need is considerably high. In Turkey, the reduction of unmet need has generated a total fertility rate below the replacement level (it ranges from 1.6 to 1.9), but its impact is relatively low when compared to other developing countries having higher levels of unmet need. For instance, in Latin America reduction of unmet need will lead to a 35 percent decline in total fertility rate (Westoff 2006). Similarly, in Uganda, total fertility rate can be reduced by 25-30 percent depending on the decrease in the level of unmet need (Khan et al. 2008). In addition to the countries' level of unmet need, the age structure, current fertility rate, and the level of social infrastructure are of great importance in determining the probable changes in contraceptive and fertility level. Moreover, meeting the needs of women for family planning reduces not only fertility but also unintended pregnancies and births. This will lead to a decline in induced abortion, and, therefore, to an achievement of development goals targeting child and mother health.

Based on the findings of descriptive and multivariate analyses, it can be concluded that high or low acceptance rate of women for the use of contraceptive methods either to space the birth interval or limit their fertility has revealed the importance of woman's status and empowerment. Indeed, fertility control does not exist as a natural instinct in human nature. Instead, it is a socially learned behavior (Him and Hoşgör 2011). For this reason, the social environment in which women live plays a significant role in raising their awareness about their individual rights to control their sexuality, fertility and reproduction. As it is known, one of the emphasis of family planning programs has been on the freedom to choose but Petchesky (1984) asserted that women's choices have not been the topic of feminists' interest. Rather, their major concern has been the conditions under which choices are made. This can be clarified by the statement Petchesky (1984) used. That is, "*the right to choose means little when women are powerless*". In other words, the widespread

availability and accessibility of contraceptive methods is insufficient when women do not have the considerable autonomy and power in control of their own bodies and their own fertility. On the other hand, population planners and policy makers still have not become conscious of the fact that the subject of their speeches is predominantly women bodies and their lives (Dixon-Mueller 1993), not the collective object of the governments to achieve political goals set by either pronatalist or antinatalist population policies (Özberk 2003; Miller 2007; Akşit 2010; Ertem 2011).

In terms of the course of family planning movement, it has been financially and politically disregarded as a global health priority during the last decades. The most influential factor about this ignorance can be considered as the approach of the U.S government which has been antagonistic especially between 2001 and 2009 to the idea of family planning meaning that they will no longer support family planning activities at the global level (Cohen 2012). It is a contradiction because the United States was the leading pioneer of the family planning movement in the world.

Accordingly, recent years have witnessed the efforts to put the family planning back on the global agenda. The best example of this is the London Summit conducted in June 2012. This summit is important because it has indicated that increased accessibility to contraceptive methods is important providing that women have better information on the incorrect and inconsistent use of contraceptive methods as well as their sides effects. It has further emphasized the need for family planning policies when 222 million women in the world with an unmet need for family planning have been taken into account. Moreover, the summit have pointed out the fact that not only the nonusers but also the modern contraceptive users (20 percent) have dealt with unintended pregnancies. In line with these indicators, the target has been set to increase the number of contraceptive users in the world's 69 poorest countries by 120 million as of 2020 (Cohen 2012; Singh and Darroch 2012). From now on, the elimination of unintended pregnancies among women using

contraceptive methods might be the focus of the future family planning programs, which have already been indicated in the London Summit.

These revitalization efforts will be meaningful as long as the main theme is supposed to respect and reinforce the women's rigths while planning the necessary actions. Even if women's needs and rights are at the center of such efforts, there are still serious doubts about how realizable it is, because when the summits like the one in London outweigh the quantitative goals, there is a possibility that coercive practices will rise again (Cohen 2012).

It is undoubtful that unmet need has been a guide for encouraging the development of family planning programs. Besides that, it is important to reveal women who are more likely to have an unmet need for family planning. On the other hand, the rationale behind the indicator of unmet need is still problematic since it is based on implicit assumptions and deductions depending on the inconsistent answers given by the respondents about contraceptive use and wantedness of a child/pregnancy. For instance, not using a method can simply be the choice of women or it can be possible that a pregnancy may have been unwanted at the time of conception but have become wanted later because of changing circumstances (Hass 1974). It is apparent that each modification in the unmet need algorithm produces higher estimates, and with the available data set it seems impossible to determine whether these revisions have been done because there is an underestimation, or whether these adjustments result in overestimation. For this reason, further research, particularly the qualitative ones in which women are directly asked about their family planning needs are required.

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APPENDICES

Appendix 1. Original versus revised definition based on socio-economic variables, currently married women 15-49, TDHS-1998

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Age													
<25	13,6	4,4	18,0	74,4	14,9	6,2	21,2	69,7	1,3	1,9	3,2	-4,8	1186
25-34	3,5	7,3	10,8	87,0	4,5	8,5	13,0	84,4	1,0	1,2	2,2	-2,6	2286
35+	0,5	7,0	7,6	89,7	0,5	10,9	11,4	85,0	0,0	3,9	3,9	-4,6	2448
Marriage duration							0,0						
0-4	13,7	2,5	16,2	75,6	15,5	3,6	19,1	70,9	1,8	1,1	2,9	-4,6	1238
5-9	5,6	6,1	11,8	86,1	6,1	7,2	13,3	84,1	0,5	1,0	1,5	-2,0	1166
10+	0,6	8,1	8,7	88,7	0,9	11,5	12,4	84,5	0,3	3,4	3,7	-4,2	3516
Education of women													
No education /incomplete primary	4,0	11,9	15,9	76,4	4,6	15,9	20,5	71,1	0,6	4,0	4,6	-5,3	1546
First level primary	4,5	5,2	9,7	87,6	5,2	7,3	12,5	84,3	0,7	2,1	2,8	-3,3	3570
Second level primary	3,2	2,8	6,0	92,7	3,9	3,7	7,6	90,8	0,6	1,0	1,6	-1,9	526
High school/higher	5,3	1,9	7,1	91,5	5,8	3,1	8,8	89,6	0,5	1,2	1,7	-1,9	279
Mother tongue													
Turkish	3,5	4,5	8,0	89,7	4,0	6,8	10,9	86,3	0,5	2,3	2,9	-3,4	4908
Kurdish, can speak Turkish	9,6	15,2	24,8	66,8	11,1	17,8	28,9	62,1	1,5	2,7	4,1	-4,7	573
Kurdish, cannot speak Turkish	6,2	25,4	31,6	40,3	7,0	30,0	36,9	34,5	0,8	4,5	5,3	-5,9	245
Other	7,4	9,4	16,9	76,1	8,2	12,0	20,2	72,2	0,8	2,5	3,3	-3,9	194
Employment status													
Not currently working/never worked	4,5	7,3	11,8	84,3	5,3	9,7	15,0	80,5	0,8	2,3	3,1	-3,8	4036
Employee without security	4,0	6,1	10,1	86,8	4,4	9,1	13,4	83,0	0,4	2,9	3,3	-3,8	1428
Employee with security	3,7	1,2	4,9	94,2	4,0	3,1	7,0	91,6	0,3	1,8	2,1	-2,5	435
Health insurance													
No	6,3	9,3	15,6	79,0	7,1	12,1	19,2	74,7	0,8	2,8	3,6	-4,3	2541
Yes	2,7	4,5	7,2	90,8	3,3	6,7	10,0	87,5	0,6	2,2	2,8	-3,3	3329
TOTAL	**4,3**	**6,6**	**10,9**	**85,7**	**5,0**	**9,0**	**14,0**	**82,0**	**0,6**	**2,5**	**3,1**	**-3,7**	**5921**

Appendix 2. Original versus revised definition based on reproductive variables, currently married women 15-49, TDHS-1998

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Actual-ideal gap													
actual < ideal	9,1	2,4	11,5	81,9	10,6	4,2	14,8	76,9	1,5	1,9	3,4	-5,0	2239
actual = ideal	1,8	6,8	8,6	90,3	1,9	8,7	10,5	88,2	0,1	1,9	1,9	-2,1	1805
actual > ideal	0,5	11,3	11,8	85,6	0,7	15,0	15,7	81,4	0,2	3,7	3,9	-4,2	1652
Sex of living children													
None	11,6	0,1	11,7	61,9	10,9	0,6	11,5	60,4	-0,7	0,5	-0,2	-1,5	613
Only male	6,0	5,0	11,0	86,9	7,3	6,2	13,5	84,1	1,3	1,2	2,5	-2,8	1273
Only female	6,4	4,0	10,4	86,5	8,0	6,1	14,1	82,1	1,6	2,1	3,7	-4,4	989
Both sexes	1,5	9,3	10,8	86,8	1,8	12,8	14,7	82,7	0,3	3,5	3,8	-4,1	3046
Deceased children													
0	4,8	5,6	10,3	86,6	5,5	7,6	13,1	83,2	0,8	2,0	2,8	-3,4	4841
1+	2,3	11,1	13,4	81,5	2,4	15,5	17,9	76,5	0,1	4,3	4,5	-5,1	1080
Abortion history													
Yes	1,6	6,0	7,6	90,9	1,5	8,7	10,2	87,9	-0,1	2,7	2,6	-2,9	1560
No	5,3	6,8	12,1	83,7	6,2	9,1	15,3	79,7	0,9	2,4	3,3	-4,0	4357
Ever-use of contraceptives													
Never	14,4	12,1	26,5	0,0	16,0	13,3	29,3	0,0	1,7	1,2	2,8	0,0	936
Traditional	3,3	5,6	8,8	89,1	5,1	8,0	13,2	83,9	1,9	2,5	4,4	-5,3	1000
Modern	2,2	5,5	7,8	91,1	2,3	8,3	10,6	88,0	0,1	2,7	2,8	-3,1	3984
Knowledge of ovulatory cycle													
Give correct answer	3,1	3,2	6,3	92,2	3,5	5,2	8,7	89,3	0,3	2,0	2,4	-2,8	1155
Give wrong answer	4,6	7,3	11,9	84,6	5,6	9,5	15,1	81,0	1,0	2,1	3,2	-3,7	2526
No idea	4,5	7,5	12,0	83,4	4,9	10,5	15,4	79,3	0,4	3,1	3,4	-4,2	2235
Knowledge of FP from media													
No	5,1	8,4	13,5	81,7	5,6	11,6	17,2	77,2	0,5	3,2	3,8	-4,4	2599
Yes	3,8	5,1	8,9	88,7	4,5	7,0	11,5	85,6	0,7	1,9	2,6	-3,1	3318
Knowledge of FP from family/friends													
No	4,2	7,2	11,4	84,8	4,6	10,0	14,6	81,0	0,4	2,8	3,2	-3,8	3901
Yes	4,6	5,3	9,9	87,5	5,7	7,1	12,8	84,0	1,1	1,8	2,9	-3,5	2014
TOTAL	**4,3**	**6,6**	**10,9**	**85,7**	**5,0**	**9,0**	**14,0**	**82,0**	**0,6**	**2,5**	**3,1**	**-3,7**	**5921**

Appendix 3. Original versus revised definition based on community level factors, currently married women 15-49, TDHS-1998

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Approval of family planning													
Approves	3,9	5,9	9,8	87,5	4,6	8,1	12,7	84,0	0,7	2,2	2,9	-3,5	5316
Disapproves	8,9	14,6	23,5	58,2	8,9	19,9	28,8	53,2	0,0	5,3	5,3	-5,0	314
DK	7,0	10,4	17,4	70,9	7,5	13,6	21,2	66,0	0,5	3,2	3,7	-4,9	286
Use of family planning against religion													
Yes/some methods	6,1	9,7	15,8	76,9	6,9	12,4	19,2	72,9	0,7	2,6	3,4	-4,1	1049
No	4,0	5,8	9,8	87,5	4,6	8,1	12,7	84,1	0,6	2,3	2,9	-3,4	4490
DK	2,7	7,7	10,4	85,1	4,1	11,5	15,6	78,7	1,5	3,8	5,2	-6,4	370
Traditionality level in marriage													
Little or no	4,3	2,9	7,2	90,8	4,8	4,6	9,4	88,0	0,5	1,7	2,3	-2,8	1475
Medium	3,6	5,4	9,0	88,5	4,1	7,7	11,8	85,1	0,5	2,3	2,9	-3,4	3050
Large	6,0	13,1	19,1	73,0	7,0	16,6	23,6	68,0	1,0	3,5	4,5	-5,0	1373
Gender roles													
Low	3,2	4,7	7,9	90,1	3,7	6,3	10,0	87,5	0,5	1,6	2,1	-2,5	2328
Medium	4,9	7,6	12,5	83,4	5,8	10,3	16,1	79,1	0,9	2,7	3,6	-4,3	2270
High	5,2	8,0	13,2	81,7	5,6	11,5	17,1	77,2	0,4	3,4	3,9	-4,5	1304
Religion													
Sunni	4,1	5,2	9,3	87,9	5,1	7,5	12,6	83,9	1,0	2,3	3,3	-4,0	2871
Alawi	3,2	9,4	12,5	83,6	2,9	11,1	14,0	81,4	-0,3	1,7	1,5	-2,2	269
Other muslim	4,7	8,2	12,9	83,0	4,9	10,8	15,7	79,6	0,2	2,6	2,8	-3,4	2289
Answered DK	4,4	5,8	10,2	86,7	5,8	8,6	14,4	82,0	1,4	2,8	4,2	-4,7	455
TOTAL	**4,3**	**6,6**	**10,9**	**85,7**	**5,0**	**9,0**	**14,0**	**82,0**	**0,6**	**2,5**	**3,1**	**-3,7**	**5921**

Appendix 4. Original versus revised definition based on spousal and household level factors, currently married women 15-49, TDHS-1998

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Education of husband													
No education /incomplete primary	2,7	15,4	18,1	71,0	2,7	21,5	24,2	64,0	0,0	6,1	6,1	-7,0	546
First level primary	4,7	6,1	10,7	86,1	5,4	8,2	13,6	82,6	0,7	2,2	2,8	-3,4	4742
Secondar level or higher	3,1	2,5	5,6	93,2	4,0	4,1	8,1	90,3	0,9	1,6	2,5	-2,9	618
Husband's approval of family planning													
Approves	3,5	5,8	9,3	88,3	4,2	8,0	12,1	85,0	0,7	2,1	2,8	-3,3	4847
Disapproves	8,6	12,4	21,0	67,1	9,1	16,5	25,5	62,0	0,4	4,1	4,6	-5,1	606
DK	7,2	7,1	14,3	75,2	7,9	10,7	18,6	69,5	0,7	3,5	4,2	-5,7	457
Use of family planning against religion (husband)													
Yes/some methods	5,6	10,9	16,6	76,2	6,6	14,3	20,9	71,3	1,0	3,4	4,3	-5,0	1002
No	3,9	5,3	9,2	88,4	4,4	7,6	12,0	85,1	0,5	2,3	2,8	-3,3	4320
DK	5,3	8,5	13,7	79,3	6,3	10,8	17,1	74,9	1,0	2,3	3,3	-4,4	589
Husband's desire for children													
Same	4,2	5,6	9,7	87,4	4,8	7,9	12,7	83,8	0,6	2,3	3,0	-3,5	3750
Wants more	4,5	10,3	14,8	80,4	5,4	12,9	18,3	76,5	0,9	2,6	3,5	-4,0	1062
Wants less	4,0	6,4	10,4	87,2	4,5	9,1	13,6	83,3	0,5	2,7	3,3	-3,8	803
DK	6,6	6,9	13,4	76,6	7,1	9,3	16,4	72,0	0,5	2,4	2,9	-4,6	288
Residence													
Urban	3,7	5,4	9,1	88,3	4,3	7,5	11,8	85,0	0,7	2,1	2,7	-3,3	3978
Rural	5,6	9,0	14,6	80,4	6,2	12,2	18,4	75,9	0,6	3,2	3,8	-4,5	1943
Region													
West	3,2	3,6	6,8	91,3	3,7	5,2	8,9	88,8	0,5	1,6	2,1	-2,6	2261
South	4,5	6,7	11,1	84,8	5,4	8,8	14,1	81,0	0,9	2,1	3,0	-3,8	851
Central	3,3	6,1	9,4	88,2	3,7	8,9	12,6	84,4	0,5	2,8	3,3	-3,8	1426
North	3,4	5,6	9,0	88,4	3,8	8,6	12,4	84,4	0,5	2,9	3,4	-4,0	474
East	9,1	15,0	24,1	64,7	10,3	19,1	29,4	58,9	1,1	4,1	5,2	-5,9	909
Wealth index													
Poor	7,1	10,6	17,7	75,6	7,8	13,4	21,2	71,2	0,7	2,8	3,5	-4,3	2027
Middle	3,0	5,9	8,9	88,4	4,0	8,3	12,3	84,4	0,9	2,5	3,4	-4,0	1225
Rich	2,8	3,9	6,7	91,6	3,2	6,0	9,3	88,5	0,4	2,2	2,6	-3,1	2669
TOTAL	**4,3**	**6,6**	**10,9**	**85,7**	**5,0**	**9,0**	**14,0**	**82,0**	**0,6**	**2,5**	**3,1**	**-3,7**	**5921**

Appendix 5. Original versus revised definition based on socio-economic variables, currently married women 15-49, TDHS-2008

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Age													
<25	7,0	2,9	9,9	85,7	7,5	3,3	10,8	84,6	0,5	0,4	0,9	-1,1	999
25-34	2,7	4,3	7,0	91,6	3,1	5,3	8,5	90,0	0,4	1,1	1,5	-1,6	2640
35+	0,3	4,3	4,6	94,3	0,3	7,2	7,5	90,9	0,0	2,9	2,9	-3,4	3360
Marriage duration													
0-4	7,2	2,0	9,2	86,5	7,6	2,3	9,9	85,5	0,5	0,3	0,8	-1,0	1329
5-9	2,9	4,0	6,9	91,6	3,3	5,3	8,6	89,8	0,4	1,3	1,6	-1,8	1305
10+	0,4	4,7	5,1	93,8	0,5	7,2	7,7	90,9	0,1	2,5	2,6	-2,9	4354
Education of women													
No education /Incomplete primary	3,3	8,0	11,3	84,3	3,2	11,7	14,9	80,3	-0,1	3,6	3,6	-4,0	1274
First level primary	1,4	4,0	5,4	93,4	1,5	5,7	7,2	91,4	0,1	1,7	1,8	-2,0	3671
Second level primary	3,0	1,8	4,8	93,3	3,8	3,5	7,2	90,2	0,8	1,6	2,4	-3,1	594
High school/higher	2,7	1,7	4,4	94,6	3,2	2,6	5,8	93,0	0,5	0,8	1,4	-1,6	1461
Mother tongue													
Turkish	1,6	2,9	4,5	94,4	1,8	4,6	6,4	92,2	0,2	1,7	1,9	-2,2	5768
Kurdish, can speak Turkish	5,2	8,1	13,3	82,4	5,4	10,6	16,0	79,6	0,2	2,5	2,7	-2,8	886
Kurdish, cannot speak Turkish	3,8	19,4	23,2	66,7	3,4	25,4	28,8	61,8	-0,4	6,0	5,6	-4,9	148
Other	3,4	8,0	11,4	83,9	4,1	9,6	13,7	81,1	0,6	1,7	2,3	-2,8	197
Employment													
Not currently working/never worked	2,5	4,4	6,9	91,2	2,8	6,2	9,0	88,7	0,3	1,9	2,2	-2,5	4886
Employee without security	1,4	4,5	5,9	92,7	1,4	6,7	8,1	90,3	0,0	2,2	2,2	-2,4	1475
Employee with security	1,2	0,8	1,9	97,7	1,5	1,8	3,3	96,2	0,4	1,0	1,4	-1,5	638
Health insurance													
No	2,2	5,1	7,3	90,6	2,4	6,6	9,0	88,6	0,2	1,5	1,7	-2,0	1097
Yes	2,1	3,9	6,0	92,4	2,4	5,8	8,2	90,0	0,2	1,9	2,2	-2,5	5888
TOTAL	**2,1**	**4,1**	**6,2**	**92,1**	**2,4**	**5,9**	**8,3**	**89,8**	**0,2**	**1,9**	**2,1**	**-2,4**	**6999**

Appendix 6. Original versus revised definition based on reproductive variables, currently married women 15-49, TDHS-2008

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Actual-ideal gap													
actual < ideal	4,7	1,8	6,4	90,6	4,9	2,9	7,8	88,7	0,3	1,1	1,4	-1,9	2928
actual = ideal	0,4	4,1	4,5	95,0	0,6	5,5	6,1	93,3	0,2	1,4	1,7	-1,7	2306
actual > ideal	0,3	8,0	8,3	90,3	0,4	11,6	12,1	86,5	0,2	3,6	3,7	-3,8	1646
Sex of living children													
None	6,1	0,6	6,7	81,0	6,3	0,6	6,9	80,2	0,2	0,0	0,2	-0,8	636
Only male	3,1	3,5	6,6	92,0	3,2	4,9	8,1	90,3	0,2	1,4	1,5	-1,7	1725
Only female	2,3	2,8	5,1	93,6	2,9	3,5	6,4	92,1	0,5	0,7	1,3	-1,5	1289
Both sexes	0,9	5,5	6,4	92,6	1,0	8,4	9,5	89,4	0,2	2,9	3,1	-3,2	3349
Deceased children													
0	2,3	3,6	5,9	92,6	2,5	5,2	7,7	90,5	0,3	1,6	1,8	-2,1	6193
1+	1,4	7,6	9,0	88,7	1,3	11,7	13,1	84,3	0,0	4,1	4,1	-4,3	806
Abortion history			0,0										
Yes	0,4	3,9	4,4	94,7	0,5	6,7	7,3	91,5	0,1	2,8	2,9	-3,2	1488
No	2,6	4,1	6,7	91,4	2,9	5,7	8,6	89,3	0,3	1,6	1,9	-2,2	5506
Ever-use of contraceptives													
Never	8,6	9,0	17,6	0,0	9,2	10,9	20,1	0,0	0,6	1,9	2,6	0,0	610
Traditional	3,3	3,8	7,1	90,9	3,9	4,6	8,5	89,3	0,6	0,8	1,4	-1,6	957
Modern	1,2	3,6	4,8	94,4	1,3	5,6	7,0	92,1	0,1	2,0	2,2	-2,3	5433
Knowledge of ovulatory cycle													
Give correct answer	1,1	3,3	4,4	94,4	1,3	4,5	5,8	92,8	0,2	1,2	1,4	-1,7	1788
Give wrong answer	2,8	4,0	6,8	91,6	3,2	5,8	9,0	89,2	0,3	1,8	2,1	-2,4	3114
No idea	2,0	4,9	7,0	91,0	2,2	7,4	9,5	88,0	0,1	2,5	2,6	-3,0	2091
TOTAL	**2,1**	**4,1**	**6,2**	**92,1**	**2,4**	**5,9**	**8,3**	**89,8**	**0,2**	**1,9**	**2,1**	**-2,4**	**6999**

Appendix 7. Original versus revised definition based on community level factors, currently married women 15-49, TDHS-2008

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Meeting with friends													
No	2,8	4,6	7,4	90,6	3,1	6,6	9,7	88,0	0,3	2,0	2,3	-2,6	4279
Yes	1,1	3,3	4,4	94,6	1,2	4,9	6,1	92,6	0,1	1,6	1,7	-2,0	2702
Use of internet													
No	2,0	4,5	6,5	91,7	2,2	6,5	8,7	89,2	0,2	2,0	2,2	-2,5	4955
Yes	2,1	2,2	4,2	94,9	2,6	3,3	5,9	93,0	0,5	1,2	1,7	-1,9	1583
Watching women`s programs on TV													
No	1,9	3,4	5,3	93,3	2,3	4,8	7,1	91,2	0,4	1,4	1,8	-2,1	2773
Yes	2,3	4,5	6,8	91,5	2,4	6,6	9,1	88,9	0,1	2,2	2,3	-2,6	4195
Traditionality level in marriage													
Little or no	2,1	2,9	5,0	93,7	2,6	4,0	6,5	92,0	0,4	1,1	1,5	-1,8	2534
Medium	1,6	4,0	5,7	92,9	1,8	6,1	7,9	90,4	0,2	2,1	2,3	-2,6	3517
Large	4,2	7,6	11,8	84,3	4,1	10,7	14,8	81,0	0,0	3,1	3,1	-3,3	940
Level of practising religous duties													
Little or no	2,0	2,9	4,9	93,7	2,4	4,1	6,5	92,0	0,3	1,2	1,5	-1,8	472
Medium	1,8	3,6	5,4	93,3	2,1	5,1	7,2	91,1	0,4	1,5	1,9	-2,2	2049
High	2,4	4,4	6,8	91,5	2,5	6,5	9,1	88,9	0,2	2,1	2,3	-2,6	4441
Gender roles													
Low	2,4	3,3	5,8	93,0	2,7	4,9	7,6	91,0	0,3	1,5	1,8	-2,0	3352
Medium	2,0	3,0	5,0	93,7	2,3	5,2	7,5	90,7	0,4	2,2	2,6	-3,0	1634
High	1,9	6,3	8,2	89,2	2,0	8,4	10,4	86,6	0,1	2,1	2,2	-2,6	1876
TOTAL	**2,1**	**4,1**	**6,2**	**92,1**	**2,4**	**5,9**	**8,3**	**89,8**	**0,2**	**1,9**	**2,1**	**-2,4**	**6999**

Appendix 8. Original versus revised definition based on spousal, household and parental level factors, currently married women 15-49, TDHS-2008

	Original definition				Revised definition				Point difference				
	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Unmet need for spacing	Unmet need for limiting	Total unmet need	Demand satisfied (%)	Number of women
Education of husband													
No education /Incomplete primary	2,1	11,7	13,8	80,6	2,3	15,6	17,9	76,0	0,2	3,9	4,1	-4,5	339
First level primary	2,0	4,7	6,7	91,6	2,1	6,8	9,0	89,0	0,1	2,2	2,3	-2,6	3422
Second level primary	2,1	4,0	6,1	92,3	2,6	5,9	8,4	89,6	0,5	1,8	2,4	-2,7	985
High school/higher	2,4	2,1	4,5	94,5	2,7	3,2	5,9	92,9	0,3	1,1	1,4	-1,6	2227
Employment of husband													
Not currently working/never worked	1,5	5,7	7,3	89,7	1,9	9,4	11,3	84,9	0,4	3,6	4,0	-4,8	759
Employee without security	2,5	5,8	8,3	89,5	2,6	7,9	10,5	87,0	0,2	2,0	2,2	-2,4	2013
Employee with security	2,1	2,9	5,0	93,8	2,4	4,4	6,7	91,9	0,3	1,5	1,7	-2,0	4216
Residence							0,0		0,0	0,0	0,0	0,0	
Urban	2,0	3,4	5,4	93,2	2,2	5,2	7,4	90,9	0,2	1,8	2,0	-2,3	5284
Rural	2,6	6,2	8,8	88,7	2,9	8,2	11,1	86,2	0,2	2,0	2,2	-2,5	1716
Region													
West	1,7	2,6	4,3	94,7	1,9	3,9	5,8	93,0	0,2	1,3	1,5	-1,7	3049
South	1,7	4,2	5,9	92,3	1,7	6,6	8,3	89,5	0,0	2,4	2,4	-2,8	849
Central	2,0	3,3	5,2	93,6	2,3	5,2	7,6	90,9	0,4	2,0	2,4	-2,7	1542
North	1,2	3,8	4,9	93,9	2,0	5,3	7,3	91,2	0,8	1,5	2,3	-2,6	455
East	4,4	9,4	13,9	81,6	4,6	12,3	16,9	78,4	0,1	2,9	3,0	-3,2	1105
Wealth index													
Poor	3,4	6,6	10,0	87,1	3,6	9,2	12,8	84,1	0,2	2,5	2,7	-3,0	2460
Middle	1,7	2,9	4,6	94,3	2,0	4,4	6,5	92,1	0,4	1,5	1,9	-2,2	1475
Rich	1,4	2,6	4,0	95,1	1,6	4,1	5,6	93,1	0,2	1,5	1,7	-1,9	3065
Mother's educational level													
No education /Incomplete primary	2,0	5,0	7,0	91,1	2,1	7,2	9,4	88,4	0,1	2,3	2,4	-2,7	4694
Primary complete	2,4	2,0	4,5	94,4	2,8	3,2	6,0	92,7	0,3	1,2	1,5	-1,7	1968
Secondary/higher	2,6	3,7	6,3	92,2	4,0	4,0	8,0	90,3	1,4	0,2	1,6	-1,9	252
Parent's related													
Yes	3,0	5,7	8,7	88,6	3,1	7,5	10,5	86,5	0,0	1,8	1,8	-2,1	1465
No	1,9	3,7	5,6	93,0	2,2	5,5	7,8	90,6	0,3	1,9	2,2	-2,5	5530
TOTAL	**2,1**	**4,1**	**6,2**	**92,1**	**2,4**	**5,9**	**8,3**	**89,8**	**0,2**	**1,9**	**2,1**	**-2,4**	**6999**