TOURS•FRANCE
18-23 JUILLET 2005
18-23 JULY 2005
18-23 JULIO 2005

UNMET NEED FOR FAMILY PLANNING IN IRAN

XXV CONGRÈS INTERNATIONAL DE LA POPULATION
XXV INTERNATIONAL POPULATION CONFERENCE
XXV CONFERENCIA INTERNACIONAL DE POBLACIÓN

BY:

ALIYAR AHMADI

Tehran University

Jalil Iranmahboob

Shiraz University

IUSSP • UIESP for the Scientific Study of Population

Poster Presented at

XXV IUSSP International Population Conference

Tours, France

18-23 July 2005

ABSTRACT

UNMET NEED FOR FAMILY PLANNING IN IRAN

BY:

ALIYAR AHMADI

This study is an investigation on unmet need for family planning in Iran. It aims at identifying the state of unmet need in Iran, declaring the women's reasons for having an unmet need and determining its socio–economic determinants.

Unmet need for family planning is known as a rationale for family planning programs and as a contributor of changing family planning into a reproductive health framework. It includes the women who are intended not to have more children but due to some reasons they are not using contraception.

The study is a large scale analytical one based on data from demographic and health survey (DHS) conducted in entire country of Iran in 2000. In conducting the study a use of multilevel approach has been made to take into account the variation in provincial level. Level 1 unites are women and level 2 units are provinces. In so doing MLwiN Software was utilized.

The study identifies a wide variation between the provinces in terms of unmet need. Unmet need for family planning varies from 3.6% in Tehran city to

31.3% in rural areas of Sistan Va Balouchestan. The average for the country is 7.6%.

A high proportion of women with unmet need are those who breastfeed their children and those who have unwanted pregnancies. Health concerns about contraceptives and social disapprovals are other important reasons for unmet need. However inadequate access to services and lack of knowledge about methods and outlets are not among the predominant causes of unmet need.

The study identifies a significant relation between unmet need and place of residence, age, work status, mass media access, education, living standards, knowledge about contraceptives and children ever born. Among these variables, age, living standards, knowledge about contraceptives and children ever born are found to be most effective in predicting the probability of unmet need respectively.

ABREVIATIONS

CPS:	Contraceptive Prevalence Survey
DHS:	Demographic and Health Survey
FP/RHS:	Family Planning and Reproductive Health Survey
FP:	Family Planning
IPDC:	International Population and Development Conference
IUD:	Intra Uterine Devices
KAP:	Knowledge Attitude Practice
NFHS:	National Family Health Survey
RH:	Reproductive Health
STD:	Sexual Transmitted Disease
UN:	United Nations
UNFPA:	United Nations Population Fund
WFS:	World Fertility Survey

"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 services….” (United Nations 1994: paragraphs 7.12 and 7.16).

Introduction

Recent international conferences, specially the ICPD in Cairo and the forth world conference on women in Beijing, brought changes to population policies and strategies. Family planning as an approach to fertility reduction was modified to a reproductive health framework. Consequently, family planning began to be viewed as a way of making changes in women's lives, securing women's empowerment and ensuring their well being. Unmet need for family planning has been receiving emphasis both as an approach toward fertility regulation and as a controversial fact in terms of reproductive health.

The question "Why some women, who want to control their fertility, are not using contraception in spite of their real intention" is the core stone of present article. It refers to a group of women who are most likely to be interested in contraception. Many women who are sexually active would prefer to avoid becoming pregnant, but they are not using any method of contraception. These women are considered to have an "Unmet Need" for family planning. Unmet need points to the gap between some women's reproductive intentions and their contraceptive behavior (Westoff, C, F. 1988, 46).

Unmet need for family planning constitutes a significant fraction of all married women of reproductive age in developing countries (Pasha, 2001, 94).

Why study of unmet need is important?

As stated by some commentators, over-population is not a treat any more, but regarding population structure and social, economic and cultural characteristics of some countries and areas, the rapid growth is sure to continue for decades. In addition, from more than 400,000 conceptions that take place around the world everyday, almost half are deliberate and happy decisions but the rest are unintended and many of these are regretted (Malcolm, 2000, 2). The unmet need is investigated because of following reasons:

1. Unmet need has direct impact on total fertility rate. It is believed that if unmet need were eliminated, fertility would decline substantially (Omrana, 2001, 95). Henceforth, unmet need provides a powerful rationale for funding and organizing effective family planning programs. Sinding et al. (1994) argued that family planning programs should attempt to meet unmet need rather than pursue government targets reflecting demographic considerations.

2. It can assure wellbeing of mothers and women by preventing unwanted pregnancies. As Davis (1987, 37) pointed out, the way to reduce fertility is not just adoption of modern family planning methods, the infanticide and induced abortion can be experienced as well. Therefore, unmet need leads to unwanted pregnancy, and since many women have no way to deal with unwanted pregnancy, abortion becomes a special means to control fertility. As Regards to harmful consequences of an abortion, decreasing unmet need could help to reduce maternal morbidity and mortality.

3. Unmet need can be considered as a way to ensure women's rights. Women have rights to choose the number of their children, the time of pregnancies, and taking part in decision-making in the home. But a big proportion of women with unmet need are forced by the husband and his family to follow their commands and bring as many children as they want. From the standpoint of women's reproductive health rights, unmet need is considered as an indicator of the violation of such rights and one of several basic rationales for women's empowerment (McCauley et al. 1994, Online).

4. Since some of the unmet needs are due to the lack of services, investigation on unmet need can be considered as an evaluation of family planning programs, too. Identifying the causes and the factors that contribute to unmet need can be an important step in improving family planning services and promoting the acceptance of contraceptives.

Literature Review

Unmet need for family planning has been receiving much attention worldwide during the last four decades and many studies and inquiries have been done on it. These studies can be categorized in three groups:

1. Studies which define and measure unmet need for family planning.
2. Studies which identify causes and determinants of unmet need.
3. Studies which find out individual, social and economic consequences of unmet need.

In Asia, high levels of unmet need exist in a small number of countries, including Pakistan (32 percent), Nepal (28 percent) and the Philippines (26 percent) (Westof and Bankole, 1995, online).

In a study conducted in Pakistan by Omrana (2001), despite the existence of a demand for family planning, lack of consistent government commitment and socio-cultural constraints have brought about a high level of unmet need. In this study factors such as access and quality of available health care services, social and familial opposition have been identified as the determinants of unmet need. Perhaps the most interesting factor that has been considered in this study was the role of mother-in-low in preventing women from adopting contraceptive methods. In this study the importance of female autonomy was identified as an essential factor in decision making. "A women's perception that she can be economically self-sufficient, to a degree, protects her against unmet need for family planning" (Ibid. 105).

India has the largest population of women with unmet need, 31 million which contains 19.5 percent of all married women, (Kaushik, 1999, 4). A review of researches and studies in India shows that, most of them are comparative analyses between northern and southern states. These studies reveal that there is

a different demographic pattern among these states. (Kaushik, 1999, Kulmar S and Choe M, 1998, Dyson and Moore, 1983).

In a study on unmet need, Kaushik states that there are wide interstate variations in unmet need, but determinant variables of unmet need in both areas are more or less the same. In his study, Kaushik identifies age of women, religion, husband approval of the use of contraception and spousal communication as the main influential factors on unmet need in both areas.

Nepal has one of the highest levels of unmet need and is well documented in terms of family planning studies. A study by Stash (2000, 0nline) explores the reason why women in rural areas of Nepal who say they do not want to become pregnant do not necessarily use contraception. According to Stash, many women with an unmet need for family planning were waiting for a later time and better circumstances in which to undergo sterilization operations. “The direct cost of purchasing contraceptives or accessing surgical methods is not a contributing factor in case of unmet need, rather indirect costs associated with illness and loss of work served as a major explanation for unmet need”.

In another study by Chaudhury (2001), which is a comparative analysis between four countries of South Asia (India, Nepal, Bangladesh and Pakistan), two categories of unmet need in terms of women's intention were developed. The first group are those who have unmet need but do not intend to use contraception and the second are those who intend to use but they are not using. The way to meet unmet need is considering both groups. “ They are not likely to respond spontaneously to family planning program efforts easily, unless their concerns for not intending to use contraception in the future are adequately understood and addressed” (Chaudhary 2001,18).

The level of unmet need for Africa is the highest of all. Among African countries, Sub-Saharan Africa has the highest level of unmet need, in a way that in some countries one married woman in every three has an unmet need. In most

of these countries the proportion of unmet need is even more than contraceptive prevalence (Ashford, 2003, online, Govindasamy et al. 2000)..

In a study which took place in Kassena-Nankana district in the upper east region of Ghana a prominently rural setting characterized by a low prevalence of modern contraceptive use, almost one third of married women have an unmet need. “Unmet need is at the highest point when women are no longer amenorhoeic, are either partially breast-feeding or have weaned their child and are relying on postpartum abstinence alone to delay or avoid pregnancy” (population council 1). This study illustrates that women with unmet need do not communicate as well with their husbands about contraception as women who use contraceptives. “Only about one third of women with unmet need and their husbands say that they feel comfortable discussing contraception with each other, as compared to nearly two-third of women using contraception”.

Another study in urban Ndola district in Zambia shows that the amount of unmet need in this region, that is more urbanized, is less than other urban areas of Zambia. “In-depth interviews revealed that while both contraceptive users and those with unmet need were explicit about their current desires to avoid an unintended pregnancy, those with unmet need expressed more fatalism about their situation. This study declares that women with unmet need are less likely to talk with their husbands about contraception. “One reason is that they perceive that their opinions differ and therefore discussion would lead to spousal conflict…one strategy women resort to is secret use of contraception” (population council 2).

Communication of spouses about the fertility and family planning decision making has been one of the controversial discussions in this area of research. Lack of communication between wives and husbands creates barriers contraception use (Casterlin and Sinding 2000, 34). These barriers come into existence because either wives frequently misperceive their husband's attitudes

or husbands are more strongly opposed to contraception than their wives (Biddlecom, 1997, 114).

Bongaarts and Bruce (1995) in a study examined the criticism of Ross and Heaton (1997) about the access to contraception. They reveal that access to contraception is not a reason for unmet need any more, and for most women with an unmet need, access is not as important as what survey data indicate. Unmet need will remain a problem unless programs improve the quality of information given to clients and consider social factors underlying contraceptive nonuse.

Bahrani (1998, 68) in a study on unwanted fertility in Shiraz city in the south of Iran states that using unreliable methods has been the most important reason in unwanted fertility. Based on this study a high proportion of unmet need in city of Shiraz is due to failure of contraceptives. The reason for not using contraception has been the fear of side effects and disapproval of husband.

Conceptual Framework

It is possible to formulate a more realistic microeconomic model for contraception and unmet need using fertility theories. The matter of discussion is demand for contraception rather than demand for children. The demand is based on the economic framework that balance the expected returns of having an additional child at a certain time, the associated monetary and non-monetary costs, given preferences, family resources and contraceptive methods available.

Unmet need is related to perceived cost of contraception. According to Bhushan (1997) there are three categories of cost regarding contraception:

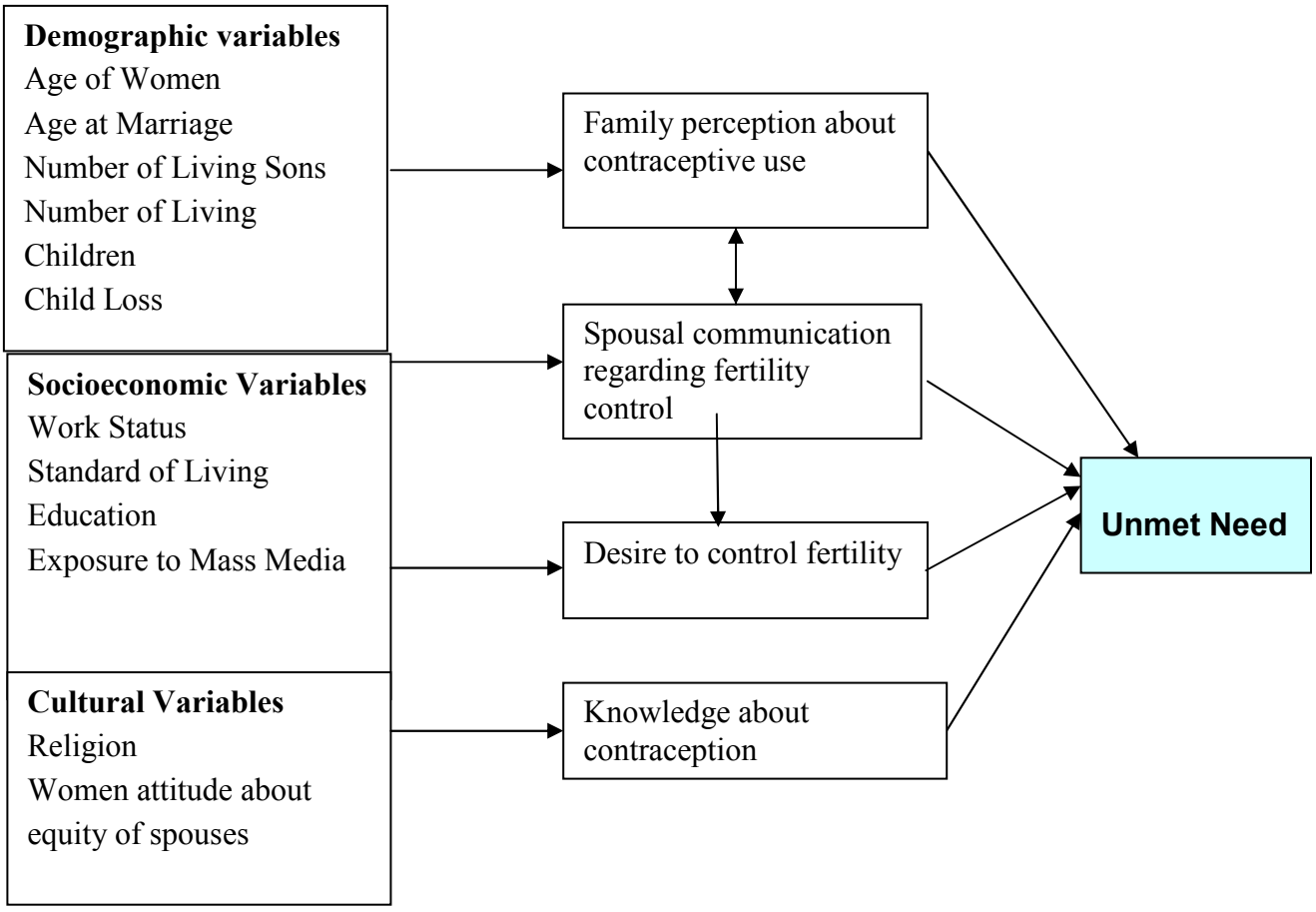
1- Costs related to availability (geographical and physical, qualitative and cognitive aspects of availability)

2- Cost related to health concerns and fear of side effects (discontinuation, fear of side effects among never users)

3- Cost related to social, cultural and familial disapproval of family planning (disapproval of family, religion and customs)

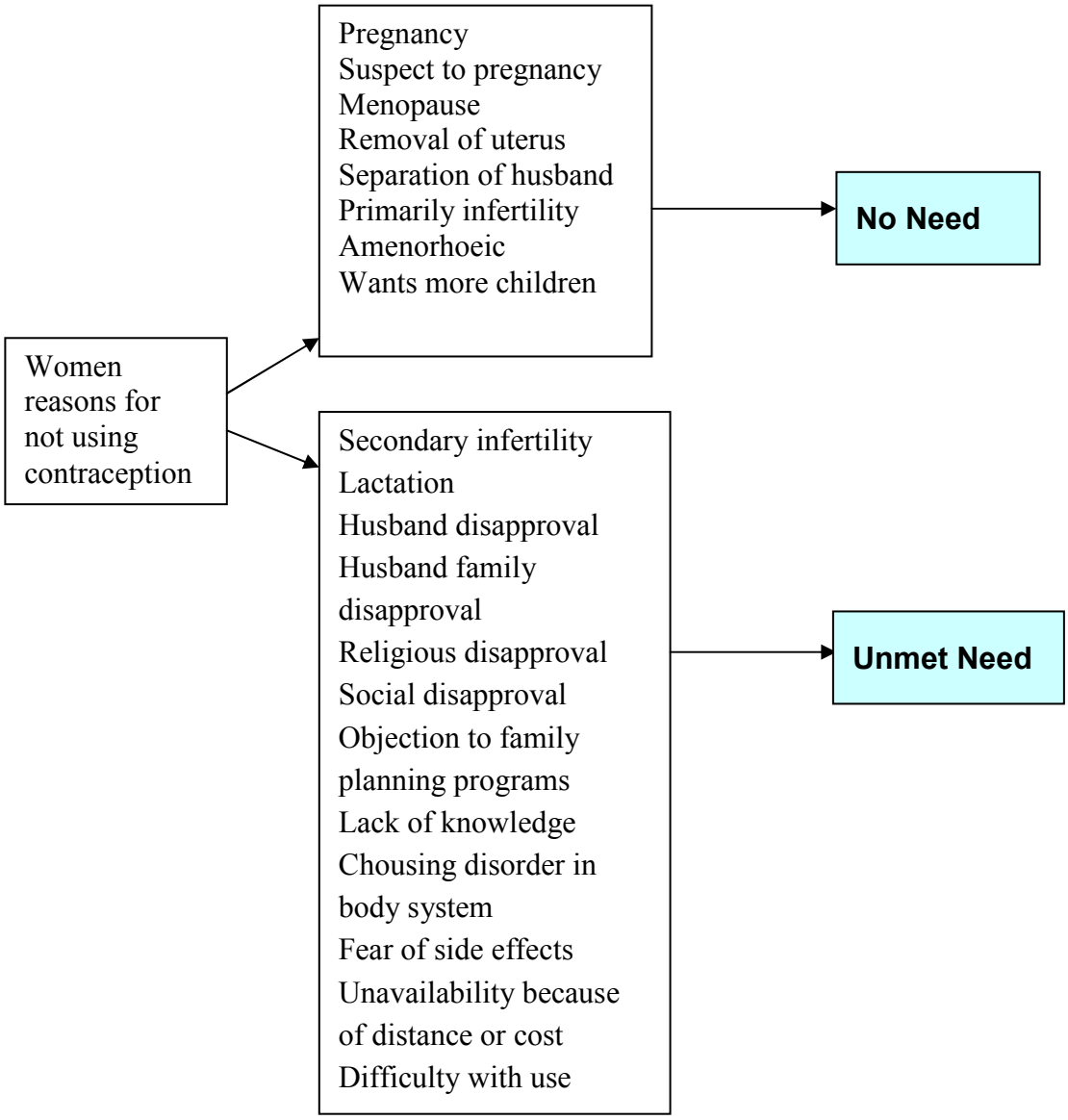
A person's intention to behave in a particular way and his/her behavior depends upon two sets of factors: personal and social influences. Personal factors include the individual’s own positive or negative evaluation of the behavior, while social influence is the effect of other individuals' attitudes on one's behavior.

Figure-1 Conceptual Framework



1- Conceptual Framework is a revised form of Kaushik's model (Kaushik, 1999, 9)

Figure -2 Model of Unmet Need Based on Women's Reasons



Method and Data

This study is a large-scale analytical study based on findings of demographic and health survey (DHS) conducted in entire country of Iran in 2000. The study includes total population of 10 to 49 year-old women who have experienced marriage in the frame of IDHS. The DHS was conducted in Iran in 2000 with a sample of 114000 household.

In this study a use of large-scale data has been made because unmet need for family planning is one of those topics that are better conducted using large-scale data. Robey (1996) states that "surveys such as DHS and FP/RHS provide basic information needed and they have no substitute as a key information source".

In this study logistic regression is employed to test the hypotheses in which dependent variable is unmet need for family planning (coded 1 and 0). The study's aim is identifying that to what extent the independent factors change the odds or probability of having unmet need.

Results

Unmet Need for Family Planning

About 7.6% of all married women have an unmet need for family planning. That means they would prefer to avoid a pregnancy but are not using any form of family planning.

Over the past decade, Iranian government policies towards population decline and rising rates of contraceptive use have reduced unmet need for family planning in Iran. However, unmet need is persistently high in some provinces.

Table1 Unmet Need for Family Planning in Iran Provinces

	Urban%	Rural%	Total%
Markazi	4.4	6.7	5.4
Gilan	5.3	5.8	5.6
Mazandaran	4.7	3.7	4.2
East Azerbaijan	5.8	8.1	6.6
West Azerbaijan	6.6	9.1	7.7
Kermanshah	7.1	9.1	7.8
Khuzestan	6	16.4	9.5
Fars	9.1	10.4	9.6
Kerman	7.1	14.1	10.3
Khorasan	7.2	10.8	8.7
Esfahan	4.5	5.7	4.8
Sistan & Balouchestan	17.1	31.3	24.9
Kurdistan	6.4	8.4	7.3
Hamedan	5.8	7.9	6.9
Caharmahal	8.5	10	9.1
Lorestan	6.5	11.3	9.1
Ilam	9.3	14.8	11.7
Kohgilooyeh	9.3	19.7	15.5
Booshehr	10	15.3	12.3
Zanjan	5.8	11.2	8.5
Semnan	3.1	5.9	4
Yazd	5.3	5.4	5.3
Hormozgan	9.8	28	20.1
Tehran Province	3.9	6.4	4.9
Ardabil	6.5	8.6	7.5
Qom	7.3	8.1	7.4
Ghazvin	5.1	6.6	5.7
Golestan	6.3	10	8.3
Tehran city	3.6		
Total	6.81	11.03	7.6

The research shows that in 6 provinces the proportion of unmet need among married women is 10% or higher.

The issue of unmet need seems to be more problematic in rural areas, where about 11% of women are considered to have unmet need for family planning.

The highest rate belongs to Sistan Va Balouchestan, a poor province located at the south west of country next to Pakistan and Afghanistan with a majority of Sonni Moslems. Unmet need proportion is 24% for entire province which is 31% and 17% in rural and urban areas respectively.

The second province with a high proportion of unmet need is Hormozgan, south of the country next to Persian golf which suffers a low level of socio-economic status. The unmet need for this province is about 21% with a proportion of 28% in rural areas.

The third province in terms of unmet need is Kohgilooye, located at Zagros Mountains, with a proportion equal to 15.5%. The people of this province are lore that is a small ethnic group in Iran.

All these three districts with a high rate of unmet need are socially and economically poor and are categorized as deprived provinces.

The lowest proportions of unmet need are 3.1 and 3.6 which belong to urban areas of Semnan and city of Tehran respectively.

Reasons of Unmet Need Reported by Women

With respect to reasons of unmet need, the study shows that, the primary reason for not using contraceptive methods is pregnancy. A high proportion of pregnancies are found unwanted. Unwanted fertilities are due to failure of contraceptive methods in provinces with low level of unmet need but in

provinces with high level of unmet need unwanted fertilities are the results of not using contraception.

The second reason for unmet need stated by women is health concerns about contraceptives and side effects, including fear of disease, suffering from a disease and problem with physical system. The third reason of nonuse was the opposition of husband, other relatives or opposition of women themselves to family planning programs.

Study identifies that inadequate access to services and lack of knowledge about contraception are not of the predominant causes of unmet need. This is in harmony with Bongaarts and Bruce's study in which they reveal that access to contraception is not a reason for unmet need any more.

Therefore, as Kaushik (1999) states monetary cost of contraception does not account for much of the unmet need. In contrast, non-monetary costs particularly the fear of side effects (physical costs) and social and familial disapproval of family planning (social costs) change about the unmet need. This might be for the fact that most of women get their contraceptive methods from governmental sources almost free of charge; so monetary reasons are not a barrier in using family planning services.

Determinants of Unmet Need

The results of univariate logistic regression models, used for testing the hypotheses are presented in table 2.

Table – 2 Logistic Regression for bivariate analysis

Variable Name	Value B	S. E.	Wald test	(exp)B	P-value
Residence	Urban®			1	
Rural	0.663	0.071	89.840	1.94	0.001**
Work status	Employed ®			1	
Unemployed	0.094	0.229	0.168	1.09	0.681
Householder	0.202	0.094	4.571	1.22	0.03*
Mass Media	No access®			1	
Radio	-0.587	0.168	12.23	0.55	0.001**
TV	-0.956	0.118	65.87	0.38	0.001**
Both	-1.469	0.102	209.48	0.23	0.000
Child Loss	Not experienced®			1	
Experienced	0.305	0.086	12.49	1.35	0.001**
Abortion	Not experienced®	-		1	
Ever experienced	-0.025	.0.088	0.085	0.975	0.77
Literacy	illiterate®	-		1	
Literate	-0.740	0.071	109	0.47	0.001**
Education	-0.085	0.008	101.5	0.92	0.000
Age at marriage	-0.042	0.010	0.96	19	0.000
Age	-0.016	0.004	0.98	16.68	0.000
Knowledge	-0.124	0.009	0.88	204.36	0.000
CEB	0.062	0.012	1.06	25.05	0.000
Living Standards	-0.101	0.008	0.90	162.5	0.000

®- Reference group *- Significant at P-value < 0.05 **- Significant at P-value < 0.001

Age of women: Reviewed literature shows that women are less likely to use contraceptives in their early reproductive ages. The model for age of women shows that unmet need and age of woman are negatively related. This might be due to the fact that young women have not achieved their expected number of children.

Place of Residence: Women who live in rural areas have the highest tendency toward unmet need, while those who live in urban areas were most likely to be currently using contraception. This is in contrast with previous studies conducted in Iran (Abbasi, 1999) in which it was found that contraceptive prevalence was higher in rural areas than urban ones.

Work status: The study shows that women do differ based on their work status in terms of unmet need. Those who are working out of house have a lower probability of having unmet need than those who work indoors. In addition, the unemployed women have a significantly lower level of unmet need than householders. The difference between unemployed women and employees is insignificant.

Mass media exposure: Another factor identified in this study is the effect of mass media access on unmet need. The more the access to mass media, the lower the probability of having unmet need. There are differences between all categories of mass media. Those who have access to radio have a lower probability of unmet need than those who have access to none of the media. The difference between unmet need of women owning TV and women owning both TV and radio is found significant as well.

Child Loss: The study shows that women who have experienced child mortality have a higher rate of unmet need. This could be justified based on the

fact that women experienced child loss, have had low levels of education and living standards. Henceforth, child loss itself might be a consequence of lower level of socio-economic status.

Sex Preference: Despite other developing countries, the women preference was found to be for girls. This fact was explained by the parity women already have. The study identifies that women with son preference are more likely than others to have unmet need. The women with girl preference have lower probability of unmet need. Furthermore, the difference between women who have preference for girls and those who have no preference towards sex was not significant (table 4-2-1-10). The point that must be clarified here is that women who do not like to have another child had not answered the question measuring sex preference. Since the unmet need mostly refers to women who want no more children and subsequently have no sex preference, this relationship may exist for women with unmet need for spacing.

Abortion: The study have not found significant relationship between abortion and unmet need although it is hypothesized that when the rate of unmet need goes up the (induced) abortion is expected to increase as a method of contraception. The reason for not being a significant relationship between unmet need and abortion in Iran may come from several factors. Firs, the question which measures abortion in DHS dose not take account of separation in induced and spontaneous abortion. Second, due to Islamic culture of the society especially culture of women with unmet need, abortion may not be experienced as a contraceptive method.

Literacy and education: The importance of female education in contraceptive use is well documented (ideational theories of fertility). This study indicates that illiterate women are more (twice) likely to have an unmet need for family planning than women who are literate. In addition, higher level of school attainment is associated with lower probability of unmet need. This finding is in

consistent with findings of other studies. It implies to the importance of education which is a base in the ideational theories of fertility control.

Living Standards: The study shows that living standards influences unmet need almost in all provinces. Furthermore, standards of living may influence other variables which are related to unmet need. For example, women with higher level of living standards are less probable to experience child loss or women with higher level of living standards are more probable to have access to mass media.

Knowledge about contraceptives: It is obviously clear that women with higher knowledge about contraceptives are more probable to use contraceptive methods than others. In this study, knowledge about contraceptives was an intermediate factor between socio-economic factors and unmet need. The study indicates negative effect of knowledge about contraception on likelihood of unmet need.

Children Ever Born: The study identifies a positive relationship between CEB and probability of unmet need. Women with higher parity are more likely to have an unmet need. In evaluating this finding, it must be noted that unmet need seems to be a cause of higher CEB not a consequence. That means women who have unmet need are more likely to bear more children than those who have not.

Table 3 Parameters of Multiple Logistic Regression for Unmet Need

Variable Name	Value	S. E.	Wald test	P-value
Constant	-2.068	0.213	93.89	0.000 **
Urban	-0.010	0.094	0.012	0.91
Unemployed	0.160	0.338	0.224	0.636
Householder	0.061	0.115	0.279	0.597
Radio	-0.305	0.218	1.954	0.162
TV	-0.240	0.161	2.236	0.135
Radio and TV	-0.250	0.172	2.110	0.146
Living standards	-0.056	0.013	17.94	0.000 **
Education	-0.022	0.014	2.34	0.126
Knowledge	-0.085	0.012	54.30	0.000 **
Age	-0.042	0.008	27.35	0.000 **
Age at marriage	0.010	0.013	0.585	0.444
Child loss	-0.033	0.119	0.078	0.78
Abortion	0.161	0.098	2.69	0.10
CEB	0.072	0.026	7.33	0.006 *

Multivariate analysis: Multivariate logistic analysis identifies that the variables including 'age', 'living standards', 'knowledge about contraception' and 'children ever born' have significant effects on the response when they are considered in the multivariate model. Other variables including 'age at marriage', 'child mortality', 'abortion', 'sex preference', 'education', 'mass media exposure' and 'work status' are excluded from the model since they have in-significant effects on unmet need. Although these variables have played a significant role in univariate modeling, their exclusion from multivariate modeling indicates that they are not strong enough to predict the probability of unmet need.

5-4- Summery and Policy Implications

The study identifies a significant relation between unmet need and place of residence, age, work status, mass media access, education, living standards, knowledge about contraceptives and children ever born. Among these variables, age, living standards, knowledge about contraceptives and children ever born are found to be most effective in predicting the probability of unmet need respectively.

With respect to the results of the present study, a number of policy implications can be provided which might prove useful to policy makers.

A major implication of this study arises from using multilevel approach. Although the rate of unmet need seems to be satisfactorily low, some deprived areas have a very high rate of unmet need in Iran. Therefore deprived areas need more consideration. As a result, in designing programs, policy makers must consider these variations among provinces, so that programs should focus on the target population. This approach suggests a level of program flexibility. This characteristic is achieved with a process of decentralization of family planning programs.

As most of unwanted fertilities are resulted from the failure of contraceptive methods, improving access and quality of reproductive health and family planning services is needed. Moreover, the women must be provided with a wide range of choices. This fact would reduce health concerns and contraceptive side effects.

The study identifies that the main causes of unmet need are related to health concerns (table 4-1-1-17). In this regard, method suppliers must inform women of probable side effects and present counseling about the correct way of using the method and related problems that women probably encounter.

The second reason for unmet need was social barriers including husband or relative disapproval (table 4-1-1-17). Therefore, counseling spouses seems beneficial. In this regard, encouraging spouses to discuss their reproductive health issues and make related decisions together and opportunities for women to raise their status, and consequently to play an effective role in family decision making must increase. In addition the program should involve men as well as women. Men involvement in reproductive health will reduce opposition to family planning programs

The study identifies that the education is an important factor in decreasing the probability of unmet need. So, women must be provided with general and specific education. Education increases their knowledge so that they can choose the most effective method and use it appropriately.

The study indicates that those provinces with low level of prosperity have higher level of unmet need. In addition, study reveals that living standards have a relationship with unmet need. So, the government should provide conditions to facilitate socio-economic development of provinces. To achieve this goal there should be an integrated population and development policy in governmental programs.

The study identifies the role of access to mass media and knowledge about family planning methods in contraceptive use. Henceforth, women should be provided with mass media sets especially TV. Moreover, programs for improving the knowledge of women about reproductive health must be announced in TV and radio.

REFERENCES

Anderson, J.E., L. Morris (1981). "Fertility Differences and the Need for Family Planning Services in Five Latin American Countries" *International Family Planning Perspectives* 7(1): 16–21.

Ashford, L (2003). "The Unmet Need for Family Planning: Recent Trends and Their Implications for Programs" Population Reference Bureau, Washington DC, USA http://www.prb.org/Content/ContentGroups/Report/032/p-Unmet NeedFamPlan.pdf

Bahrani M. (1998). "Consideration of Unwanted Fertility and its Affective Factors in Shiraz City" *Population*, National Organization for Civil Registration, No. 25&26 (in Persian).

Beckman L.J. (1987). "Couples' Decision-Making Processes Regarding Fertility", in W.M. Scott and E.W. Moen, *Perspectives on Population*, New York Oxford University Press.

Bhushan I. (1997). "Understanding Unmet Need" Johns Hopkins School of Public Health, Center for Communication Programs, Working Paper No. 4, November 1997.

Bongaarts, J. (1991). "The KAP-Gap and the Unmet Need for Contraception" *Population and Development Review* 17(2): 293-313.

Bongaarts, J. and J. Bruce (1995). "The Causes of Unmet Need for Contraception and the Social Content of Services" *Studies in Family Planning* 26(2): 57–75.

Casterlin, J.B and S.W. Sinding (2000). "Unmet Need for Family Planning in Developing Countries and Implications for Population Policy" Working Paper, No.135.

Chaudhury, R.H. (2001). "Unmet Need for Contraception in South Asia: Levels, Trends and Determinants" *Asia-Pacific Population Journal*, September 2001.

Dixon-Mueller, R. and A. Germain (1992). "Stalking the Elusive 'Unmet Need' for Family Planning" *Studies in Family Planning* 23(5), 330–335.

Davis, K. (1987). "The Theory of Change and Response in Modern Demographic History", in W.M. Scott and E.W. Moen, *Perspectives on Population*, New York Oxford University Press.

Dyson, T. and M. Moore (1983). "On Kinship Structure, Female Autonomy and Demographic Behavior in India" *Population and Development Review* 9(1) 35-60.

Freedman, R. and L.C. Coombs (1974). "Cross-cultural Comparisons: Data on Two Factors in Fertility Behavior" New York, Population Council.

Govindasamy, P and E. Boadi (2000). "A Decade of Unmet Need for Contraception in Ghana" Macro International Inc. Calverton, Maryland USA

Kaushik, S. (1999). "Unmet Need for Family Planning: a Comparative Analysis of Northern and Southern States of India Based on NFHS data" Millennium Conference on Population, Development and Environment Nexus.

Kulmar, S. and M. Choe (1998). "Wanted and Unwanted Fertility in Selected States of India" *National Family, Health Survey*, No. 6. Mumbai, India.

Malcolm, P. (2000). "The Unmet Need for Family Planning" *Scientific American*, Vol. 282 issue 1.
http://search.epnet.com/direct.asp?an=2585248&db=buh

Masih, A.M. (2000). "The Dynamics of Fertility, Family Planning and Female Education in a Developing Economy" *Applied Economics*, Vol. 32, Issue 12.
http://search.epnet.com/direct.asp?an=3642060&db=buh

McCauley, P., B Robey, A. Blanc and J. Geller (1994). "Opportunities for Women Through Reproductive Choices" Population Reports, Series M, No. 12. Baltimore, MD: Johns Hopkins University.
http://www.jhuccp.org/pr/m12edsum.shtml

Nortman, D.L. (1982). "Measuring the Unmet Need for Contraception to Space and Limit Births" *International Family Planning Perspectives* 8(4): 125–134.

Omrana, P., F. Fikree and S. Vermund (2001). "Determinants of Unmet Need for Family Planning in Squatter Settlements in Karachi Pakistan" *Asia-Pacific Population Journal*, June 2001.

Population Council 1: http://www.popcouncil.org/publications/popbriefs/pb1(2)_2.html

Population Council 2: http://www.popcouncil.org/project_summaries/unmetneed_central.html

Rasbash, et al. (2000). "A User's Guide to MlwiN" Version 2.1c Center for Multilevel Modeling Institute of Education, University of London.

Robey, et al. (1996). "Unmet Need and Family Planning Programs" Population Reports, Series j Number 43. http://www.jhuccp.org/pr/J43/j43print.shtml

Ross, J. and L. Heaton (1997). "Intended Contraception Use among Women without an Unmet Need" *International Family Planning Perspectives* 23(4) 148-150.

Stash, S. (2000). "Unmet Need in Rural Nepal" Population Council News Release. *http:// www.Popcouncil.org/medicenter/newsrelease/sfp1299(1) .html11 .8K8*

Sinding, S.W., J.A. Ross and A.G. Rosenfield (1994). "Seeking Common Ground: Unmet Needs And demographic goals" *International Family Planning Perspectives* 20(1):23-27.

UN (1992). "Evolution of Population Policy Since 1984: A Global Perspective" Presented in Population Commission, Preparatory Committee for the International Population and Development Conference.

Westoff, C.F. (1988). "The Potential Demand for Family Planning: A New Measure of Unmet Need and Estimates for Five Latin American Countries" *International Family Planning Perspectives* 14(2): 45-53.

Westof, C.F. and A. Bankole (1995). "Unmet Need: 1990-1994" Calverton, Maryland, Macro International, Jun. No. 16. http://www.jhuccp.org/popline/popbib/j43.shtml#237

Westoff, C.F (1978). "The Unmet Need for Birth Control in Five Asian Countries" *Family Planning Perspectives* 10(3): 173–181.

Westoff, C.F. and A.R. Pebley (1981). "Alternative Measures of Unmet Need for Family Planning in Developing Countries" *International Family Planning Perspectives* 7(4): 126–136.