# Addressing unmet need for Spacing and its Implications on Fertility: Need for Family Planning in India

**Background:**

Among the three components of the population dynamics i.e. Fertility. Mortality and Migration, the studies in fertility occupy the prime place by the demographers from the very beginning. The most suitable measure of the fertility is the Total Fertility Rate (TFR) which was very high at the initial phase in India. From the very beginning India started its family planning program to control her huge population. India is the only first country which started the family planning program nationwide n 1952. The rational of this program was enabling individuals (particularly women) and couples to exercise control of their reproduction. Different approaches are adapted in our family planning program to reduce the pressure of population and to achieve replacement level of fertility.(Mohapatra,2010). The total fertility rate which represents the average number of children a woman would bear if she experienced current fertility rate throughout her reproductive years is 2.7 per women. However, there are significant interstate variations in the level of fertility. The demographically backward states such as Bihar, Madhya Pradesh, Rajasthan and Utter Pradesh accounting 40% of country's population, have total fertility rate (TFR) close to 4 children per women and contraceptive use especially in these states has proved to be challenge to the Indian family planning program. Irrespective of our huge investments in the family planning program still we are far from our goal to achieve the replacement level of fertility. The empirical studies show the uses of contraception has increased in a rapid manner both in urban and rural areas and both in educated and uneducated masses due to the availability of contraception services but simultaneously there is gap between demand and supply of contraception among women. In general parlances they are not getting these opportunities. This demand and supply mismatch has given us a concept called the "Unmet Need for Family Planning".

According to standard definition, the unmet need group includes all fecund women who are married or living in union, and thus presumed to be sexually active, who either do not want any more children or who wish to post pone the birth of their next child for at least two years but are not using any method of contraception. The unmet need group includes all pregnant married women whose pregnancies were unwanted or mistimed or who unintentionally became pregnant because they were not using contraception. Similarly, women who have recently given birth and are not yet at risk of becoming pregnant because they are amenorrheic have an unmet need if their pregnancies were unintended. In this formulation, women who became pregnant unintentionally because of contraceptive failure are considered to have an unmet need for family planning (Westoff and Ochoa, 1991 and Westoff and Bankole , 1995).

Methodologies for measuring this unmet need for contraception have become increasingly refined and complex. (Boulier, 1984; Westoff ,1978and 1988; Westoff and pebley, 1981 ; Bomgaarts, 1991; Westoff and Ochoa, 1991). The most recent estimates which include the unmet need for spacing births, put the total number of women with an unmet need in the developing world at approximately 120 million (Robey et al., 1996). Govindaswamy and collegues (1993) suggest that high risk groups such as young and old women who do not realize the potential complications of their childbearing should also be considered to have an unmet need. Bongaarts (1991) another related topic of research is "couple unmet need" (Bankole and Ezeh, 1997; Becker, 1999). It is argued that the fertility preferences are affected by the couple rather than individually. The preference and behavior of one partner are different from another. This irresolvable nature is what demographers usually term as the 'two sex problem'.

The concept of unmet need has been also criticized as being too narrow due to the neglect of contraceptive users who are dissatisfied with their method or by using an appropriate method(Dixon-Muller and Germain, 1992; Foreit and Mostajo 1993). Conceptual issues remain to be resolved, particularly whether unmet need should be viewed not as continuum, with some individuals having a greater risk of an unwanted pregnancy than others(EI-Zeini, forthcoming). There are also measurement challenges in the use –effectiveness of contraception and method dissatisfaction as ascertained in a DHS.-type survey.

The importance or research in developing a strategy for unmet need seems obvious. It is surprising. Then , that "research on the reasons why survey respondents are not using a method in spite of their stated intension to space births is scarce"(world Bank, 1994). Similarly, Casterline and colleagues (1997) note that "given the social welfare and demographic significance of unmet need for family planning, it is striking how little is known about its causes."some recent, localized studies provide valuable insights into the causes of unmet need in different settings(Caterline et,al 1997; Ramarao and townsend 1995; Robey et al.,1996). Several macro scale studies offer an overview of the causes of unmet need in developing countries (Bongaarts and Bruce 1995; Stover and Heaton 1995).

**Causes of Unmet need for family planning:**

The causes of unmet need are complex. Various Surveys and empirical studies a several range of constraints which affect the risk of woman's childbearing process. For example many women fear side effects of contraceptive methods. It may be rumors or some experienced side effects by themselves. Others fear their husband's disapproval regarding the use of family planning methods or oppose family planning themselves because of religious or personal reasons. Some women are uncertain about whether they are likely to become pregnant or they may feel ambivalent about whether they want pregnancy. Finally, some women due to lack of proper knowledge about the use of contraceptive methods and its availability have faced problems. It may be due to no proper access to the methods they want because of weaknesses in services and supplies. The most recent DHS questionnaires probe further than causes of unmet need. The

questionnaires specifically asked women why they do not use contraception even if they say they want to delay or limit childbearing. In 13 survey completed in 1999 and 2000, women gave one or more of the following responses –

Perceived lack of exposure to pregnancy was the most common reason cited. Between one third and two thirds of women with unmet need said they were never or infrequently having sex, or believed they could not become pregnant because of menopause, breastfeeding, or the another reason., Opposition to family planning (by women, their husbands, or others) accounted for 20 to 30 percent of those surveyed in sub- Saharan Africa, but lower percentage elsewhere. Method related problems were cited by about one third of women with unmet need. Problems related to side effects and health outcomes were prominent, especially in India.

**Need for the study:**

As we know from different empirical studies by the demographers, the unmet need for the family planning has a causal relationship with the fertility determination in India. But the question arises here whether there is any significant effect of unmet need for family planning on fertility reduction, if those needs are satisfied.

A school of thought expresses their view that a substantial number of women want to postpone or avoid further childbearing without using contraceptives. The statement shows there is no clear cut picture of how this unmet need is to be met, but it signifies that a large demand exists and the key to solve it depends on the supply side.

Another school of thought put forth their argument that, the unmet need for family planning has no significant impact on fertility because, among other reasons, many women classified as having an unmet need really do not "need" family planning. For example, they may be apposed to use of family planning methods, or have infrequent sexual activity, or have health concerns. Thus, it is not a lack of access to family planning services rather the faulty measurement of unmet need for family planning and perhaps some confusion between supply and demand.

The truth lies somewhere between these points of view, this analysis is directed towards the estimation of fertility rate by meeting the unmet need for family planning of India and all states of India.

**Literature Review:**

Westoff and Ochoa (1991) in the study of 25 countries using DHS-1 conducted between 1885 and 1990 found that most unmet need among younger women is for spacing births because younger women still want to have more children. Among older women most unmet need is for limiting because older women have had as many children as they want and often more.

Radha Devi et al., (1996) in a study of unmet need in utter Pradesh based on NFHS data found that higher met need (31 percent for women with 2 or more living sons) than fewer living sons (5

percent for no living sons). This is because of a strong son preference for sons in northen India. Here who have already born enough sons would like to stop child bearing and women with few sons would like to continue child bearing. The work status of women can be considered as an indicator of the status of women and her economic independence in her economic independence in her household. Working women have ;higher opportunities to interact with the outside world which exposes her to new ideas which could bring a change in her attitudes towards family size and the use of contraception (Basu. 1992). Economic independence also enhances women's role in the decision making process which ultimately leads to lower family size and greater use of contraception.

Kanitkar and Murthy (1983) in a study of contraceptive use in Rajasthan and Bihar found a clear positive relationship between the standard of living and use of contraception. Bhede and Kanitkar (1993) attributed the low standard of living of people in developing countries to lower use of contraception and high fertility. Retherford and Mishra (1997) have found that media exposure increases contraception use significantly. Bhusan (1997) baed on DHS of five countries found that women with unmet need communicate less frequently with their husbands about family planning. The gap is crucial since many women who think their husbands disapprove of using family planning many not have discussed the issue with them. Husband sometimes oppose contraception because they want more children than their wives do. Many studies shoe that men and women often disagree over desired family size. In general men want more children (Isiugo – Abaihe, 1994; Lyoyd, 1993; Manson and Taj, 1987; Mott and Mott, 1987).

**Review the fertility implications of addressing unmet need for family planning:**

A very limited researches are done by the demographers regarding what the demographic effect would be if all unmet need are satisfied.

According to sinding et al., (1994), in 13 of 17 countries, satisfying unmet need would exceed the government targets by 1.31 percent points. If the ratio of women who want to space births to those who want to stop child bearing is assumed to be the same in India as in the other Asian countries considered, the level of unmet need rises from 18 percent to 31 percent and satisfying that need would raise prevalence well above the target. Globally an increase of 15 percent points in contraceptive prevalence leads to decrease about one point in the total fertility rate(TFR), so that satisfying unmet need of 17 percent (100 million women) of reproductive women reduce the TFR by approximately 1.13 points in the developing world excluding China.

According to Westoff et al, (1996), the potential demographic significance of unmet need for contraception has a great importance in population policy. Based on Demographic and Health Survey data (DHS) for 27 countries between 1990 and 1994, the estimates of the amount and kinds of unmet need that could realistically be satisfied, fertility is expected to decline by an average of 17 percent in 13 Sub Saharan Africa countries and by 18 percent in the remaining 14

countries . These declines would represent an average of 30 percent of the distance to replacement fertility in Sub Saharan Africa countries and would cover more than 50 percent of the distance to replacement I some countries, indicating that the satisfaction of unmet need would have a significant demographic impact.

**Objectives of study:**

The principal objectives of this study are as follows:

1. To examine the factors that influence unmet need for the family planning for family planning.

2. To assess the demographic impact of addressing unmet need for spacing on fertility in India and states.

**Conceptual Framework, Methodology and data base:**

Dependent Variable is Unmet need for family planning and there are several independent variables like demographic variables like women's age at birth, Place of residence, number of living children and social variables like caste /tribe of the women, Religion of women, economic variables like work status of women and standard of living and other variables like education of women and exposure to mass media.

**Hypothesis:**

Based on quantitative effect of unmet need for family planning on fertility and its states, the hypothesis is that, the satisfaction of the unmet need for spacing reduces the fertility level considerably.

**Methodology:**

According to our objectives of the study we have different methodologies. First to assess the influences of background factors on unmet need, bi-variate analysis is dine followed by Binary Logistic analysis that provides estimates of net influences of various factors. Later we adapted Westoff and Bankole Model for estimation fertility implications of addressing unmet need for Spacing.

Bivariate analysis:

Association between the dependent and independent variables is examined with the help of cross tabulation. Unmet need for family planning by different socio-economic and demographic factors have been analyzed by Bi- variate method. The binary Logistic Regression has been used for further deep analysis.

Description of Westoff and Bankole model to know the potential demographic significance of unmet need:

The first step in this analysis is to estimate potential contraceptive use which is sum of unmet need for contraception and contraceptive prevalence. According to West off (1996) women considered having an unmet need are those who are fecund and wish to postpone their next birth or avoid any further childbearing but are not practicing contraception. Women who are currently pregnant or in amenorrhea are classified as being in need if they report their pregnancy was unintended (either unwanted pr mistimed).

This research is based on the model done by westoff and Bankole (1996). Due to the heterogeneity of different kinds of "unmet needs", we have used three models of the kinds and amount of unmet need that theoretically could be satisfied. Using the results from these models, based on assumptions that should provide the maximum, minimum and most realistic estimates of potential use, we estimate implied Total Fertility Rates(TFRs) and the reductions in fertility associated with those estimates.

**Models of Potential Use**

**First Model (Maximum Unmet Need Satisfied):**

The first model assumes that all unmet need can be satisfied. That signifies mainly the maximum potential level of contraceptive use. Really the beauty of this model holds the argument that if all the unmet need were satisfied then the contraceptive prevalence will be at the maximum level.

***First/ (Maximum Model)*** = Met Need (contraceptive Prevalence) + Unmet Need for contraception (Spacing)

Unmet need includes unmet need to space and unsure.

**Second Model (Minimum Unmet Need Satisfied):**

The second model estimates the minimum level of contraceptive prevalence. This model accepts women's reported intensions on the future course of contraceptive use. Non pregnant, currently married women who were not using contraception at the time of the survey were asked about their intension to use a family planning method in the next 12 months. Women who do not intend to use contraception in next 12 months and women who were pregnant at the time of survey were asked whether they intend to use contraception at any time in the future. The resulting estimates of demand thus include current users plus those women in need who say that they intend to use a method in future. Women who do not intend to use a method or who are uncertain or unsure are assumed in the second model to have no need (in the same sense as women who are trying to become pregnant).

***Second/ (Minimum model***) =Met need (contraceptive prevalence)+ intend to use contraception for Spacing only.

**Third Model (Realistic Unmet need satisfied):**

The assumptions used in the first and the second models are clearly exaggerated. Not all of those with unmet need are likely to use contraception if available. On the other hand, some fraction of those who don't intend to use a method (or are uncertain) will use one. The third model contains the following assumptions:

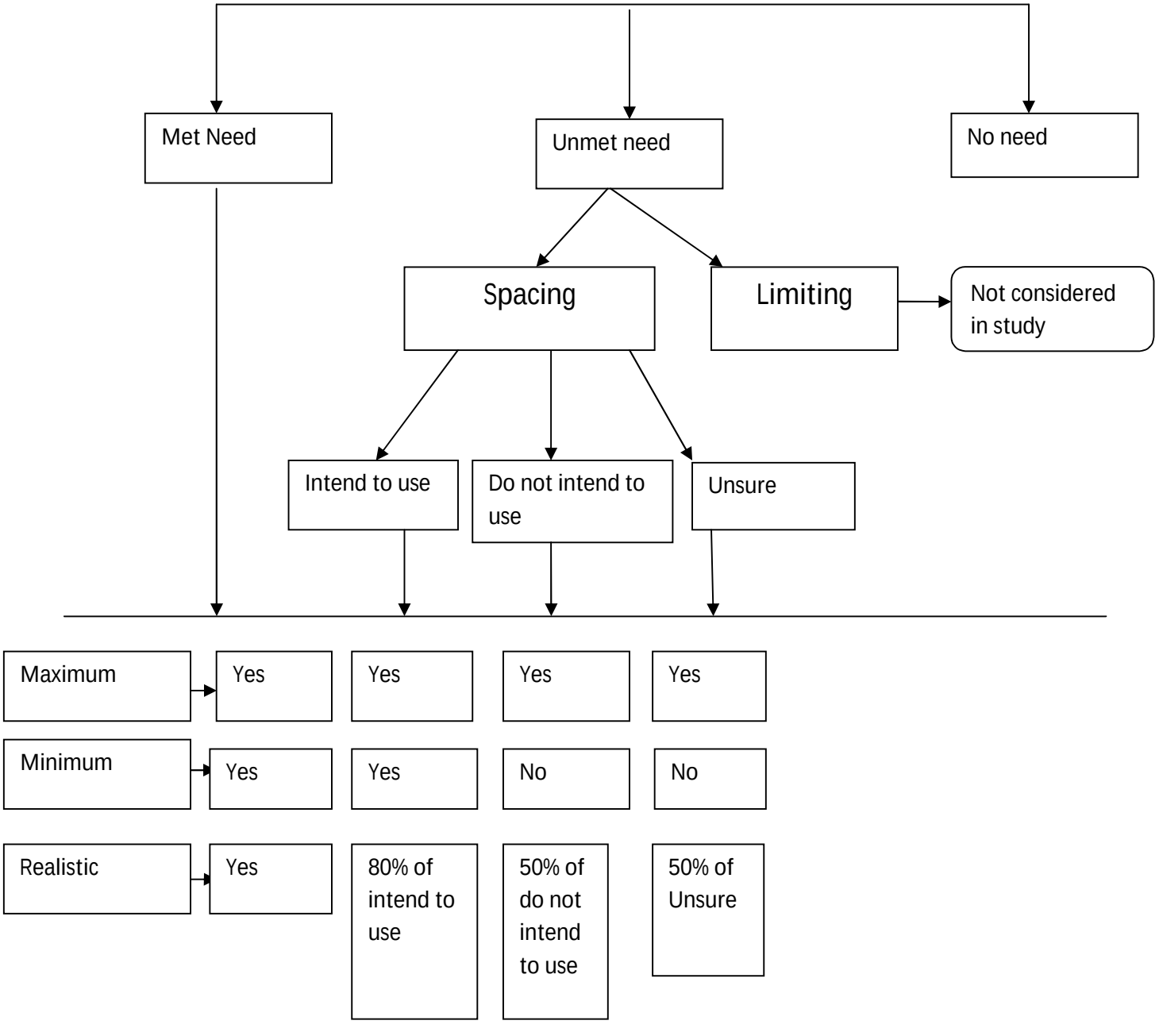
1. That among women who need to a means of spacing births, 20 % of those who intend to use a method will not use one,
2. That women in need who do not intend to use because they see themselves at low risk will not use; and half of the remaining women who do not intend to use a method will not use one.

These assumptions constitute the best guess or most realistic expectation of the amount of unmet need that can be satisfied.

***Third model/(Realistic model)=*** Met need(contraceptive prevalence)+ 80 % on intend to use (Spacing) + 50 % of don't intend to use and unsure(Spacing)

From these models we make a conceptual framework. From this conceptual framework it is easily understandable how addressing unmet need for family planning has an impact on fertility level by satisfying this unmet need.

Figure 1. A Conceptual Framework of the Westoff and Bankole Model




Source: Westoff(1996)

**Implications of Fertility:**

After estimating the potential use of family planning through three different sets of assumptions the remaining task is to derive the Total Fertility Rates (TFRs) that would be implied by those levels of use. To get the respective fertility and its implication on fertility reduction, the Bongaarts's proximate model is applied.

Bongaarts (1978) has refined the list of "intermediate variables " suggested by Davis and Blake and proposed a list of eight intermediate variables and termed them as the "proximate determinants of fertility" .

These eight variables can be classified can be classified as:

a) Exposure variables, which is marriage

b) Conception variables are like use or non use of contraception and induced abortion.

c) Determinants of natural fertility like are lactational infecundability , coital frequency, spontaneous intrauterine mortality, sterility and Duration of fertile union.

It is argued that most of the variation in fertility is mainly due to the differential impact of the first four variables. Using the data of 41 historical , developing and developed countries , it is concluded that 96 percent of the variation in the total fertility rate of the population could be explained by the four principal proximate determinants , namely, marriage, contraception , induced abortion and lactation infecudability and the remaining four variables explain very little variation in total fertility rate, but they together account for total fecundity. The framework of Bongaarts is more widely applied in fertility studies owing to its flexibility for assessing quantitatively the effect of the proximate determinants. Despite some limitations, it gives an approximate breakdown of the contributions made by different proximate determinants when studying levels and trends of fertility.

The four principal proximate variables are considered inhibitors of fertility because fertility is lower than its maximum value as a result of delayed marriage and marital disruption, the use of contraception and induced abortion, and lactational infecundability induced by breastfeeding. The fertility inhibiting effects of four principal variables measured in the model by four indices, which are defined as follows:

$C_m$ = index of marriage (Equals to 1 if all women of reproductive age are married and 0 in the absence of marriage).

$C_c$= index on non-contraception (equals 1 in the absence of contraception and 0 if all fecund women use 100% effective contraception).

$C_a$= index of induced abortion (equal 1 in the absence of induced abortion and 0 if all pregnancies are aborted) in a given time period.

$C_i$= index of lactational infecundability (equals 1 in the absence of lactation and 0 if the duration of infundability if finite).

From this equation we can calculate the total fertility rate (TFR). Four different types of fertility levels are identified from which the impact of proximate variables can be derived. With the inhibiting effects of all proximate determinants presents, the actual level of fertility in a population is measured by TFR. If the fertility inhibiting effects of delayed marriage is removed, i.e. all females marry on or before 15 years of age (no delayed marriage) , without other changes in fertility behavior , fertility will increase to a level TM ( Total marital fertility rate). If all practices of contraception and induced abortion are also eliminated, fertility will rise further to the level of TN(Total natural fertility marital fertility rate). If we remove the practice of lactation and postpartum abstinence, fertility will further rise to level of TF (total fecundity rate).

TFR, TM and TN may vary widely among populations. However, the TFs of most of populations fall within the range 13 to 17 births per women with an average of 15.3. Actually, the TF is relatively less variant because the three remaining proximate factors (natural fecund ability, spontaneous intrauterine mortality and permanent sterility) which determine TF usually cause only marginal changes in fertility.

Thus, the basic relations between the indices and the cumulative fertility measures are:

$$TFR = C_m * C_c * C_a * C_i * TF$$

These equations summarize the basic structure of the model by relation the fertility measures to the proximate determinants.

**Estimation of the above indices**

**Index of Marriage ($C_m$):**

Although the index of marriage ($C_m$) is to be determined by the age –specific proportions currently married among females, it is not simply equal to the proportion of all women of reproductive age that are married because the fertility impact of marriage also depends on the age distribution of married women. Married women in the peak child bearing age contraibute more than the youngest or eldest women, as age specific marital fertility rates reach maximum in the peak child bearing ages.

To take this age effect into account , the index Cm is estimated as the weighted average of the age –specific proportions of females currently married, m(a), where “a” demotes the age with the weight taken as the age- specific marital fertility rates , g(a), divided by $\sum g(a)$.

$$Cm = \sum m(a) * g(a) / \sum g(a)$$
$$= TFR/TM$$

**Index of Non-Contraception ($C_c$):**

The index of contraception varies inversely with the prevalence and use effectiveness of contraception practices by couples in the reproductive and use effectiveness of contraception practices by couples in the reproductive age groups. hence if contraceptive practice is absent, $C_c$=1.00 and it declines below 1 with increasing prevalence and effectiveness. Cc can be expressed by the following equation as :

$$C_c=1-1.08*u*e$$

Where u= proportion of married women using modern contraception; e= average effectiveness of contraception.

The coefficient 1.08 in the above equation represents an adjustment for the fact that women (couples) don't use contraception if they know or believe that they are sterile. Therefore, the variable "u" which measures prevalence among all women (couples), has to be inflated by the sterility correction factor to take into account the fact that the concentration of contraception is among fecund cpoples. Estimates of "u" are available from the recent fertility and contraceptive prevalence surveys. The average use effectiveness of contraceptive methods is calculated as the weighted average of the method specific use-effectiveness ($e_i$), where the weights are the proportion of women using a given method ($U_i$). Thus $U=eU_i$ and $e=\sum e_iU_i/\sum U_i=\sum e_i(u_i/u)$.

**Index of abortion ($C_a$):**

It is defined as the ratio of the observed total fertility rate(TFR) to the estimated total fertility rate without induced abortion, i.e. TFR+A and hence Ca=TFR/(TFR+A)

Where "A" is the reduction in fertility associated with a given level of abortion rate and it is calculated as A=b*TA,

Where, TA is the total abortion rate, describing the average number of induced abortions per women at the end pf the reproductive period, if induced abortions per women at the end the reproductive period, if induced abortion rate remains at the prevailing levels for women in each age group. An exact measure would be the sum of current age specific abortion rates (multiplied by five if given in five year age groups).

**Index of Infecundability ($C_i$) :**

Index Ci equals to the ratio of the TN in the presence and absence of post partum infecudability caused by breastfeeding.

As post-partum infecundability does not influence the duration of the reproductive years, its effect on fertility operates entirely through modification of the birth interval. Therefore, it equals the ratio of the average birth interval without and with breastfeeding.

If breastfeeding in not practiced , the birth interval is on an average, about 20 months (the sum of 1.5 months of minimum postpartum an ovulation, 7.5 months of mortality and  months associated with live birth). Hence, in the presence of breast feeding, the average birth interval is approximately equal to 18.5 months (7.5+2+9) plus the duration of postpartum infecunadability caused by breast feeding.

The index Ci is m therefore, estimated as:

Ci=20/(18.5+i)

Where , i= average duration of post partum infecunadability caused by breastfeeding.

Process of calculation of implied Fertility Rates:

By changing the prevalence of contraception (Cc), the implied fertility levels are derived.

Suppose $TFR_0=C_m*C_c*C_i*C_a*TF$

$TFR_1=C_m*C_{c1}*C_i*C_a*TF$

$=(C_{c1}/C_c)\ C_m*C_c*C_i*C_a*TF$
$=(C_{c1}/C_c)\ TFR_0$
($TFR_0$= current fertility rate, $TFR_1$= new fertility rate)

From the present total fertility rate we have to calculate the further fertility rate applying different degree of contraception prevalence according to our assumptions.

$TFR_0=C_m*C_c*C_i*C_a*TF$

By changing Cc to address the unmet need we can write the equation as :

$TFR_1=C_m*C_{c1}*C_i*C_a*TF$
$= (C_{c1}/C_c)\ TFR_0$

To calculate the contraceptive prevalence ($C_c$) we have to use the index of non-contraception. As we know $C_c=1-(1.08*u*e)$ ; u= contraceptive prevalence among married women married women of reproductive age(MWRA) ; e= average use-effectiveness of contraception.

The present contraceptive prevalence among married women of reproductive age (u) and other assumption regarding to contraceptive prevalence like $u_1$,$u_2$ and $u_3$ are known to us. The average use-effectiveness of contraceptive prevalence (e) is also known to us. The average effectiveness depends on the mix methods used as well as on the method specific levels of effectiveness. According to Bongaarts , the standard values of different contraception are as follows .Sterilization-1.0, IUD-0.95,pill -0.90, and other (traditional)-0.70. The other category refers to traditional methods such as Condom diaphragm, spermicidal agents ,rhythm, withdrawal, and abstinence. The latest modern methods such as injectables  and subdermal implants have much

higher effectiveness levels (close to 100 percent) and they should therefore not be included with the 'other' methods. "the use of these standard values is not likely to lead to important errors; as noted earlier, the target setting results are relatively insensitive to level of effectiveness and method specific effectiveness probably does not vary greatly among societies (except perhaps for the traditional methods)" Bongaarts,pp.187.(1984).to obtain this average use-effectiveness, a average of the method specific levelsnis calculated (the weights are given the proportions of all users that use the different methods).

After calculating and adjusting different indices of non-contraception ($C_c$). We calculate the various implied fertility rates.

**Data sources**

This analysis is based on data from third round of National family Health Survey (NFHS-3). The NFHS-3 coordinated by International Institute for Population Sciences (IIPS) under the aegis of the Government if India, was conducted in 2005-06. NFHS-3 collected information from a nationally representative sample of 124,385 women in the age group 15-49 and 74369 men in the age group 15-54 from 109,041 sample households. The survey was conducted from November 2005 to April 2006.

**Results**

**The regional Variations in Unmet Need in India:**

The current Contraceptive Prevalence of India is 56.2. The Indian Family program started very beginning very beginning but still we are not able to satisfy all our demand for family planning. It shows a large amount of unmet need for family planning in India.

The percentage of total unmet need for India is 12.8. Whereas unmet need for spacing and limiting are 6 and 6.8 percent respectively. Meghalaya occupies the highest rank in unmet need and unmet need for spacing but Nagaland ranks the highest position in Unmet need for limiting. Andhra Pradesh has the lowest level of unmet need and unmet need for limiting also but Himachal Pradesh has the least unmet need for spacing. For a proper understanding , we categorize the percentages of unmet need into "less than 10" , "10 to 20", and "20 and above". The states belonging to "less than10" category are Himachal Pradesh, Punjab, Haryana, Delhi, West Bengal, Gujarat, Maharashtra, Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. Jammu and Kashmir, Uttaranchal, Rajasthan, Mizoram, Tripura, Assam, Odisha, Chhattisgarh, Madhya Pradesh and Goa are between the ranges of "10 to 20". The category "20 and above" includes the states like Utter Pradesh, Bihar, Nagaland, Meghalaya, and Jharkhand. These States have the high level of unmet need for contraception. In most of the states unmet need for limiting is high than spacing.

There is also a difference observed in unmet need in different regions of India. Basically according to NFHS, the states are divided into five regions named as North, Central, North-East, East, West and South. The North-Eastern part of India has been experiencing a high level of unmet need for Family Planning whereas in southern part it is lowest. In case of Spacing , North East also is at highest position and Northern part it is the lowest. North East part has also highest level of unmet need for limiting whereas south has lowest in limiting. Beside North-Eastern part, Central and Eastern parts of India having huge unmet need. Another interesting thing about North Eastern part is that the difference between the spacing and limiting is very low compared to other parts of India.

**Differentials in Unmet Need**

The bivariate analysis show the unmet need at different levels of predictor variables that influence it. The levels of unmet need vary substantially by the women's social, economic and demographic characteristics. The Place of residence shows a difference in the level of unmet need for family planning of women. As expected Rural area having higher unmet need for family planning. In terms of age groups of currently married women, the level of unmet need declines as age increases , which shows that when desired fertility is achieved , the women go for spacing or the permanent method of sterilization. The last reproductive age group of women showing a very low level of unmet need i.e. 5 percent. Muslim women have the highest percentage of unmet need among all religions. In social;l group we find, there is not much difference visualized among the schedule tribes, schedule castes and other backward classes. The general caste women have lower unmet need than counterparts. Standard of living shows clear cut difference in the prevalence of unmet need for family planning that means as standard of living increases, the unmet need for contraception decreases. Same pattern has observed in case of Education also. Women having exposure to media having positive impact on unmet need for family planning. The working women also showing 5 percent less unmet need than woman who do not working. Women having 2 or less no of children show higher unmet need than women having more than 3 children.

**Logistic Regression Analysis:**

In case of place of residence women belonging to rural area are more likely to have unmet need than women from urban areas. Women belonging to others or general caste have very less chances of having unmet need than women from scheduled castes and backward classes. The schedule tribe women have higher chances of unmet need than schedule caste women. Muslim women significantly having higher unmet need in comparison with Hindu women. Women's education level has impact on the unmet need for family planning. Unmet needs are less likely to happen with increase in education. Women's work status has direct impact on unmet need for contraception. Working women have less chances of unmet need with reference to non-working women. Women are less likely to have an unmet need with increasing age and parity. Women exposed to mass media have fewer chances to have an unmet need with reference to women not

exposed to mass media. Women belonging to higher and medium standard of living class have less chances of having unmet need compared to low standard of living class. All independent variables having significant impact on unmet need for family planning.

**Analysis of different contraceptive Prevalence Level and implied Fertility rates of India:**

After calculating the unmet need and net need for family planning of India and its states , we calculate three different models like Maximum, Minimum, Realistic unmet need satisfied, by following our said assumptions. Basically these models are the levels of contraceptive use by satisfying the different unmet needs as taken in our assumptions. The first model is equivalent to meeting the total demand for family planning for family planning for spacing methods though it is unrealistic. The second model calculate the future intension of contraceptive use from the unmet need i.e. intension to use contraceptive for Spacing. That is why second or minimum model gives less percentage of need satisfied than the first model. When in case of second model we use only future intension of women to use methods to space , in third we calculate some fraction of those who do not intend to use the method for spacing and uncertain and also a fraction of the intension to use contraception for spacing. Because contraception practice, may change in future course of action and they may also intend to use. In case of realistic or third model the sets of assumptions yields the estimates of potential use quite close to the second model, which is most conservative among other models. Thus the third model gives us a very conservative use by satisfying the unmet need.

**Maximum needs Satisfaction:**

In maximum model, after adding unmet need for spacing into met need, we get the contraceptive prevalence as 62 percent which is excluding contraception use to limit as our primary focus is on only to estimate need for spacing. The maximum model shows actual demand for spacing. Himachal Pradesh has highest level of contraceptive prevalence of spacing near about 74.9; whereas Nagaland secures lowest position in prevalence of spacing having 39.6 percent.

The average Prevalence under maximum model of all states would rise to 61.6 percent from the current average 55.11 percent. The difference between the two is 6.4 percent which is the average extent of unmet need to space.

**Minimum Needs Satisfaction:**

The prevalence level after minimum need satisfaction is obviously less than that with maximum need satisfaction model because here we add only those who intend to use contraception for spacing in future in met need where in previous model we have added the total unmet need to space. As the intension to use contraception varies among the states , the need satisfaction also varies in minimum model compared to maximum. The contraceptive prevalence of India would then be 60.8.it decreases only near about 1.4 points from maximum to minimum model. The states Himachal Pradesh and Nagaland are also highest and lowest in minimum model having

74.5 and 34.2 percent respectively. The mean value of contraceptive prevalence of states has increased to 59.3 from current mean value is with difference of 4.2 points and the mean value is near about 2.3 points between maximum and minimum models.

**Realistic Needs Satisfaction:**

The realistic model is more or similar to the minimum model. The contraceptive prevalence of India is 60.6 almost similar to minimum model. Here also Himachal Pradesh (74.3)ranks first and Nagaland stands last with 36 percent contraceptive prevalence for spacing methods. There is little variation, only in decimal points, occurred in the prevalence of contraception between the minimum and maximum model. The average level of contraceptive use for spacing of states from current level to this level has increased 55.1 to 59.6 with increase of 4.5 points and difference between maximum and realistic model is 2 points only and interestingly -0.3 points only.

**Implications on Fertility:**

After analyzing the estimation of potential use of family planning for spacing under three sets of assumptions about the amount and kinds of unmet need, the remaining task is to analyze the total fertility rate (TFR) , which is implied by those levels of contraceptive use. We are aware of current Fertility and the current methods of use of family planning (as in NFHS-3).As discussed in above through Bongaarts Proximate Determinants Model we have estimated these figures of implied fertility rate. In the maximum model, the fertility rates are low compared to other two models because we suppose all unmet need as met need. The sharp reduction of fertility is visible in the maximum level of fertility compared to the current level. The fertility level in minimum and realistic model are more or less equal.

In our conservative model, the implied fertility rates are less than current fertility rates. In case of India the implied fertility rate is 2.4 from the current level of 2.7with the reduction of 9.8 percent. Really if we met the unmet need of spacing of India, We would be able to reach close to replacement level.

In all states the elimination of unmet need to space theoretically reduces the TFR to the replacement level of fertility. But it is clear from the above analysis that, by satisfying the unmet need for spacing we are able to control fertility to a significant level. The highest reduction in fertility is visualized in the state of Mizoram (19.4%) and in Meghalaya(16.5%)and In Rajasthan, Utter Pradesh, Bihar, Jharkhand, Maharashtra, Karnataka, Kerala reductions would be 10 to 12 percent and lowest reduction would occur in Punjab(4.8%),Assam(5.1) and Andhra Pradesh(5.2%) .

If we consider contraceptive rates from NFHS –3 and we take current TFR from recent SRS 2010 the we find fertility in states like Rajasthan, Utter Pradesh , Bihar, Odisha will go down significantly by satisfying unmet need for spacing only. Decline in percentage will be about 10

%. Countries TFR would go down from 2.5 to 2.3. by analysis we found that states which are already below replacement level of fertility would showing slowly decline in their fertility as their fertility was already lower. But states with high fertility showing significant decline in fertility rate.

**Conclusions:**

Unmet need has a great importance in family planning as it identifies the group of women who want to use contraception but are not using contraception but are not using it. Satisfying unmet need would result a substantial decline in fertility (Westoff , Bankole,1995). The research clearly indicates the huge amount of currently married women having unmet need in India and in different socioeconomic strata and also give a strong message for achievement of replacement of fertility by satisfying the unmet need.

There are variations in unmet need for family planning among in states. Meghalaya has the highest level of unmet need whereas Andhra Pradesh shows the lowest. There is also difference in unmet need for spacing and unmet need for limiting among states. Unmet also varies regionally. The northeastern part of India has highest prevalence of unmet need. Besides South India other parts of India has a significant level of unmet need. In case of spacing and limiting the results show the levels to be about the same. The trends show that unmet need is gradually declining still there is huge amount unmet need visible in the country.

The important policy question today is whether the level of unmet need for family planning in India is high enough to have a significant impact fertility if these needs are satisfied. To understand this question we have certain assumptions and computed the implied fertility rates. The interesting finding is that India will able to get closer to replacement level of fertility if we are able to satisfy the unmet need of spacing as we have only focused spacing. There is strong potential demographic significance of addressing unmet need on fertility. Still states like Utter Pradesh , Bihar, Madhya Pradesh, Jharkhand, Meghalaya etc. would not able to reach the figure of replacement level of fertility even after satisfying existing unmet need of spacing and even though if we include limiting also. Demand for children in these states is well above the replacement level. the maximum percentage of reduction in fertility rate is observed in Mizoram whereas Andhra Pradesh, Manipur , Punjab have the minimum percentage.

Disadvantaged marginalized groups having higher level of unmet need for spacing. Unmet need for spacing clearly challenges the entire family planning program personnel to quickly address the root causes and take necessary action to speed up implementation strategy. One of the important critics of Indian family planning program that it doesn't provide the choice and wide range of contraceptives for spacing . As we have seen the met need for spacing methods is very less. Family planning program has chiefly focused on sterilization as method of limiting. So it fails to provide spacing contraception choice and because of that women are not aware of

spacing methods. Government should take strong attention for providing services for spacing to postpone the pregnancies.

The policy implications seem clear from our analysis. The amount of unmet need is great enough to have a significant impact on fertility if it could be satisfied. Sections of the society like scheduled tribes and scheduled castes basically in Rural areas, have a mismatch of demand and supply of family planning program especially for spacing. Besides these people, the uneducated women are more vulnerable to unmet need for family Planning methods. There is ongoing debate on the high fertility rates Muslim woman which could be possible to reduce to a maximum extent by satisfying the unmet need. The basic question here is to check the unwanted births so it needs immediate action by our family planning administrators of both state and central level and mainly the panchayat level for effective implantation of family planning program. The government program and the society ensure that the women and overall couples receive reproductive health services of a high quality of their choice at the time they want without costs of time and money. Success in this effort will go a long way in achieving population stabilization, ensuring good reproductive Health and enabling couples to achieve reproductive rights. (Mohapatra,2010.)

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Table 1. Unmet need and Met need Spacing, Limiting, total of India and all states.2005-06.

| States | Using to space | Using to limit | Total met need | Unmet need space | Unmet need limit | Total unmet need |
|---|---|---|---|---|---|---|
| JAMMU & KASHIMIR | 5.1 | 47.4 | **52.6** | 5.8 | 8.8 | **14.5** |
| HIMACHAL PRADESH | 3.6 | 69.0 | **72.5** | 2.3 | 4.9 | **7.2** |
| PUNJAB | 4.7 | 58.5 | **63.2** | 2.7 | 4.7 | **7.4** |
| UTTARANCHAL | 5.7 | 53.6 | **59.3** | 4.4 | 6.5 | **11** |
| HARYANA | 4.1 | 59.2 | **63.3** | 3.1 | 5.3 | **8.3** |
| DELHI | 7.8 | 59.1 | **66.9** | 3.2 | 4.7 | **7.8** |
| RAJASTHAN | 3.5 | 43.8 | **47.2** | 7.3 | 7.3 | **14.6** |
| UTTAR PRADESH | 5.7 | 37.9 | **43.6** | 9.0 | 12.2 | **21.2** |
| BIHAR | 2.2 | 31.9 | **34.1** | 10.3 | 12.5 | **22.8** |
| SIKKIM | 5.9 | 51.0 | **57.1** | 5.9 | 11.8 | **16.3** |
| ARUNACHAL PRADESH | 7.1 | 36.5 | **43.5** | 8.2 | 10.6 | **18.8** |
| NAGALAND | 3.1 | 26.5 | **29.6** | 10.2 | 16.3 | **26.5** |
| MANIPUR | 13.0 | 35.4 | **48.4** | 5.0 | 7.5 | **12.4** |
| MIZORAM | 12.7 | 47.6 | **60.3** | 12.7 | 4.8 | **17.5** |
| TRIPURA | 10.2 | 55.6 | **65.8** | 3.6 | 6.6 | **10.2** |
| MEGHALAYA | 6.6 | 17.6 | **24.2** | 23.1 | 12.1 | **35.2** |
| ASSAM | 10.3 | 46.2 | **56.5** | 3.4 | 7.2 | **10.5** |
| WEST BENGAL | 11.8 | 59.4 | **71.2** | 4.0 | 4.1 | **8.1** |
| JHARAKHANDA | 3.2 | 32.5 | **35.7** | 11.0 | 12.2 | **23.2** |
| ODISHA | 3.4 | 47.4 | **50.7** | 6.8 | 8.1 | **14.9** |
| CHHATTISGARH | 2.9 | 50.3 | **53.2** | 5.3 | 4.8 | **10.1** |
| MADHYA PRADESH | 2.9 | 53.0 | **55.9** | 5.3 | 6.1 | **11.3** |
| GUJARAT | 7.5 | 59.1 | **66.6** | 4.2 | 3.9 | **8.1** |
| MAHARASHTRA | 4.4 | 62.5 | **66.9** | 5.3 | 4.0 | **9.4** |
| ANDRA PRADESH | 0.9 | 66.7 | **67.6** | 2.8 | 1.9 | **4.7** |

| | | | | | | |
|---|---|---|---|---|---|---|
| KARNATAKA | 1.8 | 61.8 | **63.6** | 5.6 | 4.0 | **9.6** |
| GOA | 8.4 | 39.5 | **48.3** | 7.6 | 5.9 | **12.7** |
| KERALA | 8.9 | 59.7 | **68.6** | 6.0 | 2.9 | **8.9** |
| TAMIL NADU | 2.1 | 59.3 | **61.4** | 4.0 | 4.6 | **8.6** |
| INDIA | 4.8 | 51.5 | **56.3** | 6.0 | 6.8 | **12.8** |

*Source: National Family Health Survey(NFHS-3), 2005-06.*

Table 2. Percentage of currently Married women having Unmet need for Family Planning, India

| Women's Background Characteristics | Percentage of women having Unmet need India-NFHS-3 | Frequency |
|---|---|---|
| Place of Residence | | |
| Rural | 14.2 | 64485 |
| Urban | 9.7 | 28604 |
| Education | | |
| No Education | 13.7 | 43932 |
| Primary | 11.9 | 14312 |
| Secondary | 12.6 | 29316 |
| Higher Secondary | 9.5 | 5528 |
| Religion | | |
| Hindu | 11.9 | 75799 |
| Muslim | 18.9 | 12289 |
| Others | 10.7 | 5002 |
| Social Groups | | |
| SC | 13.4 | 17498 |
| ST | 14 | 7590 |
| OBC | 13.5 | 37528 |
| Others | 11.3 | 30474 |
| Standard of Living | | |
| Low | 16.3 | 21863 |
| Medium | 12.6 | 28742 |
| High | 11.1 | 42484 |
| Work Status | | |
| Not Working | 14.6 | 59483 |
| Working | 9.5 | 33481 |
| Mass Media Exposure | | |
| No Exposure | 16.6 | 24399 |
| Exposure | 11.4 | 68690 |
| Mother's Age | | |
| <25 years | 22.8 | 23508 |
| 25-35 years | 13.7 | 35000 |
| >35 years | 5.1 | 34581 |
| Number of Living Children | | |
| <=2 | 13.7 | 51054 |
| >=3 children | 11.7 | 42035 |

Source : NFHS-3

Table 3. Binary logistic Regression for Unmet Need for Family Planning, India

| Place of Residence | Exp.(B) |
|---|---|
| Urban[R] | |
| Rural | 1.419*** |
| Education | |
| No Education[R] | |
| Primary | 0.730*** |
| Secondary | 0.771*** |
| Higher Secondary | 0.912 |
| Religion | |
| Hindu[R] | |
| Muslim | 1.886*** |
| Others | 1.103* |
| Social Groups | |
| SC[R] | |
| ST | 1.185*** |
| OBC | 1.046 |
| Others | 0.728*** |
| Standard of Living | |
| Low[R] | |
| Medium | 0.817*** |
| High | 0.812*** |
| Work Status | |
| Not Working[R] | |
| Working | 0.565*** |
| Mass Media Exposure | |
| No Exposure[R] | |
| Exposure | 0.578*** |
| Mother's Age | |
| <25 years[R] | |
| 25-35 years | 0.280*** |
| >35 years | 0.097*** |
| Number of Living Children | |
| <=2[R] | |
| >=3 children | 0.920*** |
| Constant | 0.393 |
| -2 Log Likelihood | 51930.2 |
| Nagelkerke $R^2$ | 0.227 |
| N | 64486 |

Notes: 0=No Unmet need,1=Unmet need, R=Reference group, *10% level of significance,**5%level of significance,** 5% level of significance,*** 1%level of significance

Source: Calculated from National Family Health Survey(NFHS-3),2005-06

Table 4. Contraceptive Prevalence level and their implied Fertility Rates of India and States, 2005-06.

| STATES | CONTRACEPTIVE PREVALANCE | | | | TFR | | | | % REDUCTION IN TFR | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *NEED SATISFIED* | | | *CURRENT* | *NEED SATISFIED* | | | *NEED SATISFIED* | | |
| | *MET NEED* | MAXIMUM | MINIMUM | REALISTIC | RATE | MAXIMUM | MINIMUM | REALISTIC | MAXIMUM | MINIMUM | REALISTIC |
| JAMMU & KASHIMIR | 52.6 | 58.3 | 57.0 | 56.8 | 2.4 | 2.1 | 2.2 | 2.2 | 11.3 | 8.7 | 8.3 |
| HIMACHAL PRADESH | 72.6 | 74.9 | 74.5 | 74.3 | 1.9 | 1.8 | 1.8 | 1.8 | 7.6 | 6.3 | 5.7 |
| PUNJAB | 63.2 | 65.9 | 65.1 | 65.1 | 2.0 | 1.9 | 1.9 | 1.9 | 6.8 | 4.8 | 4.8 |
| UTTARANCHAL | 59.3 | 63.7 | 62.7 | 62.5 | 2.6 | 2.3 | 2.4 | 2.4 | 10.1 | 7.8 | 7.4 |
| HARYANA | 63.4 | 66.5 | 65.7 | 65.7 | 2.7 | 2.5 | 2.5 | 2.5 | 7.9 | 5.9 | 5.7 |
| DELHI | 66.9 | 70.1 | 69.0 | 69.1 | 2.1 | 1.9 | 2.0 | 2.0 | 8.9 | 5.8 | 6.2 |
| RAJASTHAN | 47.2 | 54.5 | 53.8 | 52.8 | 3.2 | 2.8 | 2.8 | 2.9 | 13.1 | 11.8 | 10.1 |
| UTTAR PRADESH | 43.6 | 52.5 | 50.2 | 50.0 | 3.8 | 3.2 | 3.4 | 3.4 | 15.0 | 11.1 | 10.8 |
| BIHAR | 34.1 | 44.4 | 42.2 | 41.7 | 4.0 | 3.4 | 3.5 | 3.6 | 15.0 | 11.8 | 11.0 |
| SIKKIM | 57.6 | 63.2 | 61.8 | 61.7 | 2.0 | 1.8 | 1.8 | 1.8 | 12.4 | 9.3 | 9.0 |
| ARUNACHAL PRADESH | 43.2 | 51.3 | 47.7 | 48.6 | 3.0 | 2.6 | 2.8 | 2.8 | 13.6 | 7.5 | 9.0 |
| NAGALAND | 29.7 | 39.6 | 34.2 | 36.0 | 3.7 | 3.2 | 3.5 | 3.4 | 13.5 | 6.2 | 8.6 |
| MANIPUR | 48.7 | 53.7 | 51.6 | 52.1 | 2.8 | 2.6 | 2.7 | 2.7 | 9.2 | 5.4 | 6.2 |
| MIZORAM | 59.9 | 72.0 | 67.5 | 68.2 | 2.9 | 2.1 | 2.4 | 2.3 | 28.2 | 17.6 | 19.4 |
| TRIPURA | 65.7 | 69.4 | 68.4 | 68.4 | 2.2 | 2.0 | 2.1 | 2.1 | 9.9 | 7.2 | 7.1 |
| MEGHALAYA | 24.3 | 47.4 | 29.1 | 37.3 | 3.8 | 2.7 | 3.6 | 3.2 | 29.4 | 6.1 | 16.5 |
| ASSAM | 56.5 | 59.9 | 58.7 | 58.9 | 2.4 | 2.2 | 2.3 | 2.3 | 7.3 | 4.8 | 5.1 |
| WEST BENGAL | 71.2 | 75.2 | 74.1 | 74.1 | 2.3 | 2.0 | 2.1 | 2.1 | 12.6 | 9.3 | 9.1 |
| JHARAKHAND | 35.7 | 46.7 | 44.7 | 43.9 | 3.3 | 2.8 | 2.9 | 2.9 | 16.4 | 13.4 | 12.2 |
| ODISHA | 50.7 | 57.5 | 56.1 | 55.7 | 2.4 | 2.1 | 2.1 | 2.1 | 13.0 | 10.3 | 9.6 |
| CHHATTISGARH | 53.2 | 58.5 | 57.6 | 57.2 | 2.6 | 2.3 | 2.4 | 2.4 | 10.7 | 8.9 | 8.0 |
| MADHYA PRADESH | 55.9 | 61.2 | 60.7 | 60.0 | 3.1 | 2.8 | 2.8 | 2.8 | 11.3 | 10.2 | 8.7 |
| GUJARAT | 66.6 | 70.8 | 69.8 | 69.7 | 2.4 | 2.1 | 2.2 | 2.2 | 11.6 | 8.8 | 8.4 |
| MAHARASHTRA | 66.9 | 72.2 | 71.1 | 70.8 | 2.1 | 1.8 | 1.9 | 1.9 | 14.7 | 11.8 | 10.9 |
| ANDRA PRADESH | 67.6 | 70.4 | 69.1 | 69.4 | 1.8 | 1.6 | 1.7 | 1.7 | 7.9 | 4.1 | 5.2 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KARNATAKA | 63.6 | 69.2 | 67.5 | 67.6 | 2.1 | 1.8 | 1.9 | 1.9 | 14.3 | 9.9 | 10.1 |
| GOA | 48.2 | 55.4 | 51.5 | 52.8 | 1.8 | 1.6 | 1.7 | 1.6 | 13.2 | 6.1 | 8.4 |
| KERALA | 68.6 | 74.6 | 72.2 | 72.7 | 1.9 | 1.6 | 1.7 | 1.7 | 17.5 | 10.5 | 11.9 |
| TAMIL NADU | 61.4 | 65.4 | 65.0 | 64.5 | 1.8 | 1.6 | 1.6 | 1.7 | 9.6 | 8.6 | 7.4 |
| INDIA | 56.2 | 62.2 | 60.8 | 60.6 | 2.7 | 2.3 | 2.4 | 2.4 | 12.9 | 9.8 | 9.4 |

*Source: Computed from NFHS-3 (women file), 2005-06.*

*Met need we have taken for all contraceptives (spacing +limiting)*

*For further analysis of need satisfied have considered only for spacing methods.*

Table 5. Implied Fertility Rates of India and bigger States, 2010.

| STATES | TFR | | | | % Reduction in TFR | | |
|---|---|---|---|---|---|---|---|
| | | Need satisfied | | | Need Satisfied | | |
| | TFR(Current rate) | MAX | MIN | REAL | MAX | MIN | REAL |
| JAMMU & KASHMIR | 2.0 | 1.8 | 1.8 | 1.8 | 11 | 9 | 8 |
| HIMACHAL PRADESH | 1.8 | 1.7 | 1.7 | 1.7 | 8 | 6 | 6 |
| PUNJAB | 1.8 | 1.7 | 1.7 | 1.7 | 7 | 5 | 5 |
| HARYANA | 2.3 | 2.1 | 2.2 | 2.2 | 8 | 6 | 6 |
| DELHI | 1.9 | 1.7 | 1.8 | 1.8 | 9 | 6 | 6 |
| RAJSTHAN | 3.1 | 2.7 | 2.7 | 2.8 | 13 | 12 | 10 |
| UTTAR PRADESH | 3.5 | 3.0 | 3.1 | 3.1 | 15 | 11 | 11 |
| BIHAR | 3.7 | 3.1 | 3.3 | 3.3 | 15 | 12 | 11 |
| ASSAM | 2.5 | 2.3 | 2.4 | 2.4 | 7 | 5 | 5 |
| WEST BENGAL | 1.8 | 1.6 | 1.6 | 1.6 | 13 | 9 | 9 |
| JHARAKHANDA | 3.0 | 2.5 | 2.6 | 2.6 | 16 | 13 | 12 |
| ODISHA | 2.3 | 2.0 | 2.1 | 2.1 | 13 | 10 | 10 |
| CHATTISGARH | 2.8 | 2.5 | 2.6 | 2.6 | 11 | 9 | 8 |
| MADHYA PRADESH | 3.2 | 2.8 | 2.9 | 2.9 | 11 | 10 | 9 |
| GUJRAT | 2.5 | 2.2 | 2.3 | 2.3 | 12 | 9 | 8 |
| MAHARASHTRA | 1.9 | 1.6 | 1.7 | 1.7 | 15 | 12 | 11 |
| ANDRA PRADESH | 1.8 | 1.7 | 1.7 | 1.7 | 8 | 4 | 5 |
| KARNATAKA | 2.0 | 1.7 | 1.8 | 1.8 | 14 | 10 | 10 |
| KERALA | 1.8 | 1.5 | 1.6 | 1.6 | 17 | 11 | 12 |
| TAMILNADU | 1.7 | 1.5 | 1.6 | 1.6 | 10 | 9 | 7 |
| INDIA | 2.5 | 2.2 | 2.3 | 2.3 | 13 | 10 | 9 |

Source: Sample Registration Survey –annual (SRS) 2010.

Here contraceptive levels we assumed earlier which we have calculated from NFHS-3 only TFR we have taken from recent SRS (2010) for bigger states.