

Alternate Scenarios for Population Control in Pakistan: The Issue of Contraceptive Method Mix*

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I. INTRODUCTION

According to the Sixth and Seventh Five-Year Development Plans the Population Programme was supposed to follow a multisectoral approach to expand its coverage and provide women with alternatives to regulate reproduction. It never emerged in a practical form. As a matter of fact, Pakistan's population programme has always followed a supply-oriented approach assuming that demand exists, but unfortunately the major constraints which inhibited the programme was the poor supply of contraceptives and the lack of consistency in the contraceptive mix. The significance of the method mix lies in the potential impact on population growth rate and the time taken to realise this impact. A recent exercise by Choe (1991) estimates 'ideal' contraceptive mix based on a number of factors, like past and intended fertility, estimated pregnancy risk, and health status at various reproductive ages. The exercise revealed that the observed method mix differed significantly with the ideal mix. It is further argued that the adoption of the ideal mix could bring an early transition in population growth. The current analysis though does not estimate the 'ideal' mix but examines various scenarios to bring down the rapidly growing population.

The major programme emphasis on pills during the 1960s and the early 1970s (Planning and Development Division 1982) was not adequately managed and got diluted due to inadequate field support and improper user screening procedure. Although the programme shifted its attention more on clinical methods, almost all demographic surveys conducted so far exhibit that among all modern methods of contraception, female sterilization is the most popular method selected by women usually with high parity and towards the end of their reproductive career. The financial crunch and lack of political and administrative support misdirected the whole programme. Consequently population increased at a high rate. In the 1980s

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the social marketing of contraceptives focusing only on condoms which resulted in an unprecedented increase in condom use made it an easily accessible method. The shift in condom use from 2.1 percent among non-pregnant women in 1984-85 (Pakistan Contraceptive Prevalence Survey) to 3.2 in 1990-91 (Pakistan Demographic Health Survey) confirms the axiom that accessibility does make a difference. However, many methods which had somewhat prevalence earlier, particularly the 'pill' and 'foam', lost their attractiveness among programme managers and the users. But is this shift in the best interest of the programme? The decline of pill use in Pakistan is in contrast to the success of the same method in Thailand (EWPI 1991). This success usually attributed to the level of female education points towards the importance of 'user'. Who is a typical Pakistani user and what potential do they have to control high fertility rates? Moreover, what is the adequate combination of modern methods that are needed to successfully help users to either space or limit their births with a minimum dropout rate?

Considering the importance of contraceptive use in regulating the fertility, our objective in this exercise is to estimate the extent of services required to achieve a certain level of the Contraceptive Prevalence Rate (CPR) necessary to bring fertility down to a level desired by women.

II. THEORETICAL ISSUES

In order to achieve the targeted annual population growth rate, it is essential for planners to understand the intervening factors affecting fertility behaviour and the pathways through which they make any difference. In this regard, literature generally identifies three major categories: (a) demand for children; (b) supply of children; and (c) fertility regulation. The demand for children is more concerned with economic and social reasons to add children to one's family, while the supply factors encompass biological reasons that increase or decrease the duration of exposure and level of fecundity of a woman. Fertility regulation, through the conscious use of modern or traditional methods, only if supply is greater than demand, provides a couple means to control the risk of pregnancy. The reduction in the risk of pregnancy, even when demand for children exists, works to enhance space between births. Fertility decline is more effective through either limiting or spacing births, especially when younger couples try to regulate their reproduction. Central to the issue of fertility regulation is the availability and accessibility of the contraceptive methods to the potential consumers.

If we assume that a latent demand for contraception exists, then would merely the supply of contraceptives help in enhancing contraceptive prevalence levels? There are several issues related to this question. These include the pattern and type

of latent demand (spacing or limiting need), functional knowledge about various contraceptives, selection of appropriate methods, suitable screening of women through proper counselling, accessibility to various methods, and the couple's intentions to regulate reproduction. Over and above these there is the sociological reason to reject contraceptives. Men assume it as against the normative values to control fertility, besides they feel it to be not their responsibility to seek contraceptives for their wives. As such they tend to stay away from getting themselves involved. Women, on the other hand, tend to reject contraceptives to avoid the social label of being 'infertile' or her husband being 'impotent'. In general, pronatalists would propagate the value of number of children and any means to avoid reproduction as 'sacreligious'. On the whole, contraceptives *per se* are an undesirable means to limit reproduction and are taken as an imperialist threat to traditional society.

One of the major demographic factors that has exhibited a direct and strong impact on the overall fertility outcome is the proportion of women getting married at younger ages. A number of demographic surveys have shown that marriage is universal in Pakistan and that there has been a rise in the female age at first marriage over the last two decades. This transition implies that increasingly a smaller proportion of women are getting exposed to the risks of pregnancy and that their total duration of exposure has shortened. This shift may be attributed to changing family formation norms under rapid urbanisation and growing female education. The changing age at first birth and that more women becoming aware about the benefits of birth spacing could alter the fertility pattern. Adequate knowledge and easy accessibility and use of various methods are a prerequisite to accomplish this demographic transition.

It has been repeatedly argued that multiple methods are a prerequisite for bringing needed control over population growth. The provision of a variety of methods is meant to accomplish the following objectives: (a) contraceptive needs of a woman [couple] change over her reproductive cycle. This changing need could only be fulfilled if a variety of methods are propagated and made available to users; (b) not all users feel comfortable using a particular method, thereby, availability of more methods could make switching to another method easier; (c) the effective impact of contraceptives depends largely on continuity of use. A large variety of methods could ensure such a continuity both in terms of changing needs and suitability of methods and thereby stalling possible dropouts; and (d) the most important concern to a programme planner is how to make entrance or new acceptance easy. Among other factors like knowledge, shyness, accessibility, etc. a variety of methods could help this transition relatively easy, provided adequate

knowledge is disseminated. In general, one could argue that a programme would depend more on women switching to alternate methods thus ensuring continuity in use and, thereby, giving less emphasis on new acceptors (Jain: 1989). Given the general dropout rate, an increase in new acceptors of spacing methods is required to ensure a decline in fertility.

An important issue in the supply strategy of contraceptives is the effectiveness of the various methods that have a direct impact on the fertility control effort. The effectiveness encompasses both the inherent attributes of a method and that of a user. Method failure leading to a pregnancy could be because of a less effective method or of incorrect use. The inefficient use of modern methods by a couple brings to our notice a variety of social and cultural factors that includes the use and disposal of condoms in households where 6-7 persons sleep in one room, forgetting to take a pill every day, or not getting an injection at the appropriate time, inaccurate insertion of IUD, etc. These user-related casualness may eclipse the inherent good attributes of specific contraceptive methods. As a result an efficient method like the condom may not be fully effective in controlling fertility because its casual use places the user under greater risk of getting pregnant.

III. METHODOLOGY

The underlying objective of this exercise is to examine the transition in fertility behaviour that can be achieved through bringing a change in proximate factors, especially the age at marriage and contraceptive use. An early fertility transition can be accomplished by meeting the unmet need for birth spacing or limiting births. The experiences of South-East and East Asian countries with regard to contraceptive use were considered in a series of simulation exercises in order to plot the targetted fertility transition in Pakistan. These simulation exercises were done using a period of ten years as stated in government policy.

We used a software programme entitled 'TARGET' (Bongaarts and Stover 1986) to execute various simulation models. The input requirements of the programme use some basic information like: base and target years, age-specific fertility rates, the number of women in reproductive ages, the proportion of women currently married, the contraceptive method mix, the effectiveness of various contraceptives and some proximate determinants of fertility. The programme provides an opportunity to introduce changes in the method mix or in the values of various proximate factors. The simulation exercises used basic data of the preliminary results from the 1990-91 Pakistan Demographic and Health Survey (PDHS). The programme provides detailed information regarding contraceptive use by method to estimate changes in total fertility rates.

The input data exhibited in Table 1 show lower values of age-specific fertility rates associated with a lower proportion of currently married women at younger ages. Moreover, the values of the percent currently using any method are higher than estimated by earlier demographic surveys such as the 1975 Pakistan Fertility Survey and the 1984-85 Pakistan Contraceptive Prevalence Survey. The values for the use-effectiveness of methods were taken from a number of studies on Bangladesh since there are none available for Pakistan. It may be noted that a value of .70 for effectiveness of condoms means that based on prior studies a condom user

Table 1

Data Input Requirements of the Programme

(Source)→	Age Specific Fertility Rate 1990-91 (PDHS)	Women of Reproductive Age* 1991 (000s)	Proportion Currently Married (PDHS)	Percent Currently Using (PDHS)
Age Groups				
15-19	86.8	5983	18.4	2.5
20-24	235.6	5267	59.7	6.3
25-29	276.5	4481	86.0	9.7
30-34	233.5	3715	93.2	13.2
35-39	151.7	3080	93.1	20.2
40-44	73.8	2194	92.7	15.7
45-49	41.9	1765	90.5	11.7
TFR	5.5	Total 26,485	70.9	11.9
Method	Effectiveness	% MWRA Using Contraception (PDHS 1990-91)		
Female Sterilz	0.98		3.6	
Injectable	0.97		0.8	
IUD	0.95		1.3	
Pills	0.90		0.7	
Condoms	0.70		2.7	
Withdrawal	0.70		1.2	
Others	0.70		1.6	
Average	0.84	Total	11.9	

*Projected Population from 1981 Census.
MWRA = Married women of reproductive ages (15-49).

is liable to face a 30 percent chance to get pregnant because of method failure or inefficient and casual usage. Similarly, lower value for pills is considered because of social and cultural aspects of a user that could lead to casual usage of pills. For instance, illiteracy of a user, inappropriate screening by field staff, panic in user due to side effects, shortage of supply, and inadequate information are some pill-user related issues that could involve increase in pregnancy risk or possible dropout. The average use effectiveness, is estimated to be around .84 meaning that given the contraceptive use, distribution, and method effectiveness a Pakistani user on average is at risk of getting unwanted pregnancy in 16 percent of coital cases. The initial simulation exercises were conducted to examine a drop in the estimated total fertility rate of 5.5 (PDHS 1990-91) to 4.5 over the next decade. This transition in fertility is estimated to achieve the desired level of population growth rate of 2.5 percent.

IV. RESULTS

This section presents the results from a number of simulation exercises focusing on the transition in fertility caused by changes in certain proximate factors.

Single-Method Approach

Initial simulation models were executed to examine the appropriateness and the impact on fertility if only one contraceptive method could gradually replace the current method mix. These simulation exercises maintain all input values including the proportion currently married as constant. Table 2 shows the annual CPR values for all simulation exercises. Among the two prominent non-clinical methods, the use of condoms shows a very high CPR values (34.8 percent of MWRA) in year 2001 as against 27.1 percent for the use of the pill only. The high rates are not only reflective of low use-effectiveness values but also of a high rate of continuity in use and a recruitment of a large number of new acceptors. In absolute terms, if all users accept the condom as the method, the increase in the number of users has to be quadrupled from 2.2m to 8.9 m in just a 10 year period to reduce the value of TFR by just one child. Similarly, the number of users will have to be tripled (from 2.2m to 6.9 m) in case of pills. This shift in number of users is colossal for the obvious reason of inefficiency associated with the use of these methods.

On the other hand, if we opt for a clinical method such as the IUD, injection or female sterilization, the estimated CPR for the year 2001 is a little more than twice the level of CPR for 1991 (11.9 percent). In these cases also the rise in the absolute number of users by year 2001 is three times that of 1991. However, the lowest number of cases are for female sterilization. The overall problem with these

estimations is the static age structure of users. Rather with increasing the use rate, usually younger women are involved in greater proportions thereby enhancing the efficiency of use.

Table 2

Contraceptive Prevalence Rates under a Single Method Distribution Scenarios (% of Married Women of Reproductive Age)

Year	Projected Single Method-Specific Rates				
	Condom	IUD	Pills	Female Sterilisation	Injection
1991	11.9	11.9	11.9	11.9	11.9
1992	14.0	13.6	13.6	13.5	13.5
1993	16.0	15.1	15.2	14.9	15.0
1994	18.1	16.5	16.8	16.3	16.4
1995	20.3	18.0	18.4	17.6	17.7
1996	22.5	19.4	20.0	18.8	19.1
1997	24.8	20.7	21.4	20.0	20.3
1998	27.2	22.0	22.9	21.2	21.5
1999	29.7	23.2	24.3	22.3	22.7
2000	32.2	24.4	25.7	23.4	23.8
2001	34.8	25.6	27.1	24.3	24.9
No. of Users (000)					
in 1991	2,243				
No. of Users (000)					
in 2001	(8,881)	(6,544)	(6,907)	(6,216)	(6,343)

In Pakistan where a typical potential user experiences a variety of social pressures to exhibit fecundity at various stages of reproduction, the target of recruiting 8.8 m condom users or about 7 m pill users by year 2001 seem highly improbable as women or their husbands would not be eager to go out of their homes to fetch pills or condoms. Thus raising the question about service availability at the door step. As far as clinical methods are concerned a large team of personnel could be mobilised on a crash programme basis, as was done by EPI for immunisation of infants and mothers. The overall target, both in terms of CPR and number of new recruits, calls for a crash motivational programme to persuade, closely follow-up and to ensure continuous use.

The single-method distribution approach is highly inadequate not only to meet

a variety of needs for spacing or limiting births but the structural adjustment to accommodate single service will be a highly expensive proposition and difficult to change over towards a method mix later. For instance, the current realisation of the Indian family planning programme to add reversible method besides female sterilization which they had been pursuing for over two decades is experiencing obstacles not because of different service structure needed to dispense other methods rather more seriously because of the tempo and the temperament of the staff who pursued female sterilization vigorously thus relegating other methods to a secondary place. The absence of any significant demographic change due to sterilization is quite obvious as most women acquiring it already had completed their family.

Assuming we select the second best methods (IUDs or injectables) for the programme as a single method for Pakistan, there are several questions that need to be answered. Would a Pakistani user accept it as the method of their choice? Would our Programme managers be willing to bring necessary field service adjustments to dispense one method? Is the Pakistani programme adequately equipped to respond and accommodate side effect cases which may give a severe set back if the programme ignores it. These are some crucial questions that need serious attention. As a policy matter the single method approach seem quite unsuitable and lacks pragmatism.

Multiple-Method Approach

Cafeteria approach involves provision of all available contraceptive methods to the users. The choice is left to the users after adequate information and advice has been given to them. The current programme follows this general approach but the observed method specific use seem to have been adjusted to the user's needs.

Simulation exercises in this regard consider all methods under use. Three models were executed. The first model does not consider any change in any of the input measures even in the method mix (Table 3). The estimated CPR for the year 2001 to bring down the TFR by one child is above 29 percent of currently married women of reproductive ages. Though there is availability of more than one method to switch, the absolute number of users required (7.4m) to reach the CPR value of 29 is very high because of high age at first use, greater use of traditional and less efficient methods, and inappropriate field service structure to execute the programme effectively. Now we focus on three reversible methods – IUDs, injectables and condoms. The interest on condoms is because of the fact that it is the only male method that has picked up momentum in recent years and since more males are educated than females, its effectiveness and continuous use can be increased with appropriate method specific education. If the programme focusses to enhance the

Table 3

*Contraceptive Prevalence Rates under Multiple Method Scenarios
(% of Married Women of Reproductive Age MWRA)*

Year	Target: Bringdown TFR from 5.5 to 4.5		
	No Change	Change in Three Methods*	Change in Prop. Married
1991	11.9	11.9	11.9
1992	13.7	13.6	13.3
1993	15.5	15.3	14.7
1994	17.2	17.0	16.1
1995	19.0	18.7	17.5
1996	20.7	20.3	18.9
1997	22.4	21.9	20.3
1998	24.1	23.4	21.6
1999	25.8	25.0	23.0
2000	27.5	26.6	24.4
2001	29.2	28.1	25.7
Number of Users (000) in 1991	2,243		
Number of Users (000) in 2001	(7440)	(7,166)	(6,151)

* Shift in method mix over the period includes IUDs 10.6 to 16.09 percent, Injectables 6.5 to 13 percent, and Condoms 22.7 to 25.79 percent. The rest of the factors were maintained as a constant level.

proportion of users for these methods only at the cost of less efficient methods, we get a CPR value of 28 percent with 7.2 m users by the year 2001 to bring down the TFR value by one child. This scenario shows just one percentage point lesser CPR value than the no change model. This could be because of high age at start to use of efficient contraceptives and increase in the use of condoms which has a low use-effectiveness making hardly any contribution to decrease the growing number of needed users. It seems from this model that instead of focussing on condoms, another more efficient method like female sterilization may be stressed upon and condom demand be left to market forces. Strengthening sterilization will definitely help in decreasing unwanted pregnancies and surely eliminate the risk of pregnancy completely.

For a more realistic scenario, the following model includes changes in the proportion of currently married women especially in the younger ages. The shift in age at marriage is introduced keeping in mind the shift recorded by the 1990-91 PDHS for the last decade. The overall proportion declines from 70.9 in 1991 to 68.1 in 2001. This shift is in addition to the new method mix targetted for the year 2001 defined in the previous model. Our results indicate a CPR value of 25.7 percent among MWRA with 6.2 m users in the 2001. This result depicts low numbers because of (1) relatively fewer women getting exposed to risk at most fertile ages, and (2) duration of exposure to pregnancy is restricted due to entry and exit from currently married status.

This model could further be bolstered if female sterilization was also stressed. This final model seem to be more applicable and practical because it accomodates both the changes in the status of woman through changing age at marriage in Pakistan and the current programme's stress on clinical methods within cafeteria approach. The targetted CPR is twice the current level of 11.9 percent and requires concerted effort to reach it. Unless the proportion using injectables or IUDs rises rapidly, especially at younger ages, the current method mix will not make a significant difference relative to the no change model in bringing about a fertility transition. A major issue in this regard would be the encouragement to use reversible methods at early ages and the provision of accurate knowledge about method usage.

It should be noted that at low fertility, age at marriage loses its importance as a fertility determinant as approximately a thirty year reproductive age span provides ample opportunity to produce two to three children. Delays in marriage do constrain fertility but low fertility requires effective contraceptive use for a prolonged period over the marital duration.

Prior research has vividly exhibited that the success of a programme is based primarily on continuation rather than having a large number of users with low continuation rate. What emerges very strongly from this analysis is that Pakistan needs a multi-target programme wherein different target groups are addressed with a combination of methods. Focussing reversible methods on specific younger groups like newly weds and young mothers with at least two children and sterilization for women who have completed their fertility or have excess children would provide the necessary environment to facilitate greater continuation. These are policy issues that must be decided prior to implementation of the forthcoming plan. In this regard, it is necessary to see what type of method is preferred by Pakistani women. Most women would prefer to use a method that has minimal side effects and does not affect their daily normal domestic and religious functions. Excessive bleeding by using IUDs could lead to its rejection as it interferes with normal

religious duties. Similarly, improper screening of women for pill use and inadequate information about its side effects could lead to early dropout.

V. DISCUSSION AND POLICY MEASURES

It is quite clear that family planning programmes are unlikely to succeed without providing multiple methods. Let us quickly look at some success stories. Observing three Muslim countries (Egypt, Morocco and Indonesia) where contraceptives use rate has increased tremendously over the last few decades by following the cafeteria approach with an emphasis on the use of pills and IUDs clearly indicates birth spacing rather than limiting strategy. The targetted impact of these methods to bring down the TFR was accomplished through the increased use rate among younger women especially in the 20s. This pattern is also exhibited by Thailand where the pill and the IUD became the main priority of the programme. To accomplish the targetted CPR values for Pakistan the emphasis on IUD and injectables seem to be in the right direction as the main initiative of these methods is to focus on the younger ages and the newly wed couples to space births.

What is needed to accomplish this target is a range of programmatic changes. Simply increasing the number and quantities of modern methods is not going to make the difference. The supply of contraceptives needs to be fully supported by education and motivation programmes and the overhauling of the quality of services. This is essential to minimise discontinuity of use and making switching of methods easier by providing multiple choice, proper information about use and side effects, close client and provider contact encompassing privacy of the user, repeated follow-up to assist in the appropriate selection of method from a number of sources where accessibility is easier and users feel comfortable visiting these places.

The immense task of service delivery can be made tangible only if we understand what is known as the *sociology of the demand for contraceptives*. The latent demand for contraceptives is fragile and not easy to be translated into effective demand. Most Pakistani women, who are bound by daily routines of domestic and family work, business or field are engulfed in poverty and maternal morbidity, would not like to complicate their health problems because of the side effects of contraceptives. Women also trying to avoid social labelling of 'infertility' or her husband as 'impotent' or something that obstructs their own daily religious routines and rites would be the hard core non users.

Thoughtful and sensitive interpersonal communication has been found to be the best means for promoting not only use but also continuation. For instance, in Thailand and Hong Kong the success of pills rests mainly with the distribution by nurses in interpersonal meetings (EWPI 1991). Pakistan's population control pro-

gramme, therefore, should evolve special interpersonal communication programmes to strengthen husband-wife communications on family planning, counter the sense of fatalism among women, counter the ambivalence among females about their dependency on children, and try to enhance their self image. Feeling of powerlessness among women is something that should be neutralised at early stages of marital life so that women could take their own decisions regarding birth spacing, maternal quality of life, and family size. These programmes are a must where demand for contraceptives is weak.

Critics of Pakistan's population programme would pose a pessimistic tone for the projected 26 percent CPR level needed for bringing the TFR down by one child. For a planner it is a challenge with realism. If EPI programme workers could immunize a very large number of infants and women in the whole country, then why not develop a highly mobile well-trained force of workers under a multi-target strategy who could thoroughly screen women with contraceptive needs, advise on proper choice of method, closely follow-up and monitor continuity of use. The merger of health and population welfare functionaries at the grass-root level is just one step but for real success quality of service in close association with a motivational campaign is an added step in the right direction.

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