

The Onset of Fertility Transition in Pakistan

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Fertility in Pakistan has shown a stubborn resistance to change. Because of sharp declines in mortality following World War II, the population of Pakistan was growing at the rate of 2.7 percent per annum around 1960. In response to concern about rapid growth, a national policy of slowing population growth was articulated in the 1960s, with a program of family planning services as the main tool (Government of Pakistan 1965). During its first two decades, however, the program appeared to have had scant impact on fertility: the total fertility rate (TFR) continued to hover between six and seven births per woman throughout the 1970s and 1980s, and the population growth rate approached 3 percent per annum (Sathar 1993). Repeated assertions that a decline in marital fertility was underway proved baseless.[1]

In this article we present empirical evidence from multiple and independent studies carried out in the past eight years demonstrating that the decline of marital fertility has finally begun in Pakistan. The decline is gentle but nevertheless represents a genuine break from the past, most notably because of the increasing use of modern contraception for the purpose of limiting family size. The slight declines in overall fertility prior to 1990 were attributable almost entirely to increases in age at first marriage (United Nations 1993).

With a population of 130.5 million in 1998 (Population Census Organization 1998), Pakistan is the world's, seventh most populous country. According to UN projections, it will become the fourth most populous by the year 2050. It is one of only eight countries as of the mid-1990s with a population in excess of 25 million in combination with a TFR in excess of five births per woman (United Nations 1996). Pakistan stands apart from its populous neighbors in South Asia, all of which (with the exception of Nepal) experienced substantial declines in fertility prior to 1990 and therefore show markedly lower fertility in the mid-1990s, (estimated TFRs in 1995 are 2.2 for Sri Lanka, 3.4 for India and, Bangladesh, and 5.4 for Nepal) [2].

These comparisons raise questions about, which factors have precipitated and sustained fertility transition in the region, in particular the contribution of family planning programs (Shah and Cleland 1993). Some analysts credit the rapid and,

by many criteria, early fertility decline in Bangladesh to the effectiveness of the family planning program (Cleland et al. 1994). Pakistan's program, by comparison, has repeatedly been criticized for poor management and the low quality of the services offered to the majority of its clients (Robinson, Shah, and Shah 1981) (Rukanuddin and Hardee-Cleaveland 1992) (United Nations n.d.). An alternative, and not necessarily contradictory, argument is that the motivation to limit fertility did not crystallize in Pakistan before the 1990s, and therefore responsibility for the late transition cannot be placed entirely on an indecisive population policy and inadequate family planning services (Sathar 1993).

In this article we review the evidence suggesting that important demographic changes are underway; describe the large-scale social and economic changes that have motivated the recent changes in reproductive behaviour; and examine the more-direct causes of these changes and the constraints on further changes. We conclude by speculating about the prospects for further declines in fertility in Pakistan.

Status of the fertility transition

Numerous fertility surveys indicate that the TFR in Pakistan remained above 6.0 births per woman throughout the 1980s (see Table 1). Significantly, all estimates for the 1990s for the first time fall below 6.0 births per woman. The direct estimate of the TFR for 1986-91 from the 1990-91 Pakistan Demographic and Health Survey (PDHS) is 5.4. This is almost certainly an underestimate, judging from the evidence from re-interviews conducted with a sub-sample of PDHS respondents. The re-interview data suggest that roughly 10 percent of births were omitted (Curtis and Arnold 1994). Adjusting for this through the Gompertz relational model, Juarez and Sathar (forthcoming) estimate that the TFR was probably around 6.1 for the period 1986-91, a figure that is consistent with the Pakistan Demographic Survey estimate for 1992 of 5.8 (Federal Bureau of Statistics 1997). The estimate from the 1994-95 Pakistan Contraceptive Prevalence Survey (PCPS) is slightly lower, at 5.6 for the period 1994-95 (Population Council 1998b). Collectively, these estimates imply a modest decline of 0.3 births during the four year period 1991 through 1994, which if extrapolated implies a TFR of 5.4 in 1997 [3]. The Pakistan Fertility and Family Planning Survey (PFFPS) of 1996-97 (NIPS/LSHTM 1998) provides a direct estimate of 5.3 for the period 1992-96, which suggests a slightly more rapid decline during the 1990s than implied by the previous surveys. Finally, the 1998 census, whose provisional results were released in July 1998, indicates that the average population growth rate for the period 1981-98 was 2.6 percent per annum, a decline from previous inter-censal rates and consistent with a decline in fertility in the 1990s.

Table 1: Estimates of Total Fertility Rates, by decade, Source, and Type of Estimate, Pakistan, 1960's to 1990s

Decade and Source	Period Covered	TFR	
		Direct	Indirect
1960s	1962-65 }	7.1	8.0 ^A
Population Growth Estimation	1962-65	5.0	6.1 ^A
Experiment (1962-65)	1965-69	6.0	
Pakistan Fertility Survey (1975)	1968-69		
National Impact Survey (1968-69)	1968-71		
Population Growth Survey (1968-71)			
1970s	1970-74	6.3	
Pakistan Fertility Survey (1975)	1970-74	7.1	
Pakistan Labour Force and Migration Survey (1979)	1975-79	6.5	
Pakistan Labour Force and Migration Survey (1979)	1976-79	6.9	
Population Growth Survey (1976-79)			
1980s	1984-85	6.0	6.1 ^B
Pakistan Contraceptive Prevalence Survey (1984-85)	1984-88	6.9	
Pakistan Demographic Survey (1984-88)	1986-91	5.4	
Pakistan Demographic and Health Survey (1990-91)	1987-91		
Pakistan Demographic and Health Survey (1990-91)			
1990s	1992	5.8	
Pakistan Demographic Survey (1992)	1994-95	5.6	
Pakistan Contraceptive Prevalence Survey (1994-95)	1992-96	5.3	
Pakistan Fertility and Family Planning Survey (1996-97)			

A Two different methods of estimation were applied to the PGE data for this period.

B This rate was calculated by Juarez and Sathar (forthcoming) using the Gompertz relational model to adjust for misplacement errors and applies to 0-4 years before the survey.

SOURCES: Sathar (1993) : Table 1; Population Council (1998b) : Table 7.6; NIPS/LSHTM (1998) : Table 3.6.

All demographic analyses point to a decline in fertility in the 1990s. Over the past four decades there has been no other period when demographers could point with confidence to a decline of similar magnitude and duration (i.e., beyond year-to-year fluctuation). Demographic estimation in Pakistan is a treacherous

business, however, owing to the inaccurate reporting of events. This is a familiar problem for those who have followed demographic research on Pakistan: from the first demographic surveys carried out in the 1960s up to the present, systematic response errors have frustrated efforts to construct an accurate picture of levels and trends in fertility and its proximate determinants (Shah, Pullum, and Irfan 1986) (Hashmi and Ahmed 1992). The more persuasive evidence that fertility decline is underway is provided by data on contraceptive practice. As indicated in Table 2, the fraction of currently married women reporting use of a method of contraception at the time of the survey remained below 10 percent through the 1980s. Surveys in the 1990s, in contrast, reveal a marked increase in the contraceptive prevalence rate, from 12 percent in 1990-91 (PDHS) to 18 percent in 1994-95 (PCPS) to 24 percent in 1996-97 (PFFPS), a rise of roughly 2 percentage points per annum. This rise in the proportion of married women using contraception is the most compelling corroborating evidence that marital fertility is declining.

Table 2: Estimates of Use of Contraception Among Currently Married Women (Percent), by Source, Pakistan, 1960s to 1990s.

Source	Ever Use	Current Use
National Impact Survey (1968-69)	12.1	5.5
Pakistan Fertility Survey (1975)	10.5	5.2
Pakistan Contraceptive Prevalence Survey (1984-85)	11.8	9.1
Pakistan Demographic and Health Survey (1990-91)	20.7	11.8
Pakistan Contraceptive Prevalence Survey (1994-95)	28.0	17.8
Pakistan Fertility and Family Planning Survey (1996-97)	36.4	23.9

The method-specific trends in [Table 3](#) reveal that increased use of modern contraceptive methods-female sterilization and the IUD in particular-explains most of this overall trend (7.9 points out of the 12.1 percentage point increase from 1990-91 to 19.96-97). This finding should not overshadow the substantial contribution of withdrawal, which accounts for almost one-third of the increase, more than any other single method. This is an unusual feature that distinguishes the early stages of Pakistan's marital fertility transition from other Asian transitions in the second half of the twentieth century ([Population Council 1998a](#)) ([Freedman 1995](#)).

Table 3: Estimates of current use of contraception by method among currently married women (percent), by source, Pakistan 1990s

Method	Source		
	PDHS (1990-91)	PCPS (1994-95)	PFFPS (1996-97)
Any method	11.8	17.8	23.9
Any modern method	9.0	12.6	16.9
Condom	2.7	3.7	4.2
Pill	0.7	0.7	1.6
Injectable	0.8	1.0	1.4
IUD	1.3	2.1	3.4
Female sterilization	3.5	5.0	6.0
Other	0.0	0.1	0.3
Any traditional method	2.8	5.2	7.0
Rhythm	1.3	1.0	1.9
Withdrawal	1.2	4.2	4.6
Other	0.3	--	0.5

NOTE: For names of surveys see [Table 2](#).

Urban-rural differentials in fertility provide further insight into the nature of the fertility transition. This differential widened in the 1980s (see [Table 4](#)), as marital fertility decline was initiated in the major cities, most notably Karachi ([NIPS/IRD 1992](#)). The differential has widened in recent years, with the result that the urban-rural difference in the TFR exceeds 1.5 births as of the mid-1990s. A corresponding urban-rural difference in contraceptive prevalence is also evident (36 percent and 18 percent in urban and rural areas respectively, according to the 1996-97 PFFPS). A closer examination of patterns over the past two decades reveals that a pronounced years, with the result that the urban-rural difference in the TFR exceeds 1.5 births as of the mid-1990s. A corresponding urban-rural difference in contraceptive prevalence is also evident (36 percent and 18 percent in urban and rural areas respectively, according to the 1996-97 PFFPS). A closer examination of patterns over the past two decades reveals that a pronounced

increase in the practice of fertility control began among the urban upper strata (as delineated, for example, by female schooling) in the early 1980's and subsequently spread to other urban strata (Sathar and Mason 1993).

Table 4: Estimates of Total Fertility Rates, by Place of Residence and Source, Pakistan, 1970's to 1990's

Source	Period	Urban	Rural
Pakistan Fertility Survey (1975)	1970-74	6.2	6.4
Pakistan Labour Force and Migration Survey (1979)	1975-79	6.2	6.6
Pakistan Contraceptive Prevalence Survey (1984-85)	1984-85	5.5/6.1	6.2
Pakistan Demographic Survey (1992)	1992	6.2	7.3
Pakistan Demographic and Health Survey (1990-91)	1986-91	4.715.2a	5.6
Pakistan Contraceptive Prevalence Survey (1994-95)	1994-95	4.5	6.3
Pakistan Fertility and Family Planning Survey (1996-97)	1992-96	4.2	5.7

a The PCPS and the PDHS divided urban areas into major urban areas and "other" urban areas; TFRs were higher in the latter category.

All the available data indicate that contraceptive prevalence did not begin to increase in rural areas until the 1990s and therefore has not yet had a noticeable impact on fertility. The increase is found in each of the four provinces of Pakistan: as expected, Punjab has the highest prevalence levels, but the Northwest Frontier province experienced the most rapid rise in contraceptive use in the early 1990s. The upshot is a transition that in its early stages is following a conventional pattern in which reproductive intentions and behaviour change first among the upper social strata in the cities, with other urban residents and rural areas lagging behind, roughly six or seven years in this instance. To the extent it persists, the urban-rural differential has implications for national fertility trends because Pakistan has been rapidly urbanizing (as compared, for example, to other countries in South Asia). According to the 1998 census, the urban population constitutes 33 percent of the total population (Population Census Organization 1998).

We place great weight on trends in contraceptive behaviour because they represent deliberate efforts by couples to break from the reproductive regime that has characterised Pakistan in recent decades. A balanced assessment of this historic transformation must also consider the other major proximate determinants of fertility: nuptiality, postpartum practices, and induced abortion.

Information on nuptiality is relatively abundant and shows a steady increase in the average age at first marriage of females throughout the five decades since Independence: singulate mean ages at in 1951 first marriage calculated from census and survey data rose from 16.9 years in 1951 to 21.6 years in 1990-91 (PDHS) and 22.1 in 1996-97 (PFFPS) (NIPS/LSHTM 1998). The rise has been somewhat sharper in urban areas (Sathar 1997). Thus nuptiality change appears to have preceded the onset of marital fertility decline in Pakistan, as in other Asian countries in the twentieth century (Casterline 1994). The magnitude of the recent nuptiality change, however, is too slight to account for much of the estimated fertility decline in the 1990s.

Recent trends in postpartum behaviour are more difficult to discern because of gaps and incomparabilities in survey measurement over the past two decades. The available evidence suggests that the overall length of breast-feeding (un-supplemented and supplemented) has remained around 19 to 20 months from the 1970s to the present (WFS 1984; NIPS/IRD 1992) and therefore has not contributed to the recent fertility decline.

There are no reliable estimates of the incidence of induced abortion.¹ But judging from qualitative investigations, induced abortion is a far more common method of birth control in Pakistan in the 1990s than had been previously assumed. Whether recourse to induced abortion has increased in the 1990s is even more difficult to ascertain, although this view is commonly volunteered by medical practitioners in Pakistan. Like withdrawal, induced abortion is a strategy for limiting fertility that falls outside the purview of the family planning program.

In summary, a review of the evidence on trends in the proximate determinants of fertility provides no basis for questioning either the validity of the estimated fertility decline in the 1990s or the assertion that the decline is mainly the result of increased practice of contraception within marriage.

Determinants of recent changes in fertility

We now turn to the question of which factors have led to this historic development. The context is laid out in Table 5, which presents trends in basic demographic, economic, and social indicators. If one accepts the classic hypothesis that fertility transition is a response to declines in mortality and improvements in social and economic conditions, circumstances in Pakistan in the past four decades support conflicting expectations. By many criteria the country's fertility transition is several decades overdue: mortality fell steadily beginning in the 1950s, resulting in very rapid population growth by the 1960s that continued through the 1980s. Urbanization, income, and literacy/schooling have increased steadily throughout these decades. Exposure to the mass media,

as indicated by the prevalence of radios and televisions, increased rapidly beginning in the 1970s.

Table 5: Selected Demographic, Economic, and Social Indicators, Pakistan, 1960-90

	1960	1970	1980	1990
Population size (millions)	45.9	60.4	82.1	112
Population growth (percent per year)	2.7	2.8	2.9	3.0
Population density per square km of agricultural land	200	248	324	–
Life expectancy at birth, both sexes (years)	43	46	50	56
Infant mortality rate (per 1000 births)	162	143	126	103
GDP per capita (1987 US\$)	135	206	251	349
Percent urban	22	25	28	32
Percent literate	15	21	24	35
Total	–	11	–	21
Female				
Primary school enrollment ratio	30	40	39	44
Total	13	22	27	30
Female				
Radios per 1000 population	6	17	67	87
Televisions per 1000 population	–	2	10	17

SOURCES: World Bank 1983, 1992; United Nations 1990, 1997.

Offsetting these trends, however, were other conditions that acted against fertility reduction. The social environment has 'not been conducive to, fertility change. By most measures, the status of Pakistani women is very low, even in comparison to other settings in South Asia (United Nations 1993). Pakistani women lack autonomy and have restricted mobility and minimal discretionary access to economic resources (Sathar et al. 1988) (Sathar and Kazi 1997). Virtually all social indicators reveal large gender inequities. Despite improvement, levels of literacy and school attainment remain very low among females (Table 5). The gender system gives disproportionate power to Pakistani men in decision-making about reproduction. Further buttressing the existing reproductive regime has been the feudal structure of Pakistani society in which political and economic

power has remained heavily concentrated in a small number of families, especially in rural Sind and southern Punjab. These families have resolutely sustained pro-natalist institutions and social values and posed obstacles to the implementation of effective social-sector programs. The religious milieu, which has consistently maintained doubts about the moral acceptability of the practice of fertility control, constituted an additional stumbling block. Nor did macroeconomic trends provide a rationale for fertility reduction prior to the 1990s. The economy performed strongly from the 1960s through the 1980s, with significant income growth resulting from expansion in the agricultural sector and from substantial remittances from Pakistani migrant workers in the Middle East, among other factors. Gross domestic product (GDP) per capita grew at an average annual rate of 2.7 percent during the period 1970-85 (Hasan 1997). Income growth was, however, uneven and was not accompanied by proportionate growth in investments in such social services as schooling, health, and housing, (Hasan 1997).

In short, whatever the economic costs to Pakistani couples of large numbers of births, these costs seemed affordable in a period of income growth and, more to the point, were perceived as lower than the costs of challenging deeply held cultural precepts about reproduction and women's roles. This contrasts with the historical process in East Asia, where economic development fueled an upsurge in desires to restrict fertility (Greenhalgh 1988) (Asian Development Bank 1997). Accompanying this set of cultural, social, and economic factors that propped up the existing fertility regime in Pakistan was weak and inconsistent political support for policies aimed at reducing fertility (Rosen and Conly 1996). The end result of all these forces was deep ambivalence at the household level about restricting fertility (Shah and Cleland 1993). A final factor, which perhaps should be viewed as an expression of the combined force of all the other factors, was the ineffectiveness of the family planning program, which left the vast majority of Pakistani couples without convenient access to adequate services (Rukanuddin and Hardee-Cleaveland 1992).

Each of these factors sustaining high fertility has weakened in the 1990s. The steady economic growth of the 1970s and 1980s slowed considerably in the 1990s. Annual growth in GDP per capita declined to 1.2 percent in 1985-95 (Hasan 1997). The popular view is that the country is in the midst of a deep economic crisis-aggravated, according to many observers, including economists, by the structural adjustment and related conditionalities imposed by the IMF and the World Bank as a remedy (Hussain et al. 1997) (Khan and Aftab 1997). The economic crisis of the 1990s has compounded the stresses created by the long-term trend in rural areas toward land fragmentation and the more recent declines in returns to many agricultural crops (Choudhry 1997). Symptomatic of labour absorption problems in rural areas has been a growing stream of migrants

from rural to urban areas in search of off farm employment, as a result of which the population has become increasingly urbanised (see Table 5). The outcome of these macroeconomic forces has been an increase in unemployment, a decline in real wages for unskilled labour, and consequent increases in poverty and income inequality (Hussain et al. 1997). In retrospect, the relatively healthy economy of the 1970s and 1980s sustained resistance to social change, a resistance that the economic crisis of the 1990s, has finally undermined.

Associated with the sense of economic stress, and in some respects accentuating it, have been changes in life styles and in parental aspirations for children. These changes have led to a pronounced increase in the cost of each child. Consumer aspirations have outstripped changes in purchasing power in real terms. The greater concentration of the population in urban areas and the expanded exposure to the mass media (itself a result in part of urbanisation) are the proximate causes of these changes. These trends are shown in Table 5 for the period 1960-90. The trends continue in the 1990s. For example, in the six-year period between the PDHS and the PFFPS the fraction of households with televisions increased from 27 to 38 percent (NIPS/IRD 1992; NIPS/LSHTM 1998). This has occurred despite the travails of the economy, revealing the rapidly increasing attachment to modern consumer durables that itself must contribute to increases in the perceived costs of childbearing. A much more modern Pakistani life style is now transmitted through the media (particularly in advertising) to all corners of the country, including rural areas that were previously isolated. This in turn has had a direct bearing on how parents want to raise their children, with implications for standards of hygiene and health, tastes in clothing and consumer durables, and schooling aspirations. As Pakistanis themselves note in qualitative interviews (Population Council 1997d), all these changes make children more costly; this has driven down the demand for children and increased the perceived costs of unwanted births.

Changes in social structure, particularly in, kinship relationships, are also underway. In Pakistan, as elsewhere in the northern half of the Indian subcontinent, the traditional kinship structure places comparatively little emphasis on the conjugal bond,' which is viewed as a threat to highly rational ties in particular (Vatuk 1987) (Das Gupta 1996). This system also has the dual effect of restricting the decision making power of couples of childbearing age and, perhaps more importantly, marginalizing women (especially young married women). Although key elements of this system have been changing, these changes do not include expanded decision making power for women. The evidence suggests that gender inequalities have been relatively constant in Pakistan, especially in rural areas. The vast majority of women continue to experience restrictions on spatial movement outside the home and limited decision making power within the household, and do not communicate

effectively with their husbands (Sathar and Kazi 1997). We find no evidence that the dominant authority of men over-their wives-regarding childbearing and other matters-has diminished as of the mid- 1990s.

It is not an increase in the autonomy of women that seems to have been decisive during the past decade but rather an increase in the autonomy of couples of childbearing age. Over the past three decades, kinship relations and household structures have evolved in a manner that has eroded the power of elders and other relatives, and as a result decision making about family matters has become more nucleated. One indicator of this change is an increase in husband-wife discussion of fertility desires, reported by roughly one-third of respondents in the 1990-91 PDHS and by almost double that fraction in the 1994-95 PCPS (NIPS/IRD 1992) (Population Council 1998b). A second indicator of this change is the increase in the proportion of nuclear-family households. About one-half of the households in Pakistan are now nuclear (Population Council 1998b). When, as in Pakistan, a major cause of the growing predominance of nuclear households is rural-to-urban migration, in which couples with or without children move to towns and cities and set up separate households, it is much less likely that the new households are adjacent to households of extended kin. Reinforcing the effect of migration in freeing couples from the daily influence of extended kin is the fact that migration in Pakistan selects positively for literacy and schooling, among other reasons because of the job skills demanded by the non-agricultural labour markets in towns and cities (Kazi and Sathar 1996) [8].

Among the effects of the increasing independence of the conjugal unit has been greater consensus between spouses in their assessments of the costs and benefits of childbearing and related domestic issues. The economic and other costs of children are now perceived as more exclusively the responsibility of the children's parents, with the consequence that Pakistani men have become much more cognizant of the costs of child-rearing. This development is reflected in recent survey and qualitative data that show both men and women acknowledging the advantages of restricting fertility, with women stressing health concerns related to childbearing and men the economic costs of rearing many children (Population Council 1997c). It is reflected, too, in the large contribution of male methods (withdrawal, condoms) to the recent increase in contraceptive prevalence (Table 3).

These broad economic and social changes in Pakistan are the fundamental causes of the observed changes in the 1990s in fertility and its proximate determinants-contraception in particular-that were summarized above. These fundamental causes have acted through a set of factors that are the more-direct causes of the observed changes. We now turn to these more-direct causes, classifying them into three categories:

- Changes in the demand for children.
- Changes in family planning services, for example their density and quality.
- Changes in other factors constraining contraceptive use, that is, the social, psychic, and cultural "costs of contraception."

Demand for children

The earliest demographic surveys in Pakistan in the 1960s did not reveal a demand for large families. The mean ideal family size reported in the 1968-69 National Impact Survey was 4.4 children and in the 1975 Pakistan Fertility Survey 4.1 children. As a result, the prevailing assumption for the past three decades has been that there is a substantial latent demand for fertility regulation in Pakistan (Sirageldin, Norris, and Hardee 1976) (Shah and Cleland 1993). As in an earlier article (Sathar 1993), we take issue with this conventional interpretation. We feel that in the past latent demand for fertility regulation was in fact weaker than survey data have suggested, for four reasons: the limited autonomy of women, which for multiple and reinforcing reasons has worked against the adoption of fertility regulation practices (Sathar et al. 1988); the strong preference for male progeny; the relatively healthy state of the economy; and a political and cultural climate that looked unfavourably on the deliberate exercise of fertility control. During the 1990s, fertility demand has changed in two fundamental respects: the desired number of children has declined; and the attachment to fertility preferences has strengthened, that is, preferences have "crystallized." We consider both developments.

One basic fertility demand parameter is ideal family size, captured by responses to a question such as "If you could choose exactly the number of children to have in your whole life, how many would that be?" The available evidence suggests a sizable downward shift in ideal family size in the first half of the 1990s, from 4.1 children in the 1990-91 PDHS to 3.6 in the 1994-95 PCPS. More valid measurement of fertility preferences is probably provided by responses to the question "Do you want another child?"

The parity-specific percentages desiring no more children increase between 1990-91 and 1994-95 (see Table 6). The trend for the 20 years from the mid-1970s to the mid-1990s is curvilinear: a gradual decline in anti-natalism from the 1975 PFS to the 1990-91 PDHS is followed by an increase in the first half of the 1990s.

Table 6: Fertility Preferences by Number of Living Children: Percentage of Currently Married Women Who Want No More Children, by Source, Pakistan, 1970s to 1990s

No. of Living Children	PFS (1975)	PCPS (1984-85)	PDHS (1990-91)*	PCPS (1994-95)
0	2	1	2	0
1	7	4	4	12
2	30	17	17	25
3	48	36	36	51
4	69	58	52	68
5	78	75	63	78
6	90	83	71	83
7+	94	90	74	90
Total	49	43	40	52

*Survey combines the responses "want no more" and "sterilized"

NOTE: For names of survey see Table 1

SOURCES: PFS (1975): Population Planning Council of Pakistan 1976: Table 3.1; PCPS (1984-85): Population Welfare Division, Government of Pakistan 1986: Table X.1; PDHS (1990-91): National Institute of Population Studies 1992: Table 8.1; PCPS (1994-95): Ministry of Population Welfare 1995: Figure 5.1

Ideal family size and the data on fertility preferences shown in Table 6 relate to the number of children desired, but they say nothing about the strength of attachment to those desires. The strength of preferences can vary independently of the number of children desired, as a function for example of the perceived magnitude of the costs and benefits of an additional child (Bongaarts 1993). The strength of preferences is difficult to measure in demographic surveys. National surveys in Pakistan do not contain items that permit an assessment of trends in the strength of fertility preferences; hence we can only rely on what we have concluded from empirical data (quantitative and qualitative) collected in Pakistan over the past two decades. These data suggest to us that the degree of conviction about stated preferences is much deeper in the 1990s than was the case earlier: there is a heightened consciousness of these preferences, the preferences are in sharper focus (i.e., more explicitly articulated), and the determination to realize them is stronger, in comparison to previous decades.

These changes in the demand for children are a response to the economic adversity and other social changes described above. Qualitative interviews conducted in the mid-1990s reveal the link between a growing, sense of economic

stress and an increased desire to restrict fertility (Population Council 1997c). In these unstructured interviews, Punjabi men and women were asked about the advantages and disadvantages of having many children and why they and/or their neighbours were motivated to practice family planning. Again and again, both men and women emphasized the costs of children and, especially, how much more difficult it has become to shoulder these costs in the economic circumstances of the 1990s. While not clearly articulated by the respondents, one senses that the changes in life style aspirations and in child-rearing aspirations that we noted above have also contributed to the conviction that the household is falling short economically. In inquiries carried out in earlier decades," the view that children have become unaffordable was not stated as often or as emphatically (NIPS n.d.). The diffusion of this conviction throughout the population appears to be a phenomenon of the 1990s.

Despite the growing sense that children are unaffordable, ideal family size remains in excess of three children. According to the parity-specific percentages of women wanting no more births (Table 6), a small minority of women are content with two children or fewer: in the 1994-95 PCPS, only 25 percent of the women expressed a desire to stop at two surviving children, and 12 percent a desire to stop with one child. A far larger fraction of women must be prepared to limit their childbearing to two births or less if replacement-level fertility is to be achieved. Westoff and Bankole (1995) have demonstrated this through simulations in which various fractions of those women who express a desire to avoid pregnancy but are not using contraception are assumed to be using a method. Under two simulations using 1990-91 PDHS data, contraceptive prevalence would increase from 12 percent to 27 percent and 38 percent. These would result in declines in the TFR from 5.4 births per woman (the PDHS direct estimate) to 4.4 and 3.6, respectively, a range that roughly brackets the most recent estimates of the average ideal number of children. These would be substantial declines in relation to present fertility levels but would leave fertility far above replacement nevertheless.

Son preference partially accounts for the persistence of the desire for relatively numerous births. Many women with three or more surviving children want to have more children in the hope of having a son (Mahmood 1996). Analyses of survey data collected in the 1990s consistently show that son preference affects both fertility preferences and contraceptive use. In particular, even among those women indicating a desire to postpone the next pregnancy or to avoid having another pregnancy altogether, the likelihood of using contraception increases with the number of surviving sons (Population Council 1997a) (Sathar and Kazi 1997). Two sons remain the basic minimum in the minds of most couples, and there is no evidence that this view is waning significantly even in urban areas. This powerful and highly conscious son preference is to be expected given the

many social and economic structures that devalue females and the, reliance in a patrilineal system on sons for support in old age (Sathar and Kazi 1997).

Other forces are responsible for a continuing preference for three or more children. Despite substantial declines in the past four decades, infant and child mortality levels remain relatively high (Table 5), and insecurity about child loss continues to be an oft-cited reason in unstructured interviews for having a larger than ideal family size (Population Council 1997c). Furthermore, a larger family size increases the likelihood that one or more children might enjoy success in employment or marriage, thereby improving the standing of the family. Particularly in the large agricultural sector, children's labour continues to be valued. Most Pakistani households view children as the most stable form of social and economic security (Sathar and Kazi 1997).

Family planning services

A second class of explanations for the onset of fertility decline in Pakistan emphasizes improvements in family planning services, in terms of both density and quality. From its inception through the 1980s, the national family planning program fell short on both counts (Robinson, Shah, and Shah 1981) (Rukanuddin and Hardee-Cleaveland 1992). There are solid grounds for believing that the provision of family planning services has improved in the 1990s, extending a trend that began in the 1980s (Ross et al. 1992). Several new schemes that were launched in the Eighth Five-Year Plan (1993-98) have begun to take root (Rosen and Conly 1996). Two innovations are noteworthy. The social marketing of contraceptives, begun in 1986, has gained momentum in the 1990s. Despite some setbacks, social marketing has probably improved accessibility in urban areas (Davies and Agha 1997) (Agha and Davies 1998). A Village-Based Family Planning Workers program, launched on a pilot basis in 1992, now provides family planning services and advice in about 8,000 villages (Population Council 1997b).

Other initiatives may have contributed to the improvement of family planning services in the 1990s. A re-invigorated primary health care program was launched by the government in 1994, with another cadre of community-based female workers posted in both urban slums and rural areas. Thirty thousand such workers are believed to have been deployed with the responsibility to provide primary health care, including family planning services, to the communities from which they were recruited (Ministry of Health 1996). Furthermore, Ministry of Health outlets, including rural health centres and basic health units, now have a stronger mandate to provide family planning services.

Finally and perhaps most significantly, radio and television campaigns promoting family planning have picked up momentum, in terms of both their frequency and the explicitness of the messages. The percentage of women who reported that they had heard or seen a family planning message more than doubled between the 1990-91 PDHS and the 1994-95 PCPS, exceeding 60 percent in the latter survey (NIPS/IRD 1992) (Ministry of Population Welfare and Population Council 1995). The radio and television messages legitimize family planning practice and offer concrete information about how contraceptives can be obtained. A recent analysis comparing the impact of information, education, and communication programs in Bangladesh, India, and Pakistan shows substantial improvements in the reach of family planning messages in the Pakistani media and in their association with contraceptive adoption (Westoff and Bankole 1998).

Undoubtedly, then, family planning program activities have improved in the 1990s and probably deserve some credit for the recent increase in the rate of contraceptive prevalence and the resulting decline in fertility. But the important enhancements in services were implemented only in the mid 1990s and hence cannot be given credit for the sharp increase in contraceptive prevalence in the first half of the decade. In our judgement, the contribution of improvement in family planning services has been minor as compared to the contribution of the other major factors (changes in the demand for children, reduction in other costs of contraception). As a telling indication of this, a substantial fraction of the increase in the rate of contraceptive prevalence in the 1990s has involved use of withdrawal: 3.4 points out of the 12.1 percentage point increase between 1990-91 and 1996-97 (see Table 3). Withdrawal is a means of avoiding pregnancy that is free of any dependence on contraceptive supplies or services and, indeed, is often regarded as a sign that fertility decline is more the result of increasing motivation to avoid pregnancy than of improvements in the means to do so (Santow 1995).

Family planning services remain deficient in many respects. For example, basic coverage of the population is far from complete in both urban and rural areas, and especially in the latter. Various criteria classify far less than half of the population as having convenient access to any type of services. One study concludes that family planning clinics (the Family Welfare Centres) are accessible to only 10 percent of the population, with only 5 percent living within easy walking distance (Rosen and Conly 1996). Data from the 1994-95 PCPS show an average traveling time to a family planning service delivery point of 60 minutes in rural areas (as compared to 15 minutes in urban areas). The nearest facility is three or more miles away for 61 percent of never users in rural areas and for 13 percent of never users in urban areas. Clearly clinics are far closer on average for women in urban areas, but deficiency of access is a serious obstacle nevertheless

because of the many restrictions on women moving about outside their dwellings. The upshot is that only a small minority of women report having had contact with a family planning worker (Ministry of Population Welfare and Population Council 1995), and this is essentially unchanged since the late 1970s (Syed 1979). The social, marketing and the Village Based Family Planning Workers schemes hold much promise of significantly improving access to supplies and services, although rural areas remain largely untouched by social marketing (Davies and Agha 1997).

Beyond access, there are serious weaknesses in the quality of family planning services. The situation analyses that have been carried out are unambiguous on this point (e.g. Cernada et al. 1993). Outlets rarely offer a choice of methods and informed advice about alternative methods, often do not have sufficient supplies on hand, and typically lack an adequate number of trained staff. Pakistani couples concur with this evaluation: in unstructured interviews, men and women (especially rural residents) repeatedly describe providers as poorly trained and unmotivated and the contraceptive supplies as defective and unreliable (Population Council 1997c). The majority of women, especially in rural areas, seek family planning services in large hospitals; other types of outlets, even where available, are rarely visited (Population Council 1998b).

This harsh evaluation of the family planning program is based on evidence from careful local studies. Like Freedman (1995), we consider Ross et al.'s (1992) rating of the program effort in Pakistan as "moderate" too favourable, probably reflecting undue weight given to policy rhetoric and formal bureaucratic structure and too little weight given to the extent and quality of the services actually provided to Pakistani couples.

Other costs of contraception

Our third explanation for recent changes is that other forces that hinder contraceptive use have weakened. Many types of evidence suggest that the costs of using contraception in Pakistan go well beyond the financial and time costs of obtaining contraceptive supplies and services of acceptable quality'. We refer to social, psychic, health, and cultural factors that, together with financial and time costs, constitute what Easterlin (1975) defines as the "costs of contraception." Measurement of these factors is not straightforward, hence their contribution is difficult to assess empirically. A reading of the literature on fertility in Pakistan since the 1960s and evidence obtained through in-depth qualitative and quantitative research conducted in Punjab province in 1996 suggest that three obstacles to fertility control behaviour weakened significantly in the 1990s: the view that family planning is proscribed by moral and religious codes (Shah and Shah 1984); the view that extended-family members, and parents in particular,

have a rightful voice in the fertility decisions of a husband and wife; and the view that contraceptive practice threatens men's authority over women. For contraceptive practice to become widespread, these views must be undermined through a process that legitimizes couples' capacity to take deliberate actions to avoid pregnancy (Shah and Cleland 1993).

Such a process has been evident in Pakistan in the 1990s, driven by social and economic changes. Among the most important of these have been table changes in family structure described above, which have eroded the power of elders and other extended kin, especially among migrants to urban areas (Kazi and Sathar 1996). This erosion of power undermines the second of the obstacles just identified. We have argued that one consequence of this change in family structure is greater concurrence, and most likely better communication, between spouses about the costs of children and a heightened sense that these costs fall on both husband and wife. For example, in data collected in 1996 Punjabi women report little hesitance in approaching their husbands about using contraception (Population Council 1997a). This has meant, in turn, that family planning practice does not threaten gender relations to the extent it appears to have done in the past; in the 1990s, to use contraception is not to act against the interests of the husband. Moreover, couples that opt for those contraceptive methods withdrawal, condoms-that are male-controlled (see Table 3) eliminate the threat contraception might pose to patriarchal interests. Finally, the realization that rearing children is costly, and that these costs are increasing, counters the conviction that use of contraception is immoral. In unstructured interviews, male respondents in particular cite the moral duty to provide for children's needs, a duty that is difficult to fulfill with a large family (Population Council 1997c). These factors have led to greater legitimization of contraception, reinforced by the convincing anti-natalist pronouncement's of government officials since Prime Minister Nawaz Sharif's public endorsement of family planning in 1991 (repeated in 1997 and 1998), by the intensification of media campaigns espousing family planning, and by the greater visibility of family planning program activities at local levels.

What has been underway in Pakistan-first in urban areas, more slowly in rural areas (probably beginning in the Punjab) is a social dynamic in which family planning has acquired the acceptability that it lacked in the past. There is a shift of values away from traditional to modern, and a shift in the locus of decision-making from extended kin to the conjugal couple. The dynamic has its own momentum: as some Pakistani couples begin to practice contraception and this becomes known, the same choices become more acceptable to other couples. Couples may also acquire useful information from each other, about where to obtain services and how to cope with deleterious side effects of contraception on health, for example. In this fashion the social, psychic, and cultural barriers to

contraception begin to crumble, very much resembling a "contagion" process. This dynamic may well characterise most fertility transitions at some stage (Montgomery and Casterline 1996). It provides one of the more plausible and parsimonious explanations for the sudden increase in contraceptive prevalence in Pakistan in the 1990s after several decades during which surveys repeatedly suggested that latent demand, for fertility control far exceeded contraceptive practice.

While certain costs of contraception may be falling, others remain as serious obstacles to adopting and continuing use of contraception. As a result, despite the recent sharp increase in contraceptive prevalence, "unmet need for contraception" (i.e., non-use of contraception by women at risk of pregnancy who do not wish to become pregnant) remains high-on the order of one-third of currently married women (Westoff and Bankole 1995; Population Council 1998b; NIPS/LSHTM 1998). Indeed, comparison of estimates from the three national surveys conducted in the 1990s suggests that unmet need may even be on the increase, a common pattern in the early stages of fertility transition as declines in demand for children outpace increases in contraceptive use (Bongaarts 1997). In a recent in-depth study conducted in the Punjab on factors underlying unmet need, three factors emerge as the most decisive obstacles to family planning: a woman's perceptions that her husband disapproves; fear of detrimental health side effects of contraception; and concerns about the social, cultural, and religious acceptability of birth planning (Population Council 1997a)." These and other considerations make many women feel that the decision to use contraception is both unacceptable on social and cultural grounds and against their best interests, even if they wish to avoid, pregnancy. In transcripts from unstructured interviews, the anxiety that women feel about the decision whether or not to use contraception is almost palpable. Conflicting forces encourage and discourage family planning practice. The resulting ambivalence makes it difficult for many women to use contraception, especially given the effort required to obtain a method in the many communities where family planning services are distant and or of poor quality.

These considerations are compounded by the limited autonomy of women in this and other spheres of life, which as noted above does not appear to be changing appreciably. The experience of East Asia in the period 1950-80 demonstrated that fertility can decline to relatively low levels despite the low status of women: there are no grounds for asserting that increased female autonomy is a precondition for fertility transition. Nevertheless, the lack of female autonomy almost certainly hinders the transition from a high to low fertility regime: the expression of women's desire for fewer children is muted, and the range of contraceptive choices is restricted (Jejeebhoy 1995). In addition, many women who wish to postpone or terminate childbearing believe that their husbands

desire more children and oppose contraceptive practice. In fact, empirical data collected in the mid-1990s indicate that men have more positive views about contraception (and particular contraceptive methods) and are less pro-natalist than their wives assume (Population Council 1997a). However, given the limited communication between spouses and the unequal balance of power in gender relations, these misperceptions by wives are not readily corrected and are a stronger deterrent than would be the case in many other settings. The result is that Pakistani women often take the safe route of not implementing, their fertility preferences, in deference to the presumed wishes of their husbands. It is hardly surprising that men have played a decisive role in the developments of the 1990s, as reflected, for example, in the relatively large contribution of increased use of withdrawal and condoms.

Conclusions

Evidence is accumulating that a transition in marital fertility behaviour has begun in Pakistan in the 1990s. The evidence is of several types and comes from multiple and independent sources. In searching for the forces underlying this development, we have emphasized changes in the demand for children a crystallization of existing desires for smaller families, combined with a decline in family size desires (itself reflecting broader economic and social changes) as well as changes in the social, psychic, and cultural costs of contraception. We give less credit to improvements in family planning services, although they have made a contribution. In examining the obstacles to further changes in fertility, in contrast. We have stressed the immediate need for improvements in family planning services and for further reductions in other costs of contraception. Taking this assessment of the constraints on further change as a starting point, we can sketch likely scenarios for the next decade or so, and we can identify the types of policies that might promote faster fertility decline.

Because a large fraction of currently married women has unmet need for contraception, in theory a substantial increase in contraceptive practice and a corresponding decline in fertility could occur without any change in fertility preferences (Shah and Cleland 1993)." This is an important conclusion from the standpoint of near-term policy formulation and program development. But from the standpoint of the long-term goal of achieving replacement-level fertility in Pakistan, the existing level of demand for children must be regarded as the most serious constraint. As noted above, Westoff and Bankole (1995) estimate that, were existing unmet need to be satisfied, the TFR would remain in the range 3.6-4.4 births per woman, a level that implies continued rapid population growth.

A first point is that the downward trend in the demand for children apparent in the early 1990s is likely to continue to exert downward pressure on fertility. As a

natural outcome of a growing awareness that marital fertility can be deliberately regulated, the strength of attachment to desires for moderate or small numbers of children (i.e. fewer than five) will grow, while simultaneously the fraction of couples desiring large numbers of children will decline in response to the trends in economic aspirations and perceived costs of children described above. Pakistan is increasingly urbanized, and childrearing and consumer aspirations that outstrip the ability to satisfy them, and hence have anti-natalist implications, are spreading to lower socio-economic strata and rural areas. Thus we expect that a growing fraction of Pakistani couples will wish to limit their number of children, to fewer than four. Eventually this will undermine the marked differentials in reproductive behaviour according to place of residence (urban or rural) and level of schooling that have, characterized the past two decades.

Are these changes in demand likely to be matched by rises in contraceptive prevalence and by corresponding declines in fertility? In the long run the answer must be yes. In the short run, however, the answer is dependent on the extent of changes in family planning service delivery. A particular need is greater coverage in rural areas, where the limited mobility of women makes even modest travel distances to family planning services and supplies an imposing barrier to the adoption and continued use of contraception. One strategy would be to depend mainly on an extensive network of private services in urban areas (here we second Rukanuddin and Hardee Cleaveland 1992 and Rosen and Conly 1996 in calling for greater reliance on the private sector, both non-governmental organizations and medical practitioners), with public resources freed up for more extensive deployment in rural areas. Efforts must also be made to upgrade the quality of services. Interviews in the 1996 study in Punjab reveal the dim view of public-sector services held by many women and men. In short, given the heightened motivation to restrict fertility, the key in the short run to maintaining and perhaps even accelerating fertility transition in Pakistan will be improvements in family planning services.

The onset of the transition has been triggered by changes in fertility demand and by reductions in the social, psychic, and cultural costs of contraception. None of these costs has been entirely eliminated. If family planning services remain inadequate, then we expect that unmet need for family planning will remain at its current high level or even increase. Under the most desirable scenario the ongoing declines in demand for children would be accompanied by radical improvements in the supply and quality of family planning services. This scenario offers the conditions for a rapid fertility decline in Pakistan over the next decade or so.

Notes

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1. On the basis of a detailed analysis of the birth histories collected in the 1975 Pakistan Fertility Survey, Alam (1984) concluded that fertility decline had begun in the early 1970s. This conclusion was later refuted by Retherford et al. (1987), who demonstrated that the impression of decline could almost certainly be attributed to reporting errors. Similarly, a decline in marital fertility in the late 1980s evident in direct estimates from the Pakistan Demographic and Health Survey of 1990-91 (NIIPSIIRD 1992) disappears when the data are subjected to more rigorous analyses that adjust for problems of data quality (Curtis and Arnold 1994; Juarez and Sathar forthcoming).
2. A far lower TFR for Nepal is proposed by Dangol, Retherford, and Thapa (1997). On the basis of analysis of survey data from the 1970s to the early 1990s, they conclude that the TFR as of 1991 was 4.8. According to their analysis, the marital fertility transition in Nepal was progressing relatively rapidly as of the late 1980s.
3. This is consistent with the United Nations (1996) estimate for the TFR in 1995 of 5. births per woman.
4. The PFFPS estimates will need to be scrutinized. In Pakistan, fertility estimates derived from birth histories typically are downwardly biased for the period immediately preceding the survey. Even so, it seems likely that as of 1998 the TFR falls in the range of 5.05-5.5-rather high by international and regional standards but one birth less than the level that characterised the previous 30 years.
5. In the 1994-95 PCPS, 5.9 percent of women aged 35 and older reported that their most recent pregnancy ended in an abortion, spontaneous or induced. Less than 1 percent of the women reported an induced abortion. Recognizable spontaneous abortions should be on the order of 15 to 20 percent among women in this age group.
6. The rupee has weakened substantially since the early 1980s, driving up the local price of essential items that are import-dependent such as

cooking oil, kerosene, and fertilizer. The consumer price index trebled between 1982 and 1995 (Hasan 1997), and according to authoritative (but unofficial) estimates the rate of inflation in the costs of basic goods in the 1990s has exceeded 20 percent per annum.

7. A number of independent sources confirm this assertion. We have compared the distribution of households by type in the 1975 PFS and the 1990-91 PDHS. The comparison is not exact, because of definitional differences in the household structure variables in the two data sets. Our comparison probably understates the amount of change. We find that the percentage of households that are nuclear has been relatively stable in rural areas but has increased by ten percentage points in urban areas. This is consistent with our argument below that urban Pakistani couples in particular are experiencing new-found independence in reproductive decision-making, as reflected in the much greater recent change in fertility in urban areas.
8. There is good evidence that household structure is associated with women's autonomy. Data collected in the Punjab in 1993 show that women living in nuclear households have greater autonomy: 62 percent and 22 percent of women living in nuclear households make decisions regarding schooling of children and major household purchases, respectively, compared to 46 percent and 12 percent of women living in extended households (Sathar and Kazi 1997). The same study finds that women living in nuclear households have greater mobility, for example, 40 percent of these women are able to go to a health centre alone, compared to 19 percent of those living in extended households.
9. Ironically, the economic adversity created by the combination of stagnant wages and rising costs of basic goods has made contraceptives less affordable for most households. This circumstance is especially relevant for methods such as injectables, oral contraceptives, and condoms that are supplied primarily by the private sector. Agha (1998) shows strong cross-sectional associations between the use of some of these methods and household income.
10. A similar set of factors is identified in research by Hashmi, Alam, and Sheraz (1993) on reasons for non-use.
11. Our 1996 research in Punjab province (Population Council 1997a) revealed that weak attachment to stated fertility preferences is among the reasons for unmet need for contraception. It follows that increased contraceptive

practice could also result from further crystallization of preferences and stronger convictions about those preferences.

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