

Female Education and Fertility: Implications for Family Planning Programme

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Introduction

Female education creates awareness that their reproductive and health seeking behaviour show a noticeable difference than illiterate women. Ample research has been carried out to find out the linkages between female education and fertility. It has been argued that female education empowers women mainly through four ways. Their involvement in family decision –making, autonomy and control over household resources, knowledge and awareness of the modern world and inter spousal communication [Jejeebhoy, 1992].

Female education largely affects fertility through the proximate determinants. Age at marriage of educated females is higher than their illiterate counterparts and the use of family planning methods is also greater among educated women. However, the duration and intensity of breast-feeding is lower among educated women than the illiterate women [Jain and Nag, 1986].

Another important linkage of female education and fertility works through the improved survivorship chances of their children. The health seeking behavior of educated mothers for the use of maternal and child health care services is better than illiterate mothers. The effect of female education works independently regardless of the socioeconomic status of the household [Elo, 1990]. Improved child survivorship affects both the age at marriage and fertility.

Although, role played by female education is very helpful in slowing down population growth, the strategy of family planning programme was evolved keeping in view the same objective but using a different approach for tackling the problem of population growth. The spread of female education would take more than a generation to produce results while family planning programmes were designed as action oriented strategy that would facilitate a faster decline in fertility levels once the contraceptive technology is made available in the developing countries. It was debated at the outset of family planning programmes that these be integrated with social development like increased female education as a crucial factor in the success of family planning programmes.

One of the proponents of such approach was Etzioni (1979) who advocated the adoption of a 'systems approach'. He highlighted the difficulties of running family planning programmes in isolation because family planning and development can

result in period of lag found in one factor over another at the society level. Etzioni considered that the structural socio economic conditions allowing an integrated family planning programme with other programmes of development will achieve the desired level of progress both in checking population growth and betterment of other socio-economic indicators implicitly projecting the importance of female education. Pursuing further, Behrman (1991) on the investment in female education argues that the shifting of resources for the spread of female education would probably increase efficiency of resource allocations invested for development purposes.

The family planning programme in Pakistan, after being in operation for more than 30 years has not produced the desired results yet. Although a decline has been observed in the fertility levels still the fertility levels are higher when compared with the programmes of other countries. The arguments advanced by Etzioni and Behrman will provide a basis to draw conclusions in case of Pakistan.

The objective of this paper is to investigate the fertility differentials by the level of educational attainment measured by the completed years of schooling among the women.

Data and Methods

This study utilizes the Population Census data collected in 1998. Information on the number of children ever born by educational attainment of mother was gathered and published.

Two measures of fertility namely children ever born (CEB) and total fertility rate (TFR) are used to study the differentials by education of mother. The TFR was estimated indirectly by using the Arriaga (1983) method which allows one time data on CEBs and works well in regimes of falling fertility levels.

The fertility information by level of female education was available only for one point in time, 1998. Hence, no changes could be estimated if the fertility differentials have remained constant or more variation can be expected within the educated categories of women.

Information from two previous surveys, Pakistan Fertility Survey (PFS) 1975 and Pakistan Reproductive and Family Planning Survey 2000-2001 was available which is being utilized to observe any changes in the fertility differentials.

Female Education Levels

Information on educational attainment was collected during the 1981 and the 1998 censuses from population aged 10 years or older. This information is crucial as it provides the number of educated persons who have attended any formal schooling. There is however, a slight difference in the definition of educational attainment. In the 1981 census, less than primary category of education was excluded from the list of categories included in the educational attainment. However, in 1998 the below primary level educated category was added which makes the comparisons to

previous census an arduous one. Therefore, the category of less than primary level of educated women was excluded from both numerator and denominator for the estimates of 1998 census.

There appears to be an overall 85 percent increase in female education from the levels found in 1981 [Table-1]. However, there appears to be an anomalous decline in percentage of primary level of female education in 1998 than the previous census.

Table-1

Educational Attainment Levels Among Females Aged 10 Years and Above in Pakistan		
Category of Education	1981 Census	1998 Census
Primary	51.32	41.30
Middle	20.66	23.44
Matriculation	16.92	19.50
Intermediate	5.61	8.24
BA/BSc	3.62	5.20
Masters and Above	1.87	2.32
Total	13.62	25.24

The children ever born to ever married women were converted into CEBs for all women by adjusting them with women in different categories of educational levels. The non-formal and formal literate females were added together in one category of literate women.

Table-2

Children Ever Born to Women : Population Census 1998						
Age Groups	All Womens	Illiterates	Literates	Below Matriculation	Matriculation	Graduates
15-19	0.330	0.500	0.140	0.150	0.110	0.180
20-24	1.530	1.890	0.920	1.190	0.670	0.470
25-29	3.240	3.590	2.420	2.920	1.980	1.330
30-34	4.630	4.940	3.800	4.300	3.200	2.480
35-39	5.570	5.840	4.790	5.330	4.080	3.060
40-44	6.180	6.410	5.320	5.800	4.590	3.440
45-49	6.430	6.630	5.510	6.020	4.500	3.940

The category of below matriculation included primary and middle levels of educated women. Similarly, matriculation included matriculation and intermediate categories of education. The category of graduate was bachelors or higher degree of educated women. The category of other educated women, whose number was although small, was excluded so that it does cloud any variation in fertility by education of women.

The fertility differentials by past fertility measure of CEBs by education are noticeable within different categories of women [Table-2].

There appears to be a difference of more than two children among the illiterate and the educated women who had bachelor or masters level of education.

Table-3

Estimation Total Fertility Rates Using Arriaga Method: 1997-98						
Age Groups	All Women	Illiterates	Literates	Below Matriculation	Matriculation	Graduates
15-19	0.167	0.233	0.233	0.098	0.058	0.069
20-24	0.307	0.311	0.311	0.314	0.197	0.089
25-29	0.328	0.325	0.325	0.322	0.274	0.232
30-34	0.225	0.214	0.214	0.237	0.205	0.178
35-39	0.16	0.156	0.156	0.161	0.149	0.079
40-44	0.096	0.093	0.093	0.079	0.085	0.051
45-49	0.035	0.034	0.034	0.029	0.031	0.019
TFR	6.59	6.83	5.71	6.20	5.00	3.58

A similar analysis from the indirect current estimates of fertility show a wider difference to the level of three children between highly educated women and the illiterate women [Table-3]. The main difference appears to be that among illiterates and below matriculation-educated women, fertility levels are higher at earlier age up to 29 years of age when the fecundity levels are higher, contribute greatly to the fertility levels. It appears that spacing of births by apparent use of contraceptive methods, is greater among educated women than illiterates who adopt contraception only for limiting purposes at later span of their reproductive life.

Table-4

Age Specific Fertility of Women with Primary and Above Level of Education: PFS-1975 and PRHFPS-2000

Age Group	CEBs ¹ PFS-1975	CEBs ² PRHFPS-2000	ASFR PFS-1975	ASFR PRHFPS-2000
15-19	0.2	0.42	0.083	0.083
20-24	0.6	1.01	0.117	0.117
25-29	1.68	1.83	0.299	0.299
30-34	3.21	3.15	0.237	0.237
35-39	3.97	4	0.122	0.122
40-44	4.85	4.33	0.106	0.106
45-49	6.18	4.74	0.038	0.038
TFR			5.01	4.55

Source:

1. Sathar, Zeba A (1984). Does Female Education Affect Fertility Behaviour in Pakistan. Pakistan Development Review

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2. NIPS ((2001) Pakistan Reproductive Health and Family Planning Survey 2000-2001. Preliminary Report.

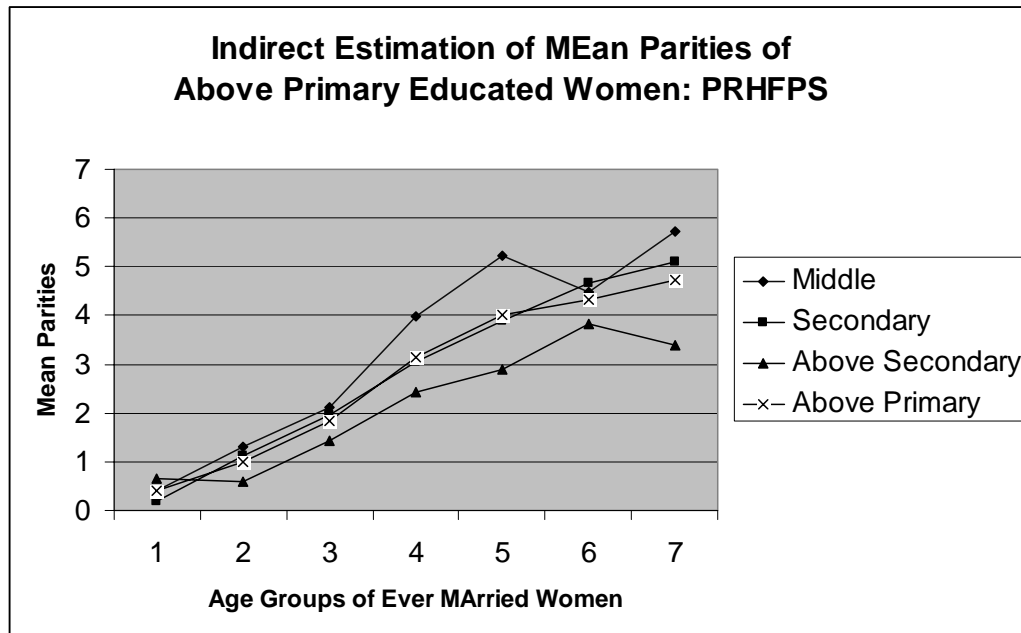


Fig-1

The fertility data by education level of women from two previous surveys namely the PFS-75 and the PRHFPS-2000 are being presented in Table-4. The limitation of the PFS-75 fertility data for educated women was that it was available only for women with primary and above level of education where as the comparative secondary level data from the PRHFPS-2000 survey was available up to levels of primary, secondary and with similar break ups for other categories of educational attainment.

The PRHFPS-2000 age specific fertility data for different categories were transformed by fitting an appropriate line by taking mean of parities for all levels of educated women [Fig-1]. The fitted line on fertility level for the women with above primary level education comes very close to the secondary level educated women with a slight tilt towards above secondary level at the later ages of reproduction.

The fertility data from two surveys depict a very little change in the fertility of educated women over time.

The direct estimates of TFR for the PFS-75 is 3.22 [Sathar, 1984] where as the similar estimate for the educated women is 3.2, 3.6 and 3.8 for education levels of middle, matriculation and above matriculation respectively. Does this reveal an

increase in fertility of educated women or the it is because of the difference in estimation techniques of TFR.

If direct estimates are viewed with in the perspective of an extensive research conducted on this subject has so far revealed an inverse relationship between female education and fertility but few exceptions can take place where fertility of educated women has shown a slight increase [Jejeebhoy, 1992].

Could it be because of any decline in breastfeeding levels among educated women or the changes in breast feeding levels can out weight the gains achieved in age at marriage and contraceptive prevalence, need further research. However, the problems related with data sets both from the census and surveys also cannot be ruled out.

Summary and Conclusion

The census and survey data on fertility levels by women's education show a variation of 2-3 children lesser children than illiterate women. There is however, a difference in levels of fertility estimates but the differentials are depicted in all data sets coming from various sources.

As the number of educated women has almost doubled in the country, an increase in the contraceptive prevalence is being witnessed. The educated women are soft targets for family planning adoption and they both use for spacing as well as limiting purposes. The chances are that educated women would have controlled their fertility even in the absence of family planning programme.

If the fertility differentials by levels of female education were taken as an indicator for fertility decline, it would reveal that programme efforts are very weak to reach hard targets, which largely forms the illiterate women.

It is suggested that an investment in female education needs to be prioritized to the level that the gender differences in education disappear and a balanced approach be adopted in the investment in female education and family planning by using the yardstick of cost effectiveness.

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