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## **Fertility Change in Rural India : 1961-69**

IN studying the changes in fertility in the context of the National family planning programme, it would be useful and meaningful to observe the pattern of change separately for Rural and Urban India. Between the two, the study of fertility change in Rural India is more important as nearly 80 per cent of India's population live in Rural Areas where the conditions are considered to be less conducive to acceptance of family planning. Accordingly, this paper confines itself to a study of fertility change in Rural India, taking into account changes in the age and marital status distributions during 1961-69.

The analysis is carried out in three sections. The first deals with the changes in the age-specific fertility rates and age-specific marital fertility rates for Rural India for the periods 1961, 1966, 1968 and 1969. The second section considers the changes in age and marital status distributions and their contribution to changes in the crude birth rate. The third section discusses the achievements in family planning programme and tries to relate the changes in fertility to the achievements.

### **Changes in Age-Specific Fertility Rates**

Table 1 presents the age-specific fertility rates for Rural India for the periods 1961, 66, 68 and 69 and percent changes in age-specific fertility rates are shown in Table 1(a). The age specific fertility rates for 1961 were estimated by using the procedure given in Bogue's manual (1971) under the following assumptions.

(a) Crude birth rate of 43.5.

- (b) General fertility rate of 189 per 1000 women in the age group 15-49.  
(c) The pattern of age-specific fertility was similar to that obtained in the 14th round of the National Sample Survey (1963) for the period 1958-59.

TABLE 1—AGE-SPECIFIC FERTILITY RATES FOR RURAL INDIA-  
1961, 66, 68 AND 69

<i>Age Group</i>	<i>1961<sup>(a)</sup></i>	<i>1965-67<sup>(b)</sup></i>	<i>1968<sup>(c)</sup></i>	<i>1969<sup>(c)</sup></i>
15-19	161.8	115.0	109.4	97.9
20-24	296.3	253.8	251.4	261.9
25-29	274.6	274.8	272.6	266.9
30-34	211.7	233.4	224.3	226.0
35-39	143.8	169.9	172.3	158.3
40-44	55.8	81.3	81.6	77.1
45-49	19.8	45.7	39.7	35.5
Total Fertility Rate	5819	5870	5757	5618

SOURCES: (a) Estimated assuming birth rate of 43.5 and a General Fertility Rate of 189 per 1000 women in the age 15-49 and assuming the age pattern of fertility as obtained in the 14th round of the N.S.S., India.

(b) From 'Sample Registration Bulletin : Provisional Statistics' Number 26, February 1969, Registrar General, India, page-4.

(c) From 'Measures of Fertility and Mortality in India' SRS Analytical series, Number 2, 1972, Office of the Registrar General, India, page-7.

TABLE 1(a)-PERCENT CHANGES IN AGE-SPECIFIC FERTILITY RATES : 1961-69

<i>Age group</i>	<i>Percent change in the period</i>		
	<i>1961-66</i>	<i>1966-69</i>	<i>1961-69</i>
15-19	-28.9	-14.9	-39.5
20-24	-14.3	+ 3.2	-11.6
25-29	0.1	- 2.9	-2.8
30-34	10.3	- 3.2	6.8
35-39	18.2	- 6.8	10.1
40-44	45.7	- 5.2	38.2
45-49	130.8	-22.3	79.3

The age-specific fertility rates for the periods 1965-67, 68 and 69 are drawn from the estimates for Rural India obtained in the Sample Registration Scheme (1969 and 1972).

The age group 15-19 recorded a consistent decline in fertility all through the period 1961-69, from 161.8 in 1961 to 97.9 in 1969. The decline was about 40 percent in the eight year period, of which 29 percent occurred in the first five years 1961-66. This is considered to be partly explainable by the reduction in the proportion of women married in the age-group 15-19 (see Table : 4). The age-group 20-24 had shown a reduction of 14 percent in the rate from 1961 to 1966 and thereafter remains more or less stable.

While the age-specific fertility rate for age 25-29 remained stable during the period 1961-66, there was an increase recorded for all the *quinquennial* age groups 30-49. The increase ranges from 10.3 percent in age group 30-34 to 130.8 percent in age-group 45-49. This was partly the result of increase in the proportion of married women in each age-group due to improved chances of joint survival of the couple (see Table : 4). But during 1966-69, the older age groups starting from 25-29 registered declines in rates with 3 percent in age-group 25-29 to 22 percent in the age-group 45-49, with the percentage decline increasing with age. This is so in spite of the increase in the proportion of women married during 1966-69. One may notice also that from 1961 to 1966, the pattern of fertility by age has changed from that of early peak (20-24) to that of late peak (25-29) and continues to be so during the years 1968 and 1969.

#### Age Specific Marital Fertility Rates

The age specific marital fertility rates which are free from the effect of proportion of women married are shown in Table 2. The percent changes in age-specific marital fertility rates are given in Table 2(a). The age-specific marital fertility rates were obtained by dividing the age-specific fertility rates by proportion of women married. The proportion of women married in each age-group for different years was estimated from the 1961 and 1971 Censuses of India, assuming linearity of change in the proportion of women married in each age group in the intercensal period for Rural India.

The pattern of change in age specific marital fertility rates in the period

TABLE 2—AGE-SPECIFIC MARITAL FERTILITY RATES FOR RURAL INDIA—  
1961, 66, 68 AND 69

<i>Age group</i>	1967	1965-67	1968	1969
15-19	219.6	169.3	166.7	151.8
20-24	318.1	274.0	272.0	283.7
25-29	290.7	288.4	285.2	278.8
30-34	231.4	250.8	239.4	240.5
35-39	165.3	190.2	190.9	174.4
40-44	71.7	100.2	98.9	92.7
45-49	28.3	61.5	52.2	46.1
Total marital fertility rate	6626	6672	6527	6340

TABLE 2a—PERCENT CHANGES IN AGE-SPECIFIC MARITAL FERTILITY RATES FOR RURAL INDIA FOR THE PERIOD 1961-69

<i>Age group</i>	<i>Percent changes in ASMR for the period</i>		
	1961-66	1966-69	1961-69
15-19	-22.94	-10.3	-30.9
20-24	-13.9	3.54	-10.8
25-29	-0.8	-3.3	-4.1
30-34	8.4	-4.1	3.9
35-39	15.1	-8.3	5.5
40-44	39.8	-7.5	29.3
45-49	117.3	-25.0	62.9

1961-1966 is interesting; the youngest age group showed the maximum decline of 23 percent and the oldest age-group recorded the maximum increase. The fertility in the middle age group (25-29) remained unchanged. Thus one could see a transition of marital fertility by age from that of early peak to late peak. The stability of total marital fertility from 1961 to 1966 indicates that there was not much change in the level of fertility as such during this period but

only a shifting of fertility schedule towards older age groups. During the period 1966-69 the age specific marital fertility rates declined almost, in all age groups. The percentage decline increased with the advancing age. Total marital fertility rate also registered a decline. These suggest a genuine decline in the overall level of fertility.

## II

### **Changes in Crude Birth Rates, Age and Marital Status Distributions**

Age specific fertility rates and marital fertility rates help us to understand the real changes in fertility. It is of high importance that these changes in age-specific rates should make an impact on the crude birth rate even under an adverse age and marital status distribution changes. Because, after all, in the final reckoning crude birth rates largely determine the size and rate of growth of the population and will continue to exercise a long term impact by producing large sizes of birth cohorts. So it is important to study the changes in the crude birth rates partitioning the changes due to the following three components:

- (a) changes in the age distribution of women;
- (b) changes in the proportion of women married in each age; and
- (c) changes in the age-specific rates.

#### *Changes in the Age-Distribution of Women*

Table 3 shows the percentage of women in each age group out of the total Rural Population of India and the proportion of women in each age group to all women 15-59 years of age as obtained in the censuses of 1961 and 1971.

The proportion of Rural India's female population in the high fertile group (20-29) were smaller in 1971 than in 1961. The proportion of females aged 20-29 fell from 8.46 percent in 1961 to 7.62 percent in 1971. In terms of absolute numbers this is of very high significance. The proportion of the population represented by women aged 15-49 was also reduced to 22.23 percent in 1971 from 22.99 in 1961, mainly on account of the reduction in the proportion of women aged 20-29.

TABLE 3—WOMEN IN EACH AGE-GROUP AS PERCENTAGE TO THE TOTAL POPULATION AND AS PERCENTAGE TO ALL WOMEN IN THE AGE-GROUP 15-49, RURAL INDIA, 1961 AND 1971

Age group	<i>Women in each age group as percentage to</i>			
	<i>total population</i>		<i>all women in age group 15-49</i>	
	1961	1971	1961	1971
15-19	3.91	3.96	17.01	17.82
20-24	4.34	3.86	18.87	17.34
25-29	4.12	3.76	17.93	16.89
30-34	3.41	3.33	14.82	14.98
35-39	2.74	2.89	11.92	13.00
40-44	2.51	2.48	10.90	11.15
45-49	1.96	1.95	8.51	8.78
Total	22.99	22.23	100.00	100.00

SOURCES: Calculated from

(a) Census of India 1961, Vol. 1, India, Part H-c(i) Social and cultural tables, pages 19-20.

(b) Census of India 1971, Series-1, India, Part-II—special, All India Census Tables (Estimated from one percent sample data) pages 118-120.

#### *Changes in the Proportion Married*

The proportion of women married in each age group as per the censuses of 1961 and 1971 is given in Table 4. The figures for 1966 and 1969 were obtained by linear interpolation from the 1961 and 1971 figures as already mentioned.

Between 1961 and 1971, the proportion of women married had decreased for age-groups 15-19 and 20-24. This is due to the increasing trend in age at marriage observed for this period. On the other hand, for all the age-groups 25-49, the proportion of women married had increased, the percentage increase for each age group increasing with age. This is quite possible under improving mortality conditions.

#### *Changes in Crude Birth Rate and Effect of Changes in Age Distribution and Proportion of Women Married*

The crude birth rate for Rural India declined from 43.5 in 1961 to 38.8 in Nos. 1 & 2 1976

TABLE 4—PERCENTAGE OF WOMEN IN EACH AGE-GROUP MARRIED 1961, 1966, 1969 AND 1971, RURAL INDIA

<i>Age of women</i>	<i>Percent women in each group married</i>				<i>Percent change from 1961 to 1971</i>
	<i>1961<sup>a</sup></i>	<i>1966</i>	<i>1969</i>	<i>1971<sup>(b)</sup></i>	
15-19	73.65	67.94	64.51	62.23	—15.5
20-24	93.16	92.63	92.32	92.11	— 1.1
25-29	94.46	95.27	95.75	96.08	1.7
30-34	91.48	93.05	93.99	94.62	3.4
35-39	86.98	89.32	90.73	91.67	5.4
40-44	77.75	81.11	83.13	84.47	8.6
45-49	69.96	74.31	76.93	78.67	12.4

SOURCES : (a) Census of India 1961, Vol. 1, India, Part II-c(i) Social and cultural tables, pp. 19-20.

(b) Census of India 1971, Series 1, India, Part II-special, All India Census tables (Estimated from one percent sample data) pp. 118-120.

1969 amounting to a 11 percent decline (see Table 5). While there was 7 percent decline in the five year period 1961-66, the decline was 4 percent in the three year period 1966-69. It was observed previously that there were changes in the age-distribution of women and proportion of women married in each age group during 1961-71. So in order to assess the effects of real changes in fertility on the crude birth rate, it is necessary to standardise the birth rates for changes in age distribution and on the proportion of women married in each age-group. This was done on the basis of the 1961 census age and marital status distribution and the effects of changes in age distribution and proportion married on the changes in the crude birth rate were obtained. The procedure for partitioning out the effects of changes in age and marital status distribution is adopted from the work of Freedman and Adlakha (1968) who made a similar analysis of the fertility decline in Hong Kong. The results are shown in Table 5.

Between 1961 and 1969, the crude birth rate declined by about 11 percent and 45 percent of this was the result of changes in the age distributions and the rest of the decline can be attributed to genuine declines in the age-specific fertility rates. Similarly of the 7 percent decline in the birth rate between 1961

TABLE 5—EFFECTS OF CHANGES IN AGE AND MARITAL STATUS DISTRIBUTION ON BIRTH RATES FOR RURAL INDIA IN THE PERIOD 1961-69

Year	Crude birth rate	Birth rate standardised on 1961		
		Age distribution	Age and marital status distribution	
1961	43.5	43.5		
1966	40.4	42.4		
1968	39.0	41.6		
1969	38.8	40.9		
<i>Percentage of decline in the</i>		<i>1961-66</i>	<i>1961-69</i>	<i>1966-69</i>
Crude birth rate		—7.13	—10.80	—3.96
<i>Birth rate standardised on the 1961</i>				
Age distribution		—2.53	- 5.98	—3.54
Age and marital status distribution		—2.76	— 6.21	—3.54
<i>Percentage decline in the birth rate due to changes in</i>				
Age distribution		64.52	44.63	10.61
Age and marital status distribution		61.29	42.50	10.61
Marital status distribution*		—3.23	— 2.13	0

\*That portion of the decline due to age and marital status not attributable to age.

and 1966, 65 percent was due to change in age composition alone and only 35 percent was due to real changes in fertility. But 90 percent of the decline in birth rate during 1966-69 had occurred due to real changes in fertility. This is also supported by the actual age-specific rates observed for the period. Between 1961 and 1966, there was an increase in age-specific rates for many age-groups. But for the favourable age distribution, the decline observed between 1961 and 1966 would have been much lower.

While the change in the age distribution, accounts for 65 percent of the decline in the birth rate from 1961 to 1966 the change in the marital status distribution had only played a negative role in the decline (3 percent). For the period 1966 to 1969, the effect of marital status distribution on the decline is almost nil.

It may be pointed out here that while the standardised birth rate declined from 1961 to 1966 at a rate of 0.24 points per year, the rate of decline was

more than doubled in the next three year period 1966 to 1969, the decline occurring at the rate of 0.50 points per year.

### III

#### Family Planning Achievements During 1961-1969

From the discussion of the previous section, it is clear that the reduction in the birth rate from 1966 to 1969 is almost entirely explained by real changes in fertility. This finding also has been corroborated by the changes in the age-specific fertility rates observed for the period. The age-specific marital fertility rates, which are free from the age and marital status distribution, also support this finding. So as a final point of support of this finding and as an examination of the consistency between family planning achievements and fertility change, the achievements in family planning programme during the period 1961-69 are considered. The main data source is the "Family Welfare Planning in India year Book 1972-73", Government of India (1974).

Table 6 shows the proportion of couples currently protected from 1966 to 1969. Even though the Family Planning Programme was started as early as

TABLE 6—NUMBER AND PERCENT OF COUPLES CURRENTLY PROTECTED DUE TO VARIOUS METHODS OF FAMILY PLANNING IN INDIA BY THE END OF THE RESPECTIVE YEAR

Year	Estimated No. of couples in the Reproductive Age-group (in millions)	No. of couples (in millions) currently protected due to								
		Sterilization		IUD insertions		C. C.		Users		Total
		No.	%	No.	%	No.	%	No.	%	No.
1966-67	90.025	2.164	2.4	1.313	1.5	0.465	0.5	3.941	4.4	
1967-68	92.260	3.849	4.2	1.543	1.7	0.475	0.5	5.868	6.4	
1968-69	94.552	5.280	5.6	1.553	1.6	0.961	1.0	7.794	8.2	

SOURCE : Table. E. 2, "Number of couples currently protected due to various methods of family planning in India by the end of the respective year", page 67, "Family Welfare Planning in India Year Book, 1972-73". Government of India, Ministry of Health and Family Planning, Department of Family Planning, New Delhi.

1952, the proportion of couples currently protected as on March 67 was only 4.4 percent. But it nearly doubled (8.2%) in the next three years in spite of

the increase in the absolute number of couples. This is very significant with reference to the earlier finding that 90% of the decline in birth rate from 1966 to 1969 is explained by real decline in fertility especially, in older age groups.

The following additional statistics given by the Government of India (1974) lend additional support:

(1) From 1961 to March 1970, it is estimated that a total of 5.20 million births have been averted by sterilizations, IUD insertions and use of other conventional contraceptives. Only 20 percent of these were for the period 1961 to March 1967 and the rest of the 80 percent during the three year period April 1967 to March 1970.

(2) Out of 5.17 million births averted during the three year period April 1967 to March 70, 92% were averted to sterilizations and IUD insertions alone, the sterilizations accounting for a major share (61.3 percent).

(3) It is reported that out of a total of 5.8 million sterilizations done during April 1966 to March 1970, 60.4 percent were from rural areas and out of a total of 2.5 million IUD insertions in the same period, 59.2 percent were from rural areas.

Out of the acceptors of sterilizations, more than 75 percent were of age above 30 years and out of IUD acceptors more than 65 percent were of age 30 and above (see Table 7).

TABLE 7—PERCENT DISTRIBUTION OF ADOPTERS OF VASECTOMY, TUBECTOMY AND IUD BY AGE

<i>Age group</i>	<i>Percent of women who have adopted</i>			
	<i>Vasectomy</i>	<i>Tubectomy</i>	<i>Condom</i>	<i>IUD</i>
Below 25 years	5.7	3.3	28.2	17.8
25-29 years	15.7	21.4	28.3	16.3
30-34 years	28.2	31.3	23.9	28.0
35-39 years	30.2	24.7	13.0	26.4
40-44 years	20.2	19.3	6.6	11.5
Total	100.0	100.0	100.0	100.0

SOURCE: Table IV 3.2 "Profiles of current users of various Methods", pp. 99, Appendix "Family Planning Practices in India, The First all India Survey Report" Operations Research Group, Baroda (1973).

From the above the confidence in the finding that there was real decline in fertility and this decline occurred in the older age groups as a result of acceptance of family planning methods is strengthened.

### **Conclusions**

Age specific fertility rates for the period 1961-66 changed from that of early peak to that of late peak and with increase in all the age-groups 30 and above. This combined with the increase in the proportion of women married nullified the effects of the decline in the age specific fertility rates observed for age group 15-24.

But from 1966 to 69 there was consistent decline in age specific fertility rates and age specific marital fertility rates. These results are consistent with the achievements in family planning program which made a great 'leap forward' from the year 1965 by sterilisation and IUD programs. The fact that 75% of the acceptors of these methods were of age 30 years and above is in tune with the changes observed in the age-specific rates for the period 1966-69, where the declines occurred mostly in older age groups.

The shifting of fertility scheduled by age from that of early peak to late peak from 1961 to 1966 and the decline in the age specific fertility rates for age groups 25 and above from the year 1966 to 69 resemble the pattern obtained for Costa Rica for the year 1959 to 1960 (Gomez and Reynolds, 1973). In the case of Costa Rica, after a similar shifting of fertility scheduled by age, rates for old age group started falling rapidly followed by decline in the rates for young age groups also.

In the case of Rural India even after the decline observed from 1966 to 1969, the rates for 1969 were still high for age groups 30 and above. The rate of decline in fertility (measured through standardised birth rates) had doubled during the period 1966 to 69 from the period 1961 to 1966, which is indicative of increasing rapidity of decline in fertility. This coupled with still high fertility observed among older women forestall further steep decline in the birth rate of Rural India for subsequent years.

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