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## **Infant Mortality, Fertility and Family Planning: An Analysis of Relationships**

### **Abstract**

Present paper is an attempt to assess the effect of infant mortality on the fertility behaviour and family planning practices. The study drew on data from a family planning evaluation study conducted by the author in Punjab (India), wherein 439 eligible couples (non-contraceptors) and 145 family planning acceptors (of sterilization and IUD) were surveyed.

The study highlights significant differences between the two categories of respondents with respect to the infant mortality-fertility relationship. The non-contraceptors have had comparatively a lower fertility level (than the family planning acceptors). The pregnancy and child wastage due to abortions, still births and infant mortality was comparatively higher among the non-contraceptors and was positively related with their fertility level. On the other hand, the family planning acceptors have not only experienced lower pregnancy and child wastage, the relationship between their fertility level and infant mortality experience was very poor.

Lower infant mortality, coupled with higher fertility, emerges as a strong motivative factor in the acceptance of fertility control measures by the family planning acceptors. This finding also supports Freedman's (1963) argument that couples will not control their fertility until they are convinced that the infant mortality levels have dropped.

The effect of socio-economic variables on the infant mortality experiences is more pronounced in case of eligible couples who have experienced higher infant deaths. The study also shows that the demographic effect of biological factors is quite significant in the infant mortality-fertility relationship.

**T**HE relationship between the infant mortality and fertility has been the subject of debate among population analysts for some time. The prevailing assumption is that the high fertility is a biological and behavioural response to high mortality (Kingsley Davis 1945). This assumption is manifested in the theory of demographic transition which states that the mortality declines are eventually followed by the fertility declines (Kingsley Davis 1963); in the child replacement hypothesis which states that the parents try to replace children who die; in the child survival hypothesis which states that the couples aim to produce enough children to ensure the survival of some intended number to the adulthood (Preston 1975), and in the argument that the couples will not reduce their fertility until they are convinced that the infant mortality levels have dropped (Freedman 1963).

Another factor in the fertility-mortality relationship is that the mortality may some time be a response to high fertility, instead of a stimulus to it. While the biological effects of high

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fertility (the effects of close spacing of births and related factors) on the mortality have been well recognised (Potter et al. 1973; Chen et al. 1974; Choudhary *et al.* 1976), there can be a behavioural response to fertility that results in increased mortality.

The present paper focuses on both the above mentioned aspects of the mortality-fertility relationship. The paper drew on data from an evaluation study of the Family Planning Programme recently conducted by the Population Research Centre, Chandigarh. The primary objective of this research was to study the fertility and family planning behaviour of a rural community. The study was conducted in Rupnagar district of Punjab (India), wherein 439 eligible couples (non-contraceptors) and 146 family planning acceptors (of sterilization and IUD) were surveyed from 33 villages, located in two development blocks: Chamkaur Sahib and Majri. The following analysis is based on the reproductive behaviour and the infant mortality experience of the women from the two categories of respondents. The purpose of considering both the groups of respondents—one still in reproductive stage (eligible couples) and the other having crossed this stage by adopting permanent methods of fertility control, is to study, whether the motive to control the fertility is influenced by the infant mortality-fertility relationship.

### **I. Socio-economic and Demographic Characteristics of the Study Population**

A summary description of the socio-economic and demographic characteristics of the respondents is presented in Table 1. It shows that the religious and caste compositions of the two categories of respondents (eligible couples and the family planning acceptors) is nearly the same and quite close to the pattern observed for the rural areas of Punjab (D'Souza 1983). But the data on the family composition show that the proportion of the nuclear families is comparatively higher among the family planning acceptors than the eligible couples. Findings of several studies on family planning acceptance pattern also indicate a similar trend (Rao 1974),

As expected majority of respondents and their spouses are in young adult age group, married for more than a decade. However, family planning acceptors have comparatively larger families (in terms of number of living children) than the eligible couples.

Nearly one-fourth of the husbands and half of the wives are illiterate. Further, very few husbands are engaged in high prestige occupations like, senior Government officials, big farmers, or businessman etc. Overwhelming majority of them held medium prestige occupations, which include medium and small farmers, artisan and clerical occupations. Proportion of employed wives is very small.

Level of living index which is based on the information about the living conditions (type of accommodation, number of living rooms, water supply, electricity, conveyance etc.), shows that on an average the respondents have medium level of living standard.

From the above analysis it is apparent that barring a few characteristics like family size, family composition etc., there is no significant difference between the socio-economic and demographic characteristics of the eligible couples and the family planning acceptors.

TABLE 1: SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF THE STUDY POPULATION

<i>Characteristics</i>	<i>Eligible Couples</i>	<i>Family Planning Acceptors</i>
1. Religion		
(i) Sikh	63.78%	62.76%
(ii) Hindu	33.94%	35.17%
2. Caste (Hierarchical Prestige Status)		
(i) High	47.15%	46.90%
(ii) Medium	27.33%	26.90%
(iii) Low	25.51%	26.20%
3. Type of family		
(i) Nuclear	47.15%	55.86%
(ii) Joint	52.85%	44.14%
4. Age		
(i) Median age of husband	32.63 years	32.38 Years
(ii) Median age of wife	29.51 years	31.60 Years
5. Duration of effective married life	12.55 Years	11.24 Years
6. Average number of living children	2.97	3.99
7. Educational level of husbands		
(i) Illiterate	27.79%	23.45%
(ii) Primary	14.81%	19.31%
(iii) Secondary and above	33.03%	28.28%
8. Educational level of wives		
(i) Illiterate	53.99%	49.66%
(ii) Primary	21.18%	24.83%
(iii) Secondary and above	10.70%	7.59%
9. Occupation of Husband		
(i) High Prestige	5.92%	4.14%
(ii) Medium Prestige	55.36%	62.07%
(iii) Low Prestige	37.82%	32.41%
10. Proportion of employed wives	5.47%	4.14%
11. Level living index (average)	4.33	4.76

## II. Fertility, Pregnancy Wastage and Infant Mortality: Motivation for Fertility Regulation

For studying the reproductive behaviour, retrospective information on the pregnancy roster is obtained and the total fertility till the date of survey is considered as an index of fertility level. Though for the family planning acceptors existing fertility level represents the total fertility (as they have ceased to reproduce by adopting the permanent methods of fertility control), whereas the eligible couples are still in reproductive stage, but considering the similarities in their age-distribution and duration of effective married life, their fertility levels can be compared. The available statistics indicate that the fertility level of the family planning acceptors is comparatively higher than the eligible couples. On an average eligible

couples have 3.62 pregnancies (but if only fertile couples are considered this average goes up to 3.76), whereas, in case of family planning acceptors this number is 4.72. With respect to the number of live births also the fertility level of the family planning acceptors is higher (average number of live births 4.43) than the eligible couples (average number 3.52 for fertile couples)

Beside the age and duration of effective married life, three other demographic factors which could influence the fertility behaviour are: age at the on-set of maternity, close birth interval and pregnancy wastage due to abortions, still births and infant or child mortality.

On the first count the data show that the women in both the groups have started their reproductive life almost at the same age, being 20.56 years (average) for the eligible couples and 20.53 years for the family planning acceptors. The time interval between the age at the consummation of marriage and the first birth (first birth interval) is also similar being 31.8 months (average) for the eligible couples and 31.1 (average) months for the family planning acceptors. In other words, it can be said that at the onset of maternity, the reproductive behaviour of the two groups of respondents was nearly same.

However, the data show that the factors affecting the birth interval between the first and subsequent pregnancies are different from the factors influencing the fertility schedule before that. The average birth interval between the first and subsequent pregnancies is considerably higher (29.64 months) for eligible couples than the family planning acceptors (26.52 months). Obviously, the shorter close birth interval is associated with the higher fertility level of the family planning acceptors.

In any fertility survey it is rather difficult to get the precise information about the pregnancy wastage due to abortions or still births. However, the available data indicate that the eligible couples have lost more pregnancies due to abortions and still births than the family planning acceptors. Among the family planning acceptors, only 1.75 per cent pregnancies resulted in pregnancy wastage whereas in case of eligible couples this proportion is 3.46 per cent.

Infant mortality experience of the two categories of respondents is also widely different from each other. In case of eligible couples out of 1491 live born babies 95 had died before reaching the age of one year giving a survivorship ratio of 936 per 1000 live births. While among the family planning acceptors out of 643 live born babies, 32 children had died before their first birthday giving a survivorship ratio of 950 per 1000 live births.

Besides being higher, the infant mortality level of the eligible couples shows a strong positive relationship with the fertility level. Data in Table 2 show that whereas among the eligible couples the incidents of infant deaths consistently increase with the rise in the fertility level, the pattern observed for the family planning acceptors was not consistent. The coefficient of correlation between the incidents of infant mortality and the fertility is 0.44 for eligible couples and 0.25 for the family planning acceptors.

TABLE 2 : PARITY AND INFANT MORTALITY LEVEL

Parity	Number of Infant Deaths										
	Eligible Couple					Family Planning Acceptors					
	0	1	2	3	Total	0	1	2	3	4	Total
1	45	2	-	-	47	1	-	-	-	-	1
2	95	3	-	-	98	18	-	-	-	-	18
3	77	10	-	-	87	29	4	1	-	-	34
4	61	11	2	-	74	28	6	1	-	-	35
5	32	12	3	1	48	18	2	-	-	-	20
6	20	7	-	2	29	14	2	-	1	-	17
7	10	3	2	1	16	7	-	1	-	-	8
8	6	1	1	1	9	2	1	-	-	1	4
9	1	3	2	2	8	3	2	1	-	-	6
10+	1	1	-	-	2	2	-	-	-	-	2
Total	348	53	10	7	418*	122	17	4	1	1	145

\*21 cases of zero parity are excluded

From the above analysis it clearly emerges that:

(i) In spite of experiencing fewer infant deaths and lower pregnancy wastage due to still births and abortions to the fertility level of the family planning acceptors is comparatively higher than the eligible couples. This finding contradicts the observation made in several studies (Wyon and Gordon 1971; Chowdhary *et al* 1976; Rutstein 1974) wherein, the fertility level of the women who have lost children is found higher as compared to those whose children survived. Apparently, the hypothesis that the parents try to replace the children who die, which subsequently result in higher fertility, does not seem to be true in the present case. It also implies that there are other factors which are responsible for raising the fertility level of family planning acceptors. But this hypothesis is very much true for the eligible couples in whose case infant mortality shows a close positive association with the fertility level.

(ii) Adoption of fertility control measures by the family planning acceptors could be related with their lower infant mortality level, which implies the requirement of fewer births to produce a given number of children. In other words, the same number of births will result in more children surviving to any given age, and pressure is created for fertility control. This is precisely that has happened in the advanced countries in the fourth stage of demographic transition, namely, when both birth and death rates stabilized at low levels. On the other hand, comparatively higher infant mortality and its stronger association with the fertility level could be one of the compelling reasons for the non-acceptance of fertility control measures by the eligible couples (United Nations 1973).

### (III) Infant Mortality and Fertility Relationship: Socio-Economic and Demographic Correlates

So far we have attempted a comparative analysis between the two categories of respondents by treating them as homogenous groups. It is likely that there may be some variations within these groups with respect to various socio-economic and demographic characteristics, which might be responsible for the difference in their infant mortality experience. The subsequent sections of this paper deal with these variations and their possible effect on the infant mortality-fertility relationship. Although the infant mortality and fertility levels are influenced by a large number of socio-economic and demographic variables but for the purpose of analysis only 8 variables are selected which are expected to have a direct bearing on the infant mortality-fertility relationship.

The effect of infant mortality on fertility is not unidirectional, its own level is also affected by the level of fertility, i.e., the relationship could well be operating in the reverse direction. For example, infant mortality may vary positively with the total number of children born. A couple who has given birth to only one child can afford to have one infant death, but a couple who has given birth to more than one child is likely to experience more than that. In order to nullify this effect, women in our study are divided into 4 categories on the basis of number of children ever born to them. The first category includes women with 1 to 2 live births, in the second category, women having 3,4 live births are included, in the third category, women having 5,6 live births and in the fourth category women having 7 or more live births are included.

#### (a) Socio-Economic Factors

Of the modern social factors that influence fertility, educational level, particularly of females is most relevant. It is expected that females' education will have a stronger negative association with infant mortality than any other socio-economic variable. This contention has been gaining increasing support from evidences originating from several national studies on fertility and family planning practices (Rao 1974).

Education is directly associated with the beliefs and attitude with regard to the family size and child health care. Higher education would lead to lower fertility and with lower fertility the chances of survival of children would be more.

Tables 3 (A) and 3(B) show the relationship between the educational level of husbands and wives and their experience with infant deaths. The data indicate that with the rise in the educational level of wives, though the proportion of eligible couples experiencing infant deaths shows a declining trend but the pattern is not very consistent. For example, in case of eligible couples of first and second parity, the educational level of wives does not seem to have any relationship with the infant mortality experience, but for the higher parities, proportion of couples experiencing infant deaths shows a declining trend with the rise in the educational level of wives. The table also reveals that only at middle or higher educational level, differences in the infant mortality experience are visible. For illiterates or primary educated wives, infant mortality experience is almost similar for all the parity levels.

On the other hand, in case of family planning acceptors, no such relationship is observed between the educational levels of wives and the infant deaths. The data show that, though

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TABLE 3 (A): EDUCATIONAL LEVEL OF WIVES AND THE INFANT DEATHS ACCORDING TO THE FERTILITY LEVEL

<i>Proportion of Women Experiencing Infant Deaths</i>	<i>Number of live Births</i>															
	<i>Eligible Couples</i>								<i>Family Planning 'Acceptors</i>							
	1,2		3,4		5,6		7+		1,2		3,4		5,6		7+	
<i>Educational Level of Wives</i>	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Illiterate	59	1.69	84	16.67	58	34.48	31	48.39	3	0.0	27	22.22	26	11.54	16	25.0
Primary	44	6.82	39	17.95	15	33.33	4	50.00	10	0.0	20	20.00	13	7.69	4	50.0
Middle	17	5.88	16	6.25	2	0.0	-	-	0	0.0	9	0.0	3	33.33	-	-
Secondary and above	25	0.0	2.2	4.54	2	0.0			6	0.0	8	25.00				
Total	145	3.45	161	14.28	77	32.47	35	48.57	19	0.0	64	18.75	42	11.90	20	30.0

(a)- Number of objects; (b)- Percentage of subjects experienced child loss during infancy. Primary - up to V Standard. Middle - Upto VIII Standard. Secondary-upto XI Standard.

TABLE 3 (B): EDUCATIONAL LEVEL OF HUSBANDS AND THE INFANT DEATHS ACCORDING TO THE FERTILITY LEVEL

<i>Proportion of Women Experiencing Infant Deaths</i>	<i>Number of Live Births</i>															
	<i>Educational level of Husbands</i>								<i>Family Planning Acceptors</i>							
	1,2		3,4		5,6		7+		1,2		3,4		5,6		7+	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Illiterate	25	8.00	41	19.51	33	36.36	20	65.00	1	0.0	9	44.44	17	11.76	7	28.57
Primary	33	3.03	30	16.71	15	25.00	5	40.00	6	0.0	20	10.00	9	11.11	8	25.00
Middle	25	0.0	29	6.90	11	45.45	6	16.67	3	0.0	12	25.00	8	12.50	3	66.67
Secondary and above	59	3.39	58	12.07	17	23.53	.4	25.00	9	0.0	22	13.64	8	12.50	2	0.0
Not recorded	3	0.0	3	33.33	1	0.0	-	-	-	-	1	0.0	-	-	-	-
Total	14	3.45	161	14.29	77	32.47	35	48.57	19	0.0	64	18.75	42	11.90	20	30.00

a - Number of subjects b- Percentage of subjects experienced child loss during infancy.  
 Primary - Upto V Standard. Middle - Upto VIII Standard. Secondary -Upto XI Standard

the women have seen their children dying in infancy, their experience is not at all related with their educational background.

With respect to the educational level of husbands, data pertaining to the eligible couples show that except for the illiterates who have experienced comparatively higher infant deaths, no significant relationship is observed between the educational level of husbands and the incidents of infant deaths. While in case of family planning acceptors no such relationship exists even for the illiterate husbands.

Above discussion indicates that wherever the incidents of infant mortality are higher (as in case of eligible couples), some negative association between the educational level (particularly of wives) and infant deaths is observed, otherwise the education does not seem to have any influence in reducing the level of infant mortality.

Living standard of the household is an important determinant of the infant mortality. It is associated with the living conditions, economic well being etc., which directly influence the morbidity and mortality patterns of the children. People with lower living standard are likely to experience higher infant deaths than the persons of higher living standard.

Table 4 briefs on the impact of level of living (Index) on the infant mortality. As expected the eligible couples show a negative association between the living standard index and the infant deaths but the same is not true for the family planning acceptors, in whose case no specific change in the incidents of infant deaths is observed either with the rise in the living standard index or change in the number of live births. But in general the family planning acceptors with lower living standard, have experienced more infant deaths than the respondents with the medium or higher living standard. Among the eligible couples, the distinction between the levels of infant mortality in different living standard categories was more clear for higher parity women (5+) than the women having fewer births.

The environmental conditions for the upbringing of children are different in different family conditions. Therefore, it can be assumed that the infant mortality experience will also be influenced by the family composition. But from our data it appears that only in case of eligible couples the family composition influences the infant mortality experience.

Table 5 shows that among the eligible couples having up to 6 live births, fewer women from the nuclear families have experienced infant deaths than the joint families. But among the couples of 7 or higher parity, proportion of women experiencing infant deaths is considerably higher in nuclear families than in joint families. However, in case of family planning acceptors, the family composition does not show any relationship with the infant mortality experience.

The direction of relationship between the family type and the infant mortality level indicates that in nuclear families, where the couples are directly responsible for the upbringing of their children, proportion of women experiencing infant deaths was comparatively low (than the joint families) till the couples have a moderate family size (up to 6 children) but the subsequent increase in the parity, adversely affects the chances of survival of their children. This phenomenon is further supported by the finding that till the 4th parity, incidents of infant deaths in the nuclear families is half of that in joint families, the difference narrowed considerably for the 5,6 parity and the positions are reversed for higher parities.

In the rural society, caste system still dominates the way of life. In most societies, higher caste people are economically well-off and have a higher standard of living while the lower

TABLE 4: LEVEL OF LIVING AND WANTED DEATHS ACCORDING TO THE FERTILITY LEVEL.

<i>Level of Living</i>	<i>Proportion of Women Experiencing Infant Deaths</i>															
	<i>Number of Live Births</i>															
	<i>Eligible Couples</i>								<i>Family Planning Acceptors</i>							
	1,2		3,4		5,6		7+		1,2		3,4		5,6		7+	
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	
Low	35	8.57	69	13.04	41	36.58	17	58.82	3	0.0	15	26.67	16	20.00	6	33.33
Medium	66	3.03	57	19.30	25	32.00	10	40.00	8	0.0	27	11.11	20	9.52	8	37.50
High	44	0.0	35	8.57	11	18.18	8	37.50	8	0.0	22	22.73	6	0.0	6	16.67
Total	145	3.45	161	14.28	77	32.47	35	48.57	19	0.0	64	18.75	42	11.90	20	30.00

TABLE 5: TYPE OF FAMILY AND WANTED INFANT DEATHS ACCORDING TO THE FERTILITY LEVEL

<i>Type of Family</i>	<i>Proportion of Women Experiencing Infant Death</i>															
	<i>Number of Live Births</i>															
	<i>Eligible Couples</i>								<i>Family Planning Acceptors</i>							
	1,2		3,4		5,6		7+		1,2		3,4		5,6		7+	
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	
Nuclear	48	2.08	87	9.19	44	31.83	22	63.63	9	0.0	33	15.15	23	13.04	16	25.00
Joint	97	4.12	74	20.27	33	33.33	13	23.08	10	0.0	31	22.58	19	10.53	4	50.00
Total	145	3.45	161	14.28	77	32.47	35	48.57	19	0.0	64	18.75	42	11.90	20	30.00

E.

TABLE 6: HIERARCHICAL PRESTIGE STATUS OF CAST AND AND INFANT DEATH ACCORDING TO THE FERTILITY LEVEL

<i>Proportion of Women Experiencing Infant Deaths</i>	<i>Number of Live Births</i>															
	<i>Eligible Couples</i>								<i>Family Planning Acceptors</i>							
	1,2		3,4		5,6		7+		1, 2		3,4		5,6		7+	
<i>Hierarchical Prestige Status of Castes</i>	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
High	78	5.13	75	10.67	33	33.33	13	38.46	11	0.0	35	11.43	16	0.0	6	16.67
Medium	28	3.85	43	16.29	23	26.09	13	61.54	3	0.0	13	15.38	18	25.00	8	37.50
Low	39	0.0	43	18.60	21	38.09	9	44.44	5	0.0	16	31.35	8	12.50	6	33.33
Total	145	3.45	161	14.28	77	32.47	35	48.57	19	0.0	64	18.75	42	11.90	20	30.00

TABLE 7: AGE AT THE TIME OF BIRTH OF FIRST CHILD AND THE INFANT DEATHS ACCORDING TO THE FERTILITY LEVEL

<i>Proportion of Women experiencing Infant deaths</i>	<i>Number of Live Births</i>															
	<i>Eligible Couples</i>								<i>Family Planning Acceptors</i>							
	1,2		3,4		5,6		7+		1,2		3,4		5,6		7+	
<i>Age at the time of first delivery (Yrs.)</i>	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Below 21	67	4.48	90	17.78	57	12.28	34	50.00	11	0.0	30	23.33	28	7.14	17	35.29
21+	78	2.56	71	9.86	20	25.00	1	0.0	8	0.0	34	14.70	14	33.33	3	0.0
Total	145	3.45	161	14.28	77	32.47	35	48.57	19	0.0	64	18.75	42	11.90	20	30.00

caste people form the lower strata of the society. In this context, it is normal to expect that the infant mortality experience will also differ in accordance with the hierarchical status of different caste groups in the society. Higher caste women are likely to have a lower infant mortality level than their medium or low caste neighbours.

Analysis of available data also indicates that in both the categories of respondents, comparatively a smaller proportion of higher caste women have experienced infant deaths than the medium or lower caste women.

Table 6 shows that in all the parity levels (except 1,2) comparatively fewer high caste women have experienced infant deaths. But the differences in the infant mortality experience of the medium and low caste women are not so evident. The influence of the increase in the fertility level on the infant mortality experience is also visible only in case of eligible couples, wherein the proportion of women experiencing infant deaths increases with the rise in the fertility level in all the caste categories.

From the above analysis it is evident that the infant mortality experience of high caste women is widely different from the medium or low caste women in whose case it is nearly the same.

#### *(b) Demographic Factors*

Age of mother at the onset of maternity is considered as an important biological determinant of the infant mortality. Due to early marriage of females in India, child bearing at the tender ages through adolescence causes deaths of many children born to these women.

Table 7 summarizes the pattern of infant deaths to the selected women by their age at the birth of first child. The results indicate that except in 5, 6 parity category at all other fertility levels, women starting their reproductive life below the age of 21 years have experienced more infant deaths than the women having their first child after the age of 21 years. The table also shows that in both the categories of respondents, proportion of women experiencing infant deaths increases consistently (except for the 5, 6 birth order) with the rise in the fertility level.

The importance of birth interval as a major determinant of infant mortality is found to be more significant in developing countries. The timing and spacing of children has a direct bearing on the health of mother and consequently of the infant. While the shorter intervals lead to higher risk of mortality for the child born at the end of period, early child deaths in turn lead to early conception of next. In such instances the women having shorter birth intervals, may on an average lose more children in infancy. In the present study we have examined the effect of shorter birth intervals on the survival chances of children, irrespective of the factors involved in determining the length of the birth intervals.

Table 8 presents the infant mortality experience for varying lengths of average birth interval between first and subsequent pregnancies. The influence of birth interval on the survival chance of child is very much pronounced here. The risk of infant deaths is comparatively higher if the children are born in quick succession (average birth interval less than 18 months) than the children born at the longer intervals (with some minor exceptions). However, the differences in the infant mortality levels of the women having their children

TABLE 8: AVERAGE INTERVAL BETWEEN THE FIRST AND SUBSEQUENT PREGNANCIES AND INFANT DEATHS ACCORDING TO THE FERTILITY LEVEL

<i>Proportion of Women Experiencing Infant Deaths</i>	<i>births</i>								<i>Number of Live</i>							
	<i>Eligible Couples</i>								<i>Family Planning Acceptors</i>							
	1,2		3,4		5,6		7+		1,2		3,4		5,6		7+	
<i>Average Interval Between first &amp; subsequent pregnancies</i>	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Less than 18 months	21	0.0	8	50.00	5	80.00	1	0.0	5	0.0	4	25.00	2	50.00	1	100.00
18 months to 36 months	53	7.55	111	10.81	56	28.57	30	50.00	10	0.0	51	21.57	37	10.81	18	22.22
56+ months	39	0.0	42	16.67	16	31.25	4	50.00	3	0.0	9	0.0	3	0.0	1	100.00
Not applicable	32	3.13	-	-	-	-	-	-	1	0.0	-	-	-	-	-	-
Total	145	3.45	161	14.28	77	32.47	35	48.57	19	0.0	64	18.75	42	11.90	20	30.00

at the intervals of 8 to 36 months and more than 36 months, were not so evident. Obviously, only upto a certain level (in the present case 18 months) birth interval influences the probability of survival of child during infancy. The effect of inter-birth interval in the infant deaths was more pronounced at the higher fertility levels.

### Conclusion

The study highlights the striking differences in the infant mortality-fertility relationship between two categories of respondents: eligible couples and the family planning acceptors. The eligible couples have experienced higher pregnancy wastage due to still births and abortions and higher infant mortality, which is positively associated with their fertility level. The family planning acceptors have not only experienced fewer infant deaths, but their fertility level is also higher than the eligible couples.

The eligible couples present a classical case supporting the child replacement hypothesis which states that the parents try to replace children who die and in the process produce more children.

Lower infant mortality coupled with higher fertility, emerge as a strong motivating factor in the acceptance of fertility control measures by the family planning acceptors. This finding also supports the Freedman's (*op. cit.*) argument that the couples will not control their fertility, until they are convinced that the infant mortality levels have dropped.

Though almost all the socio-economic variables discussed in the study, influence the infant mortality experience of the respondents, but the influence is more pronounced in case of eligible couples who have experienced higher infant deaths.

Both the demographic variables discussed in the study i.e., the age at the onset of maternity and close birth intervals, show a close association with the infant mortality experience of both the categories of respondents. In other words it implies that the demographic effect of biological factors is quite significant in the infant mortality-fertility relationship.

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