

Anthropo-Demographic Study Among the Caste and Tribal Groups of Central Himalayas: 6. Fertility, Child Mortality and Family Planning

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ABSTRACT Statistical tools mainly multiple regression, have been utilised to study the impact of various variables on fertility, infant and child mortality and usage of family planning methods among the caste groups of Kumaun and the Bhotia tribal groups. Child Mortality, age at marriage (wife), usage of family planning methods and educational level of wife are the variables having an important bearing on the number of livebirths per evermarried woman/fertility. It is seen that for infant and child mortality the variables are fertility, occupation of wife, income and present age of wife. The determinants of usage of family planning methods are educational level of husband, number of surviving children and income.

Various variables have an important bearing on fertility, infant and child mortality and usage of family planning methods. Infact variation in fertility levels, infant and child mortality levels and usage of family planning methods among the different population groups studied is explained by variations in the social, economical and cultural environment which the different households are subjected to.

MATERIAL AND METHODS

Correlation and multiple regression using Statistical Package for the Social Sciences (SPSS) have been utilised to study the impact of various variables on fertility, infant and child mortality and usage of family planning methods among the caste groups of Kumaun and the Bhotia Tribal groups. The independent variables used for number of children born per ever married woman are infant and child mortality, age at marriage of wife, usage of family planning method, education level of wife, education level of husband, age at menarche, annual income, occupation of wife, family type and age at marriage of husband. The independent variables for infant and child mortality are number of children born per ever married woman, occupation of woman, annual income of

household, age of woman and education of woman. The independent variables used for usage of family planning methods are education of husband, surviving children, age of woman, education of wife, annual income and occupation of wife. For details see Paul Chachra and Bhasin (1998, a, b, c, d)

RESULTS AND DISCUSSION

The number of livebirths per evermarried woman is correlated with a number of variables. It shows high positive correlation with the age of the woman, loss per woman and surviving number of children. As the age of the woman increases the number of livebirths per woman increases. Loss per woman number of livebirths (number of surviving children) is taken as an indicator of infant and child mortality. Child deaths results in more number of livebirths as women try to recompensate their loss to achieve their desired number of surviving children.

The number of livebirths per evermarried woman is negatively correlated with the education level of both the wife and the husband, age at marriage of wife and husband and household income. As education level increases fertility decreases. Late age at marriage results in low fertility as there is a delay in exposure risk to conception. Also women who marry later are generally more educated. When income levels are low, fertility levels increases. Desire or motivation for children is more in low income households as they have low investment (less education etc.) and high returns (wage earners at an early age, security in old age).

Couples who have practised family planning have more children than couples who have not practised family planning. This could be due to the fact that in the hill region as for the rest of India those who have practised family planning have mainly opted for permanent methods. Only those couples who have achieved their desired

reproductive goals would opt for permanent methods. As a result the number of children or fertility among these couples is high compared to those couples who have not practised any family planning as they have not achieved their desired family size and would like to have more children in future.

Correlation of infant and child mortality (loss per woman) with a number of variables has also been done. There is a high positive correlation with the age of the woman, number of livebirths per ever married woman, place of residence and number of surviving children. Rural women are more prone to lose children than women who reside in urban areas. This may be due to poor availability of medical facilities in rural areas and low literacy among the rural folks.

High negative correlation exists between infant and child mortality, education level of the wife and husband, age at marriage of wife, and occupation of the wife. As the education level of the husband and the wife increases infant and child mortality decreases. This may be due to the fact that educated people tend to consult doctors and have greater awareness of general sanitation, nutrition and availability of health services. Women who marry early and have children at a young age have high infant and child mortality, than women who marry at a late age. It is seen for the present population that women who do not work have low infant and child mortality. This may be due to the fact that women who do not work generally belong to the upper castes and to high income households. A negative correlation also exists between income and child mortality. Low income households have scarcer resources to combat illness and environmental hazards and as a result have high child mortality. Those couples who have high child mortality would not naturally opt for any family planning methods, as they would like to attempt to recompensate their loss.

Usage of family planning methods has also been correlated with a number of variables. Usage of family planning methods increases as the age of the women increases, the number of livebirths per evermarried woman increases and also when the number of surviving children increases. Naturally women who are older have more children and the chances of their achieve-

ment of desired fertility goals being realised are high. Hence usage of family planning method is high when this occurs. It is also seen that as the education level of the husband and wife increases the percentage of users of family planning methods increases. Education besides creating awareness of the availability of various family planning methods also influences a couples conception of family size. High income also results in higher percentage of users of family planning. This may be due to the fact that couples belonging to the high income bracket have better access to the various family planning methods. Users of family planning are less among women who have high infant and child mortality. This may be due to the fact that they would attempt to recompensate their loss.

Multiple regression has been done for three dependent variables: the number of children ever born per ever married woman, loss per woman and usage of family planning methods.

1. In this case the number of children born per evermarried woman has been taken as the dependent variable (Table 1). Among all the independent variables the statistically significant variables are infant and child mortality indicator- loss per woman, the wife's age at marriage, usage of family planning methods, educational level of husband and wife, age at menarche, income and educational level of husband. The four important variables which are responsible for determining the level of fertility are child mortality, age at marriage (wife), usage of family planning methods and educational level of wife.

Table 1: Determinants of Number of children born per ever Married woman among the Kumauni Caste and Bhotia Tribal Groups of Uttarakhand

<i>Independent variable</i>	<i>Beta</i>	<i>Simple r</i>	<i>t-value</i>
Child mortality	0.54**	0.625**	20.36
Age at marriage (Wife)	-0.17**	-0.424**	6.24
Usage of family Planning methods	0.12**	0.036	4.70
Education of wife	-0.12**	-0.344**	4.04
Age at menarche	0.08**	0.182**	3.35
Annual income	0.09**	-0.103**	3.31
Education of husband	-0.08**	-0.332**	2.72

** Significant at 0.01 per cent

* Significant at 0.05 per cent

Multiple R = 0.704

R Square = 0.496

Child mortality is a very important variable in determining the level of fertility. The higher the child mortality the higher is the fertility. This has been substantiated in a number of studies. High fertility could be a mechanism of recompe- nsation to achieve desired reproductive goals.

Women's age at marriage has a negative impact on fertility. In other words as the age at marriage increases fertility decreases. This could be due to delay in exposure to conception risk and the fact that women who are more educated generally marry later.

Education level of wife also has a negative impact on fertility. As the wife's education level increases fertility decreases. Contributing factors for this are more educated woman generally marry later; education influences a woman's conception of family size and educated women have better knowledge of family planning methods.

Jain (1985) studying the regional variation of fertility in India by multiple regression demonstrates that conditions conducive to fertility decline include high adult female literacy, low infant mortality, high contraceptive use and high female age at marriage. According to him, the pace of fertility decline in the future could depend upon the pace of infant mortality decline, enhancement of female education, and improvements in family planning programme.

Dreze et al. (1996) also emphasized on the role of women's agency and empowerment in reducing mortality, fertility and gender inequality. As far as determinants of fertility was considered none of the variables relating to general level of development and modernisation is statistically significant. By contrast, female literacy and female labour force participation appear to be crucial determinants of the total fertility rate.

To quote Dreze et al. (1996) "The message seems to be that some variables relating to women's agency (in this case, female literacy) often play a much more important role in demographic outcome than variables relating to the general level of development."

Natarajan (1989) studying fertility and child mortality in Uttar Pradesh (based on 1981 census district level data) has shown by regression

analysis that child mortality seems to be a very important variable in determining the level of fertility and that female literacy is negatively correlated with both child mortality and fertility. He has summarized that variations in couples per 1000 population, female literates in age group 15-34 and provision of health facilities seem important factors explaining variation in fertility. Apart from these three factors availability of protected drinking water supply seems to be an important factor in determining child mortality.

According to Mahadevan and Jayasree (1989) diversity in value of children between the states of India is responsible for pro or antinatalist behaviour. In other words the concept of value of children is a major determinant of fertility and it differentially influences the population of the three states (Uttar Pradesh, Andhra Pradesh and Kerala) studied. It was found that greater value for the son exists in Uttar Pradesh, less in Andhra Pradesh and lowest in Kerala. It was also confirmed that the value of son is a strong pronatalist factor irrespective of all other considerations. Old age security is the most important value dimension that increases fertility all over India. Cultural dimensions of value of children are also important as a pronatalist force in most places in our country, though it is somewhat less in Kerala. The percentage of families without male children is very low in both Uttar Pradesh and Andhra Pradesh but somewhat higher in Kerala. Similarly, the percentage of families with a single male child is proportionately higher in both Kerala and Andhra Pradesh but significantly lower in Uttar Pradesh.

2. Determinants of infant and child mortality. Loss per woman is used as an indicator of infant and child mortality and is taken as the dependent variable. As seen in table 2 the independent variables found to be statistically significant are number of livebirths, occupation of wife, income and present age of wife.

Child mortality increases as the number of livebirths or fertility increases. When child mortality is high, parents attempt to have more children in order to achieve their desired family size.

It is seen that women who work have higher child mortality. In the hill region of Uttar

Table 2: Determinants of infant and child mortality among the Kuamuni Caste Groups and Bhotia Tribal Groups of Uttarakhand

<i>Independent variable</i>	<i>Beta</i>	<i>Simple r</i>	<i>t-value</i>
Live birth	0.54**	0.625**	15.17
Occupation of wife	-0.07**	-0.268**	2.46
Annual income	-0.06*	-0.159**	2.28
Age of wife	0.08*	0.481**	2.22

**Significant at 0.01 per cent

* Significant at 0.05 per cent

Multiple R = 0.64

R Square = 0.41

Pradesh there is significant male out migration, causing this region to have high women work participation rates. However the women mainly work in the traditional sector, agriculture, which involve hard physical labour. Also the women who do not work belong to the upper castes or belong to the higher income groups.

It is observed that as income increases child mortality decreases. Couples belonging to low income groups do not have access to proper health care and the nutrition of their children could be poor. These factors contribute to higher child mortality among poorer couples.

Studies have been conducted to examine the association between infant/child mortality and female education, income and other variables. Kulkarni et al. (1990) doing regression analysis on data from 74 countries showed the strong effect of female literacy and income on infant mortality. Defo (1994) and Goyal (1990) have commented on the strong association between infant mortality and income. Caldwell et al. (1990), Gupta (1990), United Nations (1994) have highlighted the association of women's education with infant and child mortality.

3. Determinants of usage of family planning methods.

When usage of family planning methods is taken as the dependent variable (Table 3) it is seen that as the education level of the husband increases, usage of family planning methods increases. This may be due to the fact that the educated husbands have got different aspirations and conceptions of family size compared to the less educated ones. It is also seen that as the number of surviving children a couple has

increases, there is greater tendency to opt for family planning methods. This is obviously due to the fact that these couples have achieved their desired family size. With an increase in the level of income there is an increase in the usage of family planning methods. This may be due to the fact that couples belonging to the higher income bracket have more accessibility to the various different methods and also may be more educated. Among working women usage of family planning methods is less compared to non working women. The hill region has high women work participation rate in the traditional sector (agriculture and weaving), there being no clash in the role of mother and work. Also non working women tend to belong to the high income groups.

Table 3: Determinants of usage family planning methods among the Kumauni Caste Groups and Bhotia Tribal Groups of Uttarakhand

<i>Independent variable</i>	<i>Beta</i>	<i>Simple r</i>	<i>t-value</i>
Education of husband	0.16**	0.215**	3.91
Surviving children	0.19**	0.135**	5.64
Annual income	0.11**	0.213**	2.96
Occupation of wife	0.08*	0.191**	2.14

**Significant at 0.01 per cent

*Significant at 0.05 per cent

Multiple R = 0.031

R Square = 0.10

The National Family Health Survey Subject Reports, using logist regression have analysed the effect of a number of predictor variables on contraceptive prevalence rates in each state and in India as a whole. They found education (husband and wife) to have a strong effect on contraceptive use and also place of residence. They also noted that religion has a substantial effect on contraceptive use, with Muslims having a much lower prevalence than Hindus. Women who are not from Scheduled Caste and Scheduled Tribe have a higher contraceptive prevalence rate than either Scheduled Caste/Scheduled Tribe women, though there is considerable variability among states (National Family Health Survey Subject Reports, 1996).

Raju's (1987) study on socioeconomic factors in family planning adoption in Andhra Pradesh revealed that contraception was more readily adopted by the caste Hindus than the

Scheduled Castes; educated husbands and the husbands who were having high socioeconomic status.

A variety of environmental, social, biological and economical factors shape a population's demographic profile. A region's demographic profile could be different from the national and even the state's demographic profile as in the case of Uttarakhand and population under study. Broadly, the hill region (if trends of the current population are taken to indicate the situation) could be considered at a different demographic transition stage somewhere ahead of some of the districts in the plains of Uttar Pradesh, yet far behind the state of Kerala. Regional diversity in demographic trends is a reflection of diversity in these factors which is amply demonstrated by the hill region.

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