Fertility and its determinants among the Lamkang Tribe of Chandel District, Manipur

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ABSTRACT: *Present study investigates fertility and its determinants among the Lamkang tribe on the basis of household survey collected from 10 villages of Chandel District (Manipur), interviewing 200 ever married women. The findings indicate that the age group of 15-50 years, comprising of the population at peak productive ages, constitutes 64.39% of Lamkang population. The sex ratio of 1105 reveals the preponderance of females over males. Regression analysis suggests that biological and social factors like age at menarche, age at marriage, age at first conception, women's education have an inverse relationship with number of conceptions and live births whereas education of husband and type of family are inversely proportional with live birth only.*

Key words: Fertility, Lamkang Tribe, Factors, Regression analysis.

INTRODUCTION

Fertility is the only way for biological replacement of human being in order to continue its existence on earth and if the human society is to prevail, it is through fertility only as one cannot control death. That is why, of the three main aspects of demography, fertility, mortality, and migration, fertility always occupies a central position in population study (Asghar et al. 2014).

Fertility is considered a complex phenomenon that is affected simultaneously by several factors. A large number of studies, conducted on different groups characterized by diverse cultural and environmental conditions, have shown that a variety of biological and socio-cultural and socio-economic factors are responsible for characteristic fertility differentials. Age at menarche, age at menopause, age at marriage, age at first conception, standard of living index, education, and occupation are some of the factors which has been extensively studied. Using NFHS-3, Gupta et al (2006) have highlighted a few points about different regions of India. For Southern states fertility is not a major concern. However, in Andhra Pradesh, early marriage and low education of women are matters of concern. In Northern and Western states, preference for sons is still an issue. However, most of these states have replacement fertility. In UP, Bihar, Rajasthan, MP, Chhattisgarh and Jharkhand, high fertility levels and low contraception use are major areas of concern. In North east India, except Sikkim and Tripura; fertility levels are still high and use of contraception is low. Thus, the present study is an attempt to determine the fertility and its determinants among the Lamkang tribe of Chandel district, Manipur.

The Lamkang tribe is one of the backward tribe in Manipur recognized by the government of India in 1956. According to 2001 census, the population of Lamkang in Manipur was 4524. They speak Lamkang dialect which belongs to the Tibeto-Burman group (Grierson, 1903). The Lamkang people in the past were animistic. However, with the advent of Christianity in Lamkang in the early 1920s, these beliefs and practices started slowly vanishing. Today, cent percent of Lamkang follow Christianity. Agriculture is the largest and primary mode of production. Both shifting and wetland cultivation is practiced by the people (unpublished documented by Dr. Anjana Sankhil).

MATERIAL AND METHODS

The study area was in Chandel District of Manipur and the data was collected in a cross-sectional survey from first week of July through last week of August 2013 on Lamkang tribe. At the first stage of Sampling, all the villages were arranged according to the size of the population. Then, a sample of 10 villages namely Betuk, Kanpandaam, Paraolon, Lamrinkhuw, Aibuldaam, Deeringkhew, Charangching, Daampi, Mantripantha and Thamlapokpi were selected on the basis of PPS Sampling (Probability Proportional to the size of the population). At the second stage, 200 households were randomly selected from these 10 villages. Thus, a total of 200 ever married women (15-50 years of age) constitute the sample for the present study. An interview schedule

was framed and tested before applying to the field. Proper consents were taken before starting the interview after making them understand the purpose and benefit of the study. Interviews were conducted in isolation in order to maintain privacy and in free-frank manner. Information related to reproductive profile such as age at menarche, age at marriage, and age at first conceptions and socio-economic data such as education, family type, and household amenities was collected with most possible accuracy. A composite measure viz. standard of living index (SLI) was derived based on RCH, 2002 (Unpublished Ph.D Thesis by Aniket Kumar, 2012) for classifying the household by considering some of the household amenities such as type of house, source of drinking water, location of source of drinking water, source of lighting, fuel used for cooking, toilet facility, mode of transport, type of agriculture, number of cattle heads. Each of these amenities was given a score and standard of living index was calculated by adding these scores. The total score has been classified into low (if total score is ≤8), medium (if total score is ≤9 but ≥12) and high (if total score is ≥13). Some of the doubted information were verified and confirmed from their spouse or elders of the family. Each schedule was edited and entered in Ms-Excel data sheets. Descriptive analysis and stepwise linear regression were performed primarily using SPSS 16.0 version. Number of conception and number of live births were the two dependent variables which were used to calculate the statistical analysis. Statistical significance was checked at 5% level of probability.

RESULTS AND DISCUSSION

The age and sex composition of the present study is presented in Table 1. It can be seen that 31.72% of the total population of Lamkang tribe falls in the age group of 0-14years, which is little higher to that of India's i.e. 30.9% in the same age interval (SRS 2010). However, only 3.88 % of Lamkang population is equal to or above the age of 60 years, which is lower than its corresponding figure of 7.5 % for Indian National population (SRS 2010). The higher percentage of population under 15 years than the population above 60 years shows young age composition of Lamkang tribe. It is also observed that females in the age groups 15-59 and 60+ years exceed than to those of males for the corresponding age groups. However, proportion of males is more than females in the age group 0-14 years.

Table 1: Age and sex composition of Lamkang Tribe of Chandel district, Manipur

Age Cohort	Male			Female			Total	
	No.	% of total population	% of male population	No.	% of total population	% of female population	No.	% of total population
0-14	168	15.91	33.6	167	15.81	30.03	335	31.72
15-59	313	29.64	62.6	367	34.75	66.01	680	64.40
60+	19	1.80	3.8	22	2.08	3.96	41	3.88
Total	500	47.35	100	556	52.64	100	1056	100

The crude birth rate in the present study is estimated to be 10.53 per 1000 population, which is lower to that of India's 22.8 (SRS 2009) and Manipur's 15.8 (SRS 2009). However, the total fertility rate in the present study (2.45) is similar to that of Manipur's 2.4 (Census 2001) but it is significantly lower than that of India's 3.8 (2001 census).

Factors affecting Fertility

In order to understand the effects of fertility, various biological and social factors are examined. **Age at menarche** is an important phenomenon, which marks the potential beginning of childbearing among the women. It can be influenced by many inter related factors as varied as biological, nutrition, geographical and environmental conditions and magnitude of social and economic activities (Eveleth and Tanner 1976, Gonzales and Villena 1996, Greksa 1990, Padmavathi et al. 1984, Thomas et al. 2001). The mean age at menarche in the present study is found to be 14.33 years. Comparing with earlier reports, it is found that the mean age of menarche is lower than 15.4 years reported for Kabui Naga (Singh 2006), but higher than 13.93 years for Tangkhul Naga (Chakravartti 1986), and 13.6 years for Meitei (Singh 2006). The mean number of conception and live birth to ever-married women is found to be highest for those who have had early age at menarche (Table 2). The regression analysis reveals that age at menarche is inversely proportional to number of conception and live birth (Table 6).

Table 2: Fertility of Lamkang women by age at menarche

Women's Age at menarche (in years)	Number of Woman	Conception			Live birth		
		Number	Percentage	Mean	Number	Percentage	Mean
12	12	75	9.29	6.25	53	8.31	4.42
13	49	223	27.63	4.55	179	28.06	3.65
14	48	185	22.92	3.85	141	22.10	2.94
15	56	197	24.41	3.52	156	24.45	2.79
16	26	94	11.65	3.62	83	13.01	3.19
17	6	20	2.48	3.33	18	2.82	3
18	2	10	1.24	5	5	0.78	2.5
19	1	3	0.37	3	3	0.47	3
Total	200	807	100	4.04	638	100	3.19

Age at marriage and age at first conception are two direct factors that influence fertility. The mean age at marriage among Lamkang in the present study is observed to be 20.67 years, which is more or less similar to its corresponding figure of 19.98 years for Meitei and 20.03 years for Kabui Naga (Singh 2006). Nag (1974) suggested that in both developed and less developed countries, increase in age at marriage for women is the most crucial factor in reduction of fertility. Studies by Andorka (1978), Mahadevan and Sumangala (1987), Audinarayana and Senthilnayaki (1990) and Guru et al (2003) also demonstrated lower fertility for those women who marry late in their life as compared to those who marry at younger ages. Similarly, the present study (Table 3) also shows that the highest mean number of conception (5.1) and live birth (3.7) is found to the women who marry at an early and thereafter the proportion of conception and live birth decreases gradually with the increase in the age of marriage with exception in age cohort 36-40 years, where the mean number of live birth is little higher than the preceding age cohort i.e. 31-35 years.

Table 3: Association of age at marriage and age at first conception with fertility

Age Cohort	Association of age at marriage with fertility			Association of age at first conception and fertility		
	Woman (%)	Mean conception	Mean Live Birth	Woman (%)	Mean conception	Mean Live Birth
<15	5	5.1	3.7	3	6.5	4.67
16-20	59.5	4.60	3.64	47	5.14	3.99
21-25	22	3.34	2.64	34.5	3.07	2.54
26-30	9.5	2.47	2.05	9.5	2.58	2.11
31-35	3	2.17	1.67	4	2	1.63
36-40	1	2	2	1.5	2	1.67
>41	0	0.00	0.00	0.5	2	2
Total	100	4.04	3.19	100	4.04	3.19

Age at first conception can be taken as a vital factor that has direct influence on fertility of women as higher age at first conception is bound to reduce the overall fertile period of woman. In the present study, mean age at marriage and mean age at first conception is almost similar indicating women conceive almost immediately after marriage. The mean age at first conception is 21.61 years among Lamkang, which is almost similar to 20.96 years among Meitei, 22.87 years among Kabui, and 20.16 years among Nepalese (Singh 2006). Table 3 shows that the mean number of conceptions (6.5) and live birth (4.67) to ever-married women has been found to be highest for those women having age at first conception less than or equal to 15 years. The mean values are found waning as maternal age at first conception increases with the exception in some age cohorts of 31-35, 36-40, and >41 years, where the mean number of conception are same and the mean number of live birth are fluctuating. The regression analysis (Table 6) also shows that age at marriage and age at first conception is inversely proportional to number of conception and live birth.

Out of 200 women, 16 were widowed and 5 were separated. Thus, in table 5 you would find the total number of men as 179. Education is always conceived as an important factor influencing directly the size of the family. A study of Pandey et al. (2000) supported that literacy level to woman affects her fertility through delaying effect of age at marriage, thus reducing the overall reproductive years. In such cases formal education of woman is most significant predictor of fertility. Education is considered to be one of the most important variables affecting fertility behavior (Caldwell 1980).

Table 4: Association of woman's education, Family type, and Standard of Living Index with fertility

	Woman (%)	Mean conception	Mean Live Birth
Woman's Education			
Illiterate	23	5.70	4.13
Primary	35	4.34	3.46
Matriculation	32.5	2.88	2.48
Graduation and above	9.5	2.84	2.37
Family Type			
Nuclear	80	4.20	3.33
Joint/Extended	20	3.38	2.63
Standard of Living Index			
Low (total score ≤8)	31.5	4.21	3.14
Medium (total score ≤9 but ≥12)	56.5	4.05	3.34
High (total score ≥13)	12	3.5	2.58

Table 5: Association of Education of their husband with fertility

Level of Education	Number of Man	Conception by their wife			Live Birth		
		Number	Percentage	Mean	Number	Percentage	Mean
Illiterate	36	143	19.67	3.97	128	22.46	3.56
Primary	59	315	43.33	5.34	218	38.24	3.69
Matriculation	58	189	26.00	3.26	153	26.84	2.64
Graduation and above	26	80	11.00	3.08	71	12.46	2.73
Total	179	727	100	4.06	570	100	3.18

In the present study, it has been observed that illiterate ever-married women have higher mean number (5.70) of conception and live birth (4.13) than literate ones. Also fertility decreases with increase in level of educational attainment. The stepwise regression analysis reveals that woman's education is inversely proportional to number of conception and live birth. Similar findings were also reported earlier on the Muslims population of Manipur (Asghar et al. 2014) which indicates the inverse relationship between education and fertility.

Further, education of husband is also found to influence conception and is in the same trend as Woman's education except the primary level of educational attainment is found higher than the illiterate one. However, the educational attainment with respect to live birth is found fluctuating (Table 5) but somehow it is inversely proportional to live birth. Overall, the study reveals that woman's education have influenced ultimate fertility decline by empowering individuals to have choices and make decisions about the family size rather than the education of husband.

Table 6: Stepwise regression analysis of factors influencing fertility (independent variables with respect to dependent variables) among Lamkang Tribe

Independent variables (factors)	Dependent variables	R square	S.E.	Beta Coefficient	P value
Age at menarche	Total Conception	0.034	2.842	-0.184	0.009
	Live birth	0.028	1.886	-0.169	0.017
Age at marriage	Total Conception	0.108	2.730	-0.329	0.000
	Live birth	0.133	1.782	-0.364	0.000
Age at first conception	Total Conception	0.140	2.681	-0.374	0.000
	Live birth	0.178	1.735	-0.422	0.000
Woman's education	Total Conception	0.140	2.681	-0.374	0.000
	Live birth	0.118	1.797	-0.343	0.000
Husband's education	Live birth	0.023	1.890	-0.151	0.044
Family type	Live birth	0.022	1.897	-0.148	0.036

Type of the family also affects the total fertility in the present study (Table 4). Nag (1974) have also suggested that couples in nuclear family have fewer obligations and so they are relatively free to choose their family size according to their needs and have higher coitus frequency. Similarly, in the present study, Nuclear family is found to be associated with higher fertility. It is observed that mean number of conception and mean number of live birth are higher among the nuclear family (4.20 and 3.33, respectively) compared to joint/extended family (3.38 and 2.63, respectively). The linear regression analysis reveals that type of family has an inverse relationship with live birth.

The standard of living index is indicative of living conditions of the household. Better living standard is likely to decline the fertility level (Rao 1976). The effect of standard of living index on fertility is gaining continuous attention since 1900 (Caldwell 1982). The type of dwelling, housing attributes and physical environment are indicative of socio-economic status of the household to some extent. Hodgson (1983) suggests that as a society's standard of living improves, its fertility level tends to decline. They voluntarily modify their reproductive behavior to preserve their standard of living. In the present study, the result also shows that the households with medium living conditions have comparatively higher mean number of live birth than those with low standards whereas in terms of conception, the highest mean number is found with the low standard of living. Thus the average fertility is found decreasing with better standard of living however it is found statistically insignificant (Table 4).

CONCLUSION

In the present study the mean age at menarche, age at marriage, and age at first conception has been found to be 14.33, 20.67, and 21.61 years respectively, which is lower than that of 15.4, 20.03, and 22.87 years respectively for its neighboring population of Kabui Naga. These figures enhance the chances of higher fertility for Lamkang tribe. Regression analysis undertaken in the present investigation suggests that biological and social factors like age at menarche, age at marriage, age at first conception, women's education have been found to have an inverse relationship with number of conception and live birth whereas education of husband, type of family are inversely proportional with live birth only.

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