International Journal of Human Sciences
ISSN:1303-5134

Volume: 8 Issue: 2 Year: 2011

A Study of Isonymy and some socio-demographic variables among Koms and Meiteis of Manipur, India

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Abstract

Manipur is one of the northeastern states of India, comprising of both tribal and non-tribal population groups. Kom (tribal) and Meitei (non-tribal) population groups are considered for the present study. This study examines the socio-demographic correlates of prenatal and post natal deaths among Koms and Meiteis of Manipur. Meiteis are found to have comparatively better socio-economic condition than that of Koms. Two socio-demographic variables have emerged to influence offspring mortality among Meiteis and Koms. While among Meiteis higher socio-economic status is found to significantly reduce offspring mortality, among Koms it is the higher inbreeding which is found to significantly increase the offspring mortality.

Keywords: Isonomy; Prenatal; Postnatal mortality

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Introduction

The reproductive process of human beings is a relatively inefficient one. According to WHO, 1998 about 9 million babies are either born dead or die within first 28 days of life in a year. Mortality is one of the fundamental factors that determine the size of a population. Mortality has played a dominant role in determining the growth of any population. Globally, infant mortality declined markedly between the early 1980s and late 1990s, most of this improvement being among older infants. The perinatal death toll during the same period fell only slightly from 64 to 57 deaths per 1000 births (Rajaram et al, 2008). There have been many studies which reported higher offspring mortality in the socio-economically poorer communities. The demographic variables like Per capita annual income (PCAI), age at marriage, age at first conception, place of delivery and person involved in the delivery, educational status could possibly contribute to higher pregnancy failure and offspring mortality. Another possible factor reported is high inbreeding in a population (Murry et al, 2005). Inbreeding can also be measured through surname, as surnames behave like genetic markers (Guglielnino et al, 1991), it is assumed that new surnames appear or disappear during in-migration or out-migration respectively. Surnames have also proven to be great utility in understanding the direction of within- population gene flow. Lasker (1988) noted that the distribution of surnames reflects the effect of mate choice on a population's genetic structure. One of the primary concerns in historical demographic research is to determine how culture interacts with various evolutionary forces to affect the population's genetic structure. An obvious focus of study for this interaction is the population's mating pattern. A population can have high levels of inbreeding if individuals tend to mate within their lineage. Alternatively, population structure could be affected by preferential mating among specific subdivisions or families (the Wahlund effect). Both inbreeding and the “Wahlund effect” are impediments to panmixia within the breeding group and are thus important determinants of population structure. The parental consanguinity and high inbreeding were found to exert significant deleterious effect on the viability of fetuses due to homozygosity for sublethal genes among some populations (Shami et al, 1989; Ulusoy & Tuncbilek, 1987; Hann, 1985). However, there are many socio-economic factors which affect infant mortality.

Manipur is one of eight northeastern Indian states. It has a total of 23.88 lakh (2001 Census provisional figure) population of which 33 different tribes shared less than 40% of the total state’s population and non-tribal (Meitei community) shared as high as 60% of the total state

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population. The state has been facing many socio-political problems. The infant mortality is reported to be 30 deaths before the age of one year per 1000 live births, lesser than the NFHS-2 estimate of 37 and NFHS-1 estimate of 42. However, the state has third lowest infant mortality in the country after Goa and Kerala, respectively.

In the present study two populations namely, Kom (tribal) and Meitei (non-tribal) were selected to understand mortality pattern and other demographic variables vis-a-vis mating pattern. The Kom tribe considered as a minority tribe consists of 2% of the total state population where as Meiteis constitutes 60% of the total state's population. There are a number of myths associated with the origin and migrations of Manipuris, some of which are briefly mentioned below.

According to the early British administrators, " Meiteis are the descendants of a Tartar colony, which probably emigrated from the north-west border of China during the sanguinary conflicts for supremacy which took place between the different members of Chinese and Tartar dynasties" (Pemberton, 1966), while Mc Culloch (1859:4) said they are the descendants from the surrounding hill tribes and Grierson (1905) noted that they belong to the Tibeto- Burman group of race, while many others write that they are related to Tai groups.

The Kom tribe is one of the old kuki tribes of Manipur. They have a myth regarding their origin. According to a myth regarding their origin, their forefathers are believed to have come out through *Khul* (cave).

Materials and Methods

The data used in the present study are from primary sources collected from four districts of Manipur state of India which were selected purposively by looking at the present socio-political scenario of the region. A total of 224 Koms and 349 Meiteis ever married women are selected. Meiteis are mainly distributed in all the valley districts (Imphal East, Imphal West, Thoubal and Bishnupur district). Therefore, the present study was concentrated in almost all four districts for Meiteis. However, the Kom, a tribal community, is reported to be in substantial number in hilly districts like Churachandpur and Senapati districts. As the situation of the state is politically sensitive due to prevailing identity crisis along with geo-political issues, it was not an easy task to conduct fieldwork, especially among tribal population in the hilly regions. After due consultation with the authorities concerning hilly

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areas; the researcher decided to confine the present study to the valley districts. Kom tribe is reported to be distributed in two villages namely, Moirang Mantak and Kakching Mantak of two valley districts viz Bishnupur and Thoubal districts of Manipur. People of Moirang Mantak village of Bishnupur district and Kakching Mantak of Thoubal district were together in Moirang Mantak village some 250-300 years ago (Cheirao, 1996). The Kom village and the Meitei village are about 5-10 Km from each other in districts namely, Bishnupur and Thoubal. Thus, the study for Meitei community was conducted in areas along with other districts to understand the demographic variation. The primary information for the present study was an interview schedule which includes both closed and open-ended questions, which were prepared keeping the objectives of the study in mind.

The data provides information on live births, prenatal deaths, still-births, infant mortality and child deaths. In addition, the data also provides ego's reproductive history. Multiple births are considered as single pregnancies and the current pregnancy is not included in the analysis. The present analysis is restricted to ever married women.

The collected data were summarized, tabulated and analyzed using SPSS. Multivariate logistic regression analysis was employed to identify the cause of the prenatal, perinatal, infant mortality and child deaths among Koms and Meiteis, respectively, of Manipur.

To understand the inbreeding the total consanguinity (Ft) was calculated through surname analysis.

The isonymic method, initially defined by Crow and Mange (1965) and later corrected and improved (Crow, 1980), was also applied. According to Crow's method (Crow, 1980), total consanguinity (Ft) depends on two components:

$Ft = Fn + (1-Fn)* Fr$

where Fr is the random component, and Fn the nonrandom component, according to the relation

$Fr = \Sigma piqi/4$

where pi is the frequency of surname i in paternal surnames and qi the frequency of surname i in maternal surnames. The nonrandom component is estimated by the expression

$Fn = (P- \Sigma piqi)/4 *(1- \Sigma pi*qi)$

where P is the frequency of marriages with isonymic surnames.

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Results

The educational status among Koms is very low (49.01%) compared to Meiteis (88.84%) (Table 1). The better educational status among Meiteis provides better workplace which further results in better annual income. Meiteis are found to have higher fertility with higher mean age at marriage, mean age at menarche and mean age at menopause than that of Koms. But Koms are found to have higher Crude death rate (CDR) and infant deaths than that of Meiteis.

Table 1: Distribution of some Socio-demographic determinants among Koms and Meiteis of Manipur.

Population	Socio-demographic determinant	Categiries	Values
Kom	Female literacy rate		49.01%
Meiteis			88.84%
Kom	Occupation		
		Labourer	51.78%
		Agriculture	40.62%
		House wife	7.59%
		Employed in institution	0.000%
		Bussiness women	0.000%
Meiteis			
		Labourer	6.25%
		Agriculturists	23.50%
		House wive	55.40%
		Employed in institution	8.60%
		Bussiness women	6.25%
Kom	Per capita annual income		
		Below Rs.10,000	60.27%
		Rs.10,000- Rs.12,000	8.03%
		Above Rs.12,000	31.70%
Meiteis			
		Below Rs.10,000	38.40%
		Rs.10,000- Rs.12,000	7.16%
		Above Rs.12,000	54.44%
Kom	Mean age at menarche		12.50
Meitei			12.54
Kom	Mean age at Marriage		18.27
Meitei			21.55
Kom	Mean age at Menopuse		46.85
Meitei			47.10
Kom	Total Age specific fertility		98.21
Meitei			108.88
Kom	Total fertility		3.79
Meitei			4.99
Kom	Crude Birth Rate		17.55
Meitei			23.44
Kom	Crude Death Rate		14.37
Meite			3.70
Kom	Infant mortality rate		166.66
Meitei			27.77

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It is seen from the table 2 that there is higher number of prenatal, neonatal, still birth, infant and child mortality respectively among Kom than Meitei. In Kom, among all types of mortality, prenatal mortality is highest (2.1%) followed by infant mortality (including neonatal mortality) (0.6%), still birth (0.5%) and child mortality (0.5%). However, the prenatal and postnatal mortality among Meiteis are very less (table 2).

Table 2: Prenatal and early postnatal offspring mortality among the Koms and Meiteis.

Age cohort	No. of Conc-eption	Prenatal mortality		Still birth		Neonatal +Infant mortality		Child Death		Total Death	
		No.	% age	No.	% age			No.	% age	No.	% age
Kom	781	17	2.1	4	0.5	5	0.6	4	0.5	30	3.84
Meitei	905	4	0.4	2	0.2	1	0.1	7	0.7	905	1.5

The multivariate analysis indicates the non-significant contribution of most of the variables on the offspring mortality in both the population. However, the present age of the mother shows influence the offspring mortality among Koms whereas per capita annual income among Meiteis shows significant contribution to the offspring mortality. It is very interesting to note that the lower socio-economic condition among Koms does not seem to influence the high offspring mortality (table 3 and 4).

Table 3: Multivariate regression analysis of factors influencing mortality among Kom

Step number	Variable selected as per the order	T-test	Significance of contribution of the factor(P-value)
1	Present age of the women	1.056	0.012*
2	Educational qualification of the women	0.880	0.380
3	Educational qualification of the husband	-0.056	0.955
4	Age at marriage	0.664	0.507
5	Per Capita income	-0.471	0.638
6	Age at first conception	-1.645	0.102
7	Place of the delivery	1.055	0.292
8	Occupation of the women	1.361	0.175
9	Expert involve in the delivery	-0.49	0.961

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Table 4: Multivariate regression analysis of factors influencing mortality among Meitei

Step number	Variable selected as per the order	T-test	Significance of contribution of the factor(P-value)
1	Present age of the women	-0.094	0.925
2	Educational qualification of the women	-1.521	0.130
3	Educational qualification of the husband	1.179	0.240
4	Age at marriage	-0.118	0.906
5	Per Capita income	7.158	0.000*
6	Age at first conception	-235	0.814
7	Place of the delivery	0.643	0.521
8	Occupation of the women	-0.347	0.729
9	Expert involve in the delivery	-0.589	0.557

56 isonymous marriages observed among Koms may be attributed to high total consanguinity (Ft=0.437) where as among Meiteis not a single marriage was found to be isonymous implying absence of consanguinity (table 5). The random inbreeding co-efficient (Fr=0.0626) is found to be higher than the nonrandom inbreeding co-efficient (Fn=0.04396) reflecting generally high inbreeding and population isolation among Koms.

Table 5: Isonymy (P) and total consanguinity (Ft) for the Koms and Meiteis of Manipur

Variables	Kom	Meitei
Total Marriages	224	352
No of Isonymy marriage	56	0
Isonymy (P)	0.25	0
Random inbreeding co-efficient (Fr)	0.0626	0
Non-random inbreeding co-efficient (Fn)	0.04396	0
Total consanguinity (Ft)	0.437	0

Though, the percentage of prenatal deaths and still births among isonymous marriages is higher than that of non-isonymous marriages in Koms, the difference is not found to be statistically significant ($\chi 2$= 0.779; p-value = 0.372) (table 6). However, the isonymous and non-isonymous group of Koms differ significantly ($\chi 2$= 4.52; p-value = 0.032) with respect to Neonatal, infant, child mortality.

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Table 6: Distribution of prenatal, still births, Neonatal, Infant and Child deaths among Isonymous and non-isonymuous marriage of Koms.

Measures	No. of conception	No. of live birth	prenatal death	%	Still birth	%	Neonatal death	%	Infant mortality	%	Child deaths	%	Total
Isonymy	196	189	5	2.5	2	0.10	1	0.5	1	0.5	3	1.5	12
Non-Isonymy	585	571	12	0.2	2	0.3	0	0.0	3	0.5	1	0.1	18
Total	781	757	17	2.1	4	0.5	1	0.1	4	0.5	4	0.5	30

Discussion

Death is a principal "vital event". Death can occur only after a live birth has occurred. For one thing, it excludes the entire category of fetal mortality, or pregnancy losses that occur prior to the completion of the birth process. This process of unfavourable outcome of pregnancy could be due to the socio-economic conditions or high inbreeding among population which enhance the lethal effects of deleterious genes. Koms are found to have lower sex ratio and lower literacy rate respectively than Meiteis. The poor educational level among Koms may be attributed to lack of awareness among them. Lower percentage of unskilled labourers, higher employement in institution and business of Meitei women than Kom women, besides higher Per capita annual income (PCAI) indicates that the Meiteis have comparatively better Socio-economic status than the Koms. None of the socio-demographic variables listed in the table1 shows significant influence on the prenatal and postnatal deaths among Koms.

However, the per capita annual income is found to significantly reduce offspring mortality among Meiteis. This seems to indicate that economic status plays an important role on offspring mortality.

The mortality can also be caused by the genetic factors. Surname is considered as a social marker which is inherited from the parents like a gene by the progeny. The surname analysis can also provide information about the population structure, isolation, migration and inbreeding (Crow and Mange, 1965). The high isonymous marriages indicate high inbreeding, which could lead to increased genetic load and the subsequent elimination of recessive alleles; further leading to high pregnancy failures and infant mortality. The Koms are found to practice high isonymous marriages unlike Meiteis. The total consanguinity (Ft) is found to be quite high (0.1038) among Koms. This could lead to higher offspring

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mortality. The nonrandom inbreeding co-efficient (Fn=0.04396) is found to be lower than random inbreeding co-efficient (Fr=0.0626) indicating high inbreeding among Koms, which could be one of the reasons for greater pregnancy failure and offspring mortality among them. Non-significant difference between Isonymy and non-isonymy marriages with respect to prenatal deaths and still births indicates that the expected homozygosity of lethal/ sublethal genes is not affecting the foetal viability. However, significantly higher Neonatal deaths, Infant mortality and child deaths among isonymous marriages indicate the higher incidence of point mutations which become lethal after the child birth. Thus, this population needs screening and counseling for single gene disorder like thalassemia, Hemoglobin E, sickle cell anaemia and phenylketonaria.

Thus, two socio-demographic variables have emerged to influence offspring mortality among Meiteis and Koms. While among Meiteis higher socio-economic status is found to significantly reduce offspring mortality, among Koms it is higher inbreeding which is found significantly increase offspring mortality.

Therefore, population Heath planners need to emphasize on improving the socio-economic status through economic development programme and reducing inbreeding among population through social education respectively among Meiteis and Koms. This clearly seems to suggest that population health planners must make their plan population specific at the micro level.

References

Census of India. (2001). Register General and Census Commissioner, Government of India.

Cheirao, K. (1996). Mantak (Kom Jati Ama). Times Printer, Kakching Manipur.

Crow, J. F. & Mange, A. P. (1965). Measurement of inbreeding from the frequency of marriages between persons of the same surname. *Eugenics Quarterly*, 12: 199-203.

Crow, J. F. (1980). The estimation of inbreeding from isonomy. *Human Biology*, 52: 1-14.

Grierson, G.A. (1903). Linguistic Survey of India. Vol (iii) Part (ii) Banarsidaas, Delhi.

Guglielmino, C. R., Zei, G. & Cavalli-Sforza, L. L. (1991). Genetic and cultural transmission in Sicily as revealed by names and surnames. *Human Biology*, 63: 607-628.

Hann, K. L. (1985). Inbreeding and fertility in a south Indian population. *Annal of Human Biology,* 12: 267-274.

Lasker, G. W. (1988). Related surnames in one-surname "linkages". *Human Biology,* 60: 1-9.

Mcculloch, W. (1959). Account of the valley of Munnipore and the Hill Tribe with comparative vocabulary of the Munnipore and other Languages. Selection from the Records of the Government of India. No. 27. Bengal Printing: Calcutta.

Murry, B., Sachdeva, M. P. & Kalla, A. K. (2005). Estimation of fertility and mortality differentials among the Lotha Nagas of Nagaland. *Anthropologist,* 7: 45–52.

Pemberton, R.B. (1966). Report on the Eastern Frontier of British India 1835, Calcutta, 2nd Edn. Guwahati. pp 11-20.

Rajaram, S., Zottarelli, L.K. & Sunil, T.S. (2008). An assessment of fetal loss among currently married women in India. *Journal of biosocial Science,* 41: 309-327.

Shami,S.A., Schmitt,L.H., & Bittles,A.H. (1989). Consanguinity related prenatal and post natal mortality of the populations of seven Pakistani Punjab cities. *Journal of Medical Genetic,* 26: 267-271.

Ulusoy, M. & Tuncbilek, E. (1987). Consanguineous marriage in Turkey and its effects on infant mortality. *Turkey Journal Population Studies*, 9: 7-26.

World Health Organization. (1998). The world health Report 1998. Life in the 21st Century: A vision for All. *WHO,* Geneva.