



Original Article:

Identification of Factors Influencing Third Birth Transition in Manipur.

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Citation: Singh NS, Singh WS, Singh NS. Identification of factors influencing third birth transition in Manipur. *Online J Health Allied Scs.* 2011;10(1):8

URL: <http://www.ojhas.org/issue37/2011-1-8.htm>

Open Access Archives: <http://cogprints.org/view/subjects/OJHAS.html> and <http://openmed.nic.in/view/subjects/ojhas.html>

Submitted: Feb 2, 2011 Accepted: Mar 30, 2011; Published: April 15, 2011

Abstract:

The third birth transition has a negative impact on the national goal of fertility replacement level (2.1) which is to be achieved by 2010. To identify the factors influencing the demographic phenomenon, a cross sectional as well as community based study consisting of 1397 eligible women was conducted in the four valley districts of Manipur under cluster sampling scheme. Analysing the empirical information through SPSS, 42% of the study subjects transit their 3rd birth and its major determinants could be detected to be sex preference, age at marriage, and educational level each at 0.01 probability level of significance.

Key Words: Age at marriage; Sex of previous child; Education of wife; Third child

Introduction:

To reduce the human fertility following the Cairo's International Conference on Population and Development (ICPD- 1994), India's National Population Policy (NPP) - 2000 had formulated the short, medium and long term objectives of the policy. The medium-term objective is to bring the total fertility rate to replacement level (2.1) by 2010, through vigorous implementation of inter-sectoral operational strategies. The long-term objective is to achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development, and environmental protection. Obviously, the short, medium and long-term objectives are intertwined and failure on short or medium-run goals would have serious implication for the long-run objective of population stabilization. Further, recognizing the importance of health in the process of economic and social development and improving the quality of life of citizens, India's National Rural Health Mission: 2005-12 also emphasises in its goals on population stabilization, gender and demographic balance.

NFHS reports the significant inter-state variations in the unwanted fertility in India. Unplanned pregnancies are still relatively common. The unwanted fertility had risen from 22% in 1992-93 to 25% in 1998-99. Nevertheless, unwanted fertility as percent of TFR declined in the low fertility southern states of Kerala, Tamil Nadu and Andhra Pradesh and rise up in most of the high fertility states like Bihar, Rajasthan, Uttar Pradesh, Madhya Pradesh, and Orissa over the same period. However, if the unwanted fertility component is taken care of or gets eliminated then the TFR would come down to replacement level of 2.1 or even below that in most parts of India. The recent NFHS-3 report also stresses that if all women were to have only the number of children they wanted, the TFR would be 1.9 instead of 2.7. Among births in the five years before the survey, 10% were wanted later and 11% were not wanted. In the report, 71% of adults want no

more children, are already themselves sterilized, or have a spouse who is sterilized. Among those who do want another child, about half would like to want at least two children. Two-thirds of women and men consider the ideal family size to be 2 children or less.

Third birth transition is a serious demographic phenomenon for population growth. Lack of education and son preference may be sloe responsible factors to it. The past studies in India have identified three major factors for son preference. They are economic, socio-cultural and religious utilities. Sons are more likely than daughters to provide family labour on the farm or in family business and support their parents of old age, although there is some recognition that sons are no longer a dependable source of old age support.(1-4) A son brings upon marriage a daughter-in-law into his family and she provides additional help around the house as well as an economic reward in the form of dowry payments. In the context of India's patriarchal family system, having one son is imperative for continuation of the family line, and many sons provide additional status to the family.(5) The utility of having sons also arises from the important religious functions that only sons can provide.(6) According to Hindu tradition, sons are needed to kindle the funeral pyre of their deceased parents and to help in the salvation of their souls. Most of the Indian couples have thus a strong preference for sons over daughters. In an effort to have sons, many couples continue to have children after achieving their desire family size. In case of intention, about 20% of Indian couples want more sons than daughters, but only 2 to 3% of them want more daughters than sons.(7) In Manipur, 31.2% of ever married women who want more sons than daughters according to NFHS-3:2005-06 which is declining from that of 36.5% in NFHS-2:1998-99 and 43.4% in NFHS-1:1992-93.(8) Despite, no community based study has so far been conducted in the state particularly in hill and rural areas where 'natural fertility'(9,10) seems to be existed. Thus, it is to investigate the socio-demographic determinants of third birth transition.

Materials and Methods:

A cross sectional as well as community based study of 1397 currently married women of reproductive age group having at least two live births was conducted through a cluster sampling scheme in four valley districts of Manipur – Bishnupur, Imphal East, Imphal West and Thoubal. The survey was performed during the six months of July 2009-January 2010 with the reference date of 11th July 2009. The logistic regression model is adopted to identify the determinants of third birth transition in the state. Here, the response variable is the transition of third birth which is quantified by the issue of third live birth. It is defined to be 1, if the mother has at least third live birth and 0,

otherwise (having at most two live births). The explanatory variables considered are religion (1 for subject religion & 0 for other religion), residence (urban=1& rural=0), type of family (nuclear=1& joint=0), educational level, employment status (employed=1 & others=0), age at marriage, couple's desire number of son, death of previous child during infancy say infant mortality (death=1, alive=0), sex of previous/ index child (female=1, male=0) and the use of contraceptives (used=1, others=0) during transition of third birth. For categorical variables, binary dummy variable (0, 1) is utilized. The educational level is measured by the number of completed academic years in education. The results of the analysis are interpreted on the basis of P-values of the regression coefficients (B) and odds ratios (OR) quantified by Exp.(B) of the variables.

Results:

Out of 1397 eligible women, 593 that is 42% ones is found to have their third birth in the population. A binary logistic regression analysis on the transition of third birth (1 if at least 3rd birth occurred, 0 otherwise) is carried out to identify the determinants thereof. Here, seven significant variables out of fourteen classified ones can be detected with their adjusted Ors shown in table-1. The significant factors found

in the model are education of wife (P<0.01, OR=0.90), age at marriage of wife (P<0.01, OR=0.89), employment of husband (P<0.01, OR=2.16), couple's desire number of son (P<0.01, OR=1.73), sex of previous/index child (P<0.01, OR=2.08), death of previous child during infancy (P<0.05, OR=2.39) and duration of post partum amenorrhoea (P<0.05, OR=1.04). The significant factors are positively associated with third birth except level of education and age at marriage which have negative impacts thereon. Here, the level of significance of each variable is observed after adjusted the effects of other factors under study. It is to say that the effects of the significant variables are found keeping that of others to be constant or so termed adjusted.

In the stepwise (Forward Wald) logistic regression, the best set of determinants of third birth is found to be five factors. They are type of family, education of wife, age at marriage, couple's desire number of son, and sex of previous child depicted in table-2. In the last fifth step, the logistic regression is fitted with the five variables. After adjusted the joint effects of four other variables in the last model, achievement of educational level and age at marriage of wife are observed to be negatively associated with the phenomenon of third birth transition. Among the three variables having positive impacts on the phenomenon, the most important factor is sex of index child being female.

Table 1: Odds Ratios of variables on 3rd birth in Logistic Regression Model

Variable	B	S. E	Wald	P-value	OR	95%CI for OR	
						Lower	Upper
Residence	-0.306	0.189	2.608	.106	0.736	0.508	1.068
Type of family	0.312	0.161	3.765	.052	1.366	0.997	1.871
Religion (Hindu)	0.094	0.240	0.152	.697	1.098	0.686	1.758
Religion (Muslim)	0.154	0.731	0.045	.833	1.167	0.278	4.893
Education of husband	0.018	0.025	0.507	.476	1.018	0.970	1.068
Education of wife	-0.102	0.018	31.529	.000	0.903	0.871	0.936
Employment status of husband	0.770	0.173	19.894	.000	2.160	1.540	3.029
Employment status of wife	0.656	0.387	2.877	.090	1.928	0.903	4.115
Age at marriage of wife	-0.111	0.018	37.760	.000	0.895	0.863	0.927
Couples desire number of son	0.547	0.107	25.921	.000	1.728	1.400	2.133
Sex of previous child	0.734	0.157	21.955	.000	2.084	1.533	2.833
Use of contraceptives	0.124	0.318	0.152	.697	1.132	0.606	2.113
Death of previous child	0.870	0.154	18.112	.045	2.387	1.028	6.174
Post partum amenorrhoea	0.036	0.016	5.124	.024	1.037	1.005	1.069
Constant	1.615	0.639	6.387	.011	5.027		

While controlled the effects of four other variables in the last model, the risk of having 3rd birth can significantly be reduced (P<0.01) by 7% corresponding to one year advancement in education as its OR-value 0.93 with 95%CI: 0.901-0.95. As one year delay in marriage, the women can be free of 11% from the risk of 3rd birth in the sense that at an average a woman has 11% more significant risk of being 3rd birth with respect to one year earlier of her marriage (P<0.01, OR=0.89 with 95%CI: 0.87-0.93). But, highly significant risk of 74% is observed to each increment in the couple's desire number of son as supported by its test values (P<0.01, OR=1.74 95%CI: 1.42-2.143) as the joint effect of other four factors in the last model is typically controlled. This sex preference effect is again reemphasized that the high risk of 3rd birth phenomenon (P<0.001) can be quantified to be at least double times in the previous 2nd child is female than that of male (OR=2.07 with 95%CI: 1.53-2.79).

Table 2: Odds Ratios of variables on 3rd birth in Stepwise Logistic Regression Model

Step	Variable	B	S.E	Wald	P-value	OR	95% CI for OR	
							Lower	Upper
1	Age at marriage of wife	-.137	.016	72.523	.000	.872	.845	.900
	Constant	3.628	.373	94.632	.000	37.639		
2	Education of wife	-.080	.015	28.086	.000	.923	.897	.951
	Age at marriage of wife	-.112	.017	44.815	.000	.894	.866	.924
	Constant	3.773	.381	97.846	.000	43.531		
3	Education of wife	-.076	.015	24.810	.000	.927	.899	.955
	Age at marriage of wife	-.104	.017	37.180	.000	.902	.872	.932
	Couples desire no. of son	.443	.100	19.441	.000	1.557	1.279	1.895
	Constant	2.621	.455	33.196	.000	13.746		
4	Education of wife	-.080	.015	26.407	.000	.924	.896	.952
	Age at marriage of wife	-.105	.017	37.244	.000	.900	.870	.931
	Couples desire no. of son	.541	.105	26.632	.000	1.717	1.398	2.108
	Sex of previous child	.739	.153	23.470	.000	2.094	1.553	2.823
	Constant	2.137	.470	20.641	.000	8.470		
5	Type of family	.316	.155	4.158	.041	1.371	1.012	1.857
	Education of wife	-.078	.016	24.915	.000	.925	.898	.954
	Age at marriage of wife	-.106	.017	37.896	.000	.899	.869	.930
	Couples desire no. of son	.555	.105	27.748	.000	1.743	1.417	2.143
	Sex of previous child	.726	.153	22.534	.000	2.068	1.532	2.791
Constant	1.916	.482	15.782	.000	6.792			

Discussion:

Five determinants of third birth transition are found to be educational level of wife, age at marriage, couple's desire number of son, sex of previous child and the type of family. As such, the five significant factors fit the last regression model. In many societies as the couples are educated, eagerness to restrict the family size increases. The present findings observe the similar view. But, comparing the effects of education of husband ($P>0.05$) with the wife counterpart, it is evident that the education of wife ($P<0.01$, $OR=0.90$) plays more significant role in reducing third birth transition. It is observed in logistic regression with fourteen explanatory variables after controlling the effects of other variables. The effects may include delaying age at marriage, reduction in the desired family size, increase opportunities for personal advancement, awareness of social mobility and freedom from close familiarities of women outside the home and greater exposure to knowledge and favourable attitude towards family limitations. Thus, enhancement of education is supposed to result in non-familial aspiration and a greater understanding of the process and ways of controlling high fertility. This view is supported by the findings of Yadava et al.(11) Again from the event-history analysis of 2000 Egyptian Demographic and Health Survey, Vignoli (12) stresses that the difficult change in the fertility of women with high educational status seems to be responsible for the stalling fertility decline during recent years. The study also revealed that the preference for at least one son in the family on the progression to the third child is weakening among women who have completed secondary education.

However, the sex of the previous/ index child is demographic factor which can not be managed by human hand. The value of the OR say 2.07 means that the risk of third birth transition is increased more than double times when the previous child is female than that of male counterpart. While adjusted the joint effects of other four variables in the last model, couple's desire number of son is also observed to be high influential factor ($P<0.01$) leading to third birth. It is advocated by OR value of 1.74 which indicates that the risk of third birth is increased by 74% corresponding to desire of one more son. It is thought to be caused by the fact that influence of son preference is high in the study population. This view is supported by Singh et al.(13) They found that the duration of waiting time to conception is significantly short as the desire number of son increases. The finding is in agreement with some other past findings too. In many developing countries, reproductive intentions and behaviours are strongly influenced by sex of surviving children. (7,14-16) This ill behave may have retarded India's fertility decline and therefore the present fertility level is far behind the national socio-demographic goals which is to be achieved by 2010 according to the prime target of National Population Policy 2000.

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