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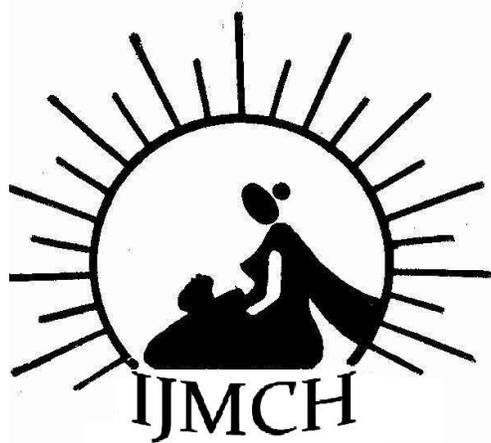
**DETRMINANTS OF BIRTH SPACING OF URBAN SLUMS
WOMEN OF VARANASI CITY**

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To know Socio-demographic risk factor of birth spacing in urban slums women

DETRMINANTS OF BIRTH SPACING OF URBAN SLUMS WOMEN OF VARANASI CITY

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Abstract

Objective To know Socio-demographic risk factor of birth spacing in urban slums women **Design:** Cross Sectional Study; interview technique. **Sample Size:** 1520 eligible couple from 1408 randomly selected household. **Statistical Analysis:** Multinomial logistic regression analysis. **Result :** The Socio-demographic determinants, namely, caste if SC/ST(AOR=0.31,CI:0.17-0.54) and per capita monthly income if less than Rs 300 (AOR=2.24,CI:1.46-3.44), female age if less than 18 years, marital duration 5-9 years (AOR=3.02,CI:1.15-7.93), children ever born if more than 4-5, male and female surviving children more than 4, age at consummation bellow 18 years (AOR=0.13,CI:0.06-0.26), length of PPA less than 3 months (AOR=18.58,CI:9.72-35.54) and status of index child have significant association with the risk of birth spacing.

Key Words: Closed Birth Interval, Post Partum Amenorrhea, Per Capita Income.

Introduction: Slum population, which by definition lack of basic amenities, constitute about 40 percent of Indian urban population (around 8 to 10 percent of the country population). This rapid increase, specially contributed by poor rural migrant is adversely affecting the living conditions of the inhabitants of towns and cites creating many poverty pockets, with very poor physical quality of life index. India slums population will rise to 93.06 million by 2011 while in 2001 it was 52.4 million (Planning Commission Report, 2010). The birth spacing or pace of child bearing defined as the length of time between two successive live births indicates as birth interval. The last closed birth interval, which reflects the latest fertility performance of women as well as less affected by the recall period was taken as fertility indicator. Short birth interval may lead to higher TFR if childbearing process is continued and adversely affects a mother's health and her children's chances of survival. Due to rapid growth of slums population, Total Fertility Rate (TFR) of 2.8, above the national average 2.7 . The proportion of unplanned births was nearly twice in slum communities.(NFHS-3). The birth spacing or pace of child bearing is in part, a response to experience with and fear of child mortality, as parent's tray to ensure that certain number of their children will survive.The germanium size of urban slums is the stark reality that the planners and policymaker have to face if modifiable what are socioeconomic and demographic risk factor of birth spacing , may be helpful think on certain strategies and effective intervention are made in time to achieve National Rural Health Mission (NRHM) goals .

MATERIALS AND METHODS:

Purpose of Study: To reflect the current speed of child bearing process, females with recent closed birth interval (CBI) less than 24 months were compared with females with Closed Birth Interval (CBI) more than 36 months. The influence of various specific determinants, such as Socioeconomic and Demographic factors of birth spacing of women is considered.

Aims: To know socioeconomic and demographic determinants of birth spacing of urban slums women. Therefore determinants of Birth Spacing are the measure to know the direction of population growth of urban slums.

Objectives: What are Socio-economic and Demographic risk factor of birth spacing in urban slums women.

Study Design: Cross Sectional Study; interview technique.

The Study Area: Slums of Varanasi city.

Study Sample Size : 1520 eligible couple from 1408 randomly selected household.

For study sample size the slum population of eastern U.P. no data on closed birth interval (CBI) was available. Therefore, a pilot study on 100 eligible couples from 80 families was carried out. The percent of eligible couple with CBI < 24 months was 34.3%, CBI ≥ 36 months was 20.9% and percent of eligible couple with at least two live births was 86.0. The average no. of eligible couples per family was 1.25. The proportion of eligible couples with CBI ≥ 36 months is the least and forms the basis for comparing other groups. Therefore, proportion of eligible couples with CBI ≥ 36 months has been considered to determine the sample size. Therefore sample size for taking 10% permissible error $n = 4 PQ/L^2$ was $n = \frac{4 \times 20.9 \times 79.1}{(2.09)^2} = 1514$; Since, the proportion of eligible couples with at

least two live births is 0.86. Therefore, a sample of $1514/0.86 = 1760$ eligible couples is required to interrogate. The average number of eligible couples per family is 1.25. Thus, $1760/1.25 = 1408$ houses are expected to be contacted to get desired number of eligible couples for the purpose of the present study.

Therefore, 1520 eligible couple, had more than 2 alive children had given their last birth during the last five years from the date of survey were included from 1408 randomly selected households.

Sampling Methodology: Two-stage sampling procedure was adopted to select these households - at first stage 21 (10 per cent) slums were selected from a total of 218 slums identified by District Urban Development Authority (DUDA), Varanasi, using Probability Proportional to Size (PPS) systematic random sampling. At the second stage, from the prepared list of households of selected slums, 1408 household were selected following systematic random sampling procedure. All the eligible couples of the selected households were interviewed for their socio-economic and demographic status. Thus, the most recent closed birth interval, constituted by the last live birth, recorded for all the females is free from the effect of censoring.

Statistical Analysis: The SPSS Version 10.0 was used to *analyse* the data

The data was analysis by multinomial logistic regression analysis methods. Having estimated those risk factors which were significantly associated with shorter closed birth interval, we estimated two multinomial logistic models in order to the eliminate influence of inter-relationship of shorter closed birth interval.

The multinomial logistic regression analysis $P(Y = k) = 1 / \left[1 + \sum_{j=1}^{k-1} \exp\{g_j(x)\} \right]$ and $g_j(x) = \beta_j(x)$ approach along with the estimate of β

coefficients, standard errors, adjusted odds ratios (AOR) and their confidence interval (CI) for different classifications of the variables has been adopted. For the purpose of assessing the significance of estimates of coefficient of each predictor, Wald statistic was obtained as

$W_j = \hat{\beta}_j / \hat{SE}(\hat{\beta}_j)$. The significant result will indicate the presence of interaction effect.

RESULT AND DISCUSSION: The multinomial logistic regression analysis to identify the absolute contribution of different risk factor on shorter closed birth interval has been carried out. In the present analysis only those variables are included which were found statistically associated at the individual level. In the model, the number of ever born male and female children was considered as covariates as these are highly associated with number of ever born children, surviving male and female children, present age of the female and consequently marital duration.

The analysis revealed that two variables namely caste and Per Capita Income (PCI) were significantly associated with shorter duration of Birth Spacing or Closed Birth Interval (CBI). Significantly lower risk of shorter CBI in SC/ST (AOR = 0.31, CI: 0.17-0.54) and higher risk in PCI group \leq Rs. 300 (AOR = 2.24, CI: 1.46-3.44) was observed. The age at conjugation, if below 18 years, contributed significantly to smaller closed birth interval (CBI),compared to age at consummation \geq 18 years, females who entered in conjugal life between 16-17 years or below 16 years, the risk of shorter CBI was smaller (AOR = 0.13, CI: 0.06-0.26) for females with conjugal age 16-17 years and AOR = 0.15, CI: 0.06-0.32 for females with conjugal age below 16 years. The females with shorter marital duration were at significantly higher risk of CBI \leq 24 months (AOR = 3.02, CI: 1.15-7.93) for females with marital duration between 5-9 years; AOR = 55.43, CI: 12.82-239.65 for females with marital duration below 6 years. The age of females is more than 30 years; the risk of shorter CBI was almost six times more in females of age \leq 25 years, whereas it was similar in those between ages 25-29 years. The female who gave to six or more children, the risk of shorter CBI was significantly less in those giving birth to 4-5 children, whereas in those with 2-3 children the risk was almost similar. Both numbers of surviving male and female children have significant influence on spacing. Compared to females with \geq 4 surviving males, those with 2-3 surviving male children (AOR = 60.49, CI: 17.53-208.77) and one or no surviving male child (AOR = 57.43, CI: 11.08-297.60) were at higher risk of shorter CBI. Whereas, couples who had one or no surviving female child when compared with 2 or more surviving female children, were at lower risk of shorter CBI (AOR=0.16; CI: 0.09-0.29).

The Shorter duration of PPA of women had shown significantly increasing trend of higher risk of shorter CBI; compared to duration of PPA \geq 10 months, the odds of shorter CBI for females with PPA 7-9 months was 4.14 (CI: 2.36-7.25) times, for females with PPA 4-6 - months 12.44 (CI: 6.52-27.70) times and for females with PPA below 3 months 18.58 (CI: 9.72-35.54) times more. Survival status of the index child had its influence on CBI, but among females in whom this child was dead, all (100%) were with CBI below 24 months.

CONCLUSION AND SUGGESTION: The risk factors of birth spacing of urban women namely, caste and per capita monthly income have significant association with the risk of shorter CBI (<24 months). Backward Caste compared to SC/ST and lower monthly PCI have around two-fold risk of shorter CBI (<24 months). The community under study was a slum population mostly represented by low class people of poor economic status majority of low level education and the occupation of the husband, although, referred to as service, was basically of class III and IV cadre in either government or private sector. Therefore, instead of education and occupation of husband, PCI and caste played the key role in determining the length of CBI. It is because couples of better PCI and OBC class considered as superior class than SC/ST, have conscious of better life style. Among the demographic factors such as female age, marital duration, children ever born, male and female surviving children, age at consummation, length of PPA and status of index(preceding to last) have exerted strong influence on the length of shorter Closed Birth Interval (CBI). Lower age of mother (\leq 25 years), shorter marital duration (below 9 years) and 4-5 number of births have been associated with increased risk of shorter CBI. This is because the females are mainly represented by the most active reproductive age groups and having less than the desired number of surviving children. Lesser number of surviving male children and marital duration below 5 years emerged as the most prominent determinants of shorter CBI.

Therefore, the policy maker or planner think about findings of this study : (a) The urban slum community of women socio economic status such as education ,occupation ,per capita income and

strengthen its maternal and child health care activities for reduce levels of infant mortality, living in unhygienic condition need continuous counseling on consequences of frequent pregnancies and large family size (b) due to illiteracy age at marriage of women is very low then age at consummation is also risk factor of child spacing; (c) great attention should also be given to delivery of family planning services to women uses contraceptive methods to limit their family size, particularly younger ones and to provide them with motivational messages about the health benefits of child spacing.

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Table:

**Socioeconomic and Demographic Determinants of Shorter Birth Spacing of Urban Slums women:
Closed Birth Interval (<24months vs ≥36 months);**

Determinants	β -estimate	SE of β	Wald-Statistic	df	P value	AOR	CI
Socio-economic variables							
Intercept	-6.98	1.36	26.20	1	0.00	-	-
Covariate							
Male ever born	2.70	0.45	35.53	1	0.00	14.91	6.13-36.25
Caste							
OBC	1.00						
SC/ST	-1.19	0.29	17.12	1	0.00	0.31	0.17-0.54
Per Capita Income (Rs.)							
300 and above	1.00						
Below 300	0.81	0.22	13.71	1	0.00	2.24	1.46-3.44
Demographic Variables							
Age of Female (yrs)							
≥ 30	1.00						
25-29	0.16	0.38	0.18	1	0.67	1.18	0.56-2.46
≤ 25	1.78	0.55	10.34	1	0.00	5.90	2.00-17.41
Marital Duration (yrs)							
≥ 15	1.00						
10-14	0.09	0.28	0.12	1	0.73	1.10	0.64-1.89
5-9	1.11	0.49	5.06	1	0.02	3.02	1.15-7.93
≤ 5	4.02	0.75	28.89	1	0.00	55.43	12.82-239.65
Children ever born							
≥ 6	1.00						
4-5	-1.20	0.42	8.14	1	0.00	0.30	0.13-0.69
2-3	0.26	0.48	0.30	1	0.59	1.30	0.51-3.35
Male ever surviving							
≥ 4	1.00						
2-3	4.10	0.63	42.13	1	0.00	60.49	17.53-208.77
None or one	4.05	0.84	23.59	1	0.00	57.43	11.08-297.60
Female ever surviving							
≥ 2	1.00						
None or one	-1.83	0.29	38.75	1	0.00	0.16	0.09-0.29
Age at consummation							
≥ 18	1.00						
16-17	-2.02	0.35	33.98	1	0.00	0.13	0.06-0.26
≤ 15	-1.91	0.40	23.21	1	0.00	0.15	0.06-0.32
Duration of PPA PPA(mths)							
≥ 10	1.00						
7-9	1.42	0.29	24.58	1	0.00	4.14	2.36-7.25
4-6	2.52	0.33	58.64	1	0.00	12.44	6.52-27.70
≤ 3	2.92	0.33	78.01	1	0.00	18.58	9.72-35.54
Status of preceding to last child (index)							
Alive	1.00						
Dead	25.21	0.00	-	1	-	--	--

