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Improvident maternity and its associated factors in urban slums of Chandigarh

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Abstract

Background: Population explosions in developing countries are the major problem which neutralizes all the gains and developments achieved in the country. High fertility levels and undesired births existing in India lead to improvident maternity.

Objective: To estimate the prevalence of improvident maternity and to investigate its socio-demographic, cultural and reproductive correlates.

Method: A two-stage systematic random sample design was adopted in the present cross sectional study. Couples having wife in the reproductive age willing to participate in the study were selected.

Results: Overall prevalence of improvident maternity was 43.6% which was 56.8% among those couples having no desire for child by wife. Improvident maternity rate was 44.9% among those having no son preference as compared 23.1% among those having son preference. Illiteracy of women, migratory population, age above 25 years, early age at marriage below 18 years, first delivery before 18 years of age, awareness of contraceptives, having no future desire of child, having no male child, having more daughters than sons were significant risk factors of improvident maternity.

Conclusions and Suggestions: Improvident maternity rate in the studied area is very high. It is associated with socio-demographic and reproductive characteristics of couples. There is an urgent need of adopting some strategies for changing reproductive behavior of couples for reduction in improvident maternity rate for averting births and attaining desired outcomes.

Strengths and Weaknesses
1. Efforts have been made to address issues related with differentials in fertility behavior of women and their spouses.
2. It suggests some potential solutions for reducing improvident maternity.
3. Correlates of improvident maternity observed in the present survey may be helpful in developing strategies for aversion of unwanted births by improving reproductive behavior. This study represents only slum population and results suffer regional bias. There is possibility of some more factors influencing the outcomes.

Keywords: yucatec maya, traditional medicine, plant use, herbalist

Introduction

Reproductive health has significant implications on policy and programme related with fertility. World Health Organization (WHO) defines reproductive health as a "State of complete physical, mental and social well being in all matters relating to reproductive system, its function and progress. Reproductive health is influenced by many social and cultural factors.

Fertility decisions of women and men are influenced by several factors. High fertility levels still existing in India resulted in undesired births causing improvident maternity. Aversion of unwanted births will have potential demographic impact. By reducing improvident maternity, the majority of unwanted births may be averted. Improvident maternity is defined as women who had already given birth to three children of whom at least one is alive. It implies occurrence of pregnancy which is not desired for the married couple. Improvident maternity affects considerably the reproductive and child health and has some potential demographic impact [1-4].

However, little is known about improvident maternity status and its important correlates. Most fertility surveys are confined to currently married women assuming that women's response reflects the preference of couples but there may be conflicting responses of women and men. Individual situations and desires influence fertility decisions of men and women. India has patriarchal societies and usually men are the main decision makers in all aspects of life, both in urban and rural families.

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Men play important and dominant role as primary decision-makers in taking fertility related decisions also affecting reproductive health status of the community. Other family members are also reported to play dominant role in fertility decisions. Differences between fertility decisions of husband and wife and dominant role of other family members in fertility decisions may also have consequences in terms of improvident maternity.

The present study is an attempt to estimate prevalence of improvident maternity and its socio- demographic, cultural and some other correlates in slum areas of Chandigarh.

Material and Methods

The present study is a part of detailed project "Correlates of Improvident Maternity in Urban Slums of Chandigarh" sponsored by Indian Council of Medical Research (ICMR) conducted during 2010-11. Chandigarh is the most economically advanced Union Territory (UT) of India and capital of two states: Punjab and Haryana, known for its high literacy and good environmental conditions. In spite of high literacy rate for both males (90.54%) and females (81.38%), Chandigarh shows high fertility level with decadal population growth rate of 17.10% against 17.64% for India [5]. Majority i.e. 10, 25,682 (97.25%) of its population was urban including slums and 29,004 (2.75%) was rural population [6].

Sampling Design

A two-stage systematic random sample design was adopted. At the first stage, from the sampling frame available a sample of four slum areas (colonies), called primary stage units (PSU), was selected with probability proportion to size (PPS). At the second stage, a sample of households as second stage units of was selected systematically within each selected PSU. Within each household, couples having wife in the reproductive age (15-49 years) along with their spouses willing to participate in the study were selected as study units or respondents.

Study-design

Present paper reports results of community-based study adopting cross sectional study design.

Sample size

Power analysis was done to calculate optimum sample size. On the basis of pilot survey, percentage of households with improvident maternity as main outcome parameter in the project was found to be 35% and percentage of couples in the reproductive age was about 25% of total population. Assuming 90% confidence coefficient and 10% (of 35%) relative precision, the optimum sample size came out to be 503 households. Design effect due to selection of couples within selected households came out to be 1.26 and hence optimum sample of 634 couples was obtained. Final sample in the present study included 667 couples in the baseline observational study.

Study unit

Couples having wife in the reproductive age (15-49 years) along with their spouses willing to participate in the study served as study units or respondents.

Study tool

Study variables included socio- demographic characteristics, reproductive behavior in terms of past/future fertility desires, fertility preferences, contraceptive choices, gender preference, contraceptive choices, interpersonal communications interpersonal relationships with spouses etc.Information was collected using a predesigned and pretested semi-structured interview schedule conducting house-to-house survey. Respondents were interviewed in privacy to collect the desired information at the respondent's home at flexible time points keeping in view of their working hours. Both husband and wife were interviewed by the same interviewer. All possible efforts were made to reduce non-responses including frequent visits. Field problems faced by survey team members during data collection were discussed time to time and solved to the extent possible.

Ethical issues

Approval by Institutional Research Committee and Institutional Ethics Committee (IEC) was granted to undertake the project.

Statistical Methods

Statistical tests like normal test, student's t-test, chi-square test, and Analysis of Variance (ANOVA) technique were used for analyzing data. Odds ratios along with 95% confidence intervals were calculated for assessing factors associated with improvident maternity. Multiple logistic regression analysis was also used for detecting risk factors of improvident maternity and estimating prevalence of improvident maternity on the basis of binary dependent variables. SPSS-16 statistical software was used for data analysis.

Results

Results on improvident maternity rates by reproductive behaviour of couples in terms of awareness and preferred use of contraceptives, future intention to use contraception, desired number of children, gender preference, fertility related decisions, and other important parameters in Table-1 Improvident maternity rate among those having no desire for child by wife were found to be 56.8%. Future desires for child by wife as well as by husband were significantly associated with improvident maternity ($P<0.001$). Improvident maternity rates among those having desire for child by wife in the past was found to be 36.9% compared to 50.8% among those who were not having such desires. Past desires for child by wife, husband or both were found to be significantly associated with improvident maternity. Improvident Maternity rates were found to be significantly higher ($P<0.001$) in case of contraceptive knowledge by any of the partners. In spite of contraceptive awareness of both partners, improvident maternity rates were found to be 45.9%. In case of current contraceptive use, improvident maternity rates were significantly higher (49.7%) than those who are not using any contraceptive currently (35.4%). The association between improvident maternity and current contraceptive use was found to be highly significant ($P<0.001$). About 48% couples intended to use contraceptive in future were falling in improvident group. Son preference was found to be significantly associated with improvident maternity ($P<0.001$). Improvident maternity rate was 44.9% among those having no son preference as compared to only 23.1% among those having son preference. Desire for last pregnancy was also found to be

significantly associated with improvident maternity (*P*<0.001). Lower improvident maternity rates were observed in case of unwanted last pregnancy. Among those 219 couples who both wanted to wait longer for last pregnancy, improvident maternity rates were found to be 35.6%. Improvident maternity rates were also significantly higher when couples were not having any male child. Association between having male child and improvident maternity was found to be highly significant (*P*<0.001). Similarly having no daughter was also found to be a

significant positive correlate of improvident maternity. Improvident maternity rates were also found to be 58.0% in case of those having more daughters than sons. History of still birth was not found to be significantly associated with improvident maternity (P=0.29). Abortions, spontaneous as well as induced were comparatively higher in non-improvident group as compared to improvident group. There were 91(13.6%) lactating mothers, Improvident maternity was seen in 71.4% lactating mothers.

Table 1: Improvident Maternity Rates by Reproductive Behavior of Couples

Reproductive Behavior	Improvident Maternity		Total (N= 667)
	No (N=376)	Yes (N= 291)	
Future desire for child by wife			
No	212(43.2)	279(56.8)	491(100.0)
Yes	164(93.2)	12(6.8)	176(100.0)
			X^2=129.70(*P*< 0.001)
Future desire for child by husband			
No	218(43.9)	279(56.1)	497(100.0)
Yes	158(92.9)	12(7.1)	170(100.0)
			X^2=122.07(*P*< 0.001)
Future desire for child by wife /husband			
No	211(43.1)	279(56.9)	490(100.0)
Yes	165(93.2)	12(6.8)	177(100.0)
			X^2=130.99(*P*< 0.001)
Past desire for child by wife			
No	159(49.2)	164(50.8)	323(100.0)
Yes	217(63.1)	127(36.9)	344(100.0)
			X^2=12.45(*P*< 0.001)
Past desire for child by husband			
No	166(50.2)	165(49.8)	331(100.0)
Yes	210(62.5)	126(37.5)	336(100.0)
			X^2=9.84(*P*< 0.001)
Past desire for child by either			
No	157 (49.1)	163 (50.9)	320(100.0)
Yes	219(63.1)	128(36.9)	347(100.0)
			X^2=12.80(*P*< 0.001)
Past desire for child by both			
No	168 (50.3)	166(49.7)	334(100.0)
Yes	208 (62.5)	125 (37.5)	333(100.0)
			X^2=10.03(*P*< 0.001)
Contraceptive knowledge of wife			
No	75(70.8)	31(29.2)	106(100.0)
Yes	301(53.7)	260(46.3)	561(100.0)
			X^2=9.92 (*P*<0.001)
Contraceptive knowledge of husband			
No	79(66.4)	40(33.6)	119(100.0)
Yes	297(54.2)	251(45.8)	548(100.0)
			X^2=5.42 (P=0.02)
Contraceptive knowledge of either			
No	73(70.9)	30(29.1)	103(100.0)
Yes	303(53.7)	261(46.3)	564(100.0)
			X^2=9.73(*P*< 0.001)
Contraceptive knowledge of both			
No	81(66.4)	41(33.6)	122(100.0)
Yes	295(54.1)	250(45.9)	545(100.0)
Current contraceptive use			
Not using	184(64.6)	101(35.4)	285(100.0)
Using	192(50.3)	190(49.7)	382(100.0)
			X^2=13.0(*P*< 0.001)
Future intention to use contraceptive by wife	215(51.9)	199(48.1)	414(100.0)
Future intention to use contraceptive by husband	206(51.5)	194(48.5)	400(100.0)
Future intention to use contraceptive by either partner	218 (52.0)	201 (48.0)	419(100.0)
Future intention to use contraceptive by both	203(51.4)	192 (48.6)	395(100.0)
Son preference by couples			

No	346(55.1)	282(44.9)	628(100.0)
Yes	30(76.9)	9(23.1)	39(100.0)
			$X^2=6.25(P< 0.001)$
Last pregnancy desired			
Yes	219(63.1)	128(36.9)	347(100.0)
No	157(49.1)	163(50.9)	320(100.0)
			$X^2=12.80(P< 0.001)$
Wife wanted to wait for previous pregnancy	141(64.4)	78(35.6)	219(100.0)
Husband wanted to wait for previous pregnancy	141(64.4)	78(35.6)	219(100.0)
Desire for having son			
No	228(46.2)	265(53.8)	493(100.0)
At least one	148(85.1)	26(14.9)	174(100.0)
			$X^2=77.19(P< 0.001)$
Desire for having daughter			
No	187(42.5)	253(57.5)	440(100.0)
At least one	189(83.3)	38(16.7)	227(100.0)
			$X^2=99.51(P< 0.001)$
Desire for having more daughters than sons			
No	287(63.1)	168(36.9)	455(100.0)
Yes	89(42.0)	123(58.0)	212(100.0)
			$X^2=25.32(P< 0.001)$
H/o still births			
No	367(56.8)	279(43.2)	646(100.0)
Yes	9(42.9)	12(57.1)	21(100.0)
			$X^2=1.09(P=0.29)$
History of spontaneous abortions	13(65.0)	7(35.0)	20(100.0)
History of induced abortions	14(63.4)	8(36.4)	22(100.0)
Currently pregnant	31(91.2)	3(8.8)	34(100.0)
Currently lactating	65(71.4)	26(28.6)	91(100.0)
Overall	376(53.4)	291(43.6)	667(100.0)

Results of logistic regression analysis presented in Table-2 indicate that illiterate women from migratory population, aged above 25 years, having early age at marriage below 18 years, first delivery before 18 years of age, aware of contraceptives, having no future desire of child, having no male child, having more daughters than sons, were at significantly higher risk of improvident maternity.

Table: Variables Entered In Logistic Regression Analysis

Outcome/Input Variables
V= Improvident Maternity Status
=0, If No
=1, If Yes
V_1 = Son Preference by Couples
=0, If No
=1, If Yes
V_2 = Current Contraceptive Use by Couples
=0, If No
=1, If Yes
X_1 = Contra Knowledge by either Husband or Wife
=0, If No
=1, If Yes
X_2 = Future Intention to use contraceptive by either Husband or Wife
=0, If No
=1, If Yes
X_3 = Educational Status of Wife
=0, if educated
=1 If illiterate
X_4 = Educational Status of Husband
=0, if educated
=1, if illiterate
X_5 = Occupation of Wife
=0, if employed
= 1, if unemployed
X_6 =Type of Family
= 0, if nuclear family
= 1, if other type of family
X_7 = Future Desire of Child by either Husband or Wife
=0, If No

=1, If Yes
X₈ =Past Desire of Child by either Husband or Wife
=0, If No
=1, If Yes
X₉ =Having Male Child
=0, If No male child
=1, If at least one male child
X₁₀ = Having Female Child
=0, If No female child
=1, If at least one female child
X₁₁ =Having More Female Children
=0, less /equal daughters
=1, if more daughters than sons
X₁₂ =Age of Wife
=0, if 25 or more years
=1, if age below 25 years
X₁₃ = Age of Husband
=0, if 25 or more years
=1, if age below 25 years
X₁₄ =Marital Age of Wife
=0, if 18 or more years
=1, if below 18 years
X₁₅ =Marital Age of Husband
=0, if 21 or more years
=1, if below 21 years
X₁₆ =Still Births
=0, If No H/0 still births
=1, If have H/0 still births
X₁₇ =Socio-economic Status (L)
=0, If Middle/High SES
=1, if Low SES
X₁₈ = Occupation of Husband
=0, if employed
= 1, if unemployed
X₁₉ =Prior Place of living
=0, if within Chandigarh
=1, if outside Chandigarh
X₂₀ =Age at First Delivery
=0 if 18 or more years
=1, if below 18 years,
X₀ =1 is a dummy variable.

Table 2: Logistic Regression Analysis of Risk Factors of Improvident Maternity at Baseline Survey

Variable	B	S.E.	P-Value	Odds Ratio= Exp (B)	95.0% C.I. for Odds Ratio	
					Lower	Upper
V1	-.068	.591	0.910	0.935	.293	2.977
V2	.151	.311	0.630	1.163	.632	2.140
X1	1.123	.413	0.007	3.075	1.369	6.906
X2	.008	.330	0.982	1.008	.528	1.924
X3	.671	.250	0.007	1.956	1.199	3.190
X4	.446	.327	0.174	1.562	.822	2.967
X5	-.207	.579	0.721	0.813	.261	2.529
X6	-.292	.258	0.257	0.747	.451	1.237
X7	-1.641	.452	0.000	0.194	.080	.470
X8	.090	.252	0.721	1.094	.668	1.793
X9	-1.885	.485	0.000	0.152	.059	.393
X10	-.889	.282	0.002	0.411	.236	.715
X11	2.161	.387	0.000	8.682	4.070	18.522
X12	-2.199	.404	0.000	0.111	.050	.245
X14	.679	.321	0.034	1.972	1.051	3.699
X15	.407	.303	0.179	1.502	.829	2.719
X16	.993	.616	0.107	2.700	.808	9.024
X17	.368	.405	0.364	1.444	.653	3.195
X18	.502	.937	0.592	1.652	.263	10.371
X19	-.489	.241	0.042	0.614	.383	.983
X20	.587	.268	0.029	1.798	1.063	3.043
X0	-1.701	.803	0.034	0.182		

Discussion

In developing countries like India, reproductive behavior of couples is influenced by several factors leading to improvident maternity. Improvident maternity status is likely to be influenced by reproductive behavior of couples in terms of fertility preferences and differentials in fertility related decisions of women and their spouses like awareness and preferred use of contraceptives, future intention to use contraception, desired number of children, gender preference, fertility related decisions, and other important parameters.

In the present survey, overall prevalence of improvident maternity was found 43.6%. Among couples having no desire of child by wife, improvident maternity rate was 56.8%. Last pregnancy was not desired by 38.4% women and 49.6% spouses and by 48.0 % of either partner. There were 24.3% women and 24.1% men who were of the opinion that they wanted to wait for next baby. It was estimated that half of all pregnancies were unplanned or unintended in Delhi[7]. Whereas, according to NFHS -3 survey report[4], twenty-one percent pregnancies were unplanned in the five years preceding the survey.

Illiterate women from migratory population, aged above 25 years, married below 18 years of age, aware of contraceptives, having no future desire of child, having no male child, having more daughters, mothers, having first delivery before 18 years of age were at significantly higher risk of improvident maternity as observed in our study. Magnitude of teenage pregnancy and complications of early marriage were reported contributing factors to high maternal and parental mortality and morbidity in an earlier study[8] also.

On the basis of logistic regression analysis, contraceptive knowledge, educational status of women, having more male children, having more daughters than sons, having any male child, migratory population and delivering baby prior to 18 years of age were significant risk factors for improvident maternity. Majority of the males (59%) and females (74%) in Delhi favoured a small family of two children [9]. In rural area of West Bengal, 62.8% of mothers considered two to be the ideal number of children [10]. Impact of female literacy on fertility as a whole is also reported earlier [11]. Son preference is one of the reasons given for high fertility and low acceptance of family planning in many developing nations. Such a preference is believed to have a strong effect on the number of additional children parents have near and above the desired minimum size. Adoption or non-adoption of family planning method eventually depends on their achieved sex preference of children [12].

Improvident maternity status is associated with reproductive behavior of couples in terms of fertility preferences and differentials in fertility related decisions of women and their spouses. Reproductive behavior of couples in terms of awareness and preferred use of contraceptives, future intention to use contraception, desired number of children, gender preference, fertility related decisions, and other important parameters may be proxy indicators associated with improvident maternity. This study represents only slum population and results suffer regional bias. There is possibility of some more factors influencing the outcomes which could not be included in the study.

Conclusions and Suggestions

On the basis of present study, it can be concluded that improvident maternity rate in the studied area of slums in Chandigarh is very high. It is associated with socio-demographic and reproductive characteristics of couples. Correlates of improvident maternity observed in the present survey may be helpful in developing some health education strategies for improving reproductive behavior of couples and reducing subsequently improvident maternity rate. There is an urgent need of adopting some population specific strategies for changing reproductive behavior of couples for reduction in improvident maternity rate for averting births and attaining other desired outcomes.

Contributors

DK: Conceptualized the concept, designed survey schedule, organized project and survey work, analyzed and interpreted data and also drafted the report/manuscript.

NKG: Supervised the overall work and checked the manuscript,

MS: Assisted in drafting manuscript, finalized the manuscript, collected additional study material and submitted the manuscript.

MKS: Assisted in organization of field activities, played role in data quality checks and validation of study tools.

Competing Interest: No, there are no competing interests

Data Sharing: Dr Dinesh Walia by emailing dinesh.walia17@gmail.com

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