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MATERNAL CARE AMONG REPRODUCTIVE WOMEN IN SLUMS IN GREATER MUMBAI

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ABSTRACT

This paper examines utilization of antenatal and delivery care in the Mumbai slums on the basis of standard of living index constructed from household amenities, housing quality, sources of drinking water, electricity and toilet facilities. The study uses primary data, collected using cluster sampling of sample size of 433 reproductive women who have given at least one live birth prior to the survey, on frequency of antenatal check-ups, iron folic supplementation, receiving two doses of tetanus toxoid injection and skill of delivery attendant from the Rafi Nagar slum. The findings using logistic regression reveals unimaginable low level of maternal care among illiterate women in this slum. Besides that there is evidence of concentration of women without adequate maternal care amongst the poorest of economic stratum. The need for maternal care services is suggested for illiterate and SLI category slum women.

KEYWORDS: Maternal care; Health seeking behavior; Utilization; Mumbai Slum.

Maternal Care among Reproductive Women in Slums in Greater Mumbai

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Introduction

The World Health Organization (1996a) estimated that 585000 maternal deaths occur globally every year, with the majority of this burden experienced in developing countries. Thaddeus and Maine (1994) suggested that 75 percent of these are due to direct obstetric causes and could be avoided with quality care at the appropriate time. Antenatal care provides a preventive service that monitors women during pregnancy, with the potential to identify obvious complications and risk factors at an early stage in pregnancy, to arrange for appropriate maternal and child health care and to reduce maternal morbidity and mortality if delivered effectively. However, the success that it has in achieving this aim is related to the quality of service that is provided, the number of visits that a women receives during pregnancy, the timing of those visits and the existence of and accessibility of professional delivery care when necessary (World Health Organization, 1996b).

Promotion of maternal and child health has been one of the most important objective of the Family Welfare Programme in India. Antenatal care (ANC) refers to pregnancy-related health care provided by Doctors or a health worker in a medical facility or at home. The safe motherhood initiative proclaims that all pregnant women must receive a basic, professional antenatal care (Harrison, 1990). Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counseling on preventive care, diet during pregnancy, delivery care, postnatal care and related issues. In 1996, safe motherhood and child health services were incorporated in to the Reproductive and Child Health (RCH) Programme by govt. of India. This program recommends that as part of antenatal care, women receive two doses of tetanus toxoid vaccine, adequate amounts of iron and folic acid tablets or syrup to prevent and treat anaemia, and at least three antenatal check-ups that include blood pressure checks and other procedures to detect pregnancy complications (Ministry of Health and Family Welfare, 1997; 1998b).

The accessibility of health services to the urban poor living in different cities of varying population sciences reveals that even slum people seek medical help from nearby private sources for minor ailments and for chronic, acute diseases, maternal and child health and family planning, they seek government services. It also gives an idea about how much health care accounts for the total expenditure at the household level in a month. The community development program implemented (Demet Gural, 1996) since nine years, in the big cities' slums, executed in three different cities of Turkey, namely Istanbul (in the west) and, Gaziantep and Kilis (in the southeast) as well as in Nakhcevan autonomous region of Azerbijan and Almaty city of Kazakstan where the migration rates are high shows that the women who receive their first information from the community workers continue to receive their services from the public health centers in their neighbourood or start seeking for more information and services.

There are various factors that influence the individual's health seeking behaviour towards their illness. The factors could be personal, environmental or social and in a way, reflect the health behavior utilization of people. Among women the morbidity and mortality due to reproductive tract infections/sexually transmitted infections are relatively very high compared to other health problems and many a time these are under reported. Similarly diarrhoeal diseases contribute significantly to childhood morbidity and mortality in urban slums because of the delay in seeking appropriate treatment.

Louise et al. (2005) have tried to assess the quality of maternal health services in urban India. The study was done in a slum area of Mumbai and data was collected from municipal and private hospitals. The various components in their framework were – Human and physical resources, Referral system, Maternity information system, use of appropriate technologies, Management of emergencies, Respect, dignity and equity and emotional support. All above components were measured in terms of certain percentages. Phanindra and Prakasam (1998) have tried to assess the quality of health care in rural Gujarat by using NFHS data. They have defined quality as utilization of services by different providers (Public and Private).

In general, women in slum remain unaware of their own reproductive health problems such as menstruation, sexuality, concept of menstrual hygiene and family planning methods. Further risk involved in repeated pregnancies and proper utilization of antenatal and postnatal care. Hence it is necessary to impart knowledge about these reproductive health problems. Women in the urban slums are unaware of the existing health facilities and even if available it has been adequately utilized.

Research study carried out in Delhi slums (Anita K. et al. 2003) revealed that the extent of utilization of health care services for RTIs/ STIs diseases found to be 32.9% among reproductive women and their health seeking behaviour found to be poor. Another study carried out in slums in Greater Mumbai (Yasudian 1990) revealed that most of the slum population was visiting private health facilities.

Study carried out in Dhaka slum (Rashid, 2004) regarding the reproductive health needs of married adolescent women reveals an insight into the situations in which adolescent women take decisions surrounding marriage, fertility, childbearing etc, within the socio-economic constraints that surround them and the larger structural conditions which govern their lives.

Research study to examine the effects of demographic and social factors on the positive trends in institution based use of antenatal and delivery care with medically trained professionals in Honduras and Guatemala from the late 1980's through the late 1990's was carried out (Stanton, 2004). The differential use of these maternal health services by urban/rural residence, parity, age, women's education, women's employment and Socio-economic status is similar across country and time period, and resembles patterns of use reported worldwide. The results show that all of these factors exert strong, unchanging and significant efforts on use of antenatal care.

Research reviews by Nag (1983), Srinivasan (2002), Duggal and Amin (1989), Mumiyandi (1997), Gandotra & Narayan Das (1983), Basu (1990) revealed that the studies have not focused on antenatal, post natal health awareness of women in slums in Greater Mumbai. Also, the limitations of this study were the variation in scope as well as coverage of important aspects such as the type of health sources availed, physical distance to the source, expenditure incurred for treatment etc.

Keeping in view of above research work an attempt is made to evolve a suitable strategy for knowing the health seeking behavior of the study women, utilization of antenatal and delivery care services and the health facilities available to women in the reproductive age group in slum area of Greater Mumbai, this study has been initiated.

Background of the study area

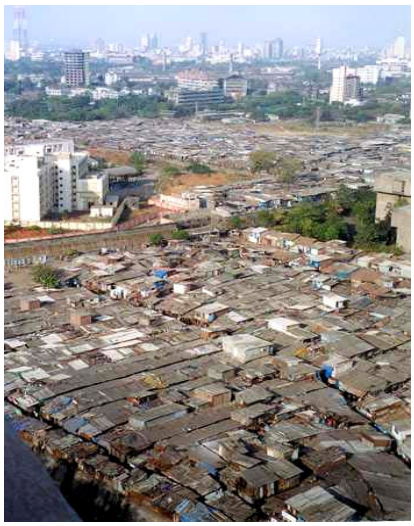
The state of Maharashtra situated in the western part of India, came in to existence on 1st May, 1960 with the merging of territories of Bombay state, Madhya Pradesh and Andhra Pradesh. It has a land area of 3, 07,713 sq. km. which is about

one-tenth of the total land area of the country. As per the 2001 Census of India, the total population of the state is 96.8 million, which is 9.4 percent of the total population of India.

The city of Mumbai is originally a cluster of seven islands having an area of 603 sq. km. It has grown at a tremendous pace over the years. Between 1941 and 1961 the population grew 2.5 times and between 1961 and 1981 was of two times. Between 1981 and 2001 the population increased from 82 lacs to 120 lacs. Thus the overall population density of Greater Mumbai works out to be 19000 persons per sq. km. where Maharashtra's only 314. This high density of population coupled with dearth of housing has lead to the development of degrading slums.

Mumbai being the capital of Maharashtra and also the metropolitan city has many features to attract people, it generate job opportunities and then people finds the solution to stay where ever possible as per their earning capacity. It has organized industrial sectors, high literacy rate among workers, well planed transportation facility, good drinking water facility, and underground sewage system, basic education provided by Municipal corporation schools and even private schools and free education to girls is also provided by Govt. of Maharashtra, India. Many Anganwadies located in slums are imparting education to slum children and also to adults so called 'adult education'. Therefore on the large scale, the migration takes place from the most of the parts of India to Mumbai.

Fig-1: Arial view of study area: Slum in Mumbai.



According to Census of India 2001, about 49 percent of population of Mumbai lives in slums. About 28 percent and 21 percent of total population is male and female respectively who lives in slums. These slums household people have low income. These people consists even recent migrants who do odd jobs and cannot afford to pay any rent nor can they leave the city for fear of losing what ever source of income they have. Such people have occupied a space where ever they could find a place even in the face of stringent laws of encroachment. These slums have no basic health facilities like safe drinking water, toilets etc., in fact they have open drainage. They have strong impact of religion and culture and practices of doing early marriages.

According to 2001, Census of India, the slum sex ratio of Mumbai is 929 and slum literacy rate is 83.13 where as slum female literacy rate is 75.17 and slum male literacy rate is 89.08. This rate is above the national level.

The present study is an attempt to know, health seeking behavior of the study women towards maternal care to examine the safe motherhood practice of such women in the study area and to know the effects of Socio-economic conditions on the safe motherhood practice.

Materials and Methods

Measuring household standard of living

In the absence of data on income and consumption measures, household standard of living indices are often constructed using three set of information, namely source of drinking water, Toilet facility, type of house and ownership of selected consumer durables (Montgomery et al., 2000). Index scores for the present study ranges from 1-6 for a low SLI to 7-9 for a medium SLI and >=10 for a high SLI (Appendix). There are three other approaches in the construction of living of standard indices differing in the manner in which different household amenities, quality of housing materials, and assets are weighted.

Data

For the present investigation, two stage sampling procedure has been adopted. In the first stage, the slums in the Greater Mumbai according to their population size were listed using the "Directory of Slums" published by office of the additional collector (ENC), Mumbai & Mumbai Sub. Dist. (see ref.). Two lists were prepared, one for plain area slums and other for hilly area slums. From each list, one slum was selected at random. Hence one slum from plain area and another slum from the hilly area were obtained. plain area slum was Rafi Nagar slum located at Deonar and hilly area slum was Ramabai Nagar slum at Bhandup(w). The populations of these slums (study area) are 5500 and 3500 respectively.

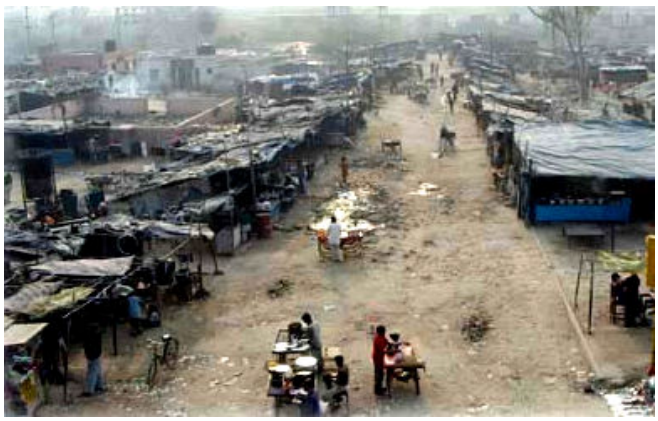
In the second stage of sampling, from the selected two slum areas, using cluster sampling, two clusters were selected at random from each slum area. From these two clusters of Rafi Nagar slum area 433 households and from two clusters of Ramabai Nagar slum area 349 households were selected and then were interviewed using

structured schedule. In all, this study covers 782 reproductive women in two slums representing slum population in Greater Mumbai. This survey was conducted from June to August, 2005.

The Rafi Nagar slum on plain area in Deonar is considered as the study area for the present study. This area come under M/East ward of Brihan Mumbai Municipal Corporation, situated near Govandi (west) railway station, a suburb in the eastern part of Mumbai.

The slum sex ratio of M/East ward is 785 where as the slum sex ratio of Mumbai is 929. The sex ratio of M/East ward is less compared with the sex ratio of Mumbai; it clearly indicates that there are migrants in this study area. The female literacy rate of this area is 67.49 compared to male literacy rate of 82.9. This ward spread over 34.38 sq. km. and has density of 13,730 (1991 Census) population per sq. km. respectively. Deonar is at the third rank position as far as population of slums in Mumbai is concern. In Deonar out of 6.72 lacs of population, 5.22 lacs of people stay in slum area (population density – 19,546 per sq. km.), according to Census of India, 2001, Maharashtra population data with data on slum population in urban units.

Fig-2: Environmental condition in study area.



In order to know health seeking behaviour and to measure the safe motherhood practice in terms of antenatal care, and post natal care, the children born to mothers during the last three years prior to survey were considered. Such numbers were 433.

Method of analysis

Logistic regression analysis was used to assess the effect of socio-economic determinant variables on safe motherhood practice controlling for other variables included in the model. For the logistic regression analysis purpose, the births born to mothers in the last three years prior to survey were considered.

Results and discussion

Antenatal care

Women not receiving antenatal check-ups tend to be disproportionately older women, women of high parity, women from scheduled Tribes, illiterate women and women from households with low standard of living. Antenatal care is essential for ensuring safe motherhood. During antenatal period, women are likely to face health problems of reproductive nature and there will be a package of measures available for expectant mothers, which ensures safe motherhood. The study women who have given birth during the last three years prior to survey in the study area were considered to analyze the differentials in pregnancy problems experienced by mothers and the extent of utilization of antenatal care services. Table no.1.2 indicates that 83 percent of study women received at least one antenatal check-ups, only 52 percent received three or more antenatal check-ups and 76 percent have consumed any iron and Folic acid tablets or syrup where as 17 percent of study women did not go for antenatal check-ups.

Fig-3: Housing condition in the study area.

Reproductive Health problems during pregnancy

About 45 percent of the women in the study area reported that they had at least one problem during pregnancy. Table no 1.1 shows the problems during pregnancy reported by study women. The major antenatal problem reported were excessive fatigue 45 percent (NFHS-2: 49.1 percent), followed by white discharge 41 percent, pain in abdomen 39 percent, swelling of the legs 25 percent (NFHS-2: 35.9 percent), blurred vision 19 percent (NFHS-2: 12.1 percent), any vaginal bleeding 14 percent (NFHS-2: 3.5 percent), convulsion not from fever 13 percent (NFHS-2: 10.5 percent), night blindness 25 percent (NFHS-2 and RCH: 6.3 percent), and anemia 2.8 percent (NFHS-2: 16.1 percent). The percentage of these pregnancy problems remains almost same as compared to the problems specially shown as Mumbai slum data in NFHS-2 for Maharashtra state where survey was taken in 1998-99. This indicates that even after a long period of 7 years, the reproductive health condition of study women living in slum on hill remains poor, probably these women are not utilizing the medical facilities available in that area.

Components of antenatal care programmes and antenatal care advice

Data on various components of antenatal check-ups underwent by women in Table no 1.3 shows positive behavior pattern of women in utilizing antenatal care services in the study area, about 71 percent. Data on antenatal care advice in Table no 1.4 reveals that the proportion of pregnant women in the study area received proper advice on delivery care and new born care is just 55 percent followed by special diet, 53 percent and family planning is about 49 percent where as 11 percent of study women were alert about danger sign for pregnancy. Hence the study reveals good antenatal care seeking behaviour of women towards antenatal measurements but moderate towards antenatal advice.

Table 1.1 : Utilization of Antenatal care services showing problems during pregnancy in Rafi Nagar slum, Deonar, Mumbai.

Particulars	Total cases		Percentage of cases	
Problems during pregnancy:	**Yes**	**No**	**Yes**	**No**
Night blindness	106	327	24.5	75.5
Blurred vision	80	353	18.5	81.5
Convulsions Not from fever	57	376	13.2	86.8
Swelling of the legs,body or face	107	326	24.7	75.3
Excessive fatigue	196	237	45.3	54.7
Anaemia	12	421	2.8	97.2
Any vaginal bleeding	59	374	13.6	86.4
White discharge	179	254	41.3	58.7
Abdomen pain	169	264	39.0	61.0
Excessive bleeding	57	376	13.2	86.8
Excessive omitting	95	338	21.9	78.1
Number of Births	573		-	

Table 1.2 : Utilization of Antenatal care services showing Antenatal care indicators in Rafi Nagar slum, Deonar, Mumbai.

Antenatal care indicators:	**Total cases**	**Percent of cases**
Percentage that received at least one antenatal check-up	360	83.1
Percentage that received three or more antenatal check-up	226	52.2
Percentage given any iron and Folic acid tablets or syrup	331	76.4
Tablets received/purchased		
1-40	131	30.3
41-70	155	35.8
70+	45	10.4
Median number of check-ups(for those who received at least one antenatal check-up)	1	-
No antenatal check-ups	73	16.9

Table 1.3 : Utilization of Antenatal care services showing components of Antenatal check-ups in Rafi Nagar slum, Deonar, Mumbai.

Components of Antenatal check-ups: Antenatal measurements / tests	Total cases		Percent of cases	
	Yes	No	Yes	No
Weight measured	265	95	61.2	21.9
Height measured	196	164	45.3	37.9
Blood pressure checkup	310	50	71.6	11.5
Blood test	338	22	78.1	5.1
Urine test	326	34	75.3	7.9
Abdomen Examined	308	52	71.1	12.0
X-Ray	79	281	18.2	64.9
Sonogram/Ultras	276	84	63.7	19.4
Any other test	79	281	18.2	64.9
Number of Births	573		-	

Table 1.4 : Utilization of Antenatal care services showing Antenatal advice in Rafi Nagar slum, Deonar, Mumbai.

Antenatal advice:	Total cases		Percent of cases	
	Yes	**No**	**Yes**	**No**
Special diet	231	129	53.3	29.8
Danger sign for pregnancy	46	314	10.6	72.5
Delivery care	240	120	55.4	27.7
New born care	237	123	54.7	28.4
Family planning	212	148	49.0	34.2
Use of any form of tobacco	128	232	29.6	53.6
Walking exercise	255	105	58.9	24.2
Number of births for which the mother received at least one antenatal checkup	573		-	

Socio-economic correlates

Table no. 2 shows the influence of the socio-economic characteristics of study women on the utilization of antenatal care services in the study area. It is clearly seen from the table that the utilization of antenatal care services increase with rise in the position of women with respect to each of the socio-economic factors. The utilization of antenatal care services decreases with rise in the birth order of children and decreases as mother's age increases where as it increases with improvement in the position of women with respect to education and shows moderate increase with respect to standard of living in medium and high category. The utilization of antenatal care services

decreases in the case of Muslims category women with respect to Hindu women and in case of general category women with respect to SC, ST and Others category women.

Table No 2: Percentage Received Antenatal Care by Selected background Characteristics in Rafi Nagar slum, Deonar, Mumbai.

Background characteristics	Received antenatal checkup		Number of Births
Mother's age	Yes	Percent	
15-24	131	86.2	199
25-29	115	81.6	193
30-49	114	81.4	181
Total			573
Birth order			
1	55	87.3	64
2	71	85.5	105
3	75	85.2	123
4+	159	79.9	281
Mother's education			
Illiterate	224	78.6	394
Literate, <middle school complete(1-6)	64	88.9	88
Middle school complete(7+)	72	94.7	91
Religion			
Hindu and Others	23	88.5	33
Muslims	337	82.8	540
Caste			
SC, ST and Others	35	85.4	52
General	325	82.9	521
Standard of living			
Low	131	86.2	206
Medium	149	81.0	242
High	80	82.5	125
Total	360		573

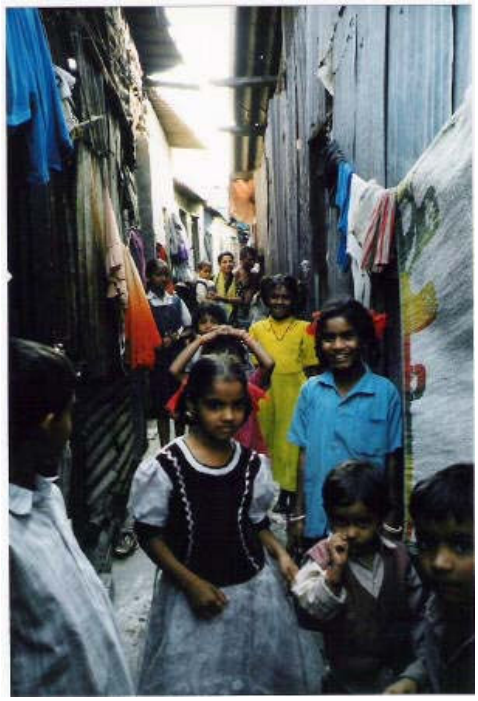
Multivariate Analysis

Logistic Regression

The above discussion gives an idea of the relationship between utilization of antenatal care services and the socio-economic predictor variables. However it does not control for the influence of other variables in the analysis and therefore is inadequate. Thus to see the effect of each of the socio-economic predictor variables independent of the other variables, the results of logistic regression are presented. Table No. 3 shows the odds ratios from logistic regression examining the effect of selected socio-economic variables on utilization of antenatal care services. The odds ratio indicates the effect of

each of the socio-economic factors on the utilization of antenatal care services in the study area, controlling for other variables included in the model.

Fig-4: Lane in the study area.



The odds ratio increases consistently with improvement in the position of the study women in respect of mother's education. The odds ratio differed highly significantly by educational attainment. For example, the respondents who completed middle school (1-6) are 2 times more likely to utilize antenatal care services than those who are illiterates and also those who have completed Middle school and above (7+) are 5 times more likely to utilize antenatal care services than those who are illiterates. Thus with increasing levels of education, the likelihood of utilizing antenatal care services increases. The odds ratio in the case of Religion, Caste and standard of living category is not significant. Thus we can conclude that there is a strong impact of increase in the level of education on the utilization of antenatal care services in the Rafi Nagar slum area.

Table No. 3: Odds ratios from logistic regression examining the effect of selected Socio-economic variables on Utilization of prenatal care services in Rafi Nagar Slum, Deonar, Mumbai.

Socio-economic determinants	Sig.	Odds ratio
Religion		
Hindu and Others (Ref)		1.00
Muslims	.600	.692
Caste		
SC, ST and Others (Ref)		1.00
General	.817	1.129
Mother's education		
Illiterate (Ref)	.003	1.00
Literate, <middle school complete(1-6)	.052	* 2.187
Middle school complete(7+)	.003	*** 4.967
Standard of living		
Low (Ref)		1.00
Medium	.155	.645
High	.389	.730
Constant	.008	6.079

******P< .001, ***P< 0.01, **P< 0.05, *P< .1**

Delivery Care Services

Reproductive and Child Health program (RCH) encourage deliveries under proper hygienic conditions and under the supervision of trained health professionals.

NFHS-2 (National Family Health Survey – 2) shows that within Mumbai, slum women are more likely to use public health facilities for maternal health care services where as non slum women are more likely to use private health facilities for the same. According to the two NFHS surveys, the proportion of deliveries attended by a health professional increased from fifty three percent in NFHS-1 to sixty percent in NFHS-2. Babies with low birth weights (less than 2.5 k.g.) face substantially higher risk of dying than do babies with normal birth weights. In the questionnaire, the question to the study women, who have given birth during the last three years were asked, where she gave birth and who assisted during her delivery. Table no 4 shows that 35 percent of study women had deliveries at their home while rest of the deliveries i.e. 48 percent had at government hospital and 17 percent at private hospital. In accordance with delivery practice, about 65 percent of deliveries were conducted by doctors from government hospitals and private hospitals. Delivery characteristics reveal that height and weight of child born were not measured was known to mothers. This is about 37 percent. It indicates that these deliveries are due to home delivery practice. Another question was asked whether women know, height and weight of the child was normal. About 13 percent of study women were unaware. Besides to these 5 percent of study women had caesarean. Hence delivery care among women in the Rafi Nagar slum area is very poor. Thus lack of antenatal care and delivery care for the women may results into high infant mortality, maternal mortality and even low life expectancy of a new born child in this slum area.

Table 4: Percentage women Utilized Delivery Care Services in Rafi Nagar Slum, Deonar, Mumbai.

Particulars	**Total cases**		**Percentage of cases**	
Place of delivery (Health facility / Institution)				
Govt .H.P	209		48.3	
Pvt Hp	72		16.6	
Home	152		35.1	
Total	433		100.0	
Delivery Attendant				
Govt.hosp doctor	209		48.3	
pvt doctor	73		16.9	
NGO doctor	12		2.8	
Trained Dai	90		20.8	
Mother in law	11		2.5	
Neighbours	34		7.9	
other relatives	4		0.9	
Delivery Characteristics				
Caesarean	20		4.6	
weight and height of child was	**Yes**	**% Yes**	**No**	**% No**
measured	274	63.3	159	36.7
normal	238	86.9	36	13.1

Table no 5 shows the relationship between delivery care and socio-economic characteristics of women. The institutional deliveries are highest among mothers of age 15-24 and lowest among the age 25-29, and increases as mothers age increases, about

66 percent. It indicates that these study women prefer to home delivery. Institutional births are stagnate related with order of births and is about 69 percent. Institutional deliveries increase sharply with education of women and the standard of living. About 34 percent of women from low category of standard of living are not availing delivery care services. Thus we can conclude that there is a concentration of women amongst the poorest of economic stratum who goes without adequate maternal care. The proportion of institutional deliveries is higher among Hindu and others than Muslims. Women from General category (non SC, ST and others) have slightly higher proportion of institutional births than the women from SC, ST and others. The proportion of institutional births shows no fixed pattern with the number of antenatal check-ups, in fact it decreases. Women who receive more antenatal check-ups are more likely than other women to deliver in medical institutions because their antenatal care providers advised them to do so. Women with pregnancy complications are more likely than other women to have antenatal check-ups and also deliver babies in medical institutions (Demet Gurel, 1996). The growing awareness of the benefits of medical care among the women may be the contributory factor (Ramanchandran et. al, 2004).

Table No. 5: Percentage Born in Institutions by Selected background Characteristics in Rafi Nagar Slum, Deonar, Mumbai.

Background characteristics	**Percentage Born at Institutions**		**Number of Births**
Mother's age	Yes	Percent	
15-24	111	73	199
25-29	78	55.3	193
30-49	92	65.7	181
Birth order			
1	43	68.3	64
2	58	69.9	105
3	59	67.0	123
4+	121	60.8	281
Mother's education			
Illiterate	170	59.6	394
Literate, <middle school complete(1-6)	52	72.2	88
Middle school complete(7+)	59	77.6	91
Religion			
Hindu and Others	19	73.1	33
Muslims	262	64.4	540
Caste			
SC, ST and Others	26	63.4	52
General	255	65.1	521
Standard of living			
Low	97	63.8	199
Medium	119	64.7	193
High	65	67.0	181
Number of Antenatal Check-ups			
0	73	16.9	97
1	54	84.4	87
2	51	72.9	91
3	58	72.5	102
4+	111	76.0	196
Total			**573**

Logistic Regression

The logistic regression results in Table no. 6 reveals that socio-economic background conditions have impact on the use of delivery care services. The odds ratio increases consistently with improvement in the position of the study women in respect of mother's education. The odds ratio differed highly significantly by educational attainment. For example, the respondents who completed middle school (1-6), are 1.75 times more likely to utilize delivery care services than those who are illiterates and those who have completed Middle school and above (7+) education are 2.28 times more likely to utilize delivery care services than those who had no schooling to utilize delivery care services. The odds ratio is not significant by standard of living, religion and caste categories with respect to utilization of delivery care services. Thus it reveals that the likelihood of utilizing delivery care services increase with the level of education in Rafi Nagar slum in Deonar.

Table No. 6: Odds ratios from logistic regression examining the effect of selected Socio-economic variables on Delivery Care in Rafi Nagar Slum, Deonar, Mumbai, India.

Socio-economic determinants	**Sig.**	**Odds ratio**
Religion		
Hindu and Others (Ref)		1.00
Muslims	.335	.606
Caste		
SC, ST and Others (Ref)		1.00
General	.443	1.357
Mother's education		
Illiterate (Ref)	.008	1.00
Literate, <middle school complete(1-6)	.056	*1.745
Middle school complete(7+)	.006	***2.287
Standard of living		
Low (Ref)		1.00
Medium	.993	.998
High	.563	1.177
Constant	.247	1.764

****P<.001 ***P<0.01 , **P<0.05

Conclusions and policy Implications

This study finds that extent of utilization of services pertaining to antenatal and natal periods are very low among illiterate women, low category of standard of living women and SC-ST and Other women. The role of socio-economic factors in service

utilization is clearly evident in study area. Logistic regression shows that the socio-economic background conditions have strong impact on the use of antenatal care and delivery care services. The odds ratio differed significantly by educational attainment and is very high with respect to antenatal care.

The odds ratio is not significant by other religion, Caste and Standard of living category women with respect to utilization of antenatal care and delivery care services.

This study also reveals good delivery care seeking behaviour of women towards antenatal measurements, about 71 percent but moderate towards antenatal advice, about 55 percent. Most of the problems during the pregnancy of study women remain same; in fact it has increased over the period of time since the last NFHS-2 (1998-99) was conducted. Thus reproductive health condition of study women living in slum remains poor. The women from low category of standard of living, SC and ST and other category women, percent of illiterate women and even Hindu and Muslims women are not availing delivery care services; clearly indicates that there is a concentration of women amongst the poorest of economic stratum who goes without adequate maternal care. Thus this paper suggests that the effective awareness campaign through urban health centers, committed community health workers, easy access to services, better health care delivery system, quality health care, follow-up care and awareness towards every stages of antenatal, natal, postnatal and child health care etc are needed for the betterment of reproductive health of women in such slums particularly to illiterate women.

APPENDIX

The standard of living is calculated by adding the following scores:

Type of House: 4 for *pucca*, 2 for semi-*pucca*, 0 for *kachha*;

Toilet facility: 4 for own flush, 2 for public, 1 for public pit or open, 0 for no facility;

Source of lighting: 2 for electricity, 1 for other, 0 for no facility;

Source of drinking water: 2 for pipe, hand pump, well, 1 for public tap, hand pump, well, 0 for other water sources;

Separate room for cooking: 1 for yes, 0 for no;

Ownership of house: 2 for yes, 0 for no;

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