Does Non-ANC Influence Complications while delivery among Women in Slums in Greater Mumbai?

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Introduction

Every seven minutes, one woman dies due to complications in pregnancy or child birth, in India (The Registrar-General of India, 2007). That's 77000 deaths every year. This further attributes the high percentage of deaths to rundown maternity services and mother-and-childcare centers and rural health facilities. The current survey also reports that there are 300 maternal deaths per lakh (100,000) live births and what is most worrying is that women in the 20-24 age groups constitute one-third of the total deaths. The main causes for a majority of deaths are hemorrhage, puerperal sepsis (infections after delivery), complications of abortion, obstructed labor, and hypertensive disorders associated with pregnancy and lack of education and awareness (Registrar General of India, 2006). Most of the women are anemic because they don't take good care of themselves. Inadequate health care and child birth in quick succession are the other issues. Abortions done by dais and quacks, which is widely prevalent in India, could also give rise to various infections.

In the poorest parts of the world, the risk of a woman dying as a result of pregnancy or childbirth during her lifetime is about one in six compared with about one in 30,000 in Northern Europe. India, being developing country, contributes to 26% of the global burden of maternal deaths with nearly 136,000 women dying annually (UNICEF, 2009) due to causes related to pregnancy and childbirth. Such a discrepancy poses a huge challenge to meeting the fifth Millennium Development Goal to reduce maternal mortality by 75% between 1990 and 2015 (Carine, 2006). It has also been estimated that for every maternal death, there are over 100 acute

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a Mumbai was selected for the trial, in view of presence of large urban slum population (highest among cities in Maharashtra). Situation analysis of the slums revealed existence of unlisted slums, pockets of underserved slum population and underutilization of existing health services.
b. The indexed women were the one who had a live birth during the last 3years preceding the survey.
c. Based on this survey, the information was recorded as the self reported symptoms. This did not necessarily imply check up being carried out at the time of survey.
d. Complete Antenatal Care for a pregnant mother includes at least 3 antenatal check-ups, 2 doses of TT injection and consumption of 90+ IFA tablets prior to the expected date of delivery.
e. An antenatal check-up includes weight and height measurement, blood pressure, abdominal examination and diagnostic tests including urine test etc.

morbid episodes, indicating overall figure of 62 million maternal morbidities annually (Koblinsky, 1993). This invites the attention of researchers to examine the causes and epidemiological factors associated with maternal deaths.

Antenatal care provides a preventive service that monitors 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 thus 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).

In 1996, safe motherhood and child health services were incorporated in to the Reproductive and Child Health (RCH) Programme in 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 (90+) 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 (Harrison,1990; Ministry of Health and Family Welfare, 1997; 1998b)

Maharashtra, the state of India, has the highest number of slum dwellers (Nandita et al., 2002) having a slum population of more than 40 million (Census of India 2001). The study conducted (Godbole and Talwalkar, 1999) in urban slums in Maharashtra (excluding Greater Mumbai) showed that the antenatal care coverage for three or more ante-natal check-ups was 55 per cent for women in slum. About 58 per cent women in slums reported to have taken a complete dose of iron and folic tablets and only 34 per cent women reported a birth interval of more than three years in slum areas. Anemia is an underlying cause for a range of morbidities and severe anemia is a cause of maternal mortality. The consequences of anemia are severe, long term and often irreversible. A study (Khilare 2001) conducted in the slum area of Pimpri-Chinchwad area of Pune district indicated that out of a total of 1,797 women registered for antenatal care at the PCMC Bhosari hospital, about 83 per cent were anemic (hb < 11 gms/dl). The proportion of anemic pregnant women increased to 89.6 per cent for unrecognized slums.

Another study done (Jean, 2008) in slum in Nairobi where access to appropriate facilities is limited, women with no formal education, availed less appropriate health facilities. Un-

educated women, not seeking delivery care at a proper facility are more likely to have pregnancy complications in the later stage of pregnancy. Besides women who delivered at a health facility indicated that more than 75% of women who delivered at appropriate facilities had at least one complication during delivery compared with about 66% among those who delivered at inappropriate facilities ($p < 0.01$).

The study done in slum areas of Dhaka, Bangladesh, women who delivered in facilities (both elective and emergency transfers) were of significantly higher economic status, were better educated, and were significantly more likely to have received antenatal care than women who gave birth at home. There were no significant differences in parity, nutritional status, anemia, or serious delivery-related complications between those who delivered at home and who delivered at elected facility. Emergency transfers, however, were more likely than deliveries at home or at elective facility among "primipara" (odds ratio [OR]=1.9; p<0.01,) and among those who met the operational definitions for serious delivery-related complications (OR=3.4; p<0.01). This study also showed that the self-reported postpartum morbidity was associated with maternal characteristics, delivery-related complications, and some birthing practices (Fronczak et al, 2007).

A study (Mayank et al., 2001) of women in the slums of Delhi, India reports that among women who experienced bleeding during pregnancy, 44 per cent actually recognized it as a danger signal; of those experiencing high blood pressure, and swelling of the hands, face and feet, only 33 per cent and 9 per cent respectively, recognized its severity. Indeed, this study concludes that although the vast majority of pregnant women received antenatal care, fewer than 10 per cent had been informed about danger signals.

In Andhra Pradesh, Madhya Pradesh and Orissa, the states of India, women who did not seek care for complications experienced during pregnancy cited lack of mobility and lack of resources as reasons while those who did not seek care for complications experienced in the postpartum stage cited lack of resources as the reason (Murthy and Barua, 2001).

Research study conducted by the Institute of Health Management, Pachod (IHMP) in 27 slums of Pune, India, indicates that women suffer from much preventable morbidity. Post-abortion complications are reported 42 per cent of the cases. As many as 44 per cent women from urban slums did not seek treatment for reproductive tract infections. Data also indicate that 68 per cent women harbour negative gender attitudes against themselves – a result of the process

of socialisation. These attitudes have a direct impact on their treatment-seeking behaviour and utilisation of antenatal services (Kapadia-Kundu and Tupe 2001).

It has also been ascertained that pregnancy-related problems have far-reached consequences on the overall reproductive health of women, in addition to their contribution to maternal mortality (Bhatia Cleland, 1995a). Besides less attention has been paid on pregnancy related problems and treatment to these problems. Gynecological morbidity has been studied at community level to a certain extent (Bang et al, 1989, Bhatia Cleland, 1995b, Parikh et al, 1996, Prakasam, 2004) but study on pregnancy related problems and complications while delivery are scanty. Recently, a few studies have been conducted mainly to explore the prevalence of obstetric morbidity at the community level (Bhatia et al 1996: Srinivasa et al, 1997), but negligible attempts were made to examine the determinants of obstetric morbidity among women in slums. Women, particularly in the poor socio-economic status have the inherent tendency of late reporting of morbidity episodes, which subsequently worsens the intensity of health disorders and co-morbidities (Harikrishnan, 2009).

In general, women in slum remain unaware of their own reproductive health problems occur during pregnancy such as Danger sign for pregnancy, Excessive bleeding, Anaemia, diet care during pregnancy and Blood pressure check etc. Further risk involved in repeated pregnancies and proper utilization of antenatal and postnatal care is another concern. Hence it is necessary to impart knowledge about pregnancy related problems and to understand the root causes of generating complications while delivery among such poor women in slums. Besides, women in the urban slums are unaware of the existing health facilities and even though these facilities are available, it has been adequately utilized.

Thus, keeping in view of above research work, an attempt is made, to evolve a suitable strategy for knowing

i) the reproductive health of a study women during pregnancy,

ii) utilization of antenatal care among study women and

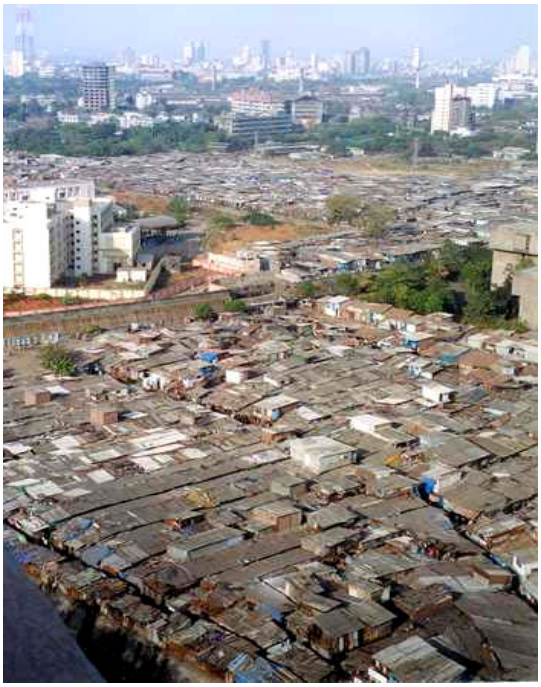
iii)the determinants influencing complications while delivery among women in slum in the area of Greater Mumbai, this study has been initiated.

2. Background of the study area

According to a UNESCO document, “a slum is a building, a group of buildings, or area characterized by overcrowding, deterioration, unsanitary conditions or absence of facilities, or amenities which, because of these conditions or any of them, endanger the health, safety or morals of its inhabitants or the community (Anderson N., 1960). “Slums may be characterized as areas of substandard housing condition within a city. A slum is always an area. A single, neglected building even in the worst stage of detoriation does not make a slum”(Bergel E. E., 1955). Apart from these definitions, slum is an area of darkness, an area of poverty and thus poverty is the prime characteristic of slum.

The TFR for slum areas of Mumbai is 2.69. Within Mumbai, the proportion of births of order one is 35 and that of order four or higher in slum areas is 18 percent. Short birth intervals may adversely affect a mother’s health and her children’s chances of survival. Besides, the percentages who want at least one son (sex preference) are 76 percent, and who want at least one daughter is 72 percent. Infant mortality rate in slum area is 28 (per 1000 born).

Pic-1 Profile of the study area

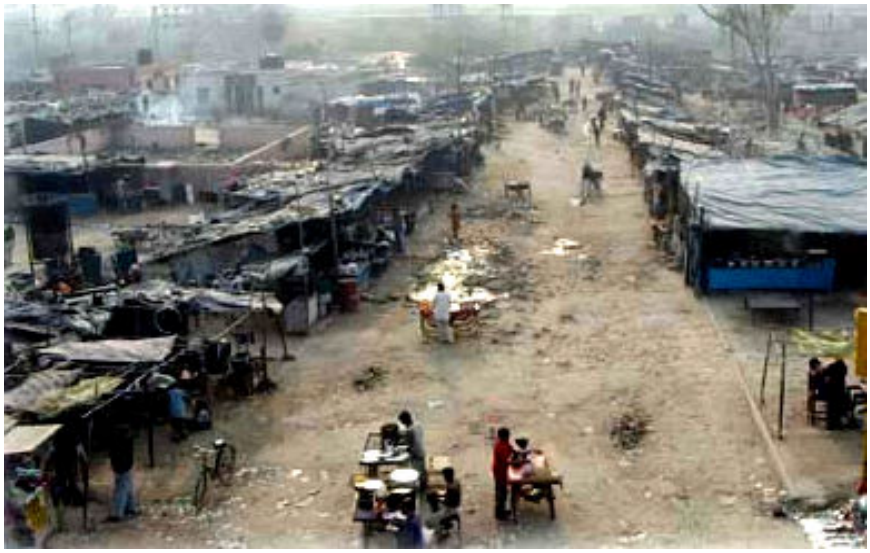


Likewise, Rafi Nagar, a densely populated slum, is situated at Deonar, comes under M/E ward of Brihan Mumbai Municipal Corporation, Mumbai, is about 4 kms. away from Govandi railway station, a suburb in the eastern part of Mumbai, India. This ward spreads over 34.38 sq. km. and has overall population density of 27,398 per sq. km. Deonar **is at the third rank position as far as slum area populations in Mumbai are concern**. In Deonar, out of 6.72 lacs of people, 5.22 lacs of people stay in the slum area (population density – 19,546 per sq. km.). The slum sex ratio of M/East ward is 785. The female literacy rate is 67.49 as compared to male literacy rate of 82.9 which is quite below the national level (Census of India, 2001, Maharashtra population data with data on slum population in urban units).

Rafi nagar which is next to the Shivaji nagar, is one km. away from Govandi (West) railway station, is another straw ling slum on the south separated by 120 feet road. On the north

of Rafinagar is BMC's dumping ground. On the East is Shivaji nagar BEST depot and West side it has 30 feet wide nullah. This slum area spreads over approx 0.30 sq. km. having about 1000 zopadis (huts) and makes about 5500 residents. Most of the inhabitant are migrant from the states Utter Pradesh, Bihar, West Bangal, some southern part of India including interior part of Maharashtra. The majority of huts are kachha, semi-pucca and very few pucca.

Pic-2: Environmental condition in study area.



Rafi nagar slum was formed in the year 1970 with tenement size of 20. Normally, 4-5 families come together and then occupy such open land so called, 'dumping ground' which is being used by municipal corporations for accumulating garbage. Such group of families start living on such grounds by erecting 4 bamboos on four sides separated by 6-10 feet making an area of about 60-100 sq ft, and then they cover it with plastic sheets, thus forms 'Zopadi' (hut) such huts are called as kachha house. When many such huts constructed adjacent to each other it becomes a congested locality.

The Rafi nagar is also of the same type where the huts are congested; have area ranging from 60 sq. ft. to 100 sq. ft. and in rare case more than 100 sq. ft. It was found that 8-10 family members used to reside in a single room of house. Drinking water facility was found to be very poor in this area.

Sanitation is also very poor in the study area. Slum dwellers use common toilet located in the study area or otherwise they prefer the locations of 30 ft. wide nallah. As there is no proper drainage system in the study area, dirty gutters formed automatically while washing utensils and clothing just outside the house. Children also use these gutters for toilet purposes and as there is no sufficient common ground to play, children play near this gutter. Thus leads to the communicable diseases like diarrhea, cough with fever etc. As, many people stay in the small room which has hardly ventilation with no sufficient sun light, no sufficient water even for

bathing and also for toilet, many members of such family always feels like sick and thus household of the family hesitate to go to his job.

The environmental conditions in the slum are very dirty, dirty smell is one of the characteristic of this area. Living together in a congested room with unhygienic atmosphere having contaminated drinking water may leads to the diseases like T.B., Malaria, and Asthma etc.

Fig-3: Housing condition in the study area.

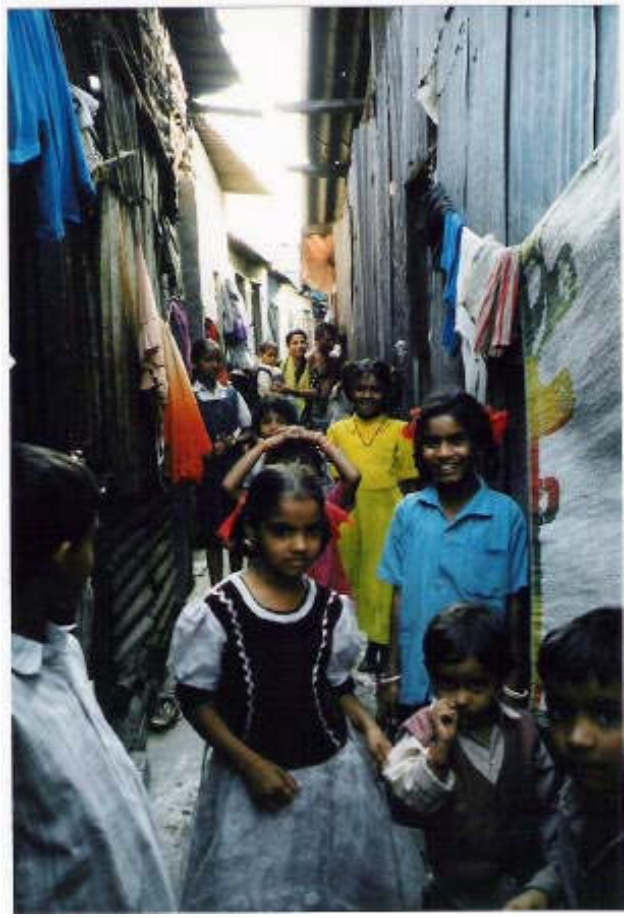
It was also found that the residents of this area cannot afford good medical facility, hygienic food, and reasonable sanitation as they are extremely poor. For the health services they prefer nearby Sub-Urban Health Centre located in the Lotus colony which is adjacent to the Shivaji nagar area and for the major ailments, they prefer to go to the Urban Health Centre (UHC) adopted by Nair Hospital, where full-fledged team of doctors and para-medical staff serve the community.

It was also found that, many times the slum dwellers, particularly, study women doesn't avail medical facility till the disease take its own shape. The reason is that they have to spend a small portion of money in buying the medicines as prescribed by the doctors (as she want to spend this money for their family), but she do avail the same for their children. 'Shatapdi' hospital, run by Municipal Corporation is generally used for delivering a child and for ANC they go to UHC but tendency of study women for regular Post Natal Check-ups was rarely seen.

It was also observed that many study women prefer to deliver their child at home. It was also observed that, quite a few number of study women avail the medical treatment either from UHC or from private hospital for their reproductive health problems. Community health volunteers (CHV) used to provide essential medical facilities to the slum dwellers, particularly to the pregnant women during ANC and PNC periods in the study area.

It was also observed that the respondents were found to be very frank with the investigators which were undergraduate/ graduate girls to whom full training was given and their doubts were discussed and solved with resident's doctors from UHC.

Pic-4: Lane in the study area.



In short, the life of the residents were found to be very measurable having imposed congested houses, shortage of drinking water with unhygienic toilet facility, polluted and dirty smelled atmosphere. Besides, the study women were reluctant of availing treatment for their reproductive health problems during pregnancy including ANC, Child delivery, PNC and even child immunization.

The present study was conducted in Rafi nagar where the population of this slum was 5500.

3. Materials and Methods

i) 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.

ii) 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 the slum selected from plain area was Rafi Nagar slum in Deonar. The population of this slum (study area) was 5500 respectively.

In the second stage of sampling, from the study areas, using cluster sampling, two clusters were selected at random. From these, two clusters, 433 households were selected. The respondents were interviewed carefully using structured schedule by the trained investigators who generally work with the doctors in Pulse-Polio campaign. In all, this study covers 433 reproductive women in slums representing slum population in Greater Mumbai. This survey was conducted from June to August, 2005. Before going for survey, pilot survey was also conducted.

In order to know the reproductive health of study women during pregnancy, utilization of antenatal care among study women and the determinants influencing complications while delivery among the study women in the reproductive age groups in slums in Mumbai, the children born to mothers during the last three years prior to survey were considered.

iii) Method of Analysis

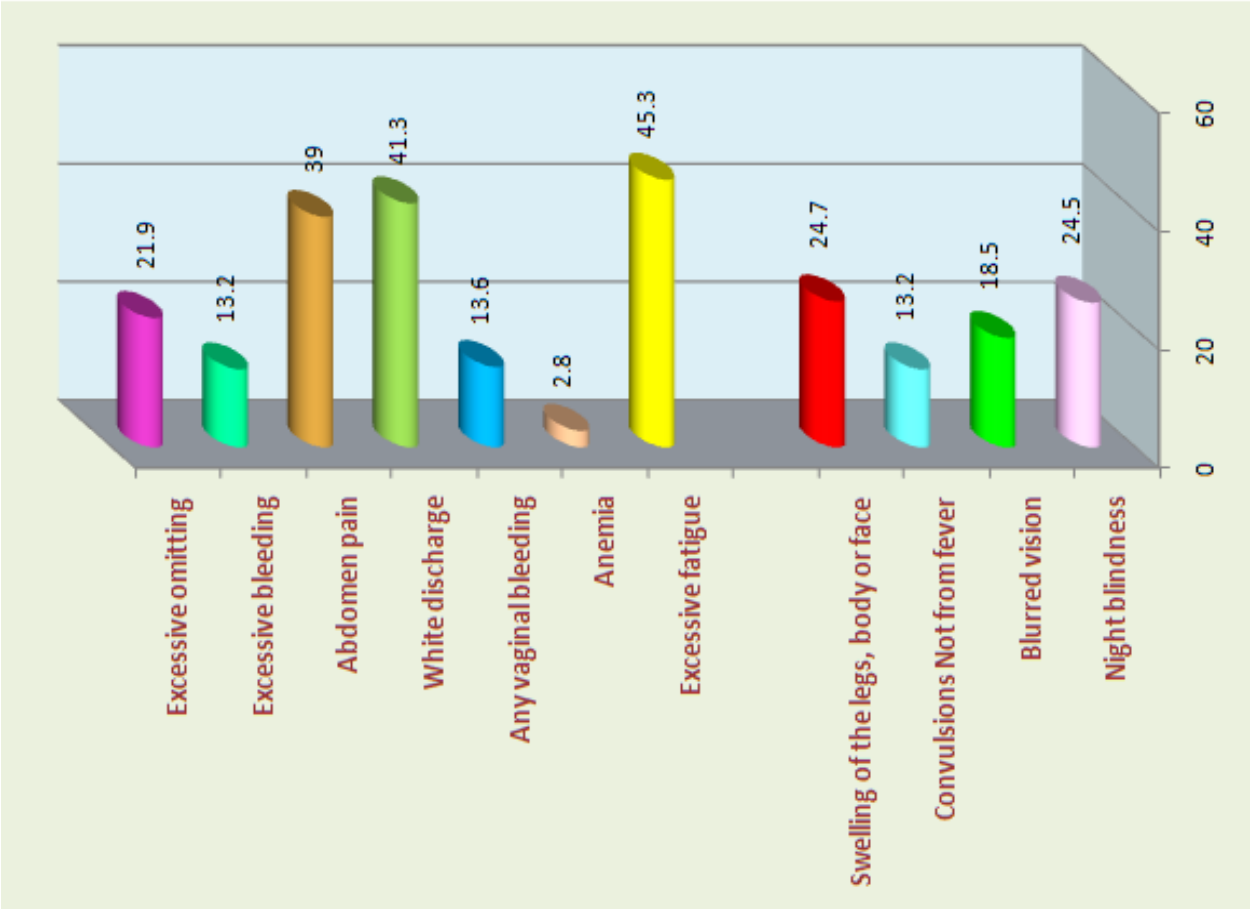
Logistic regression analysis was used to assess the effect of reproductive health problems during pregnancy with no ANC on complications during delivery controlling for other variables included in the model. For the logistic regression analysis purpose, the reproductive women who have given at least one live birth during the last three years prior to the survey were considered.

4. Results and Discussion

i) Reproductive Health Problems during Pregnancy

Fig 1 shows the problems during pregnancy reported by study women. About 45 percent of the women in the study area reported that they had at least one problem during pregnancy. The major antenatal problem reported were excessive fatigue 45 percent (NFHS-2: 49.1 percent), followed by excessive vomiting 22 percent, swelling of the legs 25 percent (NFHS-2: 35.9 percent), pain in abdomen 39 percent, white discharge 41 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 3 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 decade, the reproductive health condition of study women living in this slum remains poor, probably these women are not utilizing the medical facilities available in that area.

Fig 1: Utilization of Antenatal Care Services showing Problems during Pregnancy in Rafi Nagar Slum, Deonar, Mumbai, India.



ii) 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 at least one live 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.

a) Components of Antenatal Care Indicators

Table no.1.1 indicates that the 83 percent of study women received at least one antenatal check-ups, 52 percent received three or more antenatal check-ups, 69 percent received two or more T.T. injections and 92 percent have consumed any iron and Folic acid tablets or syrup. Median number of check-ups (for those who received at least one antenatal check-up) was 1, and 17 percent of study women who did not go for antenatal check-ups.

Table 1.1: Utilization of Antenatal Care Services showing Antenatal Care Indicators during pregnancy in Rafi Nagar slum, Deonar, Mumbai.

Antenatal care indicators:	Rafi Nagar Slum, Deonar	
	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 that received two or more T.T. injections	247	68.8
Percentage given any iron and Folic acid tablets or syrup	331	91.9
Tablets received/purchased		
1-40	131	30.3
41-100	47	14.2
100+	42	12.7
Not received	29	8.1
Median number of check-ups(for those who received at least one antenatal check-up)	1	
No antenatal check-ups	73	16.9

b) Components of Antenatal Check-ups:

Antenatal Measurements / Tests

Data on various components of antenatal check-ups underwent by women in Table no 1.2 shows positive behavior pattern of women in utilizing antenatal care services in the study area. Weight measured is only 61 percent, blood and urine test, 78 and 75 percent respectively, Sonogram and abdomen is 64 and 71 percent respectively and even blood check-up 78 percent.

c) Antenatal Advice

Data on antenatal care advice in Table no 1.3 reveals that the proportion of pregnant women in the study area have not utilized proper advice on delivery care since danger sign for pregnancy is only 11 percent, new born care is just 55 percent followed by special diet 53 percent and family planning is about 49 percent and even use of tobacco during the pregnancy is quite high, about 30 percent.

Table 1.2: Utilization of Antenatal Care Services showing Components of Antenatal Check-ups in Rafi Nagar slum, Deonar, Mumbai.

Components of Antenatal check-ups	Rafi Nagar Slum, Deonar			
Antenatal measurements / tests	**Cases**		**Cases**	
	Yes	Per		Yes
Weight measured	265	61.2	Weight measured	265
Height measured	196	45.3	Height measured	196
Blood pressure checkup	310	71.6	Blood pressure checkup	310
Blood test	338	78.1	Blood test	338
Urine test	326	75.3	Urine test	326
Abdomen Examined	308	71.1	Abdomen Examined	308
X-Ray	79	18.2	X-Ray	79
Sonogram/Ultras	276	63.7	Sonogram/Ultras	276
Any other test	79	18.2	Any other test	79

Fig 2. Reason for not receiving an antenatal check-up according to residence, Rafi nagar slum area, Deonar, Mumbai.

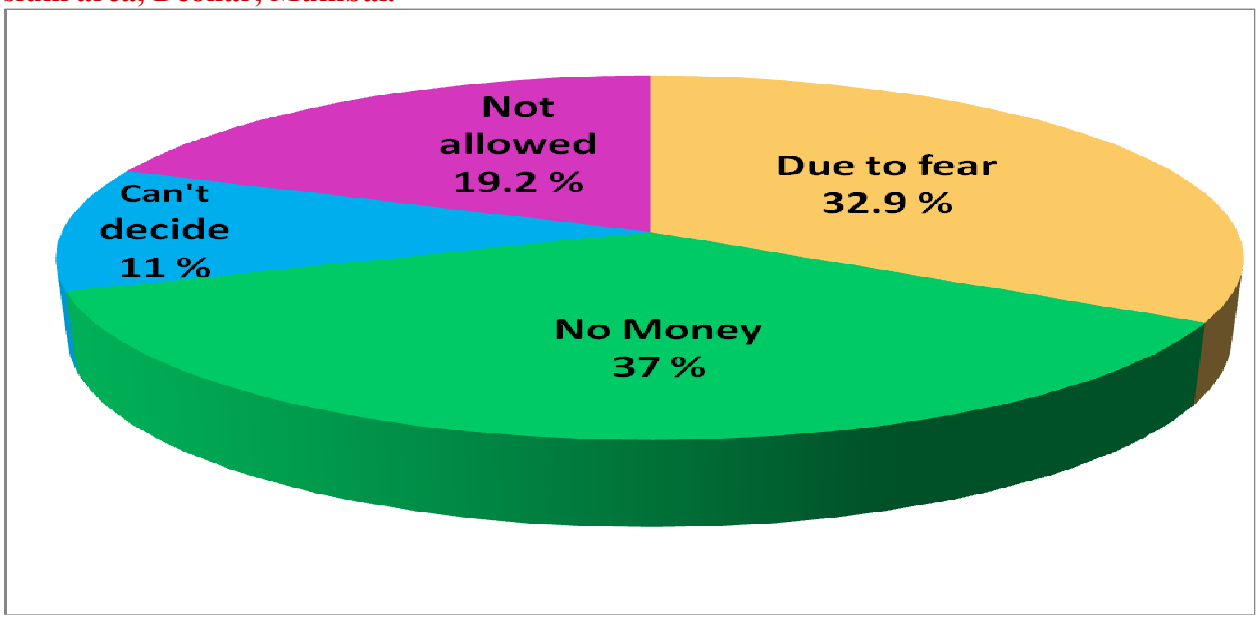


Table 1.3: Utilization of Antenatal Care Services showing Antenatal Advice in Rafi Nagar slum, Deonar, Mumbai.

Antenatal advice	Cases	
	Yes	Per
Special diet	231	53.3
Danger sign for pregnancy	46	10.6
Delivery care	240	55.4
New born care	237	54.7
Family planning	212	49.0
Use of any form of tobacco	128	29.6
Walking exercise	255	58.9
Number of births for which the mother received at least one antenatal checkup	573	

Thus from the above tables it can be summaries that still 17 percent of women did not avail antenatal check-ups. Fig 1, Table no.1.1 and Table no. 1.2 shows not that good MCH service performance. Data on antenatal care advice in Table no 1.3 reveals that the proportion of pregnant women in the study area have not utilized proper advice on delivery care as new born care is just 55 percent followed by special diet and family planning is about 49 percent. Hence the study reveals not that good antenatal care seeking behavior of women towards antenatal measurements besides too moderate towards antenatal advice.

5. 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

Table 2. Percentage received antenatal care by selected background characteristics in Rafi Nagar slum, Deonar, Mumbai.

	Rafi Nagar Slum, Deonar		
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 and above(7+)	72	94.7	91
Religion			
Hindu and Other	23	88.5	33
Muslims	337	82.8	540
Caste			
SC, ST	35	85.4	52
Other	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

utilization of antenatal care services increases with rise in the position of women with respect to each of the socioeconomic factors. The utilization of antenatal care services decreases with rise in the birth order of children and rise in mother's age where as it increases with improvement in the position of women with respect to education. The utilization of antenatal care services was found less among Muslims compared with the Hindu. It shows no fixed pattern in the case of 'caste' and 'SLI' category. There is a very negligible difference in seeking ANC services by the background variables, which indicates that besides socio-economic factors, some other non background factors have been responsible for splendid performance of antenatal care services in the Rafi nagar slum area of Deonar.

In order to see the net effects of independent variables (description of the variables is provided in Table 3 for Rafi nagar slum area) on the dependent variable which is dichotomous, logistic regression technique has been adopted.

Table 3. Measurement of variables used in the logistic regression analysis for Rafi nagar slum area, Deonar

Category	Variables	code
	Dependent variables	
Delivery complications	No (Ref)	0
	Yes	1
	Independent variables	
1. Night blindness	No (Ref)	0
	Yes	1
2. Blurred vision	No (Ref)	0
	Yes	1
3. Convulsions Not from fever	No (Ref)	0
	Yes	1
4. Swelling of the legs, body or face	No (Ref)	0
	Yes	1
5. Excessive fatigue	No (Ref)	0
	Yes	1
6. Anemia	No (Ref)	0
	Yes	1
7. Any vaginal bleeding	No (Ref)	0
	Yes	1
8. White discharge	No (Ref)	0
	Yes	1
9. Abdomen pain	No (Ref)	0
	Yes	1
10. Excessive bleeding	No (Ref)	0
	Yes	1
11. Excessive omitting	No (Ref)	0
	Yes	1
Utilisation of antenatal care service (ANC)	Antenatal Care service not utilized (Ref)	0
	Antenatal Care service utilized	1

6. Determinants of Utilization of health care services during delivery period (Delivery complications): A Logistic Regression Analysis

Logistic Regression

Table no. 4a shows the influence of the **reproductive health problems during pregnancy** of study women who did not go for ANC **on delivery complications** in the study area. It is clearly seen from the table that delivery complications due to Any vaginal bleeding and Excessive bleeding were 63 percent, followed by Convulsions Not from fever (56%), Anemia (50%), Blurred vision (49%), White discharge and Excessive fatigue (47%), Swelling of the legs, body or face (45%) and for rest it was around 43%.

Table No. 4a: Percentage reproductive health problems during pregnancy and ANC on delivery complications in Rafi Nagar Slum, Deonar, Mumbai.

	Delivery complication	
Problems during pregnancy:	Yes	Percent
Night blindness	46	43.4
Blurred vision	39	48.8
Convulsions Not from fever	32	56.1
Swelling of the legs, body or face	48	44.9
Excessive fatigue	93	47.4
Anemia	6	50.0
Any vaginal bleeding	37	62.7
White discharge	84	46.9
Abdomen pain	77	45.6
Excessive bleeding	36	63.2
Excessive omitting	37	38.9
ANC	119	33.1

The logistic regression results in Table 4b reveals that the study women who have not gone for antenatal care and having pregnancy problems results in to the complications during the delivery. Here the dependent variable is complications at the time of delivery and the independent variables were problems during the pregnancy and study women who did not go for ANC. The results of logistic regression showed that **Swelling of the legs, body or face, Any vaginal bleeding, White discharge and Excessive bleeding** during pregnancy will influence complications during the delivery of the respondents from Rafi nagar area.

Table No. 4b: Odds ratios from logistic regression examining the effect of antenatal care and reproductive health problems during pregnancy on delivery complications in Rafi Nagar Slum, Deonar, Mumbai.

	Sig.	Odds ratio
Problems during pregnancy		
Night blindness	.751	1.110
Blurred vision	1.000	1.000
Convulsions Not from fever	.840	1.054
Swelling of the legs, body or face	.011	1.782**
Excessive fatigue	.813	1.182
Anemia	.200	1.362
Any vaginal bleeding	.056	1.892*
White discharge	.009	2.407***
Abdomen pain	.359	1.252
Excessive bleeding	.018	2.281**
Excessive omitting	.254	.732
ANC	.000	.339***
Constant	.147	.650
-2 Log likelihood	507.465	
Cox and Snell R^2	0.140	
Nagelkerke R^2	0.190	
Number of births	414	

***p<0.01 , **P<0.05

7. Conclusions and Policy implications:

Maternal deaths are clustered around labour, delivery, and the immediate postpartum period, with obstetric haemorrhage being the main medical cause of death**.** Skilled attendance during delivery, access to emergency obstetric care and postnatal care (PNC) are cost effective and life saving investments for mothers. The extent of services available and availed during complications related to pregnancy, delivery and postpartum indicates the state of obstetric morbidity and mortality (Ministry of Health and Family, 2008).

This data showed that the extents of utilization of services pertaining to antenatal period are excellent other than illiterate women, low category SLI women, SC-ST, OBC women. The roll of socio-economic factors in service utilization is clearly evident in study area. It clearly shows that as education level increases, the utilization of ANC also increases. This study also reveals excellent antenatal care seeking behaviour of women towards antenatal measurements but moderate towards antenatal advice. *About 21 percent of illiterate women and 14 percent of*

women from low category of standard of living are not availing delivery care services; clearly indicate that there is a concentration of women amongst the poorest of economic stratum who goes without adequate maternal care.

Similarly the influence of the reproductive health problems during the pregnancy having no ANC creates complications while delivery and the most influencing factors found were **Swelling of the legs, body or face, any vaginal bleeding, White discharge and *excessive bleeding.***

Even if community health volunteers (CHV) plays big role in communicating importance of ANC, delivery care and post-natal care to the expectant women and to avail the health facilities in this area, illiteracy and poverty prevents such women to remain unutilized from health facilities.

Thus this paper suggest that

- the effective awareness campaign through urban health centers,
- committed health workers,
- easy access to services,
- awareness among study women related to the birth interval, proper diet during pregnancy
- better health care delivery system,
- quality health care,
- Follow-up care etc is needed for the betterment of reproductive health of women in such slums particularly to the illiterates.

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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;

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