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Research Article

A STUDY ON UTILIZATION OF MATERNAL SERVICES IN URBAN SLUMS OF BANGALORE

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ABSTRACT
Availability, accessibility, acceptability and affordability of maternal services are important to reduce maternal morbidity and mortality. To achieve MDG-5, urban slums need improvement, as slum indicators are below urban average. The objective was to study the utilization of maternal services. The cross sectional study was done in all urban slums in the urban field practice area of Bangalore Medical College and 320 postnatal mothers were interviewed. Among the 320 mothers interviewed, only 40.9% have utilized maternal services completely. About 56.6% have registered in the 1st trimester. Lack of awareness was found the major reason (49.0%). Mothers with IFA tablet consumption were by only 65.6%, major reason (44.5%) for refusal was the side effects. Only 59 % had their 2nd postnatal visit. There is poor utilization of maternal services. Awareness is needed in slums by IEC activities.

Key Words: *Utilization, Antenatal Services, Anemia, IFA (Iron and Folic Acid)*

INTRODUCTION

Pregnancy and childbirth are special events in a woman's life. But during this period they are more vulnerable to disease and death. The primary aim of antenatal care is to achieve, at the end of pregnancy, a healthy mother and a healthy baby (Park 2007). 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, delivery care, postnatal care, and related issues (NFHS-3)
India is among those countries, which has high maternal mortality ratio. The current MMR is 254 per lakh live births (Annual report 2010). Anemia is one of the important causes of maternal morbidity and mortality. The vast majority of maternal deaths and disabilities can be prevented through appropriate maternal health services before, during, and after pregnancy. The Millennium Development Goals 5 - focuses to improve maternal health (MDG 5 WHO), with targets to reduce maternal mortality by three quarters between 1990 and 2015, and to achieve universal access to reproductive health by 2015. To achieve this goal, urban population needs to be given scope. Urban poor population constitutes nearly a third of India's urban population. Health status among urban slum dwellers is poor and far from adequate, due to factors like inadequate reach of services (Agarwal S 2005). Though on average health indicators, the situation in cities is better than in rural areas, the enormous social and economic stratification with in urban areas results in significant health inequalities (World Health Report 2008).
Definition of Complete utilization of maternal services is, mothers with early registration (within 1st trimester), minimum 3 ANC (antenatal checkups), inj TT 2 doses/ booster, consumption of minimum 90 IFA (Fe & folic acid) tablets, delivery by skilled birth attendant/institutional delivery and two postnatal check-ups. Health indicators in urban slums are below urban average. Urban average of complete utilization of antenatal care is 23.7%, where as in urban slums the complete utilization is 11%.(NFHS-3)
With this background the study was performed to know the utilization of services during Antenatal and Postnatal period.

MATERIALS AND METHODS

A Cross sectional study was conducted in all 8 slums in the urban field practice area of Bangalore Medical College during Jan–July 2010. A sample of 320 postnatal mothers were interviewed, calculated

at 5% significance level with 15% allowable error based on study done by Venkatesh RR (2005), where the prevalence of complete utilization of maternal services was 35.9%.

Study area consists of 34,867 population and as per DLHS 2008, Bangalore CBR is 19/1000. The total eligible mother in study area is 662. In that as per sample size calculations 320 mothers were interviewed as every alternative mother, in entire study area. All Postnatal mothers who were residing in the urban slums during their antenatal period and were in their 4th month of postnatal period. (Maximum 3 months time was given for completion of two postnatal visits and also to avoid recall bias) & who deliver during the course of the study were included.

Data collection was started after obtaining clearance from the ethical committee and after taking consent. By using pre-tested semi structured questionnaire data was collected by house-to-house survey by interviewing postnatal mothers and also by observing their records. All eight slums were visited once a month by rotation (by covering two slums per week) and interviewing all postnatal mothers who met inclusion criteria, till a sample size of 320 was reached. At least three visits were made to include all the women who could not be contacted in the first visit. Health worker's registers and anganwadi records were also used to identify mothers during enumeration. Data was collected regarding socio demographic profile, utilization of maternal services and reasons for not utilizing these services. Hb% (hemoglobin) during their antenatal period and the birth weight of babies born to study population were also recorded. The prevalence of low birth weight babies and its factors were also assessed as an outcome measurement of complete utilization of maternal services. The definition of complete utilization of maternal services followed in a study done by Venkatesh (2005) was slightly modified and followed in our study. Data was entered onto a computerized Excel (Microsoft Excel 2009) spread sheet; subsequently it was analyzed using Epi info version 3.4.1. Descriptive statistics (means, proportions, percentages), chi square test, and logistic regression analysis was employed. The strength of association was estimated by calculating the odds ratios (OR) with 95% confidence intervals (CI). P value of <0.05 was considered statistically significant

RESULTS

Among the 320 postnatal mothers, 86.3% were in the age group of 20-29 years, 21.5 % were illiterates, 60% mothers belonged to upper lower class according to modified Kuppuswamy's classification. About 84(30.7%) husbands of the study population were illiterate and 119(37.2%) had level of education till high school. The mean age of marriage was 19 years and mean age of first conception was 20years. The mean duration of spacing between pregnancies was 2.6 years. Specific characteristics of postnatal mothers are shown in Table 1.

The proportion of mothers who have completely utilized maternal services (as per definition) were only 131(40.9%). There were differences in the timing and frequency of the visits. Only 181(56.6%) mothers had registered in 1st trimester, 41 % & 2 % in 2nd and 3rd trimester of pregnancy respectively. IFA tablets were consumed completely by 65.6% of mothers, remaining 31.6 & 2.8 % incomplete & nil consumption. Whereas only 58.75% had their 2nd postnatal visit (Table-2).

The factors affecting the utilization of different maternal services by the postnatal mothers are described in Table 3.

Doctors were the main provider of maternal services, followed by nurses. Majority that is 77.7% utilized maternal services at government facilities and 12.3% utilized at private facilities and 10% utilized at both places.

This study found significant differences among the postnatal mothers in complete utilization of maternal services with relevant socio demographic factors, like mother's education, husband's education, socio economic status and place of utilization of services and among the multiparous mothers. On multiple logistic regression analysis, significant association was found between the postnatal mothers who

Table 1 Socio demographic characteristics of postnatal mothers (n=320)

Characteristics	Frequency (%)
Age	
<20 years	28(8.7)
20–29 years	276(86.3)
30–39 years	16(5.0)
Level of education of Mother	
Illiterates	69(21.5)
Primary	72(22.5)
Secondary	129(40.0)
Degree	50(16.0)
Socio economic status	
Upper middle	38(11.9)
Lower middle	90(28.1)
Upper lower	192(60.0)
Age of marriage	
<18 years	48(15.0)
18 years or more	272(85.0)
Teenage conception (<19years)	
Yes	130(40.6)
No	190(59.4)
Total no. of children ever born (Parity)	
1	116(36.3)
2	143(44.6)
3 or more	61(19.1)
Spacing between pregnancy (n=204)	
< 3years	91(44.6)
≥ 3years	113(55.4)

Table 2. Details of utilization of Antenatal, natal, postnatal services (n=320)

Characteristics	Frequency (%)
Registered antenatal mothers	318(99.4)
Completely utilized services	131(40.9)
Early Registration (< 1st trimester)	181(56.9)
No. of antenatal visits ≥3	312(97.5)
Inj TT 2doses/booster	310(96.9)
Consumption of ≥ 90 IFA tablets	210(65.6)
Institution Delivery	318(99.4)
Postnatal check-ups (>2 visits)	189(59.0)

completely utilized maternal services and literacy of mothers (OR = 7.61), literacy of husbands (OR =4.23) and place of utilization of service (OR =0.196) Table-4. No association was found with variables like teenage pregnancy, type of family, high risk pregnancy, unwanted pregnancy and working mothers.

Table 3 Major factors affecting utilization of maternal services

Major factors	%
Lack of early registration (N= 139)	
Not aware	49
Felt not needed	27
Financial constrains	12
Hospital staff will refused to register with in 1st trimester,	9
Objection by family members.	3
Incomplete/ Nil consumption of IFA tablets (N=110)	44.5
Side effects (vomiting, diarrhoea, gastritis),	28.1
Refused (not their practice),	14.6
Felt not needed	12.72
Provided less	
Lack of 2nd postnatal visits (N=131)	55
Not aware	45
Felt not needed	

Table - 4 Variables in relation to complete utilization of Maternal services among postnatal mothers

Variables	No (N=320)	Complete utilization of services Yes (%)	No (%)	' p value'	odd ratio
Literate Mother					
Yes	243	122 (50.2)	121 (49.8)	.000*	7.61
No	77	9 (11.7)	68 (88.3)		
Literate Husband					
Yes	222	112 (50.5)	110 (49.5)	.000*	4.23
No	98	19 (19.4)	79 (80.6)		
Socio economic status					
Middle	128	73 (57.0)	55 (43.0)	.000*	3.06
Lower	192	58 (30.2)	134 (69.8)		
Place of service utilization (N=318)					
Government	272	97 (35.7)	175 (64.3)	.000*	.196
Private	46	34 (73.9)	12 (26.1)		
Multipara (>2)					
Yes	204	75 (36.8)	129 (63.2)	0.04*	.623
No	116	56 (48.3)	60 (51.7)		
LOW BIRTH WEIGHT (N=310)					
Yes	34	6 (17.65)	28 (17.65)	0.003*	0.270
No	276	122 (44.21)	154 (55.79)		

* p <0.05 (Statistically significant)

It was found that 89.8% of postnatal mothers were anemic (with Hb% of < 11g/dl) during their pregnancy. The prevalence of mild, moderate and severe anemia were 25%, 60.8% and 4.1% respectively

as per the classification followed in NFHS-3 , and the mean Hb% level was 9.61gm/dl. There was 73% reduction in the prevalence of LBW among the mothers who had completely utilized the maternal services. It was found significant with P= 0.003, OR= 0. 270, and CI = (0.109 – 0.674)

DISCUSSION

There is availability and accessibility of health services in our urban field practice area. However, the utilization of these services by our study
is good. The consumption of 90 IFA tablets/3 months was only by 65.6% of mothers. population is poor.
This study revealed that, only 40.9% of the postnatal mothers have utilized the maternal services completely during antenatal, natal and postnatal period. A similar observation was made by Venkatesh RR et al [7], in the study in the slums of Davangere town, where 35.9% of the women have utilized the services completely.
Present study observed that, 99.45%(318) of postnatal mothers (320) have registered during their pregnancy, & our health workers miss the registration of two mothers, later attributed to migrant population. and among them only 56.90% have registered in the 1st trimester. About 97.5% have had > 3 antenatal visits, 96.9% have taken TT2 / booster and 99.4% were institutional deliveries, which shows that awareness about its importance and acceptability Similar observation was noticed by NFHS-3, a study done in Hyderabad slums where, 59.5% have registered in 1st trimester, 90.5% have had more than 3 visits, 86.9% have taken TT and 46.7% have taken IFA tablets.
Major reasons or factors influencing the late registration observed in this study were similar to the observation made by Paras A et al (2007), in a study done in urban slums of Delhi , mothers with lack of knowledge in 49%, services not required in 27%, financial constraints (12%),Health Workers did not register(11%) and objection from family (3%). As majority were not aware about early registration and its importance, including health workers, there is a need to create awareness in Health staff, mothers and also in family members.
The prevalence of anaemia observed in our study was 89.8%.The findings are similar to the study done by Shali T(2004) , in urban slum of Delhi, with anaemia prevalence of 80.6%. The study revealed that there is a higher prevalence of anaemia among the study population and major reasons for decrease acceptance of IFA tablets were, 44.5% had side effects, 28.1% refused (not their practice), 13.6% felt it was not needed and 12.72 % were provided less. There is need to counsel about the advantages of the IFA tablets among the health care workers, mothers and family members in the slums.
We also observed that 99.4% were institutional deliveries (skilled attendant), whereas only 58.75% had two postnatal visits. A similar observation was made by NFHS-3 , a study done in Mumbai slums where 83.3% delivered in health facility and 63% had postnatal visits. As majority were not aware of the importance of 2nd postnatal check-ups and some felt it's not needed. There is a need for awareness among mothers in urban slums and also to motivate and supervise the health workers regarding improving 2nd postnatal visits as it is very essential both for the mother and the child.
We found strong association between, literacy of husbands and literacy of mothers in utilization of maternal services. A similar observation was made by Hazarika .I(2009), a study in slum population in India. This indicates the impact of education on awareness and utilization of maternal services by the population.
The limitation of this study is that, as the measurements of Hb% was taken from the records, the uniformity of recording cannot be assured, which might be the reason for the difference in prevalence of anemia observed in our study. Data regarding diet of mothers and tobacco consumption habits during their pregnancy was not collected.

Conclusion and Recommendation

In spite of availability and accessibility of maternal health care services in urban slums < 50% of mothers have completely utilized maternal services. Awareness about early registration, 2nd postnatal

visit and acceptance of IFA tablets among the study population are less, which needs attention and improvement.

Health workers need to be trained regularly and motivated about the essential obstetric care. Adolescent health education conducted in schools and colleges should stress on female literacy and awareness about legal age of marriage. Mothers should be addressed on antenatal checkup days, in immunization clinics, mothers group meeting in anganwadi and during the home visits by health workers. Joint effort, both by the community as well as health staffs are essential for the achievement of MDG-5.

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