Maternal Health Outcomes among Utilisers of Antenatal Services in an Urban Resettlement Colony of Delhi: A Record Based Descriptive Study

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ABSTRACT

Research Question: What are the maternal health outcomes among utilizers of antenatal services in an urban poor setting?

Methods: Record based descriptive study of pregnant women in an urban resettlement colony in South Delhi from January 2004 to December 2009. Pregnancy outcomes were recorded by health workers.

Results: Majority of women were in the age group of 21-25 years (59%) and 3% were above 30 years of age at the time of pregnancy. Out of 1838 pregnancies for which pregnancy outcome was known, 2.8% were abortions. Out of 1786 pregnancies which crossed 28 weeks, 1760 (98.6%) were full term and 1.4% were pre term births; 98.6% (n=1761) were live births and 1.4% (n=25) were still births. Of all deliveries, 85.4% were hospital deliveries.

Conclusions: Institutional deliveries are increasing in the urban poor areas of Delhi. Increasing the awareness of the community about maternal health care by field workers will improve maternal health.

Keywords: Maternal health, Pregnancy outcomes, institutional deliveries, urban poor
INTRODUCTION

Disparities in women’s reproductive health represent one of the starkest health inequities of our times and a major social injustice. Globally, each year approximately 530,000 women die from the complications of pregnancy and childbirth; 99% of these deaths occur within the most disadvantaged population groups in the developing countries of the world. (i) Approximately one-quarter of all pregnancy- and delivery-related maternal deaths worldwide occur in India, which has the highest burden of maternal mortality for any single country. (ii) India has a Maternal Mortality Ratio (MMR) of 254/1 lac live births. (iii)

Since Independence, all the national programmes including MCH programmes focussed on rural India. As per Census 2001, urban population constituted 286 million (27.8% of total population of India) (iv) and it is estimated to increase to 432 million by 2021. (v) National Family Health Survey-3 (NFHS-3) showed that health indicators especially maternal health indicators of urban poor are poor similar to rural areas. (vi) This study attempts to provide information regarding outcomes of pregnancy among pregnant women registered over a six year period.

Materials and methods

Study Design: Record based descriptive study.

Study Setting: The study was carried out in an urban resettlement colony in South Delhi which is the field practice area of Centre for Community Medicine, All India Institute of Medical Sciences since 2002. The field practice area consists of six blocks of 21327 population as per census conducted in year 2009. There are 4583 families residing in these six blocks, majority of them migrated from neighbouring states like Bihar, Uttar Pradesh, Uttarakhand, Rajasthan, etc. Under the Urban Health Programme (UHP) of Centre for Community Medicine, apart from providing preventive and curative services by a Mobile Health Clinic, there is a dedicated team of field workers consisting of four Multipurpose Health workers (2 male and 2 female), one Public Health Nurse and two Medical Social Service Officers. Multipurpose health workers visit the families once in a month and provide mainly MCH services. Information related to vital events, immunisation, antenatal and natal care, contraception are routinely collected during domiciliary visits and updated in the respective registers. 10% of this information is cross-checked by a Public Health Nurse and
postgraduates as part of their training. Antenatal and immunisation clinics are conducted on fixed days twice in a week (Thursdays and Saturdays) in Mobile Health Clinic.

**Study population and Study period:** All pregnant women registered between January 2004 and December 2009 were included in the study.

**Identification of maternal outcomes and updating of data:** All pregnancies and their outcomes in the study area were registered during domiciliary visits by health workers every month. Ascertainment of pregnancy was by history and or by urine pregnancy test or by antenatal card. Information about tetanus immunisation, iron and folic acid supplementation were also collected and entered in the registers. New pregnancies identified in antenatal clinic are also updated in the register and followed up during domiciliary visits.

**Data retrieval and analysis:** Relevant information pertaining to age, last menstrual period (LMP), gravida, pregnancy outcome and period of gestation at the time of outcome, sex of the baby, place of delivery and birth attendant for the period of 1st January 2004 to 31st December 2009 was retrieved from registers and entered into Epi info version 3.5.1. Descriptive analyses were done using SPSS 13.0.

**RESULTS**

There were 2037 pregnancies registered during the reference period January 2004-December 2009. 199 (9.7%) pregnant women, who were registered, migrated out of the study area and hence not included in the analysis. Information regarding pregnancy outcome was known for 1838 (90.2%) pregnancies. Majority of the women were in the age group of 21-25 years (59%) and 3% (61) were above 30 years of age. Mean age and the median age were 24.2(±3.2) years and 24 years respectively. The mean age of the mother remained same across the entire reference period even after adjusting for number of pregnancies (gravida). Teenage pregnancies (19 years or below) constituted 3.4% (n=70) of all pregnancies.

One third (33.8%, n=644) of pregnancies were primigravidae and 11% (209) were fourth gravida and above. In bivariate analysis, it was seen that home deliveries were more in multigravidae as compared to primigravidae but it was not statistically significant (p
value=0.06) (Table-I). 85.4% (1382) were hospital deliveries and 14.6% (237) were home deliveries. There was no major variation in place of delivery across the years.

Table I: Distribution of women by gravida and place of delivery

<table>
<thead>
<tr>
<th>Gravida</th>
<th>Home delivery (%)</th>
<th>Institutional delivery (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primigravida</td>
<td>61 (12.1)</td>
<td>443 (87.9)</td>
<td>504</td>
</tr>
<tr>
<td>Multigravida</td>
<td>176 (18.7)</td>
<td>939 (84.3)</td>
<td>1115</td>
</tr>
<tr>
<td>Total</td>
<td>237 (14.6)</td>
<td>1382 (85.4)</td>
<td>1619*</td>
</tr>
</tbody>
</table>

*Information was missing for 167 pregnancies which crossed 28 weeks of gestation either for gravida or place of delivery.

Table II: Pregnancy outcome among the study subjects

<table>
<thead>
<tr>
<th>Period of Gestation</th>
<th>n=1786</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>1760 (98.6%)</td>
</tr>
<tr>
<td>Preterm</td>
<td>26 (1.4%)</td>
</tr>
<tr>
<td>Delivery Outcome</td>
<td>n=1786</td>
</tr>
<tr>
<td>Live Birth</td>
<td>1761 (98.6%)</td>
</tr>
<tr>
<td>Still Birth</td>
<td>25 (1.4%)</td>
</tr>
</tbody>
</table>
96.3% (622) of primigravida got at least one dose of tetanus toxoid immunisation and 91.3% (588) got both the doses. 92% of multigravida got at least one dose of tetanus toxoid. Almost all pregnant women got iron and folic acid supplementation.

Out of 1838 pregnancies for which pregnancy outcome was known, 2.8% (52) were abortions. Out of 1786 pregnancies which crossed 28 weeks, 98.6% (1760) terminated as
term and 1.4% (26) as pre term births. 98.6% (1761) were live births and 1.4% (25) were still births (Table-II).

Tetanus Toxoid (TT) Immunisation showed increasing trend during the reference period (Fig-I). The proportion of primigravidae who got two doses of tetanus toxoid increased from 89% in 2004 to 97 % in 2009, and the increase was significant (Chi square for trend: p value <0.001). There was an increasing trend towards institutional deliveries across the years. The proportion of institutional deliveries increased from 81% in 2004 to 87 % in 2009, and the increase was significant (Chi square for trend: p value <0.001) (Fig-II).

Majority of institutional deliveries (60%) occurred at Vardhaman Mahavir Medical College (Safdarjung Hospital), a tertiary care hospital. Bivariate analysis showed no significant association between age of the mother and place of delivery (p value=0.48).

DISCUSSION

This six year study showed that 85.4% deliveries are institutional with a good coverage of tetanus toxoid immunisation. An increase in the proportion of institutional deliveries was seen in the last six years. Reanalyses of NFHS-3 dataset by Wealth Index showed that 44% of deliveries were institutional among urban poor in India against 78.5% among non-urban. The analysis also showed that proportion of institutional deliveries among urban poor in Delhi is only 16.6% which is very less compared with the present study. The proportion of teenage pregnancies is also low in the present study compared with that of Delhi. Other studies from urban slums also showed lesser proportion of institutional deliveries compared with the present study. Frequent field visits by medical students and a dedicated team of fieldworkers might partially explain the better maternal health indicators in the study area. However, 14.6% of deliveries still occur at home in the study area. Informal interviews with field workers revealed that most of the deliveries occur in their native places from where they migrated to Delhi or some proportion of pregnant women go back to their parental place for delivery for social and economic reasons. This is an area of concern, as we have also seen that deliveries in multigravidae are more likely to take place at home.

The advantage that urban areas over rural areas on health indicators has narrowed over time, as living conditions are deteriorating in rapidly growing cities. Failing to appropriately target the growing sub-group of the urban poor and improve their living conditions and
health may result in lack of improvement on national indicators of health as well as Millennium Development Goals.

The information related to pregnancy outcome collected every month by field workers and supplemented with information from antenatal clinics adds strength to the study. The information collected is cross checked during annual census and also by postgraduate students. Thus misclassification of place of delivery would be minimal. Moreover, six years of reference period gives stability to the data.

About 10% of pregnant women shifted out of the area which is expected in urban slum areas. Information related to literacy of the mother, complications during pregnancy and number of antenatal visits would have given further insights into the determinants of health behaviour in pregnant women.

CONCLUSION

Though institutional deliveries are increasing in the urban poor areas of Delhi, it is still seen that 15% of deliveries take place at home. The fact that this population resides in the capital city of Delhi, where there is no dearth of health services, is an area of concern and needs to be addressed. Therefore, increasing the awareness of the community about maternal health care will further improve the utilisation of maternal health services provided by the government for the urban poor.

Conflicting interests:

None declared

REFERENCES


