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RESEARCH ARTICLE

ANTE NATAL CARE AND REPRODUCTIVE HEALTH OF ADOLESCENT MOTHERS: A STUDY OF SLUMS IN DELHI

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ABSTRACT

Reproductive health is an integral part of general health and a core feature of human development. It reflects the health of a woman during her childhood, and is crucial during adolescence and adulthood, as the status of her health, nutrition, and access to healthcare determines the newborn's health. Pregnancy during adolescence is a result of the lack of knowledge, education, experience, income, and power relative to older women, and is considered as child pregnancy. A cross-sectional slum based study was carried out in six slums of Delhi among 300 respondents who had ever given live birth. Results showed that 76.9 percent of the women had at least one child. Public source of availing Ante Natal Care (ANC) services were high. As services have been improved and are better facilitated, it has added a push for institutional deliveries. Along with free medicines and free check-up are lucrative for poor women, as almost 56.9 per cent of women utilised ANC services from government hospital and 33.1 percent from the government dispensary. Most of the deliveries were institutional deliveries which is safer than that of home deliveries, which is recognized as critical for reduction of maternal and neonatal mortality. The regression analysis showed number of visits for ANC comes out to be highly significant as the number of ANC visits increase, probability of low birth weight of babies' decreases. The association between low birth weight and socio-economic factors was found significant. The standard of living index was also associated with better pregnancy outcomes as lower the standard of living or economic status of the household, more will be the probability of low birth weight. The study also shows that among all the six slums more than 80 percent of the women had normal delivery. There is an urgent need for improving reproductive health at school and community level for adolescent living in slums of Delhi to reduce the maternal and infant mortality.

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INTRODUCTION

Health is a state of complete physical, mental, and social well-being, and not merely the absence of reproductive disease or infirmity. The International Conference on Population and Development Programme of Action (1994) states that "reproductive health ... implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so." Implicit in this last condition are the rights of men and women to be informed about and have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods for regulation of fertility which are legal; and the right of access to appropriate health care services that make pregnancy and childbirth safe for women and provide couples with the best chance of having a healthy infant (UN, POPIN).¹ Reproductive health is

an integral part of general health and a core feature of human development. It reflects the health of a woman during her childhood, and is crucial during adolescence and adulthood, as the status of her health, nutrition, and access to healthcare determines the newborn's health. Reproduction is a matter of pride and growth of the family, but women's health and reproductive health issues have always been greatly neglected. This is especially unfortunate, as bearing a child untimely or before attaining the right age is dangerous for both the mother and the child. Adolescents' reproductive health is a state of complete physical, mental, and social wellbeing and in all matters relating to the reproductive system, and not merely the absence of reproductive disease or infirmity. Like adults, adolescents have the right to access affordable, high-quality reproductive health services and facilities that are confidential and respect their privacy (Human Rights and Reproductive

¹ United Nations Population Information Network (POPIN) Un Population Division, Department Of Economic And Social Affairs, Available at:

<http://www.un.org/popin/unfpa/taskforce/guide/iatfrehp.gdl.html> Accessed on 09.09.15

Health Matrix, USAID).²

In lieu of these reproductive rights, women have the right to safe motherhood and safe delivery. Pregnancy during adolescence is a result of the lack of knowledge, education, experience, income, and power relative to older women, and is considered as child pregnancy. Each year, about 16 million women in the 15–19 age groups give birth worldwide; 95 percent of these births occur in low- and middle-income countries (WHO, Maternal, newborn, child and adolescent health 2014).³ The average adolescent birth rate in middle-income countries is more than twice as high as that in high-income countries, and the rate in low-income countries is five times as high. Worldwide, adolescents aged 10–19 years account for 11 percent of all births but 23 per cent of the overall disease burden (disability-adjusted life years) due to pregnancy and childbirth. In low- and middle-income countries, women aged 15–19 years account for 14 percent of all unsafe abortions. About 2.5 million adolescents have unsafe abortions every year, and complications affect adolescents more seriously than older women (WHO 2014).

According to the UNFPA report (2009)⁴ on adolescents, less than one-half of the adolescents who gave birth during adolescence made four or more antenatal visits to a health facility or delivered at one. Adolescent pregnancies also put newborns at risk. The risk of death during the first month of life is 50 percent higher for babies born to adolescents than to adults—the younger the mother is, the higher the risk to the baby. While realising the realities from the past and looking at the current situation of health of adolescent girls residing in slums, this thus requires increasing the number of health service providers that offer more care and support to adolescent girls in need. The state of women's reproductive health in slums has always been disturbing, but governmental support and aid has improved it to meet the requirements of adolescent pregnant women.

Data Source and Methodology

This study is based on Ph.D research work, which states the utilization of different ANC services and facilities availed by adolescent women during her pregnancy and discusses the sources of facility. The data collection was carried out canvassing of two detailed questionnaires, the household questionnaire and women questionnaire. From the total sample size of 300 respondents and 220 married women, 49.7 percent of the adolescents had given birth by the time of the survey and 26.7 percent were pregnant. First, we will be discussing the percentage distribution of adolescent girls who reported to have availed prenatal care during their pregnancies. Secondly, we

will discuss the demographic and socio-economic characteristics of female respondents who availed ANC services and its sources. One of the important objectives of this study, as outline earlier is to understand the reproductive health of adolescent girls who live in Delhi slums and their healthcare-seeking behaviour. The study universe includes areas characterized by slums located in the nine districts of Delhi. Selection of six slums or sampling units, viz. Jahangirpuri, Old Chandrawal, Moti Lal Nehru Camp, Rakhi Market, Seelam Pur, and Shalimar Bagh was based on various demographic characteristics like population, sex ratio, literacy, land owning agency, area of JJ cluster in square metre, revenue district and children aged 0-6 years. The primary objective of this study is to provide in-depth socio-economic determinants of reproductive health amongst adolescent girls and their knowledge about reproductive health and utilization of ANC services.

It has often been contended that there is duality in mortality, morbidity and fertility conditions in such metropolitan areas where we have populations in posh localities with all sorts of amenities compared to slum settlements which are plagued with all kinds of miseries. The strong interconnections between socio-economic, cultural and demographic conditions have often been highlighted in theoretical and empirical literature both in India and abroad. Thus, it was considered rewarding to study the socio-economic and demographic profiles of households in selected slums of the NCT of Delhi. Possibly utilization of reproductive health care, contraception and fertility are closely interconnected demographic phenomenon and the study purports to highlight socio-economic and cultural determinants of these basic demographic factors

The logistic regression technique is used to analyse the binary response variable LBW. This methodology facilitates the eliciting of effects of several predictor variables, which may be categorical or binary, on the dichotomous response variable. Following functional form of the logit model has been used for the analysis:

$$P = \text{Probability} (Y=1 | X_1 = x_1, X_2 = x_2, \dots) = \frac{\pi}{\pi + (1-\pi)} = \frac{\exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p)}{1 + \exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p)}$$

Where Variables:

Let Y be a binary response variable

$X = (X_1, X_2, \dots, X_k)$ be a set of explanatory variables which can be discrete, continuous, or a combination. x_i is the observed value of the explanatory variables for observation i .

Based on the model developed, the variables selected and their description is follows -

Dependent variable Low birth weight (LBW) - Low birth weight of baby of the adolescent mother has been taken as a dependent variable for our analysis. Based on the response received, those who gave birth to baby having weight less than 2500 grams irrespective of the period of gestation were considered as low birth weight cases. If the weight of the baby reported is less than 2500 gm, it takes a value of 1 and if more than 2500 gm, it takes a value of 0. In our sample, of the total 128 live births, 66 (50.6 percent) were underweight.

² Human Rights and Reproductive Health Matrix United States Agency for International Development (USAID) Available at: <http://www.policyproject.com/matrix/ARH.cfm>

³ WHO 2014 Maternal, newborn, child and adolescent health Available at: http://www.who.int/maternal_child_adolescent/topics/maternal/adolescent_pregnancy/en/ Accessed on 09.09.15

⁴ UNFPA and Guttmacher Institute, "Adding it Up: The Costs and Benefits of Investing in Family Planning and Maternal and Newborn Health," 2009. <http://www.unfpa.org/webdav/site/global/shared/factsheets/srh/EN-SRH%20fact%20sheet-Adolescent.pdf>

Independent variables Socio-economic factors like age, caste, literacy, standard of living, employment and demographic variable like antenatal factors, parity, numbers of visits for

and better educated than ever before. Table 1.1 provides differentials in utilization of ANC by slum adolescents based on various socio-economic and demographic characteristics of respondents age, religion, caste; education of the respondent,

Table 1.1: Percentage of Women Availing ANC Check-up with Background Characteristics

| Background Characteristics | Selected Six Slums of Delhi | | | | | | |
|--|-----------------------------|---------------------|----------------|--------------|-----------|---------------|-------|
| | Jahangir Puri | Moti Lal Nehru Camp | Old Chandrawal | Rakhi Market | Seelampur | Shalimar Bagh | Total |
| Current age of respondents with ANC check-up | | | | | | | |
| Below 18 | 11.5 | 11.8 | 3.1 | - | 17.6 | - | 6.9 |
| 18 and 19 Years | 88.5 | 88.2 | 96.9 | 100.0# | 82.4 | 100.0# | 93.1 |
| Religion | | | | | | | |
| Hindu | 96.2 | 88.2 | 93.8 | 88.5 | 76.5 | 91.7 | 90.0 |
| Muslim | 3.8 | 5.9 | 3.1 | 7.7 | 23.5 | 8.3 | 7.7 |
| Christian | - | 5.9 | 3.1 | - | - | - | 1.5 |
| Others | - | - | - | 3.8 | - | - | 0.8 |
| Caste | | | | | | | |
| General | 3.8 | 47.1 | 21.9 | - | - | 25.0 | 14.6 |
| Scheduled Caste | 84.6 | - | 53.1 | 65.4 | 47.1 | 66.7 | 55.4 |
| Scheduled Tribe | - | 47.1 | - | - | - | - | 6.2 |
| Other Backward Class | 11.5 | 5.9 | 12.5 | 19.2 | 52.9 | - | 16.9 |
| Don't know | - | - | 12.5 | 15.4 | - | 8.3 | 6.9 |
| Standard of living index | | | | | | | |
| Low | 7.7 | - | 21.9 | 23.1 | 41.2 | 58.3 | 22.3 |
| Medium | 57.7 | 35.3 | 28.1 | 73.1 | 29.4 | 41.7 | 45.4 |
| High | 34.6 | 64.7 | 50.0 | 3.8 | 29.4 | - | 32.3 |
| Literacy level of the respondent | | | | | | | |
| Literate | 30.8 | 88.2 | 68.8 | 65.4 | 82.4 | 91.7 | 66.9 |
| Illiterate | 69.2 | 11.8 | 31.2 | 34.6 | 17.6 | 8.3 | 33.1 |
| Literacy level of the father | | | | | | | |
| Literate | 15.4 | 41.2 | 40.6 | 20.0 | 43.8 | 58.3 | 33.6 |
| Illiterate | 84.6 | 58.8 | 59.4 | 80.0 | 56.2 | 41.7 | 66.4 |
| Literacy level of the mother | | | | | | | |
| Literate | 3.8 | 23.5 | 18.8 | 4.2 | 5.9 | 27.3 | 12.6 |
| Illiterate | 96.2 | 76.5 | 81.2 | 95.8 | 94.1 | 72.7 | 87.4 |
| Literacy level of the husband | | | | | | | |
| Literate | 80.8 | 58.8 | 67.7 | 73.1 | 75.0 | 91.7 | 73.4 |
| Illiterate | 19.2 | 41.2 | 32.3 | 26.9 | 25.0 | 8.3 | 26.6 |
| Migration status | | | | | | | |
| Non-migrant | 23.1 | 35.3 | 34.4 | 46.2 | 17.6 | 33.3 | 32.3 |
| Migrant | 76.9 | 64.7 | 65.6 | 53.8 | 82.4 | 66.7 | 67.7 |

All the respondents were aged between 18 to 19 years who reported to have availed ANC services

ANC. Table 1.5 presents the descriptive statistics of the variables used in the estimation of the logit model.

Demographic and Socio Economic Profile of the Female Respondents with Antenatal Care Utilization

The socio-economic and demographic profile of the female respondents and thereby the utilization of antenatal care services by mothers is a subject matter in this chapter. During pregnancy and at the time of delivery, the health care services that a mother receives are important for the endurance and health of both the mother and the child. Ante Natal Care (ANC) coverage is accounted according to the type of service provider during pregnancy, number of ANC visits made to the health center, assistance during delivery time, along with the correct information provided during ANC. Compared to earlier generations, today's generation is healthier, more urbanised

and of the parents and husband. About 93.1 percent of adolescent women who had made ANC visits were in the age group of 18 to 19 years and 6.9 percent were younger than 18 years. In the slums of Shalimar Bagh and Rakhi Market, almost all 18-19 year old pregnant women had availed ANC check up. In Seelampur slum, 17.3 percent of the married women whose current age is between 18 and 19 years had gone for ANC check up. Thus overall we find that the utilization of ANC is higher amongst women in the 18-19 years age group compared to those below 18 years. If we compare women below 18 years of age, slum wise and who availed ANC, maximum were accounted from Seelampur slum with 17.3 percent as compared to other slums. It needs to be highlighted that 90 per cent of the women who availed ANC services were Hindu; 96.2 percent of Hindus respondents were from Jahangir Puri, 93.8 percent from Old Chandrawal and 91.7 percent from Shalimar Bagh slum. It shows that more Hindu women avail ANC as compared to non-

Hindu women. More Scheduled Caste women (55.4 percent) availed ANC check-ups than women from Scheduled Tribes, Other Backward Castes or the General category; and most of these Scheduled Caste women lived in Jahangir Puri. Women

who did not know their caste accounted for 6.9 percent of all respondents. According to the Standard Of Living Index (SLI)⁵, most women (45.4 percent) are in the 'medium' category; of them, 73 percent live in Rakhi Market followed by 57.7 percent live in Jahangir Puri.

Table 1.2: Percent Distribution of Adolescent Women with ANC Check-ups

| ANC Services | Percentage |
|---|------------|
| Women who had gone for ANC | 92.3 |
| Outcome of last pregnancy | |
| Live birth | 99.2 |
| Still birth | 0.8 |
| Children Ever Born | |
| One | 76.9 |
| Two | 21.5 |
| Three | 1.5 |
| Place of Facility | |
| Government /Municipal Hospital | 56.9 |
| Government Dispensary | 33.1 |
| Private hospital /Clinic | 9.2 |
| At Home | 0.8 |
| Type of Assistance | |
| Doctor | 51.5 |
| ANM /Nurse /Midwife | 47.7 |
| ASHA | 0.8 |
| Number of visits | |
| Less than 3 | 18.5 |
| More than 3 | 81.5 |
| Tests done during pregnancy | |
| Weight measured | 90.8 |
| Height measured | 81.5 |
| Blood pressure | 93.8 |
| Urine test | 96.9 |
| Abdomen examined | 93.1 |
| Internal examination | 82.3 |
| HIV test | 75.4 |
| Advise received at least once | |
| Diet | 89.2 |
| Danger signs during pregnancy | 75.4 |
| Delivery care | 77.7 |
| Breastfeeding | 86.2 |
| Newborn care | 76.9 |
| Family planning | 63.8 |
| Received daily dose of IFA and Tetanus injection | |
| Iron | 97.7 |
| Folic acid tablets | 97.7 |
| Reasons for not seeking ANC | |
| Not necessary | 4.0 |
| Not customary | 1.0 |
| No time to go | 2.0 |
| Family did not allow | 0.7 |

Table 1. 3 Percentage of Married Women Reporting Reproductive Health Problems by Age at Marriage

| Background | Age at marriage | |
|---|-----------------|-----------------|
| | Below 18 years | 18 and 19 years |
| Early child bearing | 82.6 | 17.4 |
| Number of visits less than 3 for ANC | 91.7 | 8.3 |
| Place of delivery (Non-institutional) | 83.7 | 16.3 |
| Birth given to underweight baby (less than 2.5 kg) | 71.4 | 28.6 |
| Heard about family planning (No) | 85.2 | 14.8 |
| Currently using any contraception (No) | 75.0 | 25.0 |
| Never used Condom | 77.8 | 22.2 |
| Currently pregnant | 73.1 | 26.9 |
| Menstruation related problems in last 3 months | 79.5 | 20.5 |
| Ever heard of RTI/STI (No) | 78.1 | 21.9 |

Nearly 32.3 percent ranked high on the SLI; of whom 64.7 percent belonged to the Moti Lal Nehru Camp slum. Surprisingly, no one in that slum ranks low on the SLI. At the other end of the spectrum is the Shalimar Bagh slum, where 58.3 percent rank low on the SLI. Table 1.1 also shows the literacy level of respondents who availed ANC and that of their father, mother and husband. Most women who had gone for ANC check-ups were literate (66.9 percent) and 33.1 per cent were illiterate. Majority of the women residing in the slum of Shalimar Bagh were literate with 91.7 percent. Similar trends were observed in Moti Lal Nehru Camp JNU and Seelampur slum with 88.2 percent and 82.4 percent respectively. While maximum women availing ANC services in Jahangir Puri were illiterate (69.2 percent). Father and mother of most of the respondents who availed ANC services were reported to be illiterate. It was found that majority of the husbands were literate (73.4 percent) and only 26.6 percent were illiterate, the highest percentage being in Shalimar Bagh (91.7 percent) and Jahangir Puri (80.8 percent). The table also highlights the migration status of women who availed ANC services. About 67.7 percent were migrants—while from different slums, 82.4 percent were in Seelampur and (76.9 percent) in Jahangir Puri.

A significant provision of ANC component ideally comprises three trimesters medical check-ups, which are inclusive of tests that include blood pressure, weighing, abdominal check-ups, urine test, HIV test, blood test etc., administration of iron and folic acid (IFA) tablets to all the pregnant women, and administration of two tetanus toxoid (TT) injections during pregnancy. A certified health worker is expected to identify and provide assistance for ANC check-ups of all pregnant women and thus provide them proper counselling. To establish if such care had been provided, we asked respondents a direct question: had they received any specific care during the last pregnancy? For those whose answer was in the affirmative, we tried to know why the care was received and the nature of care received. Table 1.2 reveals that of the women who had ever given birth, 92.3 per cent had gone for ANC check-ups. Almost 99.2 per cent of the women had given live birth and only 0.8 per cent had given stillbirth.

Therefore, it may be concluded that almost all the women living in the Delhi slums gave live birth. It has also been observed from the study that around 77 per cent of the women who availed ANC services have one child. It is also evident from the data that there were women in the 15–19 age group who reported two children (21.5 percent) and three children (1.5 percent). This shows the burden of early pregnancy and child bearing at a very early stage of life. While the situation is same worldwide, about 16 million women in the 15–19 age groups give birth each year; this makes up 11 per cent of all births (WHO 2014). This burden of early pregnancy leads to many reproductive health problems, which include anaemia, malaria, HIV and other sexually transmitted infections, postpartum haemorrhage and mental disorders, such as depression. Table 1.2 further reveals that almost 57 per cent of women utilised ANC from government hospitals and 33.1 percent from the government dispensaries. For urban poor women living in slums, institutional deliveries, free medicines and free check up offered at government centres are cost effective. There are also cases where women reported to have

migrated from their native states to avail better health facilities and services. Marriage of girls less than 18 years is a common phenomenon worldwide and affects millions. Despite stringent policies and programmes to cut down child marriage, there are many girls worldwide who have lost their childhood and bear the burden of early marriage. Early marriage results in early childbearing and mother at younger age face increased risk mortality. Early marriage of girls limits young women's lives and they have to compromise on their reproductive health rights. To address these gaps in evidence, we used data from the survey to compare the factors leading to reproductive health problems and experiences of adolescent women who had married before the age 18 years with those women who had married at age of 18 years or older.

Cross tabulation was done to access the probability of association between lower the age at marriage with factors leading to reproductive health problems. Table 1.3 shows that girls, who get married below the 18 years, are more prone to reproductive health problems. Each factor leading to reproductive health problems is analysed to find an association between early marriage and early childbearing among adolescent girls residing in slums. Table 1.3 clearly is an example of early marriage leading to the burden of early childbearing. In our sample 82.6 percent of girls who got married below 18 years of age reported to have had early childbearing. It is well documented that infant mortality among the children of very young mothers is higher in comparison to those of older ages.

A stronger likelihood of low birth weight babies has been recorded among adolescent mothers at 71.4 percent. This is mainly associated with early pregnancy and poor maternal care and nutrition. It was found that girls have inadequate knowledge about personal care and family planning (see Table 1.3). Married girls below 18 early (5.2 percent) reported to be unaware about any family planning methods and 14.8 percent of married girls aged 18 and 19 years reported the same. Certainly the majority of women were not using any form of contraception as 75 percent of women who got married at early age did not use any family planning method. The use of condom was not prevalent among those who had married early than among those who had late marriage (77.8 percent and 22.2 percent respectively). The reason for never used condom could be probably due to partner denial in using it or there might be strong pressure on most adolescent girls to prove their fecundity soon after marriage.

During the time of the survey, nearly 27 percent of women were found to be pregnant. It is universally recognized that adolescent pregnancy contributes to maternal, prenatal and infant mortality. Study came out with the result showing that women who got married early, 73.1 percent were currently pregnant. This shows the prevalence of early pregnancy and burden of child bearing at an adolescence stage. Total 79.5 percent reported to be suffering from menstruation related problems in comparison to those who had married late (20.5 percent). Vulnerability to RTI /STI was clearly evident as 78.1 percent of the women did not have knowledge about any of the symptoms of genital tract infection.

Table 1.4 shows the slum wise percentage of women with ANC service providers. It is known that frequent childbearing and malnutrition amongst women has often been found to be responsible for higher incidence of anaemia, blood pressure, reproductive tract infections (RTI). Table 5.4 shows the nature of assistance received by women during delivery. In order to ensure better health of the mother and child, safe delivery under proper hygienic conditions and supervision of trained health personnel must be ensured. In totality (women who reported for ANC checkups), most of the deliveries (89.8 percent) in the slums of Delhi were normal. Only 10.2 percent of the deliveries were caesarean. Normal deliveries were reported maximum in Jahangir Puri and Rakhi Market slum. Delivery care has basically two important components, viz., place of delivery and professional attendance at the time of childbirth. According to the survey in six slums of Delhi, about 53.9 percent of deliveries took place in government hospitals, 26.6 percent at home, 9.4 percent in private hospitals, and 10.2 percent in government dispensaries. It is interesting to note that 73.5 percent of the deliveries were institutional deliveries (this includes government hospitals, government dispensaries and private clinics). As maximum of the deliveries are institutional deliveries and assisted by trained personnel who are recognized as critical for reduction of maternal and neonatal mortality. Slum wise, the percentage of deliveries in government hospital was higher in Jahangir Puri, where 76.9 percent of deliveries took place and 75 percent in Shalimar Bagh. Delivery at home was reported by maximum respondents residing in Moti Lal Nehru Camp slum (41.2 percent) followed by Rakhi Market slum (38.5 percent).

Information regarding delivery assistance by women who had availed ANC was also taken up; it was observed that mostly government doctors conducted the deliveries (47.7 percent), while deliveries by untrained "dai"⁶ were also prominent with 18.8 percent reporting assistance from the same. Deliveries conducted by ANM accounted for 17.2 percent. Almost 75 percent of women from Shalimar Bagh slum got assisted for their deliveries by doctors, which is the highest amongst other slums. About 53.3 percent women from Old Chandrawal and 52.9 percent from Seelampur also reported to have had skilled delivery. In Jahangir Puri slum, the proportion of ANM assistance for delivery is higher than other slums. However, 41.2 percent of the deliveries in Moti Lal Nehru slum were assisted by untrained dai. This slum also reported a higher percentage of women who had their delivery at home.

In totality, around 65.6 per cent women reported that they had to travel more than 5 km for delivery; only 2.3 percent reported to have travelled less than 1 km. Slum wise 83.3 per cent in Old Chandrawal and 70.6 percent each in Seelampur and Moti Lal Nehru slums reported travelling more than 5 km. On an average, then around 28.8 per cent of the women had to travel 1–3 km for the delivery. The result from the data shows that although adolescent women availed ANC services during pregnancy but their body did not support enough to give birth to healthier babies as 51.6 percent of women had given birth to

low birth weight babies and 48.4 delivered babies with normal to healthier birth weight babies. While if we look slum wise, highest percentage (65.4 percent) of women from Jahangir Puri slum gave birth to low birth weight babies. Old Chandrawal slum also accounted for second highest number of women (56.7 percent) with low birth weight of their babies.

The aim of the study was also to determine the factors having influence on safe motherhood. Data collected through the questionnaire based survey has been used to test the following hypothesis –

Weight of the baby at the time of birth which is an indicator of safe motherhood has been used as the dependent variable. Low birth weight (LBW) is the most common indicator used in the studies across the world as it best represents the risk of morbidity and mortality of the infant. LBW is dependent on factors associated with the mother's health (Manna et al. 2013). The observations in the variable were assigned a value of 1 if the weight of the baby at the time of the birth was less than 2500 gm indicating LBW and a value of 0 if the weight was above 2500 gm. The predictor variables that might influence the birth weight includes the socio-economic and demographic factors, obstetric factors like parity and factors related to antenatal care.

Logistic regression

Results of the logistic regression are presented in Table 1.6. The result reveals that the age of the respondent mother is positively and significantly associated with LBW (Odd ratio=2.18, p-value=0.036). Age of the mother in the sample ranged from 15 to 19 and as expected, adolescent mothers gave birth to babies with lower birth weight. The standard of living index is supposed to be associated with better pregnancy outcomes in diverse settings. Standard of living which has been categorized as low, medium and high is associated with LBW and significant (p = 0.083) effect on LBW. As expected the lower the standard of living or economic status of the household, more will be the probability of LBW of the child. Adolescents who are better off can afford more health care services required during pregnancy. Parity comes out to be significant (p = 0.027) and has negative impact on the probability of LBW. Result indicates that as the number of live birth increase, probability of LBW decreases. This is mainly because of increased awareness about ANC and other health care measures from the experience of the past pregnancy. The maximum parity in the sample was restricted to 3 only.

One of the important determinants of safe motherhood is number of visits for ANC. Number of visits for ANC comes out to be highly significant (p = .003) because as the number of

⁶ DAI: The World Health Organization (WHO 1992) defines a traditional birth attendant (TBA) as a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or through an apprenticeship to other TBAs. (Sibley and Sipe 2007)

Table 1.4: Percentage of Women with ANC Service Provider

| Kind of facility / assistance received by women who reported to have gone for ANC | ANC By Service Providers | | | | | | |
|---|--------------------------|----------------|----------------|--------------|-----------|---------------|-------|
| | Jahangir Puri | Moti Lal Nehru | Old Chandrawal | Rakhi Market | Seelampur | Shalimar Bagh | Total |
| Kind of delivery | | | | | | | |
| Normal | 92.3 | 88.2 | 86.7 | 96.2 | 82.4 | 91.7 | 89.8 |
| C-section | 7.7 | 11.8 | 13.3 | 3.8 | 17.6 | 8.3 | 10.2 |
| Place of delivery | | | | | | | |
| Government /Municipal Hospital | 76.9 | 41.2 | 30.0 | 50.0 | 64.7 | 75.0 | 53.9 |
| Government Dispensary | - | 5.9 | 33.3 | 3.8 | - | 8.3 | 10.2 |
| Private hospital /Clinic | 7.7 | 11.8 | 13.3 | 7.7 | 5.9 | 8.3 | 9.4 |
| At home | 15.4 | 41.2 | 23.3 | 38.5 | 29.4 | 8.3 | 26.6 |
| Delivery assistance | | | | | | | |
| Government Doctor | 46.2 | 29.4 | 53.3 | 38.5 | 52.9 | 75.0 | 47.7 |
| Private doctor | 7.7 | 5.9 | 10.0 | 7.7 | 5.9 | - | 7.0 |
| ASHA | - | 5.9 | - | - | - | - | .8 |
| ANM | 30.8 | 17.6 | 10.0 | 15.4 | 11.8 | 16.7 | 17.2 |
| Ayurvedic | - | - | 3.3 | 3.8 | - | - | 1.6 |
| Traditional healer | - | - | - | - | 5.9 | - | .8 |
| Untrained dai | 3.8 | 41.2 | 6.7 | 34.6 | 23.5 | 8.3 | 18.8 |
| Relatives /Friends | 11.5 | .0 | 16.7 | - | - | - | 6.2 |
| Distance travelled for delivery | | | | | | | |
| Less than 0.5 km | 3.8 | 11.8 | - | - | - | - | 2.3 |
| 1 to 2 km | 11.5 | 17.6 | 3.3 | 15.4 | 11.8 | 16.7 | 11.7 |
| 2 to 3 km | 34.6 | - | 6.7 | 23.1 | 11.8 | - | 14.8 |
| 3 to 4 km | - | - | 3.3 | - | 5.9 | 8.3 | 2.3 |
| 4 to 5 km | 3.8 | - | 3.3 | 3.8 | - | 8.3 | 3.1 |
| More than 5 km | 46.2 | 70.6 | 83.3 | 57.7 | 70.6 | 66.7 | 65.6 |
| Birth weight of babies | | | | | | | |
| Normal to healthy birth weight | 34.6 | 58.8 | 43.3 | 50.0 | 58.8 | 58.3 | 48.4 |
| Low birth weight | 65.4 | 41.2 | 56.7 | 50.0 | 41.2 | 41.7 | 51.6 |

Table 1.5 Descriptive statistics of the variables used in the estimation of the LBW (Logit model)

| Variable | Minimum | Maximum | Mean | Std. Deviation |
|---|---------|---------|--------|----------------|
| Age (15 to 19 years) | 15 | 19 | 18.10 | 1.229 |
| Caste (Lower Caste, Scheduled Castes, Scheduled Tribes Are Castes And Other Backward Castes =1 and General = 0) | 0 | 1 | .8400 | .36722 |
| Employment (Employed=1 and Unemployed= 0) | 0 | 1 | .2533 | .43565 |
| Standard of living index (Low =1, Medium = 2, High =3) | 1 | 3 | 1.9733 | .76676 |
| Parity (One child =1, Two children=2, Three children =3) | 1 | 3 | 1.26 | .469 |
| Number of ANC visits (less than 3 = 0, more than 3=1) | 0 | 1 | .8168 | .38832 |
| Literacy of the respondent's mother (literate=1, Illiterate=0) | 0 | 1 | .8068 | .39550 |

Table 1.6 : Logit Regression : Determinant of Low Birth Weight

| Predictor Variables | B | Exp(B) | S.E. | Sig.(p-value) |
|----------------------------------|--------|--------|------|---------------|
| Age | .783 | 2.188 | .373 | .036** |
| SLI | .504 | 1.656 | .290 | .083** |
| Parity | -1.069 | .343 | .484 | .027** |
| Number of Visits more than three | -2.052 | .128 | .702 | .003*** |
| Respondent's Mother's literacy | -.493 | .611 | .576 | .392 |
| Caste (Lower and General) | .692 | 1.997 | .589 | .240 |
| Employment | .893 | 2.443 | .528 | .091** |

, *, **** denotes 1%, 5% and 10% level of significance respectively

Table 1.7: Percent Distribution of Adolescent Women with Reasons for Non-Institutional Delivery

| Reasons for Delivering at Home | Percentage |
|--------------------------------|------------|
| Not necessary | 17.6 |
| Cost too much | 2.9 |
| Too far/ No transport | 5.9 |
| Poor quality services | 11.8 |
| No time to go | 44.1 |
| Better care at home | 17.6 |

ANC visits increase, probability of LBW decreases. This is because the number of ANC visits is important to prevent any adverse pregnancy outcome and can make significant contributions to the reduction of maternal morbidity and mortality (Abedin et al 2008).⁷ Early detection of pregnancy complications can lead to prompt treatment and referrals. It has also been said that women who have good antenatal care during pregnancy are more likely to have safer births and healthier babies. Literacy of the respondent's mother is also believed to play an effective role, as an educated mother will advise her daughter to avail ANC services, thereby preventing the birth of LBW babies. Employment was also associated with LBW of the baby at the time of birth (Odd ratio= 2.44, p-value=0.091). Adolescent mothers who are working at young age and are employed are giving birth to LBW babies, in comparison to unemployed women. Mother's education is not significant in this model and so was the caste of the respondent.

Reasons for Non-institutional Delivery by Adolescent women

During the survey, an attempt was also made to know the reasons why women did not avail institutional delivery and services. Table 1.7 reveals around 44.1 percent of the women did not have time to go to the health facility. This could be due to lack of awareness and probably they were not informed about the danger signs before delivery by the health personnel. Almost 17.6 percent of women felt that having an institutional delivery is not necessary and similarly 17.6 percent of women felt that if they delivered at home, they could get better care. While 12 percent of women felt health services provided to poor people in hospital are poor in quality and did not wish to avail institutional delivery. Six percent of women reported that they did not have transport facility to go, so they preferred non-institutional delivery. And 3 percent women residing in slums mentioned "cost too much" a reason for not availing institutional delivery.

DISCUSSION

Results indicate that there is an urgent need for improving reproductive health for adolescent living in slums as the key issue of adolescent source of awareness about reproductive health issues is missing. A number of programmes have been implemented to raise awareness about sexual and reproductive health matters among adolescent girls but very few of these

programmes have targeted adolescent in school. Awareness seeking behaviour should be made accessible for the girl both in school and for those who drop out. For those in school, the health promotion programmes should involve programmes intended to improve adolescents' awareness of health, hygiene and nutrition related subjects through curricular formats, along with it issues and sexual and reproductive health matters through co-curricular approaches. While on the other hand for those dropped or out of school, very few activities have been conducted to promote awareness about sexual and reproductive health matters.

Low birth weight is an outcome of the various factors associated with the mother during the term of her pregnancy. It is likely to be affected by the socio-economic status of the mother, past pregnancy or the parity and most importantly the antenatal factors. Better living standards, parity and the antenatal checkups is likely to have a negative effect on the LBW as all these factors will lead to mother giving birth to baby with normal weight, an indication of safe motherhood.

Various programmes have been facilitated for accessing sexual and reproductive health counseling and services, but are far in reaching the target population due to various short comings like indefinite definition of adolescent and youth. So many get missed and lack in accessing the benefit meant for them. The National Population Policy 2000 for the first time recognized that adolescents constitute an underserved group with special sexual and reproductive health needs and advocates special programmatic attention to addressing this sub-population. It also recommended that there the need to ensure for adolescents access to sexual and reproductive health information, counseling and services that are affordable and accessible. Most recent is the Adolescent Reproductive and Sexual Health (ARSH) strategy under the Reproductive and Child Health (RCH II) which focuses on reorganizing and strengthening the existing public health system to meet young people's needs, mobilizing communities to create an enabling environment and encourage young people to access services, and providing preventive, promotive, curative and referral services to young people. Orientation Programmes underscore the need to address both the married and the unmarried, as well as adolescent girls and boys. Other schemes under the NRHM have also been realized in addressing the needs of young people which includes the ASHA scheme, the Janani Suraksha Yojana (JSY) and the School Health Programme.

Conclusion

Reproductive health was studied on the various aspects related to reproduction, like early pregnancy, care during pregnancy, use of ANC services and reason for non-utilization of ANC. Burden of early pregnancy and burden of bearing child at a very early stage of life was evident through results. The results showed that from the total sample size of 300 respondents and 220 married women, 49.7 percent of the adolescents had given birth by the time of the survey and 26.7 percent were pregnant. The care during pregnancy and facilities availed by young women in slums varied according to various socio economic backgrounds, as 90 per cent of the women availed ANC services were Hindu; most of the women who had gone for

⁷ Abedin, S., Islam, R., & Hossain, T. (2008). Antenatal care during pregnancy: A study on Naogaon district of Bangladesh. *The Social Science*, 3(8), 537-541

ANC checkups were literate (66.9 percent) in comparison to 33.1 percent were illiterate women. More Scheduled Caste women (55.4 percent) availed ANC check-ups than women from Scheduled Tribes, Other Backward Castes or the General category.

It has also been found from the study that around 76.9 percent of the women had at least one child. It is also evident from the data that there were women reporting to have two children (21.5 percent) and women with three children (1.5 percent) during 15 to 19 years. While situation is not different worldwide, about 16 million women 15–19 years old give birth each year, about 11 percent of all births worldwide (WHO, 2014). This burden of early pregnancy leads to many reproductive health problems which include anaemia, malaria, HIV and other sexually transmitted infections, postpartum haemorrhage and mental disorders, such as depression.

Findings also showed that public source of availing ANC services were high. As services have been improved and are better facilitated, it has added a push for institutional deliveries. Along with free medicines and free check-up are lucrative for women low economic background, as almost 56.9 per cent of women utilised ANC services from government hospital and 33.1 percent from the government dispensary. Most of the deliveries were institutional deliveries which is safer than that of home deliveries, which is recognized as critical for reduction of maternal and neonatal mortality. According to the survey in six slums of Delhi, about 53.9 percent of deliveries took place in government hospitals, 26.6 percent at home, 9.4 percent in private hospitals, and 10.2 percent in government dispensaries. It is interesting to note that 73.5 percent of the deliveries were institutional deliveries (this includes government hospitals, government dispensaries and private clinics). As maximum of the deliveries are institutional deliveries and assisted by trained personnel who are recognized as critical for reduction of maternal and neonatal mortality. Slum wise, the percentage of deliveries in government hospital was higher in Jahangir Puri, where 76.9 percent of deliveries took place and 75 percent in Shalimar Bagh. Most women with ANC check-up reported for normal deliveries (89.8 percent), moreover, all the six slums reported more than 80 percent of having a normal delivery. Only 10.2 percent of the deliveries were caesarean. Awareness about skilled birth attendant was also reported as maximum deliveries were conducted by government doctors conducted the deliveries (47.7 percent). Whereas deliveries by untrained dai were also prominent (18.8 percent) and some reported assistance for deliveries conducted by ANM (17.2 percent). While in different slums, around 75 percent from Shalimar Bagh slum assisted their deliveries from the doctors which is the highest amongst other slums, 53.3 per cent from Old Chandrawal and 52.9 percent from Seelampur. In Jahangir Puri slum the proportion of ANM assistance for delivery was reported maximum than other slums. Other social and economic factors such as age, caste, employment, standard of living index, parity, number of visits for ANC and literacy of respondent's mother were found to be significantly associated with LBW in regression analysis.

Although the Indian government has made significant steps in addressing the reproductive health needs of young people but

the implementation of these policies and programmes in reaching the young people is still low. The findings from this study have shown that girl's status of reproductive health amongst poor adolescent's young women in slums of Delhi is vulnerable. Findings also showed that it is relatively important to design appropriate and realistic programs specially designed for girls living in slums which are focused on reducing early marriage, unintended pregnancies, thereby helping reduce the burden of early child bearing among adolescents and young women living in poor urban slums. Poverty has been considered a root cause of poor reproductive health outcomes especially in slum environments.

So there is a need to conduct health education about reproductive health including the education about family planning methods among adolescent girls. As education on family planning is needed to promote awareness and use of contraceptive methods for birth spacing and unintended pregnancy. Newly married adolescent girls should be targeted for the promotion of family planning programmes and maternal care related programmes. School health personnel and community level of the community should jointly promote maternal health and utilization of existing maternal health services should be made easy accessible for young mothers residing in slums.

REFERENCES

- Abedin, S., Islam, R., and Hossain, T. 2008. Antenatal care during pregnancy: A study on Naogaon district of Bangladesh. *The Social Science*, 3(8), 537-541
- Abedin, S., Islam, R. and Hossain, T. 2008. Antenatal care during pregnancy: A study on Naogaon district of Bangladesh. *The Social Science*, 3(8), 537-541
- Agrawal, S. and Agrawal, P. K. 2012. Association between induced abortion and women's reproductive health in India: Findings from a nationwide large scale cross sectional survey. *Demography India*.
- Arvind Dubey Health for Young Mothers Available at: <http://www.vigyanprasar.gov.in/Radioserials/5HealthForYoungMothers.pdf> Accessed on 09.09.15
- Harrison, K. A. 1990. The political challenge of maternal mortality in the Third World. *Maternal Mortality and Morbidity – A call to Women for Action Special Issue*, May 28, 1990
- Human Rights and Reproductive Health Matrix United States Agency for International Development (USAID) Available at: <http://www.policyproject.com/matrix/ARH.cfm>
- Imogie AO, Agwubike EO, Aluko K. Assessing the role of traditional birth attendants (TBAs) in health care delivery in Edo State, Nigeria. *African Journal of Reproductive Health* 2002; 6: 94-100.
- IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) e-ISSN: 2279-0853, p-ISSN: 2279-0861. Volume 4, Issue 4 (Jan.- Feb. 2013), PP 33-39 www.iosrjournals.org 33 | Page Socio-Biological Determinants of Low Birth Weight: A Community based study from rural field practice area of Medical College, Kolkata, West Bengal (India) Dr Nirmalya Manna¹, Dr. Jhuma Sarkar¹, Dr. Baijayanti Baur¹, Dr. Gandhari Basu², Dr. Lina Bandyopadhyay³

- National Family Health Survey-3 Ministry of Health and Family Welfare 1997, 1998b Available at: <http://hetv.org/pdf/nfhs/india/indch8.pdf> Accessed on 09.09.15
- National Rural Health Mission (2005-2012), Mission Document, Ministry of Health and Family Welfare, Government of India.
- NFHS-3, 2005-06. Available at: <http://www.rchiips.org/nfhs/nfhs3.shtml> Accessed on 09.09.15
- Nour NM. Health consequences of child marriage in Africa. *Emerg Infect Dis.* 2006;12:1644–1649. doi: 10.3201/eid1211.060510] <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3372345/>
- Ravi, Rejoice Puthuchira, and Ravi shankar Athimulam Kulasekaran. "Does Socio-demographic Factors Influence Women's Choice of Place of Delivery in Rural Areas of Tamilnadu State in India." *American Journal of Public Health Research* 2.3 (2014): 75-80.
- UNFPA and Guttmacher Institute, "Adding it Up: The Costs and Benefits of Investing in Family Planning and Maternal and Newborn Health," 2009. <http://www.unfpa.org/webdav/site/global/shared/factsheet/s/srh/EN-SRH%20fact%20sheet-Adolescent.pdf>
- United Nations Children's Fund and World Health Organization, *Low Birth weight: Country, regional and global estimates.* UNICEF, New York, 2004 Available at: http://www.unicef.org/publications/files/low_birthweight_from_EY.pdf. Last Accessed on 09.09.15
- United Nations Population Information Network (POPIN) Un Population Division, Department Of Economic And Social Affairs, Available at: <http://www.un.org/popin/unfpa/taskforce/guide/iatfreph.gdl.html> Accessed on 09.09.15
- WHO 2014 Maternal, newborn, child and adolescent health. Available at: http://www.who.int/maternal_child_adolescent/topics/maternal/adolescent_pregnancy/en. Accessed on 09.09.15
- WHO 2014 Maternal, newborn, child and adolescent health Available at: http://www.who.int/maternal_child_adolescent/topics/maternal/adolescent_pregnancy/en/ Accessed on 09.09.15
- World Health Organization, *International statistical classification of diseases and related health problems, tenth revision,* World Health Organization, Geneva, 1992.
