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Antenatal Care During Pregnancy: A Study on Naogaon District of Bangladesh

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Abstract: The main objective of this study, is to examine the differentials in antenatal care coverage. The study uses data collected from some rural and urban areas of Naogaon district, Bangladesh. Information are collected from 800 ever-married women by interview method. Bivariate statistical analysis and logistic regression analysis are used. The ever-married mothers are found medium concerned about their antenatal care coverage. Near one-third mothers had not received antenatal care during their last pregnancy. This situation has prevailed more in urban areas than in rural areas. It has been found that respondent's education, husband's education and occupation, place of residence, current use of contraception, frequent visit of health workers to the respondents have been statistically significantly associated with the utilization of antenatal care received during pregnancy.

Key words: Antenatal care, contraception, ever-married, health worker, logistic regression analysis

INTRODUCTION

Maternal health has traditionally been considered an important indicator for describing mortality conditions, health progress and indeed the overall social and economic well being of a country. The health of mothers and children is closely related to the general health of the community. Public health measures that are brought about improvement in general health would also improved maternal health. From the point of view, mother's care and children's health and survival, the health care practices of mothers such as attendance and utilization of health care facilities during antenatal period as well as having their children protected from all immunizable diseases are important (BDHS, 2004). The provision of prenatal care as experienced by western societies showed a clear relationship not only to the reduction of complications for the others, but also to the better physical condition of the new born babies (Gortmark, 1979).

Antenatal care is defined as the pregnancy related health care provided by a medical professional (doctor, nurse or midwife), traditional birth attendants (TBA's) and friends. Antenatal care is important to produce healthy baby at the end of pregnancy. Rahman (1997) in a study reported that, in order to bring maternal mortality down to an acceptable level, the Government of Bangladesh has been striving to provide maternal health care to rural women through National Health and Family Planning Program. The government health center, such as Thana Health Complex (THC), Health and Family Welfare Centers (HFWCs) and Satellite Clinics to provide maternal and child health service to the rural population free of charge. However, the use rate of these health centers is very low. Among the women visiting the HFWCs only 8% came for antenatal care. Thus, the antenatal care coverage seems to be low. There are also differences in such antenatal care and probably in care taking services from indicated sources by rural and urban residence as well as from one area to another area. Therefore, there is a need to explore the differentials in having antenatal care by rural-urban residence. The present study intends to examine the differentials in antenatal care coverage in a few rural and urban areas of the district of Naogaon, Bangladesh.

MATERIALS AND METHODS

In this study, the ever married women of reproductive age in some rural and urban areas of Naogaon district are the selected population. The data were collected on reproductive health with some socio-economic characteristics of the study population during October 2007 to December 2007. These data were collected from both urban and rural areas of Naogaon district. The number of respondents has been 800 ever married women of which 400 are from rural and 400 from urban areas. These women are purposively selected and the information were collected by direct interview using a predetermined questionnaire containing basis and other characteristic and pregnancy and antenatal related questions. However, information provided by 82 women

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of which 54 from urban and 28 from rural are discarded from analysis due to incomplete and some extent unreliable information. Therefore, the present study is based on 718 women, 346 of them are from urban and 372 from rural.

To examine the antenatal care seeking of ever-married women in the study population, the percentage of married women has been analyzed by categories of several independent variables. The logistic regression analysis is undertaken to identify the risk factors as well as to predict the probability of success. A brief exposition of the logistic regression analysis relating the present study is provided below:

The theory of logistic model was first developed by Cox (1970). The general logistic model expresses a qualitative dependent variable as a function of several independent variables, both qualitative and quantitative (Fox, 1984).

If P is the probability of receiving medical checkup during last pregnancy, the

$$P = \frac{1}{1+e^{-(\beta_0+\beta_1 x)}}$$

where, β_0 and β_1 are the regression coefficients and X is a vector of covariates that affect the antenatal care. The general logistic regression model can thus be expressed as:

$$\text{Logit}(p_i) = \log_e \frac{p_i}{1-p_i} = \sum_{j=0}^{k} \beta_j x_{ij}$$

which express the log odds of antenatal care receiver as a linear function of the independent variables.

The logistic model is fitted by considering antenatal care receiving as the dependent variable, which we have dichotomized by assigning 1 if respondents were receiving antenatal care during last pregnancy and 0 for not receiving. In performing stepwise the regression method for the determination of significant variables, 8 variables were initially selected for logistic regression analysis. If the odds ratio is greater than unity, the probability of being antenatal care receiver is higher than that of being not receiver. The p-value is used to identify the significance level in assessing the relative importance of the selected variables in the logistic regression model.

RESULTS AND DISCUSSION

Antenatal care received: Table 1 represents the distribution of married women who take medical checkup as antenatal care during pregnancy. From the table we see that about 51.3% rural mother did not take any medical checkup while in the urban area only 9.2% urban mother did not take any antenatal care. Overall 31.1% mothers did not take any medical checkup during their last pregnancy. From the Table 1, it is clear that the urban mothers are more serious about medical checkup as well as antenatal care for the betterment of them and their coming baby.

Table 1: Medical checkup during pregnancy received by ever-married women

Medical checkup during pregnancy	Urban	Rural	All
Yes	90.8 (314)	48.7 (181)	68.9 (495)
No	9.2 (32)	51.3 (191)	31.1 (223)
Total	100 (346)	100 (372)	100 (718)

Table 2: The number of visits and during last pregnancy

Number of visits during pregnancy	Urban	Rural	All
Number of visits			
0	9.2	51.3	31.1
1	2	8.1	5.2
2-3	34.1	31.2	32.6
4+	54.6	9.4	31.2
Total	100	100	100
Mean number of visits	3.34	2	2.64
Number of months pregnant at the time of first visit			
No care	9.2	51.3	31.1
<6 months	70.2	33.6	51.3
6-7 months	15.9	9.4	12.5
8+ months	4.6	5.6	5.2
Total	100	100	100

Antenatal care visits during the time of pregnancy: The number and timing of antenatal care visits are crucial factors to prevent an adverse pregnancy outcome and can contribute significantly to the reduction of maternal morbidity and mortality because it also includes advice on the correct diet to pregnant women, besides medical care. Care is most effective if the visits are started early in pregnancy and continue at regular intervals throughout the pregnancy. It is generally recommended that antenatal care visits be made monthly for the first 7 months, fortnightly in the 8th month, and then weekly until birth (BDHS Report- 1993-94).

The distribution of ever-married women according to the number of visits and stage of pregnancy when first visited in case of last pregnancy are presented in Table 2. The results indicate that a large majority (51.3%) of births of rural mothers occurs without any antenatal care, and it is only 9.2% for urban mothers. Among urban mothers who do obtain care through single visit is only 2.0% and contrary to that 8.1% rural mothers obtained care by single visit. It is astonishing to see that 54.6% urban mother got antenatal care through 4 or more visits while for rural mothers is only 9.4%. From Table 1 it is clear that for urban mothers' percentage increases with number of visits to health centers while for rural mothers no such

specific pattern is shown. However, there exists some differences in the coverage of antenatal care by rural and urban in terms of number of visits. It may be said that the antenatal care coverage levels are somewhat satisfactory in the urban areas compared to the rural areas of Naogaon. The average number of visits is also more than in urban area (3.34) than in rural area (2.0).

The number of months pregnant at the time of first visit is considered in this study. Table 2 shows that, for urban mothers, about 70.2% is less than 6 months pregnant, 15.9% is 6-7 months pregnant and only 4.6% is more than 8 months pregnant at the time of first antenatal checkup. The corresponding figures for rural mothers are 33.6, 9.4 and 5.6%, respectively. The overall percentages of mothers respectively 51.3, 12.5 and 5.2. The situation of rural mothers in terms of taking antenatal care seems to be somewhat poor than for the urban mothers. However, the antenatal care situation at the present time has improved a lot and perhaps is much better now. Nevertheless, the present finding shows that there is a wide gap in the antenatal care coverage between rural-urban residences.

Figure 1 shows the number of visits of antenatal care during the last pregnancy. Fig. 1 also shows the urban-rural difference of medical checkup during pregnancy of the study population.

Differentials in antenatal care: Table 3 represents the differential effect of some socio-economic and demographic variables on source of antenatal care. As expected, utilization of antenatal care is substantially higher in urban than rural areas. The result indicates that women in urban areas are more likely to have received antenatal care (90.8%) than women in rural areas (48.7%). From the study we have found a strong positive relationship between mother's education and antenatal care. The result indicates that only 42.1% of the women with no education received antenatal care during pregnancy. It is higher for women having at least secondary and higher level of education (79.7%). This indicates that antenatal care increases with the increase level of educational. Husband's education has somewhat similar effect on antenatal care as the mother's education. Wives of more educated husbands received more antenatal care. From religion point of view, receiving of care is higher among Non-Muslims compared to Muslims. About 90.9% Non-Muslim received antenatal care where as only 67.5% Muslim received antenatal care in the study area. Husband's occupation also has some effect on antenatal care. We can observe from Table 3 that the proportion of mothers who take antenatal care is the highest (83.0%) among women whose husbands are businessman. The antenatal care situation is same (82.3%)

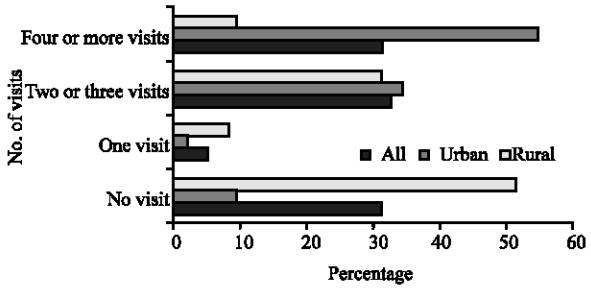

Fig. 1: Number of visits of ANC during pregnancy

among women whose husbands are service holders. The situation is marked (43.3%) among women whose husbands are involved in other occupation. The visit of health worker is directly related to the situation of antenatal care in the study area. About 69.8% mothers received antenatal care through the visits of health workers (Table 3).

Determinants of utilization of TT injections and antenatal care seeking: To find the effects of demographic, socio-economic and cultural factors on the tetanus taxied (TT) injections and antenatal care seeking behavior of mothers, logistic regression analysis is undertaken. Table 4 represents the results of the analysis. The analysis shows that place of residence, mothers education, husbands education, husbands occupation, current use of contraceptive, visit of health workers and work status of mother are significantly associated with medical checkup during last pregnancy.

The results indicate that mother's education is the most important factor affecting the utilization of antenatal care (ANC) for mothers. Table 4 indicates that the likelihood of medical checkup during last pregnancy of mothers with primary and secondary or higher level of education are respectively 1.491 times and 2.519 times higher than that of no educated mothers. Thus, we conclude that medical checkup increases with increasing the level of education.

Husband's education also shows the strong positive relationship with the utilization of ANC seeking. The mothers, who live in the urban area, are 2.158 times more likely to receive ANC than the rural mothers. This could be explained by the fact that medical facilities or qualified persons are more available and their services are relatively better in the urban areas, compared to those in the rural areas.

The Muslim mothers are not more likely (0.738) to go for medical checkup during pregnancy than their non-Muslim counterparts (Table 4). Generally Muslim women do not feel free to go to doctor or hospital than Non-Muslims due to some Muslim religious bounds.

Table 3: Distribution of ever-married women taking antenatal care during last pregnancy

Background characteristics	No. of respondent	Percentage
Residence		
Urban	346	90.8
Rural	372	48.7
Mothers education		
No education	107	42.1
Primary	133	51.9
Secondary and Higher	478	79.7
Husbands education		
No education	98	31.6
Primary	121	53.7
Secondary and Higher	499	80
Religion		
Muslim	674	67.5
Non-Muslim	44	90.9
Husbands occupation		
Farmer	195	49.7
Service	232	82.3
Business	200	83
Non-agriculture labor	61	45.9
Others	30	43.3
Visit of health worker		
Yes	583	69.8
No	135	55.2
Total	718	68.9

Table 4: Results of logistic regression for antenatal care during last pregnancy

	Received antenatal care		
Variables	Coefficient (β)	S.E. of coefficient	Odds ratio
Mother's education			
No education	-	-	1.000
Primary	0.712**	0.315	1.491
Secondary/Higher	0.657***	0.262	2.519
Husband's education			
No education	-	-	1.000
Primary	1.057***	0.333	1.348
Secondary/Higher	0.265	0.283	1.767
Place of residence			
Rural	-	-	1.000
Urban	1.848***	0.264	2.158
Religion			
Non-Muslim	-	-	1.000
Muslim	-0.303	0.658	0.738
Husband's occupation			
Farmer	-	-	1.000
Service	0.991**	0.484	2.695
Business	1.238***	0.495	3.447
Non-agriculture labor	1.276***	0.498	1.583
Others	-0.120	0.557	0.887
Current use of contraception			
No	-	-	1.000
Yes	0.620**	0.288	1.859
Visits of health worker			
No	-	-	1.000
Yes	0.501**	0.256	1.651
Work status of women			
Not working	-	-	1.000
Working	0.739*	0.393	1.478
Constant	1.927	0.820	

Note: Reference category in the parenthesis, ***p<0.01, **p<0.05, *p<0.1

The logistic coefficients indicate that highest occurrence of medical checkup during pregnancy was among the businessmen, followed by servicemen and the lowest was among the other categories than the farmers.

Current use of contraception is considered a habit of family planning and has a positive effect on the utilization of ANC during pregnancy. Mothers, who have currently using contraception, show more participation in the utilization of ANC seeking (Table 4). The mothers who were ever visited by the health worker are more likely to go for medical checkup during pregnancy than those who have never visited by health worker. The analysis indicates that respondents work status also has an important and significant effects on the medical checkup during pregnancy are likely to be 1.478 times higher among the women who were working than the women who were not working.

CONCLUSION AND RECOMMENDATIONS

From the foregoing analysis it is clear that in Naogaon, antenatal care during pregnancy differs between rural and urban residences with an up-ward biased to urban women might be due to more care opportunities and facilities available in urban areas in comparison to rural area. Also, the rural pregnant women are less likely to go outside for treatment during pregnancy than urban pregnant women due to various reasons- social, cultural, religion, financial etc. Education plays important role in antenatal care coverage. The lower level of literacy of women may be one of the reasons for non-utilization of antenatal care services. Women who have at least primary and secondary or higher education are more likely to seek antenatal care than the illiterate women. Also, working status has important bearing on the use of antenatal care during pregnancy.

The findings have important policy implications. Education and more employment opportunities should be created for women to increase their status in society. Awareness among the women about the health risk involved in pregnancy, early pregnancy and large family size should be created through special information by the visits of FPW. Reproductive health services need to be made available in a culturally accepted manner (arranging for privacy, providing maternity care by female health personnel, adjusting clinic times etc.). Also there is a need to improve the quality of care and management. Mechanism should be devised to attract poor and uneducated women to receive maternal and child health care services from qualified service providers. There should be a clear message for avoidance of high risk pregnancy and optimum use of the facilities available in both rural and urban health centers. However, the result of this study is not amenable for generalization. More data, wider coverage, proper methodology and sophisticated analysis should be made on this aspect of antenatal care coverage in the country.

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