Original Article

Pattern of Antenatal Care Received by Working Mothers and Their Pregnancy Outcome

Taslima Akber Happy[1], Mohd. Raisul Hasan[2], Tania Rahman[3], Laila Yesmin[4], Ayesha Yeasmin[5], Sailendra Nath Biswas[6], Md. Mahmudul Haque[7].

Abstract

Background: *Now a days, women are joining almost in every sector of the workforce. In view of these changes, it is necessary to find out whether the health of the working mother or their progeny has been consequently compromised.* ***Objectives:*** *To identify the utilization pattern of Antenatal Care (ANC) received by working mothers and their pregnancy outcome.* ***Materials & Methods:*** *A cross-sectional study was conducted on 242 admitted working mothers with a history of recent delivery in Dhaka Medical College Hospital (DMCH), Dhaka from January 2013 to December 2013.* ***Results:*** *Majority (61.2%) of the mothers was in the age group of 20-30 years with an average income 4885.95 Tk. Two fifth (42.1%) of them were garment workers. Only one-third (33.9%) mother received regular ANC. Majority (79.3) of them received their ANC from doctors and rest of them from Non-Government Organizations (NGO) workers (11.6%), nurses (2.5%) and health assistant (1.7%). Mothers with a history of irregular ANC showed almost 5 times more likely to develop anemia than the mothers with history of regular ANC ($p < 0.001$). Mean level of birth weight was highest among regularly ANC taking group found in one-way ANOVA ($F = 7.24$, $P<0.05$).* ***Conclusion:*** *As ANC has direct effect on a mother's health and pregnancy outcome employers should have ANC policy for their women workers.*

Key words: *Working mother, Antenatal care, Utilization pattern, Pregnancy outcome*

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Introduction

As a significant number of women especially married women are joining in the workforce recently, they raise major queries about the ensuing health of the mothers and their children. Some of these working mothers are now employed in a laborious job or subjected to pernicious agents as we are moving towards equal employment opportunities.[1] A physician can play an important role to play in helping a pregnant worker. He or she can inform her about job-related risks, can counsel her on the need for a change in job activity or placement, and can advise her when to discontinue work and when to resume after delivery.[2]

The employer, who values women's contribution, wants her to continue the job as till it is safe for her or for other workers. However, sometimes employers' expectations for certain types of activity exceed the limits of the pregnant workers' physical capability. Pregnancy is a constantly changing dynamic state. Rigid guidelines are often not suitable in such situations as women react differently to these changes.[3]

When women enter the workforce they normally do not shed their housekeeping and childrearing responsibilities. So their increased work participation may have significant health consequences.[4]

For accommodating the growing fetus and facilitate the delivery process, pregnancy hormones loosen up the pelvic structure by making the ligaments softer and more stretched.[5] Other ligaments also get relaxed, unfortunately, which causes muscle fatigue, reduced strength and creating a heightened risk of injury as those loose ligaments shifts the burden of supporting her

1. Associate Professor, Department of Community Medicine, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh.
2. Assistant Professor, Department of Community Medicine, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh.
3. Assistant Professor, Department of Microbiology, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh.
4. Associate Professor, Department of Forensic Medicine, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh.
5. Professor, Department of Physiology, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh.
6. Professor, Department of Community Medicine, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh.
7. Professor, Department of Community Medicine, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh.

Corresponding author: Dr. Taslima Akber Happy, Associate Professor, Department of Community Medicine, Khwaja Yunus Ali Medical College, Sirajganj, Bangladesh. Cell Phone: +8801303 323185, Email: happyakber@gmail.com

joints to her muscles.[6] A pregnant woman's increased size and weight also decrease her physical abilities. Her center of gravity displaces to forward due to redistribution of body mass, which interferes with her balance and equilibrium.[7] For these physical changes women during pregnancy may be unable to perform job tasks.[8]

In various occupations women experience an increased risk of a fetal death.[9] Some important work factors which directly correlated with adverse pregnancy outcomes included: fewer household helpers, standing for more than 7 hours per day, hot humid environments, walking, and carrying and lifting heavy weight.[10]

Several authors have reported that birth weight and gestational age at the time of delivery adversely influenced by excessive physical work load.[11] Strenuous activity possibly triggers premature labor by reducing blood volume to the placenta and fetus.[12]

Evidence from developed countries consistently suggests that long work hours, heavy lifting and other physically arduous work, and prolonged standing are associated with increased risk of low birth weight and preterm delivery.[13]

Child's brain development can be significantly hampered if pregnant mothers are under a lot of stress while at work. The stress during pregnancy on the mother and infant makes them more stressed and anxious; influence them to develop bad behavior and personality problem as they grow up with less intelligence.[14]

A number of authors have been pointed out the significance of maternal work as a potentially modifiable risk factor for prematurity and intrauterine growth retardation.[15] Specific maternity benefits such as changing job tasks, reducing work hours, and increased sick leave also have been shown to have a beneficial effect on gestational age.[16]

Bangladesh is a densely populated developing country, where mother and child constitute the 70% of total population. Like other countries, more and more Bangladeshi women are getting educated and participating into labor workforce. Labor force participation rate, female (% of female population ages 15-64) in our country was 60.10 as of 2011.[17] Meanwhile most of the families are now aware of family planning. That is why they just want 1 or 2 child. So every pregnancy becomes valuable one. As most of the mothers need to continue their job during certain pregnancy periods for economic purpose and fear of losing job, we must ensure their safety at workplace. For minimizing the complications we have to ensure the antenatal care.

This study will find out the areas where interventions are needed to minimize the risk of developing pregnancy complications and chance of having poor pregnancy outcomes. Findings of this study will help policy makers to prepare appropriate policy to bring healthy pregnancy outcomes.

Materials and Methods

A cross-sectional study was conducted on admitted working mothers with history of recent delivery in Dhaka Medical College Hospital, Dhaka. It was conducted from January 2013 to December, 2013. Sampling was done purposively. A total of 242 women were interviewed for conducting this study. They were interviewed with help of a semi structured pre-tested questionnaire. The data were collected by face-to-face interview of the respondents by maintaining privacy as far as possible. Before preceding the data collection, the detail of the study was explicitly explained to each eligible respondent and verbal consents were taken. Data processing and analyses were done using SPSS (Statistical Package for Social Sciences) version 21. Data were analyzed according to the objectives of the study. The test statistics used to analyze the data were descriptive statistics, Chi square (x2), ANOVA with 95% CI (confidence interval). Level of significance was set at 0.05.

Results

Mean age of the working mothers was 24.13 years and over 90% of them were Muslims. Their mean age at marriage was 16.8 years and mean age at 1st child birth was 19.19 years.

Table-I: Sociodemographic Characteristics

Variable	Frequency	Percentage
Age distribution of the working mothers		
≤20	64	26.4
21-30	148	61.2
>30	30	12.4
Distribution of the mothers by educational status		
Illiterate	58	24.0
Literate	184	76.0
Distribution of the mothers by occupational status		
Day laborer	14	5.8
Garment worker	102	42.1
Government employee	04	1.7
Private employee	50	20.7
Business	64	26.4
Others	08	3.3
Distribution of the mothers by monthly personal income		
≤ 5000	169	69.8
> 5000	73	30.2

About one fourth (24%) working mothers were illiterate. Majorities of them (42.1%) were garments workers and their mean income was 4885.95 Tk. (Table I)

Table-II: Working status and environment

Variable	Frequency	Percentage
Distribution of mothers by duration of service		
≤ 5	176	72.7
6-10	54	22.3
> 10	12	5
Distribution of mothers by type of contract		
Temporary	64	26.4
Permanent	178	73.6
Distribution of mothers by nature of work		
Light	172	71.1
Heavy	70	28.9
Distribution of mothers by daily duty hours		
≤ 8	108	44.6
9-12	60	24.8
> 12	74	30.6
Distribution of mothers by facility of restroom at work place		
Yes	66	27.3
No	176	72.7
Distribution of mothers by facility of emergency healthcare at work place		
Yes	94	38.8
No	148	61.2

On an average those working mothers were in service for last 5 years. Near about three fourth (73.6%) were in permanent work contract and their average working hours was 9.92 hours with SD ± 3.529. (Table II)

Above 60 % of the mothers received irregular ANC and 5 % had no ANC. About 30 % working mothers received ANC from NGO, 23.1 % from private hospital, 16.5 % from govt. hospital, 15.7 % from health center and 9.9 % from private doctor's chamber. Majority (79.3 %) of the mothers received their ANC from doctor, 11.6 % from NGO worker, 2.5 % from nurse and only 1.7 % from health assistant. Only 11.6 % had regular extra diet and 12.4 % had regular rest in daytime during their antenatal period. Majority (85.1 %) of the working mothers completed TT-vaccination. (Table III)

Table-IV reflects significant association between ANC status of the mothers and their anemia (p< 0.001). Among mothers who received ANC irregularly 95 percent had anemia. In case of mothers who received regular ANC, about 20 percent had no anemia. Mothers with history of irregular ANC showed almost 5 times more likely to develop anemia than the mothers with history of regular ANC.

Table-III: ANC status

Variable	Frequency	Percentage
Distribution of the mothers by ANC status		
Never	12	5
Irregular	148	61.2
Regular	82	33.9
Distribution of mothers by ANC place		
Private doctor's chamber	24	9.9
Health center	38	15.7
Government hospital	40	16.5
Private hospital	56	23.1
NGO	72	29.8
No where	12	5.0
Distribution of mothers by ANC giver		
Doctor	192	79.3
Nurse	6	2.5
Health assistant	4	1.7
NGO worker	28	11.6
Did not take ANC	12	5.0
Distribution of mothers by history of taking extra diet in antenatal period		
Never	06	2.5
Irregular	208	86.0
Regular	28	11.6
Distribution of mothers by history of taking extra rest in antenatal period		
Never	14	5.8
Irregular	198	81.8
Regular	30	12.4
Distribution of mothers by history of TT vaccination		
Never	04	1.7
Incomplete	32	13.2
Complete	206	85.1

Table-IV: Association of ANC status of the mothers with their anemia

ANC status	Anemia of mother		Total	χ2	P value
	Yes	No			
	n (%)	n (%)	n (%)		
Irregular	152(95.0)	8(5.0)	160(100)	12.78	0.000
Regular	66(80.5)	16(19.5)	82(100)		
Total	218(90.08)	24(9.91)	242(100)		

OR = 4.60, 95% CI (1.87-11.29)

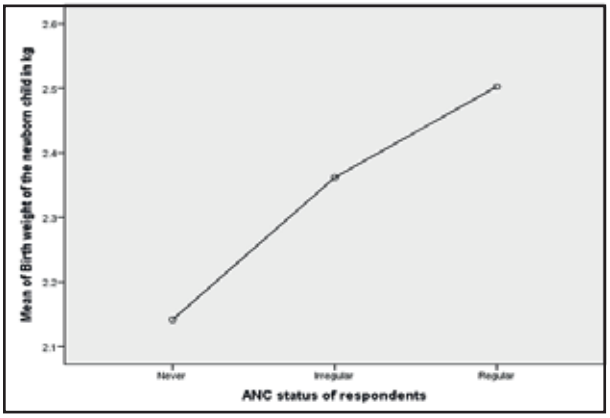

Figure 01: Association of birth weight with ANC status of the working mother.

By performing posthoc Hochberg's GT2 test it was further noticed that the mean birth weight of regularly ANC taking group differed significantly from never and irregularly taking ANC group, although there was gradual increase of birth weight with increase ANC status. [F = 7.24, P<0.05] (Figure-I)

Discussion

The findings derived from data analysis leave some scope for discussion to reach at a conclusion. This cross-sectional study was conducted among 242 admitted working mothers, who had a history of recent delivery in the gynecological and obstetrics department of DMCH. It was carried out to find out the utilization pattern of ANC received by working mothers and their pregnancy outcome.

Majority (61.2%) of the mothers was in the age group of 20-30 year and 26.4% of them were adolescent mother. The study done by Gazi R et al found the almost same scenario in Bangladesh.[18]

Among all respondents, 22.3% mothers were illiterate and from different occupational background. We found 42.1% were garment workers, 26.4% were related to business, and 22.4% were service holder and 5.8% were day laborer. Another study conducted in our country in 2012 by Rafi R et al found 16.1% female were engaged in garments sector.[19] In terms of economic status 69.8% mothers were in poor income group (≤5000 Tk.) and mean income was 4885.95 Tk. with standard deviation (SD) of ± 1944.21 Tk. This average income was almost similar to the current minimum wage for the garments workers, which is 5300 Tk per month.[20] As most of the mothers were garments worker, it is consistent with national data.

Majority (47.11%) of the working mothers had average participation in decision making. This finding is almost consistent with the finding of study carried out by Rashid MU et al. where participation rate average was 42.8%.[21]

Near about three fourth (73.6%) working mothers were in permanent work contract and 30% were heavy workers. On an average they worked for 8 hours or less daily. Only 21.5% of them had paid maternity leave. But according to the Bangladesh Labor Act, (Chapter IV called Maternity Benefit) maternity leave policy available to women in Bangladesh is 12 weeks which is paid at 100% for first two pregnancies.[22] At the workplace 72.7% mothers had no facility of rest room and 61.2% mothers had no emergency healthcare. This study found the mean age at marriage was 16.8 years which is almost similar (17.5 years) with Bangladesh population and housing census 2011.[23] The mean age at 1st child birth was 19.19 years with standard deviation ± 3.023 which is also consistent with national data by Bangladesh demographic profile index mundi 2013 (18.1 years). More than half (62.81%) of the respondents showed irregular contraceptive using patterns. But Bangladesh demographic profile index mundi 2013 found 62.1% women use contraceptives regularly.[20] This finding in not consistent with as sample size was small. Only 33.9% mothers received regular ANC and 5% respondents never went for ANC. A study done by ICDDRB in 2011 found only 21% mothers received ANC regularly.[24] In this study 30% of the working mothers received ANC from NGO, 23.1% from private hospital, 16.5% from govt. hospital, 15.7% from health center and 9.9% from private doctor's chamber. Majority (79.3) of the mothers received their ANC from doctor and rest of them from NGO worker (11.6%), nurses (2.5%) and health assistant (1.7%). It showed similarity with the study of Ellis M at el in his community based study in Katmandu, Nepal.[25]

This study found majority (85.1%) of the working mothers received the TT-immunization vaccine regularly. The study conducted by Rahman et al. in Bangladesh found 88 % urban mothers and 84 % rural mothers received tetanus toxoid injection during their pregnancy period.[26]

Significant association was found between ANC status of the mothers and their anemia ($p < 0.001$). Among mothers who had ANC irregularly 95 percent had anemia. In case of mothers who had regular ANC, about 20 percent had no anemia. Mothers with H/O irregular ANC showed almost 5 times more likely to develop anemia than the mothers with H/O regular ANC. Significant difference was found between mean birth weight of different ANC status in one way ANOVA (F = 7.24, P<0.05). Mean level of birth weight was highest among regularly ANC taking group (2.50= normal birth weight) and lowest among never ANC taking group (2.14 = low birth weight). Study done by Qader M AA in 2012 in Iraq found no significant relationship between number of antenatal care visit and low birth weight babies ($p = 0.89$).[27]

Conclusion

Good care during pregnancy is important for the health of the mother and the development of the unborn baby. Pregnancy is a crucial time to promote healthy behaviors and parenting skills. Good ANC links the woman and her family with the formal health system increases the chance of using a skilled attendant at birth and contributes to good health through the life cycle. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies.

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