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Antenatal Care Practices with Associated Factors among Tribal Women of Bangladesh

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Abstract **Objectives**: Since the maternal health of the tribal women is a world concern, it involves our attention more to them as they are underprivileged people all over the globe. This issue sounds true in the Bangladesh perspective as well. Antenatal care (ANC) is the first flight of stairs to reach the peak of success for safe-motherhood. It represents a series of evaluations over time, which is not implemented appropriately due to different types of limitation and problems. The study aimed to delve into ANC practices and the factors associated with this practices among tribal women dwelling in the Chittagong Hill Tracts (CHT) of Bangladesh. **Materials and Methods**: The descriptive statistic was used to analyze frequency, percentage. Associations were evaluated through Chi-square tests, and a binary logistic regression model was used to explore factors related to the use of ANC services. This paper is based on a quantitative study. **Result**: The study exposes that one-third (29.9%) of the pregnant women wanted ANC from a trained doctor of which 13.5% of women met adequate antenatal care attendance and 16.4% initiated attendance within three months of the pregnancy. Multivariable logistic regression analyses indicate that socio-economic status, place of residence, women's education, distance to health facilities, family planning were considered as the main determinant to seek ANC. The level of significance was set at 10% level of significance. **Conclusion:** The findings of the study suggest that specific efforts are needed to advance socio-economic status of tribal people, increasing the educational level of women and their husbands, reducing the distance from a health center, and strengthening family planning program are needed.

Keywords: *antenatal care, adequacy for ANC, CHT, delay ANC, maternal mortality, tribal women*

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1. Introduction

Worldwide, nearly 830 women die every day during pregnancy and delivery complications. It was determined that 303,000 women died at the time of pregnancy and delivery. Statistics show that 99% (302000) of maternal deaths happen in developing countries, with the largest number in rural areas. Almost all of these deaths occurred in low-resource settings, and most could have been prevented [1].

Globally, maternal mortality ratio is 216 per 1,00,000 live births. As part of the global effort to challenge the death of maternal mortality, a new target aimed at sustainable development goal (SDG) 3 by UN is to reduce the mortality ratio below 70 per 1,00,000 by 2030 and the maternal mortality rate of any country cannot be twice the world average. In 2015, the proportion of maternal mortality ratio between developing countries and developed countries is 239:12 per 100,000 live births. To achieve the SDG, worldwide decreasing rates of maternal mortality will be at least 7.5 % per year. In Bangladesh, the maternal mortality rate is 176 per 1,00,000 live births in 2015 [2].

Antenatal care is the preventive measure to trim down the rate of maternal mortality and sickness. Worldwide, 58% of women taking at least four antenatal care at the time of pregnancy. Few women (49%) of sub-Saharan Africa and 42 % women of South Asia received at least four antenatal visits respectively [2]. In Bangladesh, 64% (two-thirds) of the women sought at least one ANC services and 31% of women took four antenatal care services from professional doctors or a midwife or paramedic or community medical officer of which 46% urban and 26% rural women attended four or more ANC visits [3].

The check-up practice during pregnancy is very low observed in developing countries compared to developed countries. Many countries had less than 70% of women attending at least one pregnancy visit, for example, Afghanistan 59% [4], Ethiopia 41% [5], Nepal 68% [6]. Again, a number of countries had less than 70% of women attending at least four ANC visits, for example, Afghanistan 18% [4], Ethiopia 32% [5], Senegal 48% (DHS-2014).

In different ways the quality of antenatal care has been evaluated by the researchers. The most common way of quality antenatal care are the number of ANC visit and components of ANC services during pregnancy [7,8].

World Health Organization advises women to take ANC visits at least four times with mandatory measure of blood pressure, urine and blood tests and measures of weight and height should make at each visit during their pregnancy [9,10,11]. WHO recommends the first visit within 8 to 12 weeks after the pregnancy and the 2nd visit between 24 and 26 weeks of gestation, the 3rd visit between 32 weeks and the 4th visit between 36 and 38 weeks [10].

Due to insufficient antenatal care or delayed ANC that may occur poor results, such as; low birth weight, immaturity and prolonged delivery [12]. Time of the beginning of the Antenatal care visit is a significant pointer of adequate ANC. The studies conducted by Bbaale and Beeckman showed that the primary initiative of taking ANC makes it easier to accept sufficient number of visits, and enough services to identify the risk issues for the period of pregnancy[13]. Early antenatal care for HIV prevention works as an entry point, especially HIV prevention from the mother to the baby and ANC creates an interest in renewal and access to services [15].

Antenatal care is an important pillar for safe motherhood. Acceptance of maternal health care services in a society are mostly shaped and reshaped by personal, socio-environmental, psycho-cultural, and eco-political parameters existing in those areas. A study conducted by Kamal has revealed that health care system in Bangladesh is not homogeneous and socio-economic inequalities, deficit of knowledge regarding merits and drawbacks of consumption of maternal health care services (MHCS) and financial crisis are the major causes of a lower use of the MHCS [16].

Let us review the research done on ANC srvices in Bangladesh. Studies on antenatal service in Bangladesh reveal that, in the case of poor families, the frequency of ANC visit is less frequent. Studies have shown that mothers who are educated have more access to their antenatal care. Educated men are more willing to take their pregnant wives for treatment than illiterate men. Some studies revealed that rural mothers have fewer accesses to safe delivery as there is a lack of good hospitals in the villages. A study conducted by Islam found that one out of every nine women received antenatal care among Mru tribal community which is a small group out of 13 tribal groups living in CHT. The study showed that more than half of the respondents reported that they did not take antenatal care due to the long distance to the service center and lack of transportation facilities [17,18,19,20].

While going through the review, it has been observed that, no significant research has yet been conducted on ANC services of the tribal women of CHT of Bangladesh. Therefore, the current study was conducted to identify the socioeconomic issues concerning the use of the antenatal care services in tribal women of Bangladesh. In order to implement the new strategies to enhance the frequency of ANC visit, the research can be helpful for agencies involved in the development of maternal health.

2. Materials and Methods

A total of 556 married tribal women between the ages of 15 and 49, who had at least one living child whose age was not above one year were selected for the face to face interview survey. It was difficult for me to conduct the study by the Bengali language since the tribal people had distinct language. Consequently, two male and eight female tribes studying 9 to 12 classes were appointed for collecting data.

The collected data was summarized, tabulated and analyzed by the SPSS-20. Associations were evaluated through Chi-square tests, and a binary logistic regression analysis was used to discover issues related to antenatal care services.

The general model of the binary logistic regression equation used in the analysis is of the form.

$$\log_e\left[\frac{p}{1-p}\right] = b_0 + b_1x_1 + b_2x_2 + \text{---------} + b_k x_k$$

Where, x_1, x_2, x_3, ..., x_k are set of independent variables, b_0 is constant and b's are regression coefficients. This paper is based on a quantitative study. The outcome of multivariate analysis were given by the odds ratio (OR) with 95% confidence interval (CI) for easy understanding and interpretation. For ample representation, adding an additional 50%, the estimated sample size has been calculated as (384+192=) 576. Finally 556 households were covered from 25 upazillas and 20 households was not possible due to the absence of the respondents during survey.

Dependent Variables

The dependent variables in this study are as follows (i) seeking ANC (ii) the time to start ANC services (iii) adequate ANC

Independent Variables

The demographic, socioeconomic and cultural-behavioral predictors, such as the age of the respondent, age at first marriage, family members, current age of the husband, parity/birth order (number of children), wealth index, occupation of the women, husband's occupation, exposure to media, women's education, spouse education, place of residence, distance from the nearest health care facilities, religion, tribal identity, family planning were considered as independent variables.

2.1. Ethical Considerations

The study was initially approved by the Board of Advanced Studies held on 16th April, 2012 and finally approved by the Academic Council held on 16th June, 2012 at Islamic University, Kushtia, Bangladesh. These committee accepted research topic to do dissertation.

2.2. Aim and Objectives

The study aimed to delve into ANC practices and the factors associated with this practices among tribal women dwelling in the Chittagong Hill Tracts (CHT) of Bangladesh.

3. Results

3.1. Background of the Respondants

The data of the demographic characteristics showed 80% of the participants were from rural and 20% were urban area, 43% of the participants were aged 15-24 and 49.5% were aged 25-34, 28.8% had a secondary level of education, more than half of the women's husbands (53.4%) were involved in agriculture, majority of women (94.2%) were unemployed. Only 35.8 % of the respondents live within 05 km. In terms of wealth index, 30.8% of the women belong to an upper-middle class family. Only 29.9% of the women received antenatal care while 70.1% did not receive antenatal care from anyone at all.

3.2. Measurement of Antenatal Care Service

Antenatal care was evaluated on the basis of the numeral of ANC visits, the beginning of ANC visits in this study.

Table 1 shows that only 13.5 % of the studied population had visited ANC more than 3 times, whereas 70.1% had no antenatal care visits at all during pregnancy.

Table 1. Percentage Distribution of Adequacy for ANC

Variable Name	N	%
Adequacy for ANC		
Never visit	390	70.1
Adequate visit (4 >=)	75	13.5
Inadequate visit (1-3)	91	16.4
Total	556	100.0

Table 2 describes that only 16.4% of the women had started to receive ANC care in an early stage of pregnancy (≤3 months) while 13.5%, after 3 months of their pregnancies.

Table 2. Percentage Distribution of time of the beginning of ANC Visit

Variable Name	Frequency (N)	Percentage (%)
Beginning of ANC Visit		
No Care	390	70.1
<=3 months	91	16.4
>3 months	75	13.5
Total	556	100.0

3.3. Differentials of ANC

Table 3 illustrates that there is no relationship between the use of ANC services and sociodemographic variables among tribal women.

In Table 3, bivariate analyses showed that the socioeconomic characteristics such as wealth index ($p<0.001$), occupation of the respondents (women), husband's occupation ($p<0.001$), distance from home to nearest health care facilities ($p<0.001$), education of the respondents, education of the spouses ($p<0.001$), place of residence ($p<0.001$), media exposure ($p<0.001$), family planning ($p<0.001$) were positively associated with the utilization of the ANC.

Table 4 shows that women's age and age at the time of the first marriage were concerned in getting of a sufficient number of ANC visits. In contrast, the number of family members and parity did not affect the sufficient use of ANC services.

Table 4 depicts the association between socioeconomic variables and number of ANC visits. The family property indicators were associated with full antenatal care services. Urban women were comparatively faster than rural colleagues in search of ANC. Higher educated women accepted more ANC visits than those having no formal education. The long distance of the health center is associated with very little ANC visits.

Table 5 describes the associations between socioeconomic factors cultural and behavioral factors with the time to start ANC. Each factor of socioeconomic characteristics and cultural and behavioral factors were positively associated with the time to start ANC.

Table 3. Association between variables and antenatal care seeking

Characteristics	N	Received ANC		χ^2	P-Value
Age of respondent		**No**	**Yes**	**0.466**	**0.792**
15-24	239	164(68.6%)	75 (31.4%)		
25-34	275	196 (71.3%)	79 (28.7%)		
35+	42	30 (71.4%)	12 (28.6%)		
Age at first marriage Group				1.182	0.**277**
<18	120	89 (74.2%)	31 (25.8%)		
18+	436	301 (69.0%)	135 (31.0%)		
Family members				0.671	**0.413**
<5	361	249 (69.0%)	112 (31.0%)		
5+	195	141 (72.3%)	54 (27.7%)		
Parity				1.245	0.**264**
One- Two	418	288 (68.9%)	130 (31.1%)		
Three +	138	102 (73.9%)	36 (26.1%)		
Current age of husband				1.028	**0.598**
<25	136	93 (68.4%)	43 (31.6%)		
25-35	330	230 (69.7%)	100 (30.3%)		

Characteristics	N	Received ANC		χ^2	P-Value
35+	90	67 (74.4%)	23 (25.6%)		
Wealth Index		**No**	**Yes**	134.559	.000
Poor	223	209 (93.7%)	14 (6.3%)		
Middle	162	113 (69.8%)	49 (30.2%)		
Rich	171	68 (39.8%)	103 (60.2%)		
Occupation of the respondents (women)				48.191	.000
unemployed	524	385 (73.5%)	139 (26.5%)		
employed	32	5 (15.6%)	27 (84.4%)		
Husband's occupation				96.700	.000
Agriculture	297	247 (83.2%)	50 (16.8%)		
Business	105	58 (55.2%)	47 (44.8%)		
Service	100	37 (37.0%)	63 (63.0%)		
Day laborer	54	48 (88.9%)	6 (11.1%)		
Maternal Facility Distance (km)				89.655	.000
<5	199	92 (46.2%)	107 (53.8%)		
5-9	104	78 (75.0%)	26 (25.0%)		
10+	253	220 (87.0%)	33 (13.0%)		
Education of the respondents (women)				131.049	.000
No Education	169	151 (89.3%)	18 (10.7%)		
Primary	128	108 (84.4%)	20 (15.6%)		
Secondary	160	104 (65.0%)	56 (35.0%)		
Higher	99	27 (27.3%)	72 (72.7%)		
Education of the husband of the respondent's				117.689	.000
No Education	76	69 (90.8%)	7 (9.2%)		
Primary	87	76 (87.4%)	11 (12.6%)		
Secondary	197	163 (82.7%)	34 (17.3%)		
Higher	196	82 (41.8%)	114 (58.2%)		
Place of Residence				85.396	**.**000
Rural	445	352 (79.1%)	93 (20.9%)		
Urban	111	38 (34.2%)	73 (65.8%)		
Media exposure				88.257	.000
Watching Television					
No	371	308(83.0%)	63(17.0%)		
Yes	185	82(44.3%)	103(55.7%)		
Listening to the Radio				16.586	.000
No	512	371(72.5%)	141(27.5%)		
Yes	44	19(43.2%)	25(56.8%)		
Total	556	390(70.1%)	166(29.9%)		
Religion				3.380	.066
Buddhist	499	344 (68.9%)	155 (31.1%)		
Other	57	46 (80.7%)	11 (19.3%)		
Tribal's identity				16.017	.001
Chakma	331	212 (64.0%)	119 (36.0%)		
Marma	138	107 (77.5%)	31 (22.5%)		
Tripura	37	28 (75.7%)	9 (24.3%)		
Other	50	43 (86.0%)	7 (14.0%)		
Family Planning (using a modern method of contraception**)**				26.123	.000
No	303	240(79.2%)	63(20.8%)		
Yes	253	150(59.3%)	103(40.7%)		
Total	556	390(70.1%)	166(29.9%)		

Table 4. Association between variables and adequacy for ANC seeking

Demographic Characteristics	Total	Number of ANC Visits			χ^2	P-Value
		No visits	>3 visits	<=3 visits		
Age of respondent(Years)					8.980	.062
15-24	239	164 (68.6%)	29 (12.1%)	46 (19.2%)		
25-34	275	196 (71.3%)	44 (16.0%)	35 (12.7%)		
35+	42	30 (71.4%)	2 (4.8%)	10 (23.8%)		
Age at first Marriage					4.784	.091
<18	120	89 (74.2%)	9 (7.5%)	22 (18.3%)		
18+	436	301 (69.0%)	66 (15.1%)	69 (15.8%)		
Family members					1.285	.526
<5	361	249 (69.0%)	53 (14.7%)	59 (16.3%)		
5+	195	141 (72.3%)	22 (11.3%)	32 (16.4%)		
Parity (Children Ever Born)					1.914	.384
One -Two	418	288 (68.9%)	61 (14.6%)	69 (16.5%)		
Three +	138	102 (73.9%)	14 (10.1%)	22 (15.9%)		
Wealth Index					146.224	.000
Poor	223	209 (93.7%)	4 (1.8%)	10 (4.5%)		
Middle	162	113 (69.8%)	15 (9.3%)	34 (21.0%)		
Rich	171	68 (39.8%)	56 (32.7%)	47 (27.5%)		
Education of the respondents (women)					142.160	.000
Illiterate	169	151 (89.3%)	2 (1.2%)	16 (9.5%)		
Primary	128	108 (84.4%)	7 (5.5%)	13 (10.2%)		
Secondary	160	104 (65.0%)	26 (16.2%)	30 (18.8%)		
Higher	99	27 (27.3%)	40 (40.4%)	32 (32.3%)		
Education of the husband of the respondent's					124.274	.000
Illiterate	76	69 (90.8%)	0 (0.0%)	7 (9.2%)		
Primary	87	76 (87.4%)	4 (4.6%)	7 (8.0%)		
Secondary	197	163 (82.7%)	12 (6.1%)	22 (11.2%)		
Higher	196	82 (41.8%)	59 (30.1%)	55 (28.1%)		
Occupation of the respondents					58.527	.000
unemployed	524	385 (73.5%)	58 (11.1%)	81 (15.5%)		
employed	32	5 (15.6%)	17 (53.1%)	10 (31.2%)		
Husband's occupation					103.344	.000
Agriculture	297	247 (83.2%)	22 (7.4%)	28 (9.4%)		
Business	105	58 (55.2%)	19 (18.1%)	28 (26.7%)		
Service	100	37 (37.0%)	34 (34.0%)	29 (29.0%)		
Day laborer	54	48 (88.9%)	0 (0.0%)	6 (11.1%)		
Residence					**97.775**	.000
Rural	445	352 (79.1%)	33 (7.4%)	60 (13.5%)		
Urban	111	38 (34.2%)	42 (37.8%)	31 (27.9%)		
Watching Television					100.251	.000
No	371	308 (83.0%)	18 (4.9%)	45 (12.1%)		
Yes	185	82 (44.3%)	57 (30.8%)	46 (24.9%)		
Listening to the Radio					17.556	.000
No	512	371 (72.5%)	62 (12.1%)	79 (15.4%)		
Yes	44	19 (43.2%)	13 (29.5%)	12 (27.3%)		
Maternal Facility Distance (km)					95.039	.000
<5	199	92 (46.2%)	51 (25.6%)	56 (28.1%)		
5-9	104	78 (75.0%)	16 (15.4%)	10 (9.6%)		
10+	253	220 (87.0%)	8 (3.2%)	25 (9.9%)		
Total	556	390 (70.1%)	75 (13.5%)	91 (16.4%)		

Table 5. Association between variables and the time to start ANC

Demographic Characteristics	Total	Time of the beginning of ANC visit			χ^2	P-Value
		No Care	<=3 months	>3 months		
Age of respondent					10.090	0.039
15-24	239	164 (68.6%)	34 (14.2%)	41 (17.2%)		
25-34	275	196 (71.3%)	53 (19.3%)	26 (9.5%)		
35+	42	30 (71.4%)	4 (9.5%)	8 (19.0%)		
Age at First Marriage					3.475	0.176
<18	120	89 (74.2%)	13 (10.8%)	18 (15.0%)		
18+	436	301 (69.0%)	78 (17.9%)	57 (13.1%)		
Family members					2.058	0.357
<5	361	249 (69.0%)	65 (18.0%)	47 (13.0%)		
5+	195	141 (72.3%)	26 (13.3%)	28 (14.4%)		
Parity (Children Ever Born)					2.220	0.330
One -Two	418	288 (68.9%)	74 (17.7%)	56 (13.4%)		
Three +	138	102 (73.9%)	17 (12.3%)	13.8%		
Wealth Index					136.007	.000
Poor	223	209 (93.7%)	6 (2.7%)	8 (3.6%)		
Middle	162	113 (69.8%)	25 (15.4%)	24 (14.8%)		
Rich	171	68 (39.8%)	60 (35.1%)	43 (25.1%)		
Education of the respondents (women)					140.180	.000
No Education	169	151 (89.3%)	4 (2.4%)	14 (8.3%)		
Primary	128	108 (84.4%)	9 (7.0%)	11 (8.6%)		
Secondary	160	104 (65.0%)	32 (20.0%)	24 (15.0%)		
Higher	99	27 (27.3%)	46 (46.5%)	26 (26.3%)		
Education of the husband of the respondent's					123.588	.000
No Education	76	69 (90.8%)	0 (0.0%)	7 (9.2%)		
Primary	87	76 (87.4%)	5 (5.7%)	6 (6.9%)		
Secondary	197	163 (82.7%)	17 (8.6%)	17 (8.6%)		
Higher	196	82 (41.8%)	69 (35.2%)	45 (23.0%)		
Maternal Facility Distance (km)					92.989	.000
<5	199	92 (46.2%)	64 (32.2%)	43 (21.6%)		
5-9	104	78 (75.0%)	14 (13.5%)	12 (11.5%)		
10+	253	220 (87.0%)	13 (5.1%)	20 (7.9%)		
Occupation of the respondents					52.779	.000
unemployed	524	385 (73.5%)	73 (13.9%)	66 (12.6%)		
employed	32	5 (15.6%)	18 (56.2%)	9 (28.1%)		
Husband's Occupation					104.833	.000
Agriculture	297	247 (83.2%)	21 (7.1%)	29 (9.8%)		
Business	105	58 (55.2%)	27 (25.7%)	20 (19.0%)		
Service	100	37 (37.0%)	41 (41.0%)	22 (22.0%)		
Day laborer	54	48 (88.9%)	2 (3.7%)	4 (7.4%)		
Media Exposure						
Do you watch Television					89.626	.000
No	371	308 (83.0%)	31 (8.4%)	32 (8.6%)		
Yes	185	82 (44.3%)	60 (32.4%)	43 (23.2%)		
Listening to the Radio					18.344	.000
No	512	371 (72.5%)	75 (14.6%)	66 (12.9%)		
Yes	44	19 (43.2%)	16 (36.4%)	9 (20.5%)		
Residence					97.676	.000
Rural	445	352 (79.1%)	42 (9.4%)	51 (11.5%)		
Urban	111	38 (34.2%)	49 (44.1%)	24 (21.6%)		
Religion					5.808	.055
Buddhist	499	344 (68.9%)	88 (17.6%)	67 (13.4%)		
Other	57	46 (80.7%)	3 (5.3%)	8 (14.0%)		
Group of Tribal					22.603	.001
Chakma	331	212 (64.0%)	72 (21.8%)	47 (14.2%)		
Marma	138	107 (77.5%)	13 (9.4%)	18 (13.0%)		
Tripura	37	28 (75.7%)	2 (5.4%)	7 (18.9%)		
Other	50	43 (86.0%)	4 (8.0%)	3 (6.0%)		
Family Planning (using a modern method of contraception**)**					26.144	.000
yes	253	150(59.3%)	56(22.1%)	47(18.6%)		
no	303	240(79.2%)	35(11.6%)	28(9.2%)		
Total	556	390(70.1%)	91(16.4%)	75(13.5%)		

3.4. Determinants of Antenatal Care Service Utilization

Table 6 illustrates that women's education, family planning, distance from health care center, index of family property were statistically important determinant for receiving ANC services.

Table 6. Factors influencing ANC service utilization among tribal women in CHT

Variables	Odds Ratio	95% C.I. for EXP(B)	
		Lower	Upper
Wealth Index			
(Poor)	1.00		
Middle	4.272***	2.086	8.750
Rich	7.680***	3.665	16.092
Distance to Health Facility (km)			
<5	1.00		
5-9	.271***	.144	.509
10+	.197***	.113	.345
Husband's Education			
(Illiterate)	1.00		
Primary	.533 ns	.161	1.768
Secondary	.789 ns	.259	2.406
Higher	1.803 ns	.543	5.984
Women's Education			
(Illiterate)	1.00		
Primary	.837 ns	.355	1.970
Secondary	1.049 ns	.446	2.464
Higher (SSC+)	2.900**	1.095	7.678
Family Planning			
(No)	1.00		
Yes	2.031***	1.240	3.326

Notes: Level of significance:***=p<0.01, **=p<0.05, * = p<0.10, ns = not significant. The reference category is in the parenthesis.

4. Discussion

Research findings have been discussed and interpreted. Evidence from previous research has been examined and compared with the findings of the current study.

In this resrach, we observed the ANC seeking, the adequacy for the ANC and the time of starting for the ANC. The findings showed that 29.9% of the pregnant women sought at least one antenatal care services from trained medical doctors of which 13.5% of women met adequate antenatal care attendance and 16.4% initiated attendance within three months. The BDHS showed that 64% of women sought at least one ANC services from professional doctor and 31% of women took four antenatal care services from a trained doctor [3]. From this comparison, we can infer that the level of receiving ANC by tribal women of CHT was almost half of the national level.

Now we see pictures of research on receiving ANC services in the neighboring countries. A study carried out by Silwal exposed that the majority of the mothers among indigenous people of Nepal did not accept ANC even a dose of tetanus injection [21]. The most discouraging situations were found among Khairwar tribal women of Madhya Pradesh, India; They do not feel the need for ANC. They did not receive any suggestion or contact with anyone during their pregnancy [22]. They did not accept PHC (primary health care) service due to wrong ideas. About two-thirds of the Bhil tribal women of Madhya Pradesh, India (64 %) also did not receive any IFA tablets or syrup as reported by Sharma [23].

This study showed that more educated women were much interested in using ANC services than those who were illiterate. Similar findings were observed in other studies; a study done by Kamal revealed that highly educated women knew very well about the cost of care for maternal health and was also aware of the benefits of taking care of maternal health [24]. A study in rural Bangladesh ensured that higher education was associated with increased use of ANC [25]. This may be explained that girls going to schools and colleges for studies have the scope to exchange their views with classmates. They can share their problems and implications about maternity with their fellow-learners**.** The Knowledge of health science would definitely enable a pregnant woman to have sound knowledge about maternal health care services. Education not only promote awareness of good health, but also it guides a way to manage to pay for the cost of medical services. The gulf between educated and uneducated women is enormous in the fact that the educated women try their level best to avail themselves of the full range of modern maternal health facilities, whereas uneducated women are not much aware of and willing to utilize them. It is reasonable to infer that education acts as the sunlight for receiving proper maternity health care services.

It has been shown in the study that distance from the health center was inversely related to the use of ANC among tribal women of Bangladesh. The findings are consistent with the studies in Kenya and rural Haiti, where it has been found that with the increase in distance from the health center, the ANC inspection decreased [26]. Some studies found that respondents did not receive any antenatal or postnatal care due to the long distance to the service center as well as lack of transportation facilities [27,28]. Long distance causes major obstacles to reaching a health facility during pregnancy. Despite the willingness of the tribal women of CHT to receive ANC, they cannot consult a doctor or go to the hospital because of the barrier of distance. The lack of good roads and inadequate transportation severely hamper tribal women's receiving ANCS. The clear inference is that the farther the people live in, the worse the ANCS is affected.

Regarding socioeconomic status, the study revealed that women having affluence and belonging to the privileged class preferably remained in MHCS. Similar findings demonstrated a positive relationship between economic status and receiving ANC services [29]. It is reasonable to assume that mothers from the rich wealth index are generally more educated, aware of existing modern health care services and can afford the cost very easily. Women's high socioeconomic status is the gateway to receiving ANC. Women having great wealth see no impediment to take MHCS.

Concerning the use of family planning, the study found that those who were well-known about family planning were more likely to participate in ANC seeking. Previous studies have ensured that women involved in family

planning were more aware of the use of ANC. There is evidence that indicates that women who did not practice family planning were less likely to use the ANC services [30]. This is in line with our research that women who wanted to be pregnant were very less interested in using ANC services. It is generally assumed that the women's awareness and adoption of family planning result in their further utilization of MHCS. When women consult the health workers, doctors, etc. about family planning, they can simultaneously know many things about maternity health care services from them; this ultimately leads them to receive ANC.

5. Recommendation & Conclusion

This study unveils that the practice of receiving ANC services is severely affected by the socioeconomic conditions of indigenous women in Bangladesh. Based on the results of the research, the most important recommendations of ANC practices are upgrading economic conditions of tribal people, increasing the level of education of women, reducing the distance to the maternal health center, strengthening family planning program. The art and craft (Handicrafts, Crafts of Bamboo, Woodcraft, Fiber and Textiles craft, Flower crafts, Papercrafts) sector can play an important role in the development and growth of tribal economy. With a view to upgrading the economic conditions of the tribal people, 'eco-friendly' industries such as soil industries or loom industries may be established in the Chittagong hill tracts by using the natural resources of CHT.

Due to geographical condition (Remote and hilly area) distance to health facilities is also one of the factors of not utilizing ANC services. Under the infrastructural development of mountainous areas, a woman can get the best services in maternal health and the use of ANC services can be increased through decentralization of mothers' health centers.

Institutional education is one of the basic needs for everyone as it enlightens a person about the pros and cons of daily life. The learning of health science is no different. Knowledge of health science would definitely enable a pregnant woman to have sound knowledge about maternal health care. Thus more and more opportunities should be provided to have access to institutional education for the people of hill tract areas. With a view to doing so, launching good schools and colleges at the root levels should be taken into account. This will ensure not only institutional education, but also a healthy future citizen with safe motherhood.

In this study we can come to the conclusion that the government of Bangladesh must take necessary steps for the development of ANC services among tribal women of Bangladesh. We hope this research results will help the Ministry of Health to formulate a plan for the improvement of ANC.

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