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Research Article

Effect of Media Exposure and Related Factors on Antenatal Care Visits Among Pregnant Women in Bangladesh: A Study Based on BDHS 2017-18 Data

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Abstract

Providing antenatal care (ANC) to expectant mothers is the primary method of reducing maternal morbidity and death. The objectives of ANC are to monitor and preserve the health and safety of both the mother and the fetus, identify any pregnancy issues and take appropriate action, address the concerns of the mother, get her ready for delivery, and encourage mothers to adopt healthy habits. The goal of this research is to investigate the determinants associated with Bangladeshi women's ANC. Data were obtained from the BDHS for the 2017–18 year, and 4,920 married women of reproductive age (15–49 years) were selected as participants from 18,895 married women. The data was analyzed using multinomial logistic regression as well as descriptive and inferential statistical methods. The main outcome of this study found that 48.4% of respondents received 4 or more ANC visits. The ANC contacts were correlated with factors such as media exposure, division, maternal age, women's education, husband's education, and wealth index. The primary educated women were 0.312 times ($p<0.002$) less likely to receive 4 or more ANC, compared to higher educated women, and women who don't access to media, 0.464 times ($p<0.000$) less likely to engage in 4 or more ANC visits compared to media access. The results of this investigation demonstrate a substantial correlation between media exposure and ANC visits, as well as a noteworthy rise in appropriate ANC visits among expectant mothers with increased media exposure.

Keywords

Antenatal Care, Pregnant Women, Media Exposure, Multinomial Logistic Regression, Bangladesh

1. Introduction

Antenatal care involves regularly monitoring the health of potentially healthy expectant mothers who do not exhibit any symptoms, diagnosing illnesses or complex medical specialist issues in the absence of symptoms, and disseminating information about pregnancy, delivery, and handling. Pregnancy care plays a critical role in protecting women's and their unborn children's health. Through this form of preventative healthcare, women may get social, emotional, and psychological support during this crucial time in their life, as well as education from qualified medical professionals on healthy habits to maintain during pregnancy and delivery [18].

Antenatal care (ANC) has been reducing maternal morbid-

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ity and mortality as well as monitoring and preserving the mother's and the baby's safety and health throughout pregnancy. For simple pregnancies, it is vital to have at least four ANC; extra visits are only required in situations of problems that are supported by empirical evidence. This will help to confirm improved health outcomes for pregnant women and the birth of a healthy baby. [12].

Previous research from Bangladesh and South Asia has categorized pertinent elements associated with pregnant women's ANC interactions into three categories: demographic, socioeconomic, and environmental. Thus, having a thorough understanding of the many demand-side elements associated with media exposure is crucial for informing policy, which may then make it easier to demand the right steps to support ANC services and improve maternal health.

Early in the 20th century, ANC for expectant mothers was introduced as a method of screening asymptomatic mothers in an effort to identify and subsequently avoid adverse occurrences in both the mother and the fetus [6]. ANC includes keeping track of medical information, evaluating each person's needs, making suggestions, and providing guidance on pregnancy and childbirth. Together with screening tests, it also covers illnesses that are common and harmful to pregnancy health, self-care throughout pregnancy, first-line management, and referral when needed [20]. ANC should begin as soon as there is a plausible chance of becoming pregnant. The ultimate objectives are to determine the mother's health state, estimate the age of conception, and start planning for ongoing special care [4]. To put it succinctly, antenatal care (ANC) refers to the routine assessment of a mother's health during her pregnancy in order to support her well-being and ensure a successful pregnancy.

Apart from diagnostic and screening services, ANC provides a platform for vital medical services, sickness prevention, and health advocacy [21]. ANC seeks to monitor and protect the health of the mother and fetus, identify any pregnancy difficulties and take appropriate action, address the concerns of the mother, get her ready for delivery, and encourage women to adopt healthy habits [19]. Globally, there has been a consistent increase in the use of ANC over the past few decades. Currently, the majority of women (86%) attend at least one ANC visit, and 62% get at least four ANC visits from conception to delivery [15].

During the first 28 weeks of pregnancy, ANC visits are typically planned every 4-6 weeks; from 28 to 36 weeks gestation, they are done every 2-4 weeks; and from 36 weeks to birth, they are scheduled weekly [17]. When a woman notices that her pregnancy is going regularly at 16 weeks, 24-28 weeks, 32 weeks, and 36 weeks, the WHO advises her to schedule four ANC checks [10]. Merely disclosing information on at least one and at least four ANC is insufficient to assist nations in meeting their maternal health goals as ANC consumption rises. If ANC services are of low standard, a nation may have high levels of at least four ANC but few women receive the suggested ANC interventions [9].

The aim of this research is to examine the overall BDHS trend of ANC usage and to determine the obstacles to prenatal care utilization by employing data processing techniques based on the combined BDHS dataset. Therefore, the purpose of this study was to provide evidence that developers, decision-makers, and relevant stakeholders might utilize as a starting point for initiatives to increase the usage of ANC services in Bangladesh.

1.1. Objectives of the Study

This study's main goal is to determine how media exposure, educational attainment, and other carefully chosen variables affect the factors that impact ANC visits in Bangladesh. The objectives are pointed out below-

1. To determine the demographic and socio-economic factors related to ANC visits in Bangladesh.
2. To determine the relationship between ANC visits and a few chosen variables.
3. To examine how being exposed to the media affects ANC visits.
4. To identify the impact of ANC visits with some demographic and socio-economic factors.

1.2. Review of Related Literature

In a 2017 study, Rahman et al. investigate the patterns in the use of four or more (4+) ANC during the last 22 years, as well as the factors that influence and the disparities in the use of 4+ ANC, based on data from the Bangladesh Demographic and Health Surveys conducted in 2011 and 2014 [13]. Higher educational, living in an urban area [11] and belonging to the highest quintile of income were determined to be significant predictors in this analysis. As mother age and parity have increased, so has the employment of 4+.

Women who are less educated, live in low-income households, have limited access to the media, or are from metropolitan and Sylhet regions are less likely to utilize ANC and may even receive fewer visits from ANC. There were also fewer ANC visits among women who reside in remote regions, depend on family members for medical choices, and have unintended pregnancies [2].

One study looked into the relationship between an unplanned pregnancy and the following use of one to four skilled antenatal care visits [10]. According to the study's findings, around 64% of Bangladeshi women who became pregnant within three years of the survey got antenatal care (ANC) at least once, and of those, approximately 32% utilized ANC four or more times.

The study shows that among women in Bangladesh, receiving at least four ANC visits is significantly and favorably associated with institutionalized delivery [14].

Ali et al. (2018) investigates the demand-side variables linked to the recommended use of ANC services by adult and teenage women in Bangladesh [1]. About 32% of adult and 30% of teenage women used the recommended ANC visits, ac-

cording to this study. When compared to uneducated women, the more educated adult and teenage women had an 8.08-fold (P < .001) and 2.98-fold (P < .001) increased likelihood of receiving four or more ANC, respectively.

According to the analysis of this study [7], only 6% of moms receive the required eight or more ANC visits, and mothers received less than three (2.7 visits) ANC visits. To identify the reasons behind Bangladesh's underutilization of ANC services, further analysis is required.

Data from Nepal Demographic and Health Survey 2011, (NDHS) were analyzed for 4,079 mothers. According to research conducted in Nepal, 85% of women had at least one ANC visit and 50% of women had four or more ANC visits. The study's conclusions demonstrate the necessity to focus on less educated women from low-income families in the near future [8].

According to an analysis of data from all six rounds of the Ghana Demographic and Health Survey (GDHS), the percentage of women in Ghana who had nursing prenatal care increased with time, rising from 55% in 1988 to 89.5% in 2014 [5].

According to research conducted in Ethiopia [16], a one-unit increase in the average score for ANC service accessibility across a typical region was linked to a five-fold increase in the likelihood of receiving more ANC visits. Furthermore, in a typical location, there was a negative correlation between having at least four ANC visits and every kilometer added to the distance to the nearest ANC facility. Consequently, the analysis indicates that ANC use was mostly determined by a person's location and distance from the center, highlighting the need for more ANC availability, especially in cold spot locations.

According to a Bangladeshi research, ANC usage was greater among young pregnant women under 20 (59%) than among women between the ages of 35 and 49 (43%). When taking into account the age of the mother, ANC usage differed considerably between age groups, with older moms using ANC less frequently than younger mothers (less than 20 years old) [22]. Potential explanations include the fact that the majority of women under 20 become moms for the first time and are anxious about complications from pregnancy; as a result, they see doctors more frequently than any other age group for ANC. Conversely, research found that older women were more likely than younger women to seek out maternal health care services [3].

The national goal for Bangladesh from 2017 to 2018 was to have 92% of pregnant women receive at least one ANC visit. Nonetheless, there is a difference in ANC use between rural and urban regions. Compared to women in cities, rural women often had fewer visits, received far fewer services, and attended ANC later. There was evidence that many Bangladeshi women were not using ANC to its full potential. Just 48.4% of women had ANC visits more than four times, 43.6% had visits one to three times, and 8% had no visits at all (Bangladesh Demographic and Health Services; BDHS, 2017-18). With 4,920 participants, the BDHS, 2017–18 study was conducted in three provinces in rural Bangladesh. Of the 2,146 women who took part in the study, 43.6% had any ANC, and only 48.4% had enough ANC visits to meet the Ministry of Health's recommendation of four or more visits. Consequently, the intended outcome is not met.

2. Methods and Materials

2.1. Data Source

The data used from the 2017–18 Bangladesh Demographic and Health Survey (BDHS), which was conducted in collaboration with the Ministry of Health and Family Welfare's National Institute of Population Research and Training (NIPORT). Mitra and Associates carried out the poll between September 27, 2017, and December 5, 2017. Basic national indicators of social progress are produced by the survey, such as the number of prenatal visits, the age of the mother, the division and place of residence, the educational attainment of the respondent and her spouse, the wealth index, the exposure to the media, the birth order number, and the number of living children.

Sample Design

The Bangladesh Bureau of Statistics (BBS) released a list of enumeration areas (EAs) from the 2011 Population and Housing Census of the People's Republic of Bangladesh, which was utilized as the sample frame for the survey. The survey's main sampling unit (PSU) is an EA designed to have a mean of about 120 households. The survey's foundation is a stratified, two-stage household sample. With 1694 EAs located in urban regions and 3226 in rural areas, 4920 EAs were chosen in the first stage using a probability proportionate to the EA size.

2.2. Study Population

For the residence standing of women, the information used for the completion of this study was collected from the Bangladesh Demographic and Health Survey (BDHS) conducted in 2017-18. During this study, all ever-married women aged 15-49 years who were usually members of selected households and those who spent the night before the survey in the selected households were eligible to be interviewed for the survey. A total of 20,127 women aged 15-49 years were identified in these households, 18,895 ever-married women were interviewed, yielding a response rate of 94%. Finally, a complete of 4920 currently married women (Urban 1694; Rural 3226) aged 15-49 years were selected for this study.

2.3. Dependent Variable

The dependent variable used in this analysis is the frequency of antenatal care visits (ANC) as it is the specific

measure of pregnant women. ANC visit comprises information on the number of all women in the survey data. This variable is categorized into three categories- no ANC visits = 0, less than 4 ANC visits = 1 and 4 or more ANC visits = 2.

2.4. Explanatory Variables

Since the study uses secondary data, so the variables are taking from BDHS data (2017-18). To investigate the demographic and socio-economic impact on fertility, the study considers a total of 11 independent variables into two major groups: (i) Demographic Variables, (ii) Socio-economic Variables. The demographic variables are: Age (15-24, 25-34 and 35-49), Birth order (1, 2 and 3-15), Number of living children (Two to three and Four or more), Division (Barisal, Chittagong, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur and Sylhet), place of residence (Urban and Rural), Religion (Muslim and Non-muslim), Media exposure (No Exposure and Exposure), Respondent's education level (No education, Primary, Secondary and Higher), Husband's education level (No education, Primary, Secondary and Higher), Respondent currently working (No and Yes) and Wealth index (Poorest, Poorer, Middle, Richer and Richest).

2.5. Software and Technical Support

During this study, the whole analysis is done on a personal computer using SPSS 21, MS Word 2013, and MS Excel 2013.

3. Analysis and Results

In this study, three types of analysis have been employed which are univariate analysis, bivariate analysis and multivariate analysis.

Table 1. *Frequency of Antenatal Visit of Pregnancy Women.*

Dependent Variable	Categories	Number of Respondents	Percentage
Frequency of Antenatal Visit	No ANC	396	8.0
	Less than 4 ANC	2146	43.6
	4 or more ANC	2378	48.4
	Total	4920	100.0

Table 1 illustrates that in our study about 8.0% of women do not receive any ANC visits during pregnancy, 43.6% of women received less than 4 ANC visits during pregnancy, and 48.4% of women received 4 or more ANC during pregnancy.

Table 2. *Association of the antenatal visit of pregnant women with explanatory variables, BDHS 2017-18.*

Explanatory variables	Number of antenatal visits during pregnancy			Total	χ^2-value	P-value
	No ANC	Less than 4 ANC	4 or more ANC			
Respondent's Age Group						
15-24	194(7.5%)	1141(44.1%)	1253(48.4%)	2588		
25-34	162(8.0%)	867(42.8%)	996(49.2%)	2025	13.854	0.008
≥35	40(13.0%)	138(45.0%)	129(42.0%)	307		
Religion						
Muslim	373(8.3%)	1983(44.1%)	2146(47.6)	4502	10.776	0.005
Non-Muslim	23(5.5%)	163(39.0%)	232(55.5%)	418		
Division						
Barisal	70(13.4%)	244(46.6%)	209(40.0%)	523	185.542	0.000
Chittagong	71(8.7%)	412(50.5%)	333(40.8%)	816		

Explanatory variables	Number of antenatal visits during pregnancy			Total	χ^2-value	P-value
	No ANC	Less than 4 ANC	4 or more ANC			
Dhaka	48(6.6%)	290(39.8%)	390(53.6%)	728		
Khulna	17(3.3%)	186(36.5%)	307(60.2%)	510		
Mymensingh	55(9.3%)	252(42.5%)	286(48.2%)	593		
Rajshahi	24(4.6%)	233(44.9%)	262(50.5%)	519		
Rangpur	24(4.4%)	186(33.8%)	340(61.8%)	550		
Sylhet	87(12.8%)	343(50.4%)	251(36.8%)	681		
Place of Residence						
Urban	85(5.0%)	603(35.6%)	1006(59.4%)	1694	132.903	0.000
Rural	311(9.6%)	1543(47.8%)	1372(42.6%)	3226		
Respondent's Education Level						
No education	82(27.0%)	159(52.3%)	63(20.7%)	304		
Primary	178(13.0%)	719(52.8%)	466(34.2%)	1363	535.011	0.000
Secondary	127(5.4%)	1014(43.0%)	1216(51.6%)	2357		
Higher	9(1.0%)	254(28.3%)	633(70.7%)	896		
Husband's Education Level						
No education	120(17.7%)	355(52.4%)	203(29.9%)	678		
Primary	189(11.4%)	829(50.1%)	636(38.5%)	1654	470.137	0.000
Secondary	76(4.7%)	706(43.3%)	848(52.0%)	1630		
Higher	11(1.2%)	256(26.7%)	691(72.1%)	958		
Respondent Currently Working						
No	216(7.0%)	1361(44.2%)	1503(48.8%)	3080	11.961	0.003
Yes	180(9.8%)	785(42.7%)	875(47.5%)	1840		
Wealth Index						
Poorest	191(17.9%)	546(51.3%)	328(30.8%)	1065		
Poorer	105(10.6%)	506(51.0%)	381(38.4%)	992		
Middle	54(6.1%)	404(45.8%)	424(48.1%)	882	520.844	0.000
Richer	36(3.7%)	414(42.4%)	526(53.9%)	976		
Richest	10(1.0%)	276(27.5%)	719(71.5%)	1005		
Media Exposure						
No Exposure	269(15.3%)	914(52.0%)	574(32.7%)	1757	362.017	0.000
Exposure	127(4.0%)	1232(39.0%)	1804(57.0%)	3163		
Birth Order Number						
1	79(4.2%)	745(40.0%)	1039(55.8%)	1863		
2	114(7.0%)	703(43.6%)	797(49.4%)	1614	169.904	0.000
3-15	203(14.1%)	698(48.4%)	542(37.5%)	1443		
Number of Living Children						
One	84(4.2%)	806(40.2%)	1114(55.6%)	2004	241.267	0.000

Explanatory variables	Number of antenatal visits during pregnancy			Total	χ^2-value	P-value
	No ANC	Less than 4 ANC	4 or more ANC			
Two to three	218(8.8%)	1088(44.0%)	1165(47.2%)	2471		
Four or more	94(21.1%)	252(56.6%)	99(22.3%)	445		

Table 2 presented that the age group 15-24 years shows the highest proportion of the respondents receiving 4 or more ANC visits (48.4%) while 42.0% of the respondents in the age ≥35 years have received 4 or more ANC visits. Receiving 4 or more ANC visits is decreasing with the increase of the age of the respondents. It is seen that receiving 4 or more ANC visits has significantly associated with the age of the respondents. From the statistical analysis, we see that most of the respondents (55.5%) are Non-Muslim (i.e. Hindu, Christian, Buddhist) who have received 4 or more ANC visits while 47.6% of the respondents are Muslim who have received 4 or more ANC visits. Therefore, respondents who are Non-Muslim receiving the highest frequency of 4 or more ANC visits than Muslim respondents. It is seen that receiving 4 or more ANC visits has been significantly associated with religion. The analysis shows that of most of the respondents who are living in Rangpur, 61.8% of women have 4 or more ANC visits, and fewer of the respondents who are living in Sylhet, 36.8% of women have 4 or more ANC visits. Besides, respondents who are living in Barisal (40.0%), Chittagong (40.8%), Dhaka (53.6%), Khulna (60.2%), Mymensingh (48.2%), and Rajshahi (50.5%) women have received 4 or more ANC visits respectively. Therefore, it is seen that receiving 4 or more ANC visits has significantly associated with each division of the respondents. The majority of the respondents (59.4%) have 4 or more ANC visits who are from the urban place of residence while 42.6% of the respondents are from the rural place of residence. That means, three-fifth of the respondents receive 4 or more ANC visits who are come from urban areas. It is seen that receiving 4 or more ANC visits has significantly associated with the place of residence of the respondents.

Higher educated women show the highest percentage (70.7%) of receiving 4 or more ANC visits and no educated women are found to have the lowest percentage (20.7%) of receiving 4 or more ANC visits. The educational level of the respondents plays an important role in receiving 4 or more ANC visits and it is significantly associated with ANC visits. The majority of the respondents whose husbands have higher education, 72.1% of women have received 4 or more ANC visits, and lower of the respondents whose husbands have no education, 29.9% women have to receive 4 or more ANC visits. It is seen that receiving 4 or more ANC visits has been significantly associated with the husband's educational level. Working status indicates that 47.5% of women have 4 or more ANC visits who are currently working, while 48.8% of women are not currently working. The working status of the respondents was significantly associated with receiving 4 or more ANC visits. From analysis, the results confirm that the receiving 4 or more ANC visits were the highest (71.5%) of the richest respondents and the lowest (30.8%) of the poorest respondents. The wealth index status is increasing with the increase of receiving 4 or more ANC visits. Therefore, the wealth index of the respondents was significantly associated with ANC visits. According to the media exposure, 57.0% of the respondents have 4 or more ANC visits who dose access to media and 32.7% women who don't access to media respectively. Hence, most of the respondents who are access to media. It is seen that receiving 4 or more ANC visits has been significantly associated with media exposure. From analysis, it can be found that 55.8% of the respondents have 4 or more ANC visits whose birth order number 1, 49.5% women whose birth order number 2 and 37.5% women whose birth order number 3 to 15. The birth order number is increasing with the decrease of receiving 4 or more ANC visits. Therefore, receiving 4 or more ANC visits has been significantly associated with the birth order number. From the table, 55.6% of the respondents have 4 or more ANC visits whose number of living children one, 47.2% women whose number of living children two to three, and 22.3% women whose number of living children four or more. The number of living children is increasing with the decrease of receiving 4 or more ANC visits. It is seen that receiving 4 or more ANC visits has been significantly associated with the number of living children.

Table 3. *The multinomial logistic regression coefficient of antenatal visit among pregnant women in Bangladesh, 2017-18.*

Variable	Category	Number of ANC visits during pregnancy							
		Less Than 4 ANC				4 or More ANC			
		P	OR	95% CI for OR		P	OR	95% CI for OR	
				Lower	Upper			Lower	Upper
Division	Barisal	.229	.789	.536	1.161	.517	.870	.570	1.326
	Chittagong	.697	1.076	.744	1.557	.788	.946	.634	1.413
	Dhaka	.648	.908	.599	1.376	.668	1.101	.709	1.711
	Khulna	.052	1.769	.996	3.143	.000	2.999	1.664	5.405
	Mymensingh	.387	1.195	.798	1.790	.003	1.927	1.251	2.967
	Rajshahi	.026	1.788	1.072	2.982	.003	2.259	1.325	3.852
	Rangpur	.005	2.100	1.255	3.516	.000	5.176	3.041	8.810
	Sylhet ®								
Place of Residence	Urban	.895	.981	.736	1.308	.085	1.298	.965	1.745
	Rural ®								
Respondents Education Level	No Education	.001	.273	.123	.608	.000	.123	.053	.282
	Primary	.051	.474	.224	1.003	.002	.312	.147	.663
	Secondary	.153	.587	.283	1.219	.077	.518	.250	1.074
	Higher ®								
Wealth Index	Poorest	.000	.253	.122	.525	.000	.113	.054	.236
	Poorer	.002	.316	.154	.648	.000	.148	.072	.305
	Middle	.014	.402	.195	.829	.000	.236	.114	.486
	Richer	.120	.559	.269	1.163	.006	.355	.171	.739
	Richest ®								
Partners Education Level	No Education	.044	.483	.238	.979	.000	.258	.126	.528
	Primary	.051	.511	.260	1.004	.000	.293	.149	.576
	Secondary	.341	.718	.363	1.420	.046	.500	.253	.987
	Higher ®								
Respondent Currently Working	No	.355	1.120	.881	1.425	.550	.926	.719	1.192
	Yes ®								
Respondent's Age Group	15-24	.025	.556	.332	.929	.001	.404	.231	.705
	25-34	.934	.982	.633	1.523	.612	.882	.543	1.432
	≥35 ®								
Religion	Muslim	.476	.839	.518	1.359	.188	.717	.437	1.177
	Non-Muslim ®								
Media Exposure	No Exposure	.002	.658	.505	.859	.000	.464	.352	.612
	Exposure ®								
	1	.830	.895	.324	2.471	.809	.880	.313	2.475

Variable	Category	Number of ANC visits during pregnancy							
		Less Than 4 ANC				4 or More ANC			
		P	OR	95% CI for OR		P	OR	95% CI for OR	
				Lower	Upper			Lower	Upper
	2	.037	1.426	1.022	1.989	.059	1.398	.988	1.977
	3-15 ®								
	1	.017	3.432	1.250	9.425	.000	8.847	3.116	25.12
No. of Living Children	2 or 3	.210	1.256	.880	1.794	.000	2.503	1.660	3.773
	4 or more ®								

a. The reference category is: No ANC.
b. This parameter is set to zero because it is redundant.

Results in table 3 revealed that respondents living in Rajshahi and Rangpur were 1.788 (95% CI: 1.072-2.982; P = 0.026) and 2.100 (95% CI: 1.255-3.516; P = 0.005) times more likely to utilize less than 4 ANC visits than women lived in Sylhet. Respondents, within the 15-24 years age, were 0.556 times (95% CI: 0.332-0.929; P = 0.025) less likely to use less than 4 ANC visits than older women (>35 years age group). Respondents with no education were 0.273 times (95% CI: 0.123-0.608; P = 0.001) less likely to receive less than 4 ANC visits, respectively, compared to women who had higher education. In addition, the husband's educational level depicts, the husband with no education, compared with high-literate husbands, were 0.483 times (95% CI: 0.238-0.979; P = 0.044) less likely to contacts less than 4 ANC visits, respectively.

Among the five categories of wealth index; women, who belongs to the poorest, poorer and middle-class family, had 0.253 times (95% CI: 0.122-0.525; P = 0.000), 0.316 times (95% CI: 0.154-0.648; P = 0.002) and 0.402 times (95% CI: 0.195-0.829; P = 0.014) less likely to utilize less than 4 ANC visits than women, who belongs to the richest family. Moreover, women who have one child are 3.432 times (95% CI: 1.250-9.425; P = 0.017) more likely to use less than 4 ANC visits compared to women who have four or more children. Again, birth order number which implies that women have birth order number 2 is 1.426 times (95% CI: 1.022-1.989; P = 0.037) more likely to use fewer than 4 ANC visits compared to women who have 3-15 birth order numbers respectively. Furthermore, the analysis also depicts that, women who don't access to media, 0.658 times (95% CI: 0.505-0.859; P = 0.002) less likely to engage in less than 4 ANC visits compared to media access.

Analysis shows that respondents living in Khulna, Mymensingh, Rajshahi and Rangpur were 2.999 (95% CI: 1.664-5.405; P = 0.000), 1.927 (95% CI: 1.251-2.967; P = 0.003), 2.259 (95% CI: 1.325-3.852; P = 0.003) and 5.176 (95% CI: 3.041-8.810; P = 0.000) times more likely to utilize 4 or more ANC visits than women lived in Sylhet. Respondents, within the 15-24 years age, were 0.404 times (95% CI: 0.231-0.705; P = 0.001) less likely to use 4 or more ANC visits than older women (>35 years age group). Respondents with no education and primary education were 0.123 times (95% CI: 0.053-0.282; P = 0.000) and 0.312 times (95% CI: 0.147-0.663; P = 0.002) less likely to receive 4 or more ANC visits, respectively, compared to women who had higher education. Husbands educational level shows that husbands with no education, primary education and secondary education compared with high-literate husbands, were 0.258 times (95% CI: 0.126-0.528; P = 0.000), 0.293 times (95% CI: 0.149-0.576; P = 0.000) and 0.500 times (95% CI: 0.253-0.987; P = 0.046) less likely to contacts 4 or more ANC visits, respectively.

Among the five categories of wealth index; women, who belongs to the poorest, poorer, middle and richer class family, had 0.113 times (95% CI: 0.054-0.236; P = 0.000), 0.148 times (95% CI: 0.072-0.305; P = 0.002), 0.236 times (95% CI: 0.114-0.486; P = 0.000) and 0.355 times (95% CI: 0.171-0.739; P = 0.006) less likely to utilize 4 or more ANC visits than women, who belongs to the richest family. Moreover, women who have one two or three children are 8.847 times (95% CI: 3.116-25.120; P = 0.000) and 2.503 times (95% CI: 1.660-3.773; P = 0.000) more likely to use 4 or more ANC visits compared to women who have four or more children. Besides, analysis also depicts that, women who don't access to media, 0.464 times (95% CI: 0.352-0.612; P = 0.000) less likely to engage in 4 or more ANC visits compared to media access.

4. Conclusion

This paper investigated the effect of ANC visits of pregnant women and some of the covariate's factors such as age, respondent's education level, husband's education level,

wealth index, and media exposure. Conclude that the geographical, socio-economic, and environmental factors are associated with lower ANC contacts, the World Health Organization (WHO) suggested ≥4 ANC contacts and ANC contacts by qualified doctors of women in Bangladesh. To enhance women's access to antenatal care services, it's necessary to enhance the literacy of women, relieve the price of services, increase the quantity of facility-based care centers, and improve rural transport. This observation of the ANC program in Bangladesh follows the earlier WHO's guidelines of at least 4 ANC visits that prove to be a challenge for mothers in Bangladesh. Additionally, a tendency to contact non-qualified healthcare suppliers for ANC might increase the prospect of health risks for each mother and child. Therefore, the updated WHO guidelines that specialize in a minimum of eight ANC contacts by qualified doctors ought to be followed to confirm the positive pregnancy of women.

Abbreviations

AOR: Adjusted Odds Ratio
CI: Confidence Interval
EAs: Enumeration Areas
OR: Odds Ratio
SPSS: Statistical Package for Social Science

Conflicts of Interest

The authors declare no conflicts of interest.

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