**Title: Predictors of Antenatal Care Service Utilization among Bangladeshi Adolescents Mothers: A** [**population-based cross-sectional study**](https://bmjopen.bmj.com/content/11/5/e050245)

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**ABSTRACT**

Pregnancy-related complications are the leading causes of death for adolescent women worldwide. This study aims to estimate the antenatal care (ANC) coverage among adolescent mothers and identify the factors associated with the recommended ANC service utilization in Bangladesh. This study used data from the latest Bangladesh Demographic and Health Survey (BDHS) 2017-18, a nationally representative survey. A total of 1084 Bangladeshi adolescent mothers aged 15-19 were included in this study. World Health Organization recommended ANC visits (4 and more) was the study outcome variable. A logistic regression model was executed to identify the factors influencing recommended (≥4) ANC utilization among adolescent mothers. About 47.87% of adolescent mothers had utilized recommended ANC services, while 46.03% had utilized less than optimum services. However, 6.10% of adolescent mothers did not seek ANC visits during their pregnancy. This study highlights the importance of reinforcing the health system and improving the ANC services targeting mothers with lower than secondary education levels, living in specific regions, and belonging to the lowest wealth quintiles.

**Keywords:** Adolescent, Antenatal Care Service, Utilization, Bangladesh

**INTRODUCTION**

Globally, around 9.5 million women suffer from pregnancy-related complications, and more than 300,000 mothers die due to these complications each year, mostly in resource-poor settings with inadequate maternal healthcare services 1,2. Pregnancy-related complications and childbirth are the leading causes of death for adolescent women worldwide. About 12 million adolescent mothers aged 15–19 years give birth yearly in developing regions 3. The annual adolescent pregnancies were about 21 million, resulting in an estimated 12 million child deliveries. About half were unintended in low- and middle-income countries (LMICs), including Bangladesh 4. Adolescent mothers face higher risks of eclampsia, puerperal endometritis, and systemic infections than adult mothers, leading their newborn babies to face higher risks of low birth weight, preterm birth, and severe neonatal condition and even pregnancy-related mortalities which can be prevented by regular antenatal care services 4.

Despite the availability of healthcare facilities in urban areas in Bangladesh, women, particularly adolescents residing in disadvantaged urban areas like slums, are least likely to receive the necessary maternal health services. As of consequence, they are vulnerable to pregnancy-related complications 1. The latest Sustainable Development Goals focus on reducing 70 maternal deaths per 100 000 live births globally by 2030 5. According to the World Bank Data indicator, the current Maternal Mortality Rate (MMR) in 2023 is 123 per 100,000 6. Although the decreasing rate of maternal mortality is 6.5 every year, given the present rate, it will be crucial to reach the target by 2030 7. However, Bangladesh still accounted for approximately 6000 pregnancy-complication-related deaths each year 8.

Antenatal care (ANC) is the medical procedure during pregnancy 9. Antenatal care ensures a maximum probability of safe pregnancy, healthy children, and regulated maternal and neonatal mortality rates. Optimal ANC service is vital in detecting and mitigating pregnancy risk factors, but many mothers in LMICs are unaware of or avoid receiving such care 10. The World Health Organization recommended utilizing at least 4 ANC visits to avoid probable pregnancy-related complications during the prenatal period 7. Antenatal care coverage is defined as a minimum of four antenatal care visits and has been used globally as a benchmark of the performance of maternal health programs 11. Utilization of recommended ANC throughout the pregnancy period is a proven healthy behavior in reducing maternal mortalities and morbidities and promoting safe motherhood with improved maternal health outcomes 12. Bangladesh has a prolonged history of child marriage associated with adolescent pregnancy, pregnancy-related complications, and mortality 13. Despite substantial progress in maternal mortality reduction in Bangladesh, more than fifty percent of adolescent females in Bangladesh get into marital bonds, and about 27.4% experience their first marital pregnancy during adolescence 14. Adolescent maternal health problems are often neglected, and the scenario is often vulnerable in rural and remote settings in Bangladesh 1314. Adolescent mothers in Bangladesh often endure reproductive and maternal health problems due to their inability in decision-making and other social and cultural taboos 15. Several studies indicated many factors such as maternal age, number of living children, education, socio-economic status, wealth or income status, family’s or partner’s support, and distance from health care facilities associated with ANC coverage in many settings 16. Therefore, it is essential for policymakers and healthcare providers, and even adolescents and their parents, to distinguish the facts associated with care-seeking behavior and utilization of maternal healthcare and to know the health system's capacity for improving adolescent health. This study aims to estimate the coverage of ANC services among adolescent mothers and identify the factors associated with the recommended ANC service utilization in Bangladesh. Identifying all adolescent mothers who can receive the necessary health services and bear a healthy future workforce for Bangladesh is crucial.

**METHODS**

**Study design and settings**

This study used data from the latest Bangladesh Demographic and Health Survey (BDHS) 2017-18 round. BDHS is a nationally representative cross-sectional survey that collects information on demographic and socio-economic characteristics and maternal and child health-related indicators. The survey was carried out under the authority of the National Institute of Population Research and Training (NIPORT), the Medical Education and Family Welfare Division, and the Ministry of Health and Family Welfare. The BDHS used a two-stage stratified cluster sampling frame to select households and used a nationally representative sample covering the entire population. The survey selected 675 Enumeration Areas (EAs) in the first stage and conducted household listings for each EA in rural and urban areas. Consistently, 30 households were selected systematically from each EA in the second stage. According to the BDHS guidelines, trained data collectors interviewed 20,376 ever-married women aged 15-49 eligible for interviews (99% response rate). A structured questionnaire was administered at the household level to capture socio-economic and demographic information, along with maternal healthcare and recommended ANC utilization of women of varying ages. The survey was conducted from October 2017 to March 2018. In this analysis, we include the adolescent mothers between the ages of 15 and 19 years 17. The inclusion criteria were; women who were (1) married at the time of the survey, (2) aged between 15 and 19 years, and (3) had their most recent births within the three years preceding the survey. A total of 1084 women met the above-mentioned criteria for inclusion; 816 were found to be adolescent women who utilized recommended ANC services. The detailed sampling procedure, data collection methods, and data collection instruments have been described elsewhere 18.

**Variables**

The outcome variables of the study were 'recommended antenatal care (at least four visits)' among adolescent mothers. Therefore, model I represents the adolescent mothers who received less than (≤4) recommended ANC services, and model II represents the adolescent mothers who received recommended (≥4) ANC services. Several independent variables were considered, such as adolescent age, maternal education, husband’s education, place of residence, Household size, working status, mass media exposure, awareness of community clinics, administrative division, and wealth index. Adolescent age was categorized as 15 -19 years. ‘Maternal education’ and ‘Husband’s education’ were categorized as no education, primary education, and secondary and higher education. ‘Working status of mother’ was defined as ‘1’ if working and ‘0’ if not working. Those who were exposed to the utilization of radio/television were defined as '1' if exposed to mass media and '0' if they were not exposed to mass media. Awareness of the community clinic was coded as '1' if they were aware/had knowledge and '0' if they were not aware/had no knowledge. Household size was divided into groups of less than and more than five members. 'Place of residence' was coded as urban or rural. Socio-economic status was measured by the wealth index and categorized as poorest, poorer, middle, richer, and richest. The procedure to measure socioeconomic status has been described elsewhere 18.

**Data analysis**

All influential/outlier and missing observations were determined and excluded from the data set before the analysis. Both bivariate and multivariate statistical techniques were applied; first, bivariate analysis was employed for descriptive measures and for cross-tabulation. Chi-squared test of association was performed to understand the association between dependent and independent variables. Two different multivariate logistic regression models were executed to identify the factors influencing recommended (≥4) and less than (≤4) recommended ANC utilization among adolescent mothers. The results were presented in terms of adjusted odds ratio (OR) with 95% confidence interval (CI). All the statistical analyses were performed using STATA Version 14, and tests for significance were considered at the 5% significance level.

**RESULTS**

**Distribution of Maternal and Sociodemographic Characteristics**

Table 1 shows the background characteristics of the study participants. The average age was 18.09 years (SD 1.03). Most mothers completed secondary education (58.76%) and lived in rural areas (68.17%). The respondents predominantly owned larger families of more than five members (53.87%) and were exposed to the privilege of regular mass media accessibility (67.71%). Most adolescent mothers were unemployed (70%) and aware of community clinics (58%). Half of adolescent mothers (51%) utilized institutional delivery services during child delivery. Among them, 56.84% of mothers utilized C-section services, while only 43.16% of adolescent mothers had a normal vaginal delivery. About half of the adolescent mothers belonged to resource-constrained households and lived in Chittagong divisions (17%).

(Table 1 will be inserted here)

**Utilization of recommend ANC care**

Table 2 shows the percentage of women who had utilized the ANC services by background characteristics. We have observed that 47.87% of adolescent mothers had utilized recommended (4 and more) ANC services, while 46.03% had utilized less than optimum (1 to 3) ANC services. However, 6.10% of adolescent mothers did not seek any ANC visits. The recommended ANC (4 and more) utilization was higher among higher-educated mothers (64.21%) and lowest among uneducated mothers (22%). The same pattern was observed regarding husbands' education; women with more educated husbands utilized recommended ANC services more. Mothers living in urban territories highly appreciate the utilization of recommended ANC (55.20%) compared to mothers living in rural households. Adolescent mothers belonging to the Khulna (64.86%) and Rangpur divisions (56.14%) utilized more recommended ANC services, while the lowest for those who lived in the Sylhet division (34.29%). Adolescent others who belonged to the richest (67.35%) and more affluent households (63%) utilized more recommended ANC visits than the poorest households (33%).

(Table 2 will be inserted here)

Figure 1 indicates that adolescent mothers who had recommended ANC visits utilized more institutional delivery (65%) services during their child delivery. In comparison, home birth deliveries were more common (59%) among those adolescent mothers who did not utilize recommended ANC.

(Figure 1 will be inserted here)



**Figure 1:** Utilization of recommended ANC services on child -delivery among Bangladeshi adolescent mothers

**Factors associated with recommended ANC**

Findings from multivariate analysis of less-than-recommended ANC visits (Model I) and recommended ANC (Model II) are presented in Table 3. The results showed that a number of factors, such as women’s education, mass media exposure, the working status of pregnant women, administrative divisions, and wealth quintiles, were found to be significant determinants of the utilization of ANC services. Our results demonstrated that women’s educational attainment is a significant positive factor for utilizing recommended ANC services. The secondary and higher-educated adolescent mothers were 3.10 times (95% CI: 1.20-7.98; P < 0.05) and 4.97 times (95% CI: 1.73-14.24; P < 0.01) more likely to utilize recommended ANC services than the adolescent women with no formal education. We did not observe any significant role of mass media exposure and the working status of mothers in recommended utilization of ANC, although a weak relationship (P <0.05) was observed who did not utilize the recommended ANC care. The administrative division was found to be an influencing factor in utilizing recommended ANC services. For instance, adolescent mothers living in Khulna and Rangpur divisions had a higher likelihood (AOR: 2.42; 95% CI: 1.43-4.08; P < 0.001) and (AOR: 2.19; 95% CI: 1.26-3.79; P < 0.01) respectively to receive at least 4 ANC services respectively compared to those mothers who are living in Dhaka division. The women who belonged to the rich and richest quintile range utilized recommended care 2.17 times (95% CI: 1.32-3.57; P < 0.01) and 2.21 times more likely (95% CI: 1.19-4.09; P < 0.05) compared poorest households.

(Table 3 will be inserted here)

**DISCUSSION**

Despite noteworthy accomplishments in reducing maternal death in the last two decades in Bangladesh, adolescent pregnancies are still prevalent in Bangladesh. It was reported that about 52% of girls often married before the legal age (18 years), while most experienced adolescent motherhood in Bangladesh 19. Although the rate of ANC services utilization is increasing (17% in 2004 and 47% in 2014); however, the utilization was not equally distributed across the age of the women and among socio-economic strata of the households 18. Indeed, the recommended ANC can prevent severe pregnancy-related complications during birth and the post-partum period for both mothers and their unborn children. This study identified the prevalence and factors significantly associated with the utilization of recommended ANC services among adolescent mothers in Bangladesh using the latest nationally representative data of DHS 2017-18.

This study observed that about 48% of adolescent women utilized the recommended ANC services in Bangladesh, while another 46% utilized less than optimal ANC services. Although the recommended ANC utilization was higher in the previous round (31% in 2014 vs. 48% in 2017-18), it is still underutilization compared to the global ANC utilization rate (66%)19. Therefore, many adolescent mothers are still deprived of antenatal care services 20. A couple of studies indicated that the recommended ANC utilization was lower among adolescent mothers comparing adult mothers in South Asian settings, including Bangladesh 21,22. Our results show that the utilization of recommended ANC is lower in Bangladesh compared to other Asian settings like India (55.4%) and Indonesia (70%) 23,24. Adolescent mothers often face higher risks of eclampsia, puerperal endometritis, and systemic infections, and their babies also face higher risks of low birth weight, preterm birth, and severe neonatal condition, which could be tackled with optimum ANC services 25. It was observed that babies born to adolescent mothers face a 50% higher risk of being stillborn or dying in their first few weeks of life compared to babies born to older mothers 26. Therefore, health policymakers should prioritize community-based interventions such as awareness programs targeting adolescent mothers. It may be worthwhile to mention that the health facility still needs to be improved for adolescents as most healthcare services are suitable for children and adult women in Bangladesh. Therefore, it is essential to establish adolescent-friendly health care centers and link them with all levels of the health system.

This study demonstrated that several factors, such as the mother's education, wealth status, and administrative division, were significantly associated with optimal ANC coverage. Like earlier studies, we also observed that education status and household wealth status had the most tremendous role in recommended utilization among adolescent mothers 23,24. The positive relationship between health awareness and education level is well established. Several studies have found that a lower level of education is associated with adolescent pregnancy 19,27. The connection between education and health involves multiple contextual factors, including impacting various skills, navigating health care decisions, personal health behaviors and social responsibilities, etc. 28. Educated mothers had better knowledge of the benefits of care during pregnancy and have more decision-making power which may be a motivating factor for optimum ANC utilization 23. Further, greater awareness of the benefits of recommended ANC services and the adverse effects of pregnancy-related complications may be other factors that are liked with ANC utilization 22. Therefore, young girls should be inspired to acquire education, life skills, and other maternal health training programs. Basic healthcare education should be included in secondary level education to create health awareness in reproductive health issues. Although formal education was not possible later in females, reproductive health education and awareness programs can be improved to increase the optimum ANC coverage among adolescent mothers 29.

Like earlier studies, we found that adolescent mothers in the wealthiest quintile range utilized recommended care more than the poorest households 26,30. Adolescents from wealthy households utilized more maternal care services than those from the poorest households in both urban and rural Bangladesh 30,31. The wealthiest households had greater opportunities for providing education than the poorest households. Therefore, poor adolescent mothers who are deprived of necessary education are particularly vulnerable while utilizing maternal healthcare. Household wealth allows families swift access to media, transportation, and other privileges associated with utilizing all types of maternal healthcare information and services for their adolescent members 32. This study found variations in utilizing optimum ANC services among the administrative division of Bangladesh. Although the reason for divisional differences regarding optimum ANC utilization is often unclear, adolescent mothers living in Khulna and Rangpur divisions were more likely to receive optimal ANC services than mothers living in other divisions, especially in the Dhaka and Sylhet divisions. Dhaka division is the largest area in urbanization, while Sylhet divisions consist of mountains and submerged areas. Both demand and supply side factors are often associated in those regions, such as limited knowledge, urban slums, transport, and affordability issues. Sylhet division is often recognized as a hard-to-reach area, and many health indicators are poor in those regions. In contrast, many maternal health programs are implemented in the Rangpur division due to being recognized as an economically impoverished region of Bangladesh 30. A remarkable urban healthcare stream must be implemented to reach necessary antenatal care among insolvent adolescent mothers in low-performing regions. Adolescent-friendly healthcare services can be introduced through door-to-door mobilization, setting up temporary adolescent healthcare clinics in community gatherings, allowing community education services in small group mobilization, convincing community leaders, etc. can be initiated to socialize the idea of ANC service, reproductive health, and maternal health care concepts. Eventually, psychologically motivating young mothers to utilize recommended ANC services necessary to improve mother and child health.

This study may have some limitations. The information gathered in the BDHS 2017-18 was based on the self-reported information of respondents; therefore, recall and reporting bias might be associated. Further, the study's cross-sectional nature has a limitation in establishing a causal relationship. However, study findings can be generalized at the national level as the study gathered data from a nationally representative household demographic and health survey that provided data from both the urban and rural areas, which is the strength of this study.

**CONCLUSION**

This study observed that more than half of the adolescent mothers were deprived of the benefit of recommended ANC services. This study highlights the importance of reinforcing the health system and improving the ANC services targeting adolescent mothers with a lower than the secondary level of education, living in specific regions, and belonging to the lowest wealth quintiles. The findings of this study will inform and support adolescent maternal health programs and the introduction of policies targeting a range of maternal health services and opportunities that contribute to their health and development.

**Contributors** ARS conducted the design of the study. ARS and SZ interpretation of data, and writing of the initial manuscript. ARS contributed to the statistical analysis plan and wrote the statistical methods section. ARS is the guarantor of this paper. SZ and ARS authors reviewed, contributed to, and approved the manuscript.

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**Competing interests** None declared.

**Patient consent for publication** Not required.

**Ethics approval** This study did not require ethical approval as it used unidentifiable secondary DHS dataset. According to the DHS, written informed consent was obtained from mothers/caretakers on behalf of the children enrolled in the survey. The DHS data are publicly accessible and were made available to us upon request by Measure DHS. No identifiable information was included in the dataset and no attempt was made to identify any individual interviewed in the survey.

**Data availability statement** The electronic datasets can be freely downloaded from the DHS’s website through the following link: <https://dhsprogram.com/data>.

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**Table 1. Background characteristics among married adolescent mothers (N=1084)**

|  |  |
| --- | --- |
| Background characteristics | Adolescent Mothers, n (%) |
| Age (15-19 years) |  |
| Mean age, (SD) | 18.09 (1.03) |
| Women's Education |  |
| No education | 36 (3.32) |
| Primary | 299 (28.69) |
| Secondary | 626 (58.76) |
| Higher | 98 (9.23) |
| Husband's education |  |
| No education | 139 (12.82) |
| Primary | 401 (36.99) |
| Secondary | 402 (37.08) |
| Higher | 142 (13.10) |
| Place of Residence |  |
| Urban | 345 (31.83) |
| Rural | 739 (68.17) |
| Household Size |  |
| Up to 5 members | 500 (46.13) |
| > 5 members | 584 (53.87) |
| Exposure of mass media (TV/ Radio) |  |
| Yes | 734 (67.71) |
| No | 350 (32.29) |
| Working Status |  |
| Working | 316 (29.15) |
| Not working | 768 (70.85) |
| Awareness of community clinic |  |
| Yes | 630 (58.12) |
| No | 454 (41.88) |
| Place of child delivery |  |
| Home delivery | 452 (49.13) |
| Institutional delivery | 468 (50.87) |
| Mode of delivery at Institution (n= 468) |  |
| Normal Vaginal Delivery (NVD) | 202 (43.16) |
| Caesarean Section | 266 (56.84) |
| Wealth Index |  |
| Poorest | 264 (24.35) |
| Poorer | 270 (24.91) |
| Middle | 221 (20.39) |
| Richer | 208 (19.19) |
| Richest | 121 (11.16) |
| Division |  |
| Chittagong | 180 (16.61) |
| Dhaka | 151 (13.93) |
| Rangpur | 138 (12.73) |
| Khulna | 135 (12.45) |
| Rajshahi | 135 (12.45) |
| Mymensingh | 132 (12.18) |
| Barisal | 126 (11.62) |
| Sylhet | 87 (8.03) |
| Total, N (%) | 1084 (100) |
|  |  |
|  |  |

**Table 2. Utilization of recommended Antenatal Care (ANC) seeking Behavior**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Frequency of ANC, n (%) | | | | |
| Variable | No ANC, n=53 | Less than 4 times, n=400 | Four times or more, n=416 | χ2 | P value |
| Maternal age, years |  |  |  |  |  |
| 15-19 years | 53 (6.10) | 400 (46.03) | 416 (47.87) | 6.712 | 0.035 |
| Women's education |  |  |  |  |  |
| No education | 7 (25.93) | 14 (51.85) | 6 (22.22) |  |  |
| Primary | 22 (9.52) | 131 (56.71) | 78 (33.77) | 58.07 | 0 <0.001 |
| Secondary | 22 (4.26) | 223 (43.22) | 271 (52.52) |  |  |
| Higher | 2 (2.11) | 32 (33.68) | 61 (64.21) |  |  |
| Husband's education |  |  |  |  |  |
| No education | 18 (17.48) | 47 (45.63) | 38 (36.89) |  |  |
| Primary | 25 (7.91) | 161 (50.95) | 130 (41.14) |  |  |
| Secondary | 7 (2.16) | 148 (45.68) | 169 (52.16) | 52.32 | 0 <0.001 |
| Higher | 3 (2.38) | 44 (34.92) | 79 (62.70) |  |  |
| Place of residence |  |  |  |  |  |
| Urban | 17 (6.09) | 108 (38.71) | 154 (55.20) | 9.39 | 0.009 |
| Rural | 36 (6.10) | 292 (49.49) | 262 (44.41) |  |  |
| Household size |  |  |  |  |  |
| Up to 5 members | 21 (5.41) | 183 (47.16) | 184 (47.42) | 0.76 | 0.681 |
| >5 members | 32 (6.65) | 217 (45.11) | 232 (48.23) |  |  |
| Mass media exposure |  |  |  |  |  |
| Yes | 47 (7.98) | 302 (51.27) | 240 (40.75) |  |  |
| No | 6 (2.14) | 98 (35) | 176 (62.86) | 40.89 | 0 <0.001 |
| Working status |  |  |  |  |  |
| Working | 18 (7.38) | 107 (43.85) | 119 (48.77) |  |  |
| Not working | 35 (5.60) | 293 (46.88) | 297 (47.52) | 1.31 | 0.518 |
| Aware of Community Clinic |  |  |  |  |  |
| Yes | 34 (6.69) | 238 (46.85) | 236 (46.46) |  |  |
| No | 19 (5.26) | 162 (44.88) | 180 (49.86) | 1.39 | 0.497 |
| Division |  |  |  |  |  |
| Barisal | 11 (11) | 51 (51) | 38 (38) |  |  |
| Chittagong | 8 (5.56) | 74 (51.39) | 62 (43.06) |  |  |
| Dhaka | 6 (5.22) | 53 (46.09) | 56 (48.7) |  |  |
| Khulna | 1 (0.9) | 38 (34.23) | 72 (64.86) |  |  |
| Mymensingh | 8 (7.55) | 51 (48.11) | 47 (44.34) | 53.13 | 0 <0.001 |
| Rajshahi | 1 (0.92) | 55 (50.46) | 53 (48.62) |  |  |
| Rangpur | 5 (4.39) | 45 (39.47) | 64 (56.14) |  |  |
| Sylhet | 13 (18.57) | 33 (47.14) | 24 (34.29) |  |  |
| Wealth index |  |  |  |  |  |
| Poorest | 23 (11) | 117 (55.98) | 69 (33.01) |  |  |
| Poorer | 15 (6.98) | 106 (49.3) | 94 (43.72) |  |  |
| Middle | 9 (5.08) | 88 (49.72) | 80 (45.20) | 58.23 | 0 <0.001 |
| Richer | 6 (3.53) | 57 (35.53) | 107 (62.94) |  |  |
| Richest | - | 32 (32.65) | 66 (67.35) |  |  |
| Total | 53 (6.10) | 400 (46.03) | 416 (47.87) |  |  |

**Table 3. Factors associated with ANC utilization among adolescent mothers in Bangladesh**

|  |  |  |
| --- | --- | --- |
|  | Model I (<4 ANC) | Model I (4 and more ANC) |
| Women's education |  |  |
| No education (ref) | 1 | 1 |
| Primary | 1.20 (0.58 -2.51) | 1.76 (0.67-4.59) |
| Secondary | 0.95 (0.46-1.98) | 3.10\* (1.20-7.98) |
| Higher | 1.00 (0.42-2.39) | 4.97\*\* (1.73-14.24) |
| Husband's education |  |  |
| No education (ref) | 1 | 1 |
| Primary | 1.45 (0.95-2.21) | 1.18 (0.75-1.87) |
| Secondary | 1.46 (0.94-2.26) | 1.31 (0.82-2.09) |
| Higher | 1.22 (0.68-2.17) | 1.68 (0.93-3.01) |
| Place of Residence |  |  |
| Urban | 0.85 (0.62-1.17) | 1.31 (0.95-1.80) |
| Rural (ref) | 1 | 1 |
| Household size |  |  |
| Up to 5 members | 0.96 (0.74-1.25) | 0.90 (0.69-1.17) |
| >5 members (ref) | 1 | 1 |
| Mass media exposure |  |  |
| No Exposure (ref) | 1 | 1 |
| Exposure | 1.43\* (1.03-1.99) | 0.74 (0.53-1.01) |
| Working status |  |  |
| No (ref) | 1 | 1 |
| Yes | 0.72\* (0.53-0.97) | 1.07 (0.79-1.45) |
| Aware of community clinic |  |  |
| No (ref) | 1 |  |
| Yes | 0.99 (0.75-1.31) | 1.01 (0,756-1.34) |
| Division |  |  |
| Dhaka (ref) | 1 | 1 |
| Khulna | 0.61 (0.36-1.03) | 2.42\*\*\* (1.43-4.08) |
| Rangpur | 0.67 (0.39-1.16) | 2.19 \*\* (1.26-3.79) |
| Barisal | 0.89 (0.53-1.52) | 1.00 (0.57-1.77) |
| Chittagong | 1.11 (0.69-1.77) | 0.97 (0.59-1.57) |
| Mymensingh | 0.81 (0.48-1.36) | 1.58 (0.91-2.73) |
| Rajshahi | 1.11 (0.66-1.87) | 1.28 (0.75-2.17) |
| Sylhet | 0.80 (0.44-1.42) | 0.95 (0.51-1.78) |
| Wealth index |  |  |
| Poorest (ref) | 1 | 1 |
| Poorer | 0.82 (0.57-1.17) | 1.35 (0.91-2.01) |
| Middle | 0.89 (0.59-1.36) | 1.17 (0.75-1.85) |
| Richer | 0.52\*\* (0.32-0.85) | 2.17\*\* (1.32-3.57) |
| Richest | 0.49\* (0.26-0.90) | 2.21\* (1.19-4.09) |
| Number of Observation | 1,084 | 1,084 |
| LR chi2 | 50.78 | 126.05 |
| Prob > chi2 | 0.0005 | 0 |
| Pseudo R2 | 0.0356 | 0.0873 |
| Log likelihood | -688.34327 | -658.78454 |
| Mean VIF | 2.69 | 2.69 |

\*\*\*P < 0.001, P\*\* < 0.01, P\* < 0.05