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# Prevalence and socioeconomic determinants of awareness and visitation of community clinic among ever married women: evidence from Bangladesh Demographic and Health Survey, 2017–2018

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## ABSTRACT

**Objectives** Bangladesh has made remarkable progress in improving the population's health, but maternal health and healthcare facilities are still in a vulnerable situation. This study aims to investigate the prevalence and determinants of awareness and visitation of community clinics (CCs) in Bangladesh.

**Design** A population-based cross-sectional study.

**Setting** The data were collected from the most recent Bangladesh Demographic and Health Survey conducted in 2017–2018.

**Participants** This study's participants are 18 893 women aged 15–49 years throughout all administrative regions.

**Primary and secondary outcome measures** The outcomes are awareness and visitation of CCs, defined as if women are aware and visit of CCs.

**Materials and methods** Descriptive statistics, bivariate and multivariate binary logistics analysis were used to determine the prevalence and associated factors of awareness and visitation of CCs.

**Results** The prevalence of awareness and visitation to CCs were 60.26% and 15.92%, respectively. The result of the multivariate analysis revealed that higher education, division and higher number of children were significantly positively associated, whereas the richest wealth index was significantly negatively associated with both awareness and visitation to CCs. Furthermore, the urban residence was negatively and respondent involvement in currently working was positively significantly related to awareness of CCs. Moreover, male household heads and exposure to media were significantly positively related to visitation to CCs.

**Conclusion** The study result highlights that more than half of the women were aware of CCs however, the CCs' visit rates were comparatively low. Priority-based public health programmes for women through community health workers are urgently needed to increase the awareness and visitation of CCs.

## STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The fact that the current study made use of the most recent nationally representative data obtained from a country-wide population health survey is the key strength.

⇒ In addition to assigning the proper weight according to Demographic and Health Survey guidelines to ensure that the results of the study are representative of the entire population.

⇒ Despite the above strengths, the study may have had recall bias.

⇒ Second, the study's design was cross-sectional, which does not allow for establishing a connection between causes and effects.

⇒ Finally, the absence of certain demographic groups, such as destitute women, as well as a lack of cultural and communal contributions may have an effect on the behaviour of individuals seeking healthcare from community clinics services.

## INTRODUCTION

Bangladesh has committed to ensuring healthcare to the people but still some health indicators remain poor. Ensuring quality healthcare with less financial expenses has always been a big challenge for Bangladesh. To keep up with the challenge, Bangladesh established community clinics (CCs) to provide primary or general healthcare services, especially for women and children.[1–3]

The formal journey of CC in Bangladesh began in 1998, with a plan to construct 13 500 CC, and became actively popular after 2008.[1 2] However, the healthcare services in Bangladesh were available at the national level (super-specialty hospitals), administrative divisions level (medical colleges/tertiary hospitals), district level (50–250 bed

hospitals), subdistrict level (31–50 bed hospital), union level (outpatient static facility), ward level (domiciliary workers) and village level (domiciliary workers). Within the structure, at the union level, ward level and village level there was a lack of static healthcare facilities. As a result, CCs were established at the root levels to fill the void left by this structure, making CC vital to ensuring better healthcare services for the peoples.[3] Besides that, the majority of the people in Bangladesh used to live in rural areas where healthcare facilities were hard to find, in contrast to urban areas where residents had easy access to different healthcare facilities. Keeping that in mind, each CC was built and equipped to serve at least 6000 people on average and be accessible to more than 80% of that population within less than 30 min of walking distance.[2 4] Up until June 2020, there were 13 812 fully functioning CC in Bangladesh, and 133 were under construction at that time, with the target of constructing 14 890 CC by the end of 2022.[3 5]

Women are the backbone of both families and communities, and children are the future; therefore, ensuring their well-being is crucial to the success of those around them, and a better future. For that reason, in 2015, Bangladesh, along with 192 countries, has agreed to reduce maternal mortality (70 per 100 000 live births) and neonatal mortality (12 per 1000 live births) by 2030 within the targets of Sustainable Development Goals (SDGs)–3.1 and 3.2.[6] Here, CCs can be one of the most important infrastructures to help Bangladesh achieve the SDGs.[7]

One of the key purposes of the CCs in Bangladesh is to provide maternity-related healthcare services such as providing family planning, immunisation-related services, antenatal care, skilled birth attendant-based delivery, postnatal care and emergency obstetrical care.[8–10] Furthermore, health workers of CCs give the primary treatment of complicated and serious patients and refer tertiary level hospitals to get better treatment, sometimes this helps to reduce the overall number of unwanted deaths.[1] Bangladesh has progressed remarkably by taking steps to deliver those facilities in closed communities and even won awards for reducing child mortality, quality improvement in maternal care and improvement of life expectancy.[4] Although Bangladesh has achieved significant progress, still to date, we could not reach the targeted milestone. Still the maternal mortality (165 per 100 000 live births) and neonatal mortality (15 per 1000 live births) rates are high. Although there are infrastructures, the desired result cannot be achieved because CCs and maternal health-related care are not promoted enough and because a part of the population is still unaware of the resources that are available.[8 11] Thus, further improvement of the maternal healthcare scenario by promoting the facilities is a key priority, and it is crucial to study the key aspects that assist in building awareness among the people about the CC.[7]

On the other hand, people's behaviour in seeking healthcare is related to many socioeconomic aspects,

which ultimately influence health outcomes.[12 13] Physical barriers, such as lack of transportation, infrastructure and long-distance also constrain people from seeking maternal healthcare services, so they should be removed to ensure better access to the CCs.[8] Service quality is seen to have an effect on visitation behaviour as well. Lack of manpower, social discrimination and lack of quality equipment drag the service quality down, reflecting on the visitation behaviours.[14–16]

Proper awareness of CCs should be presented, especially among women, as they play a vital role in managing the children and households in Bangladesh.[2 17] Women are responsible for the majority share of childcare, and senior and elderly care in Bangladesh. At the same time, they also face health-related vulnerabilities due to their maternity period.[2] From prior knowledge, a large proportion of women, mainly in rural Bangladesh, face several health-related complications during their pregnancy and childbirth. In addition, lack of knowledge about existing healthcare services, sometimes leads to maternal morbidity and deaths.[14] Thus, having adequate knowledge about the CCs can help them seek healthcare if necessary. This not only improves the mother's health but also the entire family.

The delay in overcoming socioeconomic level barriers may result in a less desirable health outcome. Several studies have tried to find the underlying reasons behind the awareness and visitation behaviour at national and regional levels,[1 2 8 14] but the work on the identification of risk factors of awareness and visitation of CC is limited in Bangladesh. This created a huge knowledge gap due to a lack of updated information, and thus it was important to investigate the matter to understand the current situation and take steps accordingly.

The main focus of this study is to investigate the association of socioeconomic factors with the awareness and visitation of CCs of reproductive aged women in Bangladesh using Bangladesh Demographic and Health Survey (BDHS) 2017–2018. The study outcomes will therefore be helpful for the identification of the underlying relations so that proper socioeconomic level interventions can be taken to improve awareness and visitation behaviour, and ultimately the healthcare outcomes.

## MATERIALS AND METHODS
### Data source and study design
This study analysed the data from BDHS 2017–2018. The BDHS 2017–2018 is a nationally representative cross-sectional household survey conducted in both urban and rural areas covering all eight administrative regions (divisions) as Barisal, Chittagong, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur and Sylhet. The BDHS 2017–2018 surveys were conducted by the National Institute of Population Research and Training and Mitra and Associates. The BDHS, 2017–2018 data were collected using two-stage stratified sampling. In the first stage, a probability proportional method was used to select 675,

with independent selection in each sampling stratum. In the second stage, 30 households per cluster were selected with an equal probability of systematic selection from the household listing. Among the total 20 127 respondents, this study considered 18 893 women for investigating awareness of CCs and 10 643 women for investigating the visitation of CCs by the women. This difference in frequency occurred as only those who said they were aware of the CCs were asked whether they visited the CCs. The mentioned number of respondents was considered after the variables selection and ensuring the completeness of the data set by pre-processing.

## Outcome variables

The outcome variables of the study were the awareness of CCs and the visitation to CCs in the last 3 months of the respondents. Respondents were asked the question if they were aware of the CCs, and if they visited the CCs in the last 3 months, separately. If the response was yes, then they were categorised as aware (1) and visited (1), and otherwise categorised as unaware (0) and did not visit (0). These two binary response variables were considered for the analysis.

## Exposure variables

Extensive literature was used to consider the primary exposure variables in this study.[1 2 8 14] The considered exposure variables of this study are division (Barisal, Chittagong, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur and Sylhet), place of residence (urban, rural), religion (Islam, others), respondent's current age (15–19 years, 30–49 years), education (no education, primary, secondary, higher), husband/partners' education (no education, primary, secondary, higher), wealth index (poorest, poorer, middle, richer, richest), sex of household head (male, female), respondent currently working status (no, yes), number of living children (no living children, one to two living children and media exposure (no, yes). To create the wealth index variable standardised principal component scores calculated from questions about a household's ownership of various consumer materials and characteristics related to its dwelling and wealth status were used for this purpose. The media exposure variable was created specifically for this study, using three different variables, that is, watching television, listening to radio and reading newspapers. The respondents were asked if they watched television, listened to the radio and read the newspaper at least once a week. If the answer was negative for all of them, then it was categorised as no media exposure, and if the answers were positive for any one of them, then it was categorised as exposed to media.[18]

## Statistical analysis

The baseline characteristics of the variables were examined using frequency distribution. The weighted prevalence of awareness and visitation of CCs were also presented in this study. Sample weights are used in all

analyses to make sample data representative of the entire population. Sample weights are calculated to six decimals but are presented in the standard recode files without the decimal point so before the use this study is divided by 1 000 000. In Demographic and Health Survey (DHS) surveys, the sample is carefully chosen with unequal probability to increase the number of cases available for convinced areas for which statistics are needed. In this case, weights are essential to present the data in tabulation and find out different significant outcomes. Furthermore, bivariate analysis and Pearson's $\chi^2$ test were used to figure out the association between the outcome variables and the exposure variables. And later, the significant factors were entered into the final multivariate model. Finally, a binary logistic regression model was used to measure the effect of exposure on awareness and visitation of CCs using proper weighting suggested by the DHS programme. However, multicollinearity was checked using the variance inflation factor (VIF) with a fixed cut-off point (VIF ≥10). The range of VIF was found (1.011–1.134) for the awareness of CCs and (1.008–1.093) for the visitation of CCs. Adjusted OR (AOR) along with a 95% CI was used to present the results. In this study, the statistical significance value was considered at p<0.05. All statistical analysis was performed using SPSS (V.25).

## Patient and public involvement

This research considered secondary data, so there are no direct patient and public involvement.

## RESULTS

Table 1 represents the basic characteristics of the 18 893 women, along with the prevalence of the awareness of CCs, considering several socioeconomic factors. The study found that more than half of the women belonged to the 30–49 years age group (53.87%). Nearly two-thirds of the women lived in rural areas (63.5%) and 90.05% of respondents' religious faith was Islam. The highest 39.44% of women were secondary educated, but the highest 31.35% of the husbands/partners had primary education. The majority of the women belonged to the richest family (22.41%), and the majority of the respondents were not currently working in any financial sector (52.87%). More than half of the respondents had one to two children (54.16%), and 55.71% of the women had media exposure.

Furthermore, this study found that the overall prevalence of awareness of CCs among women was 60.26% (95% CI: 57.88% to 62.60%). Around 60% of the women from the 30–49 years age group were aware of CCs. The prevalence of community clinical awareness varied among the divisions, from 45.28% (95% CI: 39.46% to 51.24%) in Dhaka to 77.79% (95% CI: 72.72% to 82.15%) in Rangpur. However, the prevalence of awareness of CCs was higher among women who lived in rural areas (73.57%), had primary education (62.15%) and had no media exposure (67.81%). Overall, the prevalence of awareness of

Table 1 Baseline characteristics and prevalence towards CCs awareness of the study population (n=18893)

| Variables | N (%) | Awareness of CCs | | Prevalence of awareness of CCs | P value |
| | | No, n (%) | Yes, n (%) | Yes, % (95% CI) | |
|---|---|---|---|---|---|
| Overall | 18893 (100) | 8250 (43.67) | 10643 (56.33) | 60.26 (57.88 to 62.60) | |
| Age | | | | | 0.066 |
| 15–29 years | 8715 (46.13) | 3817 (43.80) | 4898 (56.20) | 59.42 (56.83 to 61.96) | |
| 30–49 years | 10178 (53.87) | 4433 (43.55) | 5745 (56.45) | 61.01 (58.52 to 63.44) | |
| Division (administrative region) | | | | | <0.001 |
| Barisal | 2012 (10.65) | 857 (42.59) | 1155 (57.41) | 61.29 (53.61 to 68.45) | |
| Chittagong | 2730 (14.45) | 1285 (47.07) | 1445 (52.93) | 58.47 (52.89 to 63.85) | |
| Dhaka | 2821 (14.93) | 1660 (58.84) | 1161 (41.16) | 45.28 (39.46 to 51.24) | |
| Khulna | 2480 (13.13) | 1006 (40.56) | 1474 (59.44) | 68.23 (62.32 to 73.61) | |
| Mymensingh | 2053 (10.87) | 872 (42.47) | 1181 (57.53) | 59.77 (52.28 to 66.82) | |
| Rajshahi | 2426 (12.84) | 903 (37.22) | 1523 (62.78) | 69.35 (63.25 to 74.83) | |
| Rangpur | 2346 (12.42) | 701 (29.88) | 1645 (70.12) | 77.79 (72.72 to 82.15) | |
| Sylhet | 2025 (10.72) | 966 (47.70) | 1059 (52.30) | 58.09 (48.45 to 67.14) | |
| Place of residence | | | | | <0.001 |
| Urban | 6879 (36.41) | 4997 (72.64) | 1882 (27.36) | 26.58 (22.35 to 31.30) | |
| Rural | 12014 (63.59) | 3253 (27.08) | 8761 (72.92) | 73.57 (70.79 to 76.17) | |
| Religion | | | | | 0.682 |
| Islam | 17014 (90.05) | 7403 (43.51) | 9611 (56.49) | 60.14 (57.62 to 62.61) | |
| Others | 1879 (9.95) | 847 (45.08) | 1032 (54.92) | 61.45 (55.41 to 67.16) | |
| Education | | | | | <0.001 |
| No education | 2794 (14.79) | 1169 (41.84) | 1625 (58.16) | 60.70 (57.27 to 64.02) | |
| Primary | 5915 (31.31) | 2449 (41.40) | 3466 (58.60) | 62.15 (59.27 to 64.95) | |
| Secondary | 7452 (39.44) | 3157 (42.36) | 4295 (57.64) | 61.52 (58.87 to 64.11) | |
| Higher | 2732 (14.46) | 1475 (53.99) | 1257 (46.01) | 51.26 (47.78 to 54.73) | |
| Husband/partner's education | | | | | <0.001 |
| No education | 4019 (21.27) | 1579 (39.29) | 2440 (60.71) | 63.32 (60.15 to 66.39) | |
| Primary | 5923 (31.35) | 2381 (40.20) | 3542 (59.80) | 63.10 (60.23 to 65.88) | |
| Secondary | 5578 (29.52) | 2470 (44.28) | 3108 (55.72) | 59.84 (57.03 to 62.59) | |
| Higher | 3373 (17.85) | 1820 (53.96) | 1553 (46.04) | 51.40 (47.98 to 54.81) | |
| Wealth index | | | | | <0.001 |
| Poorest | 3546 (18.77) | 1139 (32.12) | 2407 (67.88) | 70.64 (66.89 to 74.13) | |
| Poorer | 3599 (19.05) | 1042 (28.95) | 2557 (71.05) | 74.36 (71.51 to 77.02) | |
| Middle | 3653 (19.34) | 1248 (34.16) | 2405 (65.84) | 69.94 (66.76 to 72.95) | |
| Richer | 3861 (20.44) | 1938 (50.19) | 1923 (49.81) | 52.85 (49.06 to 56.60) | |
| Richest | 4234 (22.41) | 2883 (68.09) | 1351 (31.91) | 35.90 (32.29 to 39.67) | |
| Sex of household head | | | | | 0.175 |
| Male | 16681 (88.29) | 7329 (43.94) | 9352 (56.06) | 60.01 (57.62 to 62.35) | |
| Female | 2212 (11.71) | 921 (41.64) | 1291 (58.36) | 62.08 (58.40 to 65.62) | |
| Respondent currently working status | | | | | <0.001 |
| No | 9989 (52.87) | 5091 (50.97) | 4898 (49.03) | 53.52 (50.46 to 56.56) | |
| Yes | 8904 (47.13) | 3159 (35.48) | 5745 (64.52) | 67.87 (65.35 to 70.29) | |
| Number of children | | | | | <0.001 |
| No children | 1933 (10.23) | 989 (51.16) | 944 (48.84) | 52.26 (49.09 to 55.41) | |
| 1–2 | 10233 (54.16) | 4507 (44.04) | 5726 (55.96) | 60.23 (57.72 to 62.69) | |

**Table 1** Continued

| Variables | N (%) | Awareness of CCs | | Prevalence of awareness of CCs | P value |
| | | No, n (%) | Yes, n (%) | Yes, % (95% CI) | |
|---|---|---|---|---|---|
| 3 and above | 6727 (35.61) | 2754 (40.94) | 3973 (59.06) | 62.65 (59.89 to 65.33) | |
| Media exposure | | | | | **<0.001** |
| No | 8367 (44.29) | 2924 (34.95) | 5443 (65.05) | 67.81 (65.12 to 70.38) | |
| Yes | 10 526 (55.71) | 5326 (50.60) | 5200 (49.40) | 54.34 (51.53 to 57.12) | |

Bold values signifies p <0.05.
CCs, community clinics.

CCs was higher in the poorest households in comparison with the richest households (awareness of CCs among women with poorest vs richest wealth index, 70.64% (95% CI: 66.89% to 74.13%) vs 35.90% (95% CI: 32.29% to 39.67%)), and among the women's whose husbands/partners were not educated (awareness of CCs among women with no education vs highest education, 63.32% (95% CI: 60.15% to 66.39%) vs 51.40% (95% CI: 47.98% to 54.81%)). Specifically, the prevalence of awareness of CCs in working women (67.87%) was higher than the not working women (53.52%). Even Among migrant workers aged 18–59 years in China, the prevalence of awareness of CCs increased with an increase in the number of children (awareness of CCs among women with no children vs three and above, 52.26% (95% CI: 49.09% to 55.41%) vs 62.65% (95% CI: 59.89% to 63.33%)).

In addition, the results from the $\chi^2$ test found that division (p<0.001), residence (p<0.001), education (p<0.001), husbands'/partners' education (p<0.001), wealth index (p<0.001), respondent's working status (p<0.001), number of children (p<0.001) and media exposure (p<0.001) were significantly associated with awareness of CCs, whereas respondents' age (p=0.066), religion (p=0.682) and sex of household head (p=0.175) were not significantly associated with CCs.

Table 2 also reveals the baseline characteristics of 10 643 women as well as the prevalence of visitation of CCs across different socioeconomic variables. This study listed that more than half of the women belonged to the 30–49 years age group (53.98%). Majority of the women were from the Rangpur division (15.46%); more than 80% of the women lived in rural areas (82.32%) and followed religious Islam (90.30%). Among women, 40.36% had secondary education and their husbands'/partners' education was primary (33.28%). Majority of the women (87.87%) reported their household head was men. About 53.98% of the women reported that they were involved in any type of work and they had one to two children (53.80%). However, most of the participants had no media exposure (51.14%).

The results of this study showed that the overall prevalence of visitation of CCs among women was only 15.92% (95% CI: 14.45% to 17.50%). Comparatively, younger women (30–49 years of age) visited the CCs more (16.95%) than the older. The prevalence of visitation

of CCs also varied among the divisions, from 9.75% (95% CI: 7.11% to 13.24%) in Dhaka to 20.46% (95% CI: 15.77% to 26.10%) in Khulna. However, the prevalence of visitation of CCs was higher among rural women (16.28%), primarily educated women (17.15%) and had no media exposure (67.81%), women from poorer families (18.49%), working women (16.68%) and the women who had one to two children (17.23%).

The results of this study found that age (p=0.019), division (p=0.001), education (p<0.001), husband/partner's education (p<0.001), wealth index (p<0.001), sex of household head (p=0.005) and the number of children (p<0.001) were significantly associated with visitation of CCs. However, religion (p=0.494), respondent's currently working (p=0.138) and media exposure (p=0.977) were not significantly associated with visitation to CCs.

Multivariable logistic regression analyses to investigate factors associated with awareness and visitation of CCs were presented in table 3. The result depicted that among all the divisions, women from the Rangpur division had 1.85 times (AOR=1.85, 95% CI: 1.2 to 2.85, p=0.005) more likely to have community clinical awareness compared with the women from the Dhaka division. The awareness of CCs of urban women showed significantly lower odds compared with the awareness of CCs of rural women (AOR=0.18, 95% CI: 0.13 to 0.24, p<0.001). The odds of CCs awareness were increasing as the education of women was increasing (primary education: AOR=1.18, 95% CI: 1.04 to 1.34, p=0.010; secondary education: AOR=1.41, 95% CI: 1.2 to 1.66, p<0.001, higher education: AOR=1.48, 95% CI: 1.2 to 1.83, p<0.001). A richer women and richest women had significant 0.75 times (AOR=0.75, 95% CI: 0.6 to 0.9, p=0.012) and 0.54 times (AOR=0.54, 95% CI: 0.42 to 0.7, p<0.001) lower odds of CCs awareness compared with non-educated women, respectively. The currently working women were 1.42 times (AOR=1.42, 95% CI: 1.2 to 1.63, p<0.001) more aware of CCs compared with their counterparts. The women having one to two children were 1.39 times (AOR=1.39, 95% CI: 1.21 to 1.59, p<0.001) and women having three and more children were 1.38 times (AOR=1.38, 95% CI: 1.17 to 1.61, p<0.001) more likely to aware of CCs than the women having no children.

Women from Chittagong (AOR=2.01, 95% CI: 1.3 to 3.1, p=0.02), Khulna (AOR=2.26, 95% CI: 1.41 to 3.61, p=0.001), Rajshahi (AOR=1.85, 95% CI: 1.18 to 2.89,

**Table 2** Baseline characteristics and prevalence of CCs visitation of the respondents (n=10643)

| Variables | N (%) | Visit CCs last 3 months | | Prevalence of CCs visitation | |
| | | No, n (%) | Yes, n (%) | Yes, % (95% CI) | P value |
|---|---|---|---|---|---|
| Overall | 10643 (100) | 8953 (84.12) | 1690 (15.88) | 15.92 (14.45 to 17.50) | |
| Age | | | | | 0.019 |
| 15–29 years | 4898 (46.02) | 4060 (82.89) | 838 (17.11) | 16.95 (15.32 to 18.72) | |
| 30–49 years | 5745 (53.98) | 4893 (85.17) | 852 (14.83) | 15.04 (13.39 to 16.85) | |
| Division (administrative region) | | | | | 0.001 |
| Barisal | 1155 (10.85) | 1014 (87.79) | 141 (12.21) | 12.39 (9.53 to 15.94) | |
| Chittagong | 1445 (13.58) | 1185 (82.01) | 260 (17.99) | 17.65 (14.33 to 21.55) | |
| Dhaka | 1161 (10.91) | 1049 (90.35) | 112 (9.65) | 9.75 (7.11 to 13.24) | |
| Khulna | 1474 (13.85) | 1180 (80.05) | 294 (19.95) | 20.46 (15.77 to 26.10) | |
| Mymensingh | 1181 (11.10) | 1017 (86.11) | 164 (13.89) | 13.65 (10.29 to 17.89) | |
| Rajshahi | 1523 (14.31) | 1259 (82.67) | 264 (17.33) | 18.16 (14.21 to 22.90) | |
| Rangpur | 1645 (15.46) | 1384 (84.13) | 261 (15.87) | 16.64 (13.00 to 21.05) | |
| Sylhet | 1059 (9.95) | 865 (81.68) | 194 (18.32) | 19.44 (14.97 to 24.85) | |
| Place of residence | | | | | 0.23 |
| Urban | 1882 (17.68) | 1634 (86.82) | 248 (13.18) | 13.40 (9.79 to 18.07) | |
| Rural | 8761 (82.32) | 7319 (83.54) | 1442 (16.46) | 16.28 (14.7 to 17.99) | |
| Religion | | | | | 0.494 |
| Islam | 9611 (90.3) | 8077 (84.04) | 1534 (15.96) | 16.06 (14.54 to 17.70) | |
| Others | 1032 (9.70) | 876 (84.88) | 156 (15.12) | 14.60 (11.09 to 18.98) | |
| Education | | | | | <0.001 |
| No education | 1625 (15.27) | 1412 (86.89) | 213 (13.11) | 12.67 (10.74 to 14.88) | |
| Primary | 3466 (32.57) | 2877 (83.01) | 589 (16.99) | 17.15 (15.14 to 19.36) | |
| Secondary | 4295 (40.36) | 3569 (83.10) | 726 (16.90) | 16.99 (15.28 to 18.84) | |
| Higher | 1257 (11.81) | 1095 (87.11) | 162 (12.89) | 12.93 (10.79 to 15.43) | |
| Husband/partner's education | | | | | <0.001 |
| No education | 2440 (22.93) | 2050 (84.02) | 390 (15.98) | 16.10 (13.95 to 18.51) | |
| Primary | 3542 (33.28) | 2902 (81.93) | 640 (18.07) | 17.98 (16.07 to 20.07) | |
| Secondary | 3108 (29.20) | 2635 (84.78) | 473 (15.22) | 15.07 (13.41 to 16.90) | |
| Higher | 1553 (14.59) | 1366 (87.96) | 187 (12.04) | 12.46 (10.48 to 14.75) | |
| Wealth index | | | | | <0.001 |
| Poorest | 2407 (22.62) | 1981 (82.30) | 426 (17.70) | 17.71 (15.39 to 20.30) | |
| Poorer | 2557 (24.03) | 2080 (81.35) | 477 (18.65) | 18.49 (16.36 to 20.82) | |
| Middle | 2405 (22.60) | 2010 (83.58) | 395 (16.42) | 16.53 (14.40 to 18.90) | |
| Richer | 1923 (18.07) | 1659 (86.27) | 264 (13.73) | 14.01 (11.79 to 16.56) | |
| Richest | 1351 (12.69) | 1223 (90.53) | 128 (9.47) | 9.48 (7.59 to 11.79) | |
| Sex of household head | | | | | 0.005 |
| Male | 9352 (87.87) | 7834 (83.77) | 1518 (16.23) | 16.33 (14.80 to 17.99) | |
| Female | 1291 (12.13) | 1119 (86.68) | 172 (13.32) | 13.11 (11.07 to 15.47) | |
| Respondent currently working status | | | | | 0.138 |
| No | 4898 (46.02) | 4155 (84.83) | 743 (15.17) | 15.06 (13.35 to 16.95) | |
| Yes | 5745 (53.98) | 4798 (83.52) | 947 (16.48) | 16.68 (14.85 to 18.69) | |
| Number of children | | | | | <0.001 |
| No children | 944 (8.87) | 853 (90.36) | 91 (9.64) | 9.35 (7.29 to 11.90) | |
| 1–2 | 5726 (53.80) | 4766 (83.23) | 960 (16.77) | 17.23 (15.49 to 19.13) | |

Continued

**Table 2** Continued

| Variables | N (%) | Visit CCs last 3 months | | Prevalence of CCs visitation | |
| | | No, n (%) | Yes, n (%) | Yes, % (95% CI) | P value |
| --- | --- | --- | --- | --- | --- |
| 3 and above | 3973 (37.33) | 3334 (83.92) | 639 (16.08) | 15.62 (13.85 to 17.57) | |
| Media exposure | | | | | 0.977 |
| No | 5443 (51.14) | 4570 (83.96) | 873 (16.04) | 15.91 (14.26 to 17.70) | |
| Yes | 5200 (48.86) | 4383 (84.29) | 817 (15.71) | 15.93 (14.16 to 17.88) | |

Bold values signifies p <0.05.
CCs, community clinics.

p=0.007), Rangpur (AOR=1.63, 95% CI: 1.03 to 2.56, p=0.03) and Sylhet (AOR=2.20, 95% CI: 1.37 to 3.54, p=0.001) were more likely to visit CCs than the women from Dhaka. Similarly, the CCs visitation of women who had primary education (AOR=1.43, 95% CI: 1.17 to 1.74, p<0.001), secondary education (AOR=1.59, 95% CI: 1.29 to 1.96, p<0.001) and higher education (AOR=1.60, 95% CI: 1.18 to 1.28, p=0.003) showed significantly higher odds compared with the CCs visitation of women who no education.

Regarding the wealth index, women who came from middle-class, richer and richest families were 0.81 times (AOR=0.81, 95% CI: 0.66 to 0.99, p=0.03), 0.67 times (AOR=0.67, 95% CI: 0.52 to 0.88, p=0.003) and 0.44 times (AOR=0.44, 95% CI: 0.31 to 0.61, p<0.001), respectively, less likely to visit CCs than the poorest family. The women from male-headed households had 1.21 times (AOR=1.21, 95% CI: 1.00 to 16, p=0.046) higher odds of visiting CCs than the women from female-headed households. The women having one to two children were 2.05 times (AOR=2.05, 95% CI: 1.56 to 2.69, p<0.001) and having three and more children were 2.08 times (AOR=2.08, 95% CI: 1.54 to 2.81, p<0.001) more likely to visit CCs than the women who had no children. The women who had media exposure were 1.22 times (AOR=1.22, 95% CI: 1.05 to 1.41) more likely to visit CCs than the women who had no media exposure.

For both awareness of CCs (0.408), and visitation of CCs (0.449) models, the Hosmer-Lemeshow tests p value is greater than 0.05, indicating a good model fit. Furthermore, area under the curve for both awareness (0.768), and visitation (0.720) were above 0.7, suggesting a fair performance of the model. Finally, the $\chi^2$ p value for both models were less than 0.001, which infers that it was appropriate to do an adjusted model instead of a null model.

## DISCUSSION

This study investigated the socioeconomic factors associated with awareness and visitation of CCs services. This study reported moderate awareness and poor visitation to CCs among women of reproductive age in Bangladesh. It reported that 60.26% of women had an awareness of CCs, and only 15.92% of them had visited CC in the last 3 months. A previous study conducted in Bangladesh using BDHS-2011 data found that the prevalence of awareness and visitation of CCs was very poor (awareness of CCs=18% and visitation of CCs=17%).[2] Another study conducted in Bangladesh using BDHS-2014 data found the awareness of CC prevalence was 36.7%.[14] These results highlighted the successive increase in the prevalence of awareness of CCs from 2011–2014 to 2017–2018, despite the fact that the visitation of CC decreased a little bit compared with the prior years. A study in Nepal examined the health condition-seeking activity of villagers in a hamlet and revealed that 69% requested health maintenance care when they became sick. In contrast, just 19% of them had their first experience with a conventional hospital or other medical facilities.[19] Only roughly 21% of the tested population in the US attended the emergency department at least once, according to a different study.[2] On the contrary, another research reported that almost one-third of the individuals skipped approaching medical professionals even when it was anticipated that something was amiss with their condition of health.[20] Several factors could be accountable for the low prevalence of awareness and visitation of CCs such as distance to healthcare facilities and low health education system could be crucial complications in confirming the best healthcare facilities. In addition, poor knowledge about the illnesses could also be attributable. Sometimes religious and cultural beliefs could be supplementary reasons for poor awareness and visitation of CCs in Bangladesh. Furthermore, attitudes toward health awareness and treatment-seeking behaviour are resultant in the level of motivation to employ suitable healthcare services.[21]

A set of factors were found to have a significant association with awareness and visitation of CCs. The following factors had a significant association with awareness of CCs after adjustment: residence in Rangpur division, urban residence, maternal primary, secondary and higher education, richer and richest wealth status, working women and higher number of children. Beside this, the following factors had significant associations with the visitation of CCs after adjustment: residence in Chittagong, Khulna, Rajshahi, Rangpur and Sylhet division, maternal

**Table 3** Factors associated with the awareness and visitation of CCs in Bangladesh, 2017–2018

| Variables | Awareness of CCs | | Visitation to CCs | |
|---|---|---|---|---|
| | AOR (95% CI) | P value | AOR (95% CI) | P value |
| Age | | | | |
| 15–29 years (ref) | 1.00 | | 1.00 | |
| 30–49 years | 1.05 (0.94 to 1.17) | 0.415 | 0.87 (0.74 to 1.02) | 0.090 |
| Division (administrative region) | | | | |
| Dhaka (ref) | 1.00 | | 1.00 | |
| Barisal | 0.83 (0.52 to 1.33) | 0.447 | 1.18 (0.75 to 1.86) | 0.474 |
| Chittagong | 1.07 (0.71 to 1.60) | 0.751 | 2.01 (1.30 to 3.10) | **0.002** |
| Khulna | 1.39 (0.92 to 2.12) | 0.120 | 2.26 (1.41 to 3.61) | **0.001** |
| Mymensingh | 0.79 (0.51 to 1.22) | 0.291 | 1.33 (0.83 to 2.12) | 0.239 |
| Rajshahi | 1.39 (0.90 to 2.16) | 0.137 | 1.85 (1.18 to 2.89) | **0.007** |
| Rangpur | 1.85 (1.20 to 2.85) | **0.005** | 1.63 (1.03 to 2.56) | **0.035** |
| Sylhet | 0.89 (0.52 to 1.51) | 0.667 | 2.20 (1.37 to 3.54) | **0.001** |
| Place of residence | | | | |
| Rural (ref) | 1.00 | | 1.00 | |
| Urban | 0.18 (0.13 to 0.24) | **<0.001** | 0.99 (0.68 to 1.44) | 0.938 |
| Education | | | | |
| No education (ref) | 1.00 | | 1.00 | |
| Primary | 1.18 (1.04 to 1.34) | **0.010** | 1.43 (1.17 to 1.74) | **<0.001** |
| Secondary | 1.41 (1.20 to 1.66) | **<0.001** | 1.59 (1.29 to 1.96) | **<0.001** |
| Higher | 1.48 (1.20 to 1.83) | **<0.001** | 1.60 (1.18 to 2.18) | **0.003** |
| Husband/partner's education | | | | |
| No education (ref) | 1.00 | | 1.00 | |
| Primary | 1.07 (0.95 to 1.20) | 0.296 | 1.05 (0.88 to 1.25) | 0.595 |
| Secondary | 1.12 (0.99 to 1.28) | 0.078 | 0.88 (0.73 to 1.06) | 0.187 |
| Higher | 1.12 (0.95 to 1.33) | 0.179 | 0.81 (0.63 to 1.04) | 0.099 |
| Wealth index | | | | |
| Poorest (ref) | 1.00 | | 1.00 | |
| Poorer | 1.18 (0.99 to 1.4) | 0.059 | 0.98 (0.81 to 1.18) | 0.820 |
| Middle | 1.09 (0.9 to 1.33) | 0.373 | 0.81 (0.66 to 0.99) | **0.039** |
| Richer | 0.75 (0.6 to 0.94) | **0.012** | 0.67 (0.52 to 0.88) | **0.003** |
| Richest | 0.54 (0.42 to 0.7) | **<0.001** | 0.44 (0.31 to 0.61) | **<0.001** |
| Sex of household head | | | | |
| Female (ref) | 1.00 | | 1.00 | |
| Male | 0.93 (0.81 to 1.07) | 0.303 | 1.21 (1.00 to 1.46) | **0.046** |
| Respondent currently working status | | | | |
| No (ref) | 1.00 | | 1.00 | |
| Yes | 1.42 (1.24 to 1.63) | **<0.001** | 0.99 (0.85 to 1.16) | 0.902 |
| Number of children | | | | |
| No children (ref) | 1.00 | | 1.00 | |
| 1–2 | 1.39 (1.21 to 1.59) | **<0.001** | 2.05 (1.56 to 2.69) | **<0.001** |
| 3 and above | 1.38 (1.17 to 1.61) | **<0.001** | 2.08 (1.54 to 2.81) | **<0.001** |
| Media exposure | | | | |
| No (ref) | 1.00 | | 1.00 | |
| Yes | 0.95 (0.85 to 1.06) | 0.361 | 1.22 (1.05 to 1.41) | **0.009** |
| HL-goodness of fit | 0.408 | | 0.449 | |
| AUC | 0.768 | | 0.720 | |
| $X^2$ | **p<0.001** | | **p<0.001** | |

| | Awareness of CCs | | Visitation to CCs | |
|---|---|---|---|---|
| **Table 3** Continued | | | | |
| **Variables** | **AOR (95% CI)** | **P value** | **AOR (95% CI)** | **P value** |

Bold values signifies p <0.05.
AOR, adjusted OR; AUC, area under the curve; CCs, community clinics; HL-goodness of fit, Hosmer-Lemeshow goodness of fit.

primary, secondary and higher education, middle class, richer and richest families, male household head, the higher number of children and media exposure. To the best of our knowledge, this is the broadest epidemiological study to investigate socioeconomic factors associated with awareness and visitation of CCs in Bangladesh using 2017–2018 BDHS data.

The division was significantly associated with both awareness and visitation to CCs. The result illustrated that women from the Rangpur division were more aware of CCs and visited CCs compared with the women from the Dhaka division. Other divisions also showed higher odds compared with the Dhaka division. A previous study conducted in Bangladesh also found division to be a significant predictor.[14] The possible reason behind this could be the regional disparities in the accessibility of CCs service, and discrepancies in people's experience of CCs are all things that vary from division to division. Specifically, in the city of Dhaka, which serves as the capital of Bangladesh, there is indeed a substantial number of additional government and private medical facilities. That way, they would not have to worry about the obligation of having CCs service. In contrast, women in other divisions do not have public healthcare sectors. Therefore, they are more aware of the CCs services.[14]

The residence of women was significantly associated with awareness but not associated with the visitation of CCs in the current study. Rural respondents had a higher likelihood of awareness of CCs as opposed to urban respondents. This result is consistent with the studies conducted in a lower-income and middle-income country.[2 4 14] According to a previous study, the community clinic in rural Bangladesh provided the best healthcare to the people.[1] The possible reasons might be that the CCs are strategically placed in residential areas in order to promote access to primary healthcare, particularly for women and children.[4] Furthermore, in rural areas, private and other healthcare facilities are scarce compared with urban areas. Generally, a rural person has limited facilities to take healthcare services; even in most rural places there are no alternatives to CCs, but urban people have a lot of opportunities. Thus, in most cases, CCs are the best choice for primary healthcare in rural areas. Therefore, the CCs in rural areas receive more exposure and awareness.[2 14]

Education had a significant positive effect on the awareness and visitation of CCs. The result revealed a successive increase from primary to secondary to higher, where higher educated women had higher odds of awareness and visitation of CCs than the women who had no education. The output is supported by the findings carried out in developing countries.[2 14 22–24] Educated women were more likely to have access to health information and to be able to make the most use of it. They are also more prepared to initiate and manage health-related decision-making. Furthermore, highly educated women are considered to be better users of health information and services and hence are likely to seek out quality treatment for their sick children.[24] The possible explanation could be that women with higher levels of education undoubtedly had greater access to health knowledge and were, therefore, better equipped to make effective use of the information they did have. In a similar mood, they have a greater potential for leading and managing the process of a judgement call in matters pertaining to health concerns.[25] It is generally agreed that education is one of the fundamental socioeconomic factors that determine health and behaviours that are connected to health. In addition, it represents the sociocultural traits that people possess.[26] Furthermore, mothers with higher levels of education are recognised as superior consumers of health-related knowledge and assistance, and as a result, it is anticipated that they will have improved behaviours regarding the pursuit of medical attention for their sick children.[27] For the best possible usage of primary healthcare, community organisations should be used as a venue from which to deliver health instruction.

The present study found that the wealth index is negatively related to both awareness and visitation of CCs. The result demonstrated a gradual decrease from the poorest to the wealthiest, with the richest women having a lower likelihood of being aware of as well as a visit to CCs, which is consistent with the findings of the previous studies performed in Bangladesh.[2 28] One possible explanation for this is that there are not enough medical facilities in CCs to meet everyone's needs. It has not been determined whether or not the facility would have a qualified medical doctor on-premise to provide medical care. Primary healthcare facilities may only be provided in the CCs by paramedical or medical training individuals. Thus, women with a higher wealth index are less interested in taking advantage of CCs services because they can afford improved medical centres or private hospitals for their treatment, whereas, owing to a shortage of financial means, underprivileged women usually cannot get medical treatment from certified practitioners.[28]

The sex of household heads is substantially connected with visitation to CCs in this study. The output discovered that male-headed household respondents were more likely to visit CCs services compared with their counterparts.

The result is inconsistent with the findings of an earlier study done in Bangladesh, where the sex of the household head was found to be an insignificant predictor.[14] The possible reason behind the current study's findings might be that a woman's access to healthcare is influenced by her position in the household as well as her husband's comprehension of the situation. Furthermore, the presence of male support for a woman's desire to seek medical aid is linked to an increase in visits to CCs.[29 30] In addition, evidence has shown that a woman's healthcare needs are attended to effectively and promptly manner whenever men reach a consensus on the importance of women's medical healthcare needs.[31]

Women's currently working status was considerably related to awareness of CCs in the present study. The outcome reported that women involved in working had a greater likelihood of being aware of CCs than their counterparts. This result is incompatible with the reports of prior studies performed in Bangladesh.[2 14] It is possible that the outcomes of this study are because when women have jobs outside the household, they have more opportunities to interact with other people and get knowledge on healthcare more readily. Moreover, working outside the home has beneficial effects on the individual's financial situation and their community, enhancing their motivation to seek medical treatment.[32 33]

Women are conscious of their children's health. In this study, the number of children significantly associated with women's awareness of and visitation to CCs. Women who had one to two as well as three and more children, were more aware and had visited CCs more than the women who had no children. A study in a lower-income and middle-income country also provided similar results.[34] This could be the agency of family planning in Bangladesh putting in a significant amount of work, which has resulted in a better effect on the one or two-child policy, or women with more children naturally acquire greater life experience and maturity, which enables them to maintain a heightened awareness of CCs issues.[2]

The media exposure factor is significantly associated with the visitation to CCs. The result described that women exposed to media had a higher chance of visitation to CCs compared with those not exposed to media. A previous study in Bangladesh also showed analogous results.[14] The reasonable explanation could be that information may be promptly disseminated to a mass audience via the media in the guise of awareness campaigns, promotion, amusement or brief dramatic productions at comparatively minimal costs. It is attributed to various demographic changes, particularly in terms of techniques and motives for family management, health improvement and illness prevention.[35]

## CONCLUSION

The development of CCs in Bangladesh has contributed significantly to the country's primary healthcare system and has produced noteworthy improvements. Primary healthcare is important for women of any age, especially childbearing women. This study indicated that higher education, division, richest wealth index and higher number of children were significantly associated with awareness and visitation to CCs. Furthermore, urban residence and respondent involvement in currently working were significantly related to awareness of CCs; moreover, male household heads and exposure to media were significantly positively related to visitation to CCs. The findings highlight that increased women's education at higher levels leads to increased awareness of CCs and their visitation. So, different initiatives should be taken to develop women's education and make them financially solvent to make decisions regarding their healthcare services. As Bangladesh is developing in digital and electronic media, media (television, radio, newspapers and also digital platforms) can play a vital role in increasing the awareness of CCs. More campaign and advertising events for CCs are required, including more community meetings, expanded space, community donations, digital communication and simple transit to CC to spread awareness of CCs.

## RECOMMENDATIONS

Community representatives should adopt a more effective role in the development of healthcare management activities in order to raise rural women's awareness of the need for CCs and to encourage their visitation to these facilities. The goal of enhancing women's attitudes about healthcare and patient-provider interaction should be the focal point of efforts. As such, the government and appropriate authorities need to focus on developing greater participation in CC and also on developing the service facilities by appointing certified medical officers, training other service providers and the availability of necessary medicines. A major change will be observed if the rural women have basic knowledge about health, nutrition, fertility, childcare and other issues. They will be more inclined to attend CCs for medical care if they are aware of their health.

BDHS data is a secondary and publicly available data, so further research ethical approval was not required.

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