



**ATTITUDE AND KNOWLEDGE TOWARDS THE PANDEMIC COVID-19 AMONG  
PREGNANT WOMEN IN A TERTIARY CARE HOSPITAL, CHATTOGRAM,  
BANGLADESH**

**Dr. Farida Yasmin<sup>\*1</sup> and Dr. Aphroditia Aurora<sup>2</sup>**

<sup>1</sup>Assistant Professor, Department of Gynecology and Obstetrics, Chittagong Medical College, Chattogram, Bangladesh.

<sup>2</sup>Resident Medical Officer, Evercare Hospital, Chattogram, Bangladesh.

**\*Corresponding Author: Dr. Farida Yasmin**

Assistant Professor, Department of Gynecology and Obstetrics, Chittagong Medical College, Chattogram, Bangladesh.

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**ABSTRACT**

**Introduction:** The Novel CORONA virus is now of global concern and a pandemic with non-availability of specific treatment. Due to altered physiological and weakened immunological features, especially pregnant women are high-risk population in any pandemic situation. So why, knowledge and attitude towards this pandemic is very much important for them. **Methods:** A cross-sectional study was done in Gynecology outdoor, Chittagong Medical College hospital, Chattogram, Bangladesh during the period from 1<sup>st</sup> July to 30<sup>th</sup> July, 2020. All pregnant women who had antenatal check-up for current pregnancy in the hospital during the study period were the study population. Pregnant women who were not agreed to take part in the study and having complications e.g. mental disorder, hearing difficulty or critically ill were excluded from the study. The sample size was determined by using single proportion formula with the assumption of proportion of knowledge and attitude towards COVID-19 was 50% due to lack of related studies in this hospital. Margin of error (d) 5% and considering no response rate of 5%. The final sample size was 70. Systematic random sampling was applied to select the study population. Based on the hospital report an average 160 pregnant women attend the gynecology outdoor for antenatal checkup in each month. We computed the kth interval which was 2.1~2 of the first two pregnant mother. One mother was randomly selected by using lottery method. Subsequently, we selected and interviewed the study population at every second interval until the required respondents were obtained. **Results:** 85% and 75% of participants had a good level of knowledge and positive attitude toward COVID-19, respectively. Level of knowledge was significantly associated with participant's age (25-34 years) (AOR: 95% CI: 65), educational status (AOR: 95% CI: 65), occupation (AOR: 95% CI: 60) and condition of pregnancy (AOR: 95% CI: 55). Whereas age (25-34 years) (AOR: 95% CI: 60), participants husband completed secondary education (AOR: 95% CI: 50) and above (AOR: 95% CI: 60), wanted pregnancy (AOR: 95% CI: 55) and knowledge (AOR: 95% CI: 55) were the significant predictors for attitude. **Conclusion:** Study shows that a very good number of the participants had a good level of knowledge and positive attitude towards COVID-19. Age, educational status, occupational status, condition of current pregnancy was positively associated with women level of awareness of COVID-19.

**KEYWORDS:** COVID-19, attitude, knowledge.

**INTRODUCTION**

Coronavirus disease 2019 (COVID-19) is spreading and has evolved to become a pandemic crisis around the world, produces a newly appeared respiratory illness that constitutes the greatest genome of all RNA viruses and is highly contagious.<sup>[1-3]</sup> Major clinical manifestation of the diseases is fever, dry cough, fatigue, myalgia and dyspnea.<sup>[1-3]</sup> Since the outbreak first identified in December 2019 in Wuhan City, china, this virus has gained intense attention by spreading rapidly the rest of the world.<sup>[4]</sup> The disease announced as a public health emergency of international importance, and a pandemic by WHO, on January 30, 2020 and 11 march, 2020 respectively.<sup>[5]</sup> This extremely contagious disease can

spread from infected individuals to healthy ones via respiratory droplet, handshake, and fecal-oral route. It has an incubation time of 2-14 days, but an infected individual can transmit the virus just before they clinically manifest the disease.<sup>[6-8]</sup>

As of July 30 2020, it has reported across 215 countries and regions and has infected more than 17 million people with 672,364 deaths.<sup>[9]</sup> In Bangladesh, the first confirmed case reported on 08 march 2020.<sup>[10]</sup> Until July 30, 2020, 234,889 cases have identified, including total 3,083 deaths.<sup>[11]</sup> One of the reasons for such a rapid increase may be that Bangladesh is the second most densely populated country in the world.<sup>[12]</sup> Recent statistics have

estimated that population of Bangladesh is about 165 million with 1239.6 people per square kilometers.<sup>[13,14]</sup>

More than 100 million women globally are pregnant at the moment and nearly all of them are at risk of transmitting the virus.<sup>[15]</sup> In every contagious disease, outbreak pregnant mothers are especially susceptible, because of their impaired physiology and vulnerability to infection.<sup>[16,17]</sup> WHO suggests adopting some precautions of maintaining hygiene and social distancing to reduce the spread of COVID-19 and getting infected.<sup>[18]</sup> At the same time WHO also highly recommend a variety of preventive steps e.g. daily hand washing with water and soap, hand rubbing with alcohol based sanitizers, social distancing, covering hand and mouth during coughing and stopping eyes, nose and mouth touching.<sup>[19]</sup> Bangladesh government has taken protective and precautionary actions and embarked a regional lockdown from 26 March 2020.<sup>[20]</sup> All government and non-government entities, along with print and digital media assumed massive advertising on COVID-19 for awareness of the people. Bangladesh has not previously experienced epidemics like SARS, it is clear that the public healthcare systems are not readily prepared for COVID-19. However, evidence from numerous media reports support that still a considerable number of people do not adequately follow these instructions, which are responsible for exacerbation of the COVID-19 situation in Bangladesh.<sup>[21]</sup> Evidence suggests that, for such measures to be effective, public adherence is essential, which affected by their knowledge, attitudes and practices (KAP) towards COVID-19 of the respective population.<sup>[22-24]</sup> Furthermore, information about knowledge and attitude of the general population may guide the policymakers and researchers tremendously to develop effective strategies to face this kind of rapidly evolving emergency. Thus, the most important action is to implement protective actions to handle COVID-19 transmission by raising the level of awareness and creating positive attitudes. However, some COVID-19 knowledge and attitude survey reports on general population from different countries,<sup>[25-29]</sup> including Bangladesh are available already.<sup>[30]</sup> Most of them conducted through online questionnaire. Online surveys might have limitation in examining knowledge, attitude, practice in countries like Bangladesh, where only 15% of the population has access to internet compared to the world, average of 50% (World Bank-2017).<sup>[31]</sup> There is limited study on pregnant women by face-to-face interviewer administered questionnaire.

The goal of this study was to determine the level of knowledge and attitude towards COVID-19 and its determinants among pregnant women attending antenatal care in Chattogram medical college hospital.

## OBJECTIVE

### General objective

- To find the attitude and knowledge towards the Pandemic COVID-19 among pregnant women in a tertiary care hospital.

### Specific objective

- To increase the precaution in a tertiary care hospital.
- To increase the carefulness among the pregnant women.

## METHOD

An institution based cross sectional study carried out in Chattogram medical college hospital from July 01-30, 2020. Chattogram medical college hospital is located in Chattogram city, district of south-east side of Bangladesh, which is 240 kilometers away from the capital Dhaka. It is a tertiary care hospital. Besides Chattogram it covers patients from another six districts near to it. The hospital provides antenatal care in the Gynae outpatient department. All pregnant women who had antenatal follow-up for current pregnancy in the hospital during the study periods were the study population. Pregnant women who had given informed consent to take part in the study and had antenatal follow up at the hospital were included. Whereas, pregnant women who were not agreed to take part in the study and having complications e.g. mental disorder, hearing difficulty, pregnancy related complications, and critically ill were excluded from the study. The sample size was determined by using single proportion formula with the assumption of proportion of awareness and attitude towards COVID-19 was 50% due to very limited studies in Bangladesh. Margin of error (d) 5% and considering no response rate of 5%. The final sample size was 70. Systematic random sampling applied to pick the study participants from Gynecology outpatient department. Based on the hospital statistical report on average 160 pregnant mothers attend the gynecology outpatient department for ANC in each month. We computed the Kth interval, which was 2.1~2. Of the first two pregnant mothers, one mother randomly selected by using lottery method. Subsequently, we selected and interviewed the study participants at every second interval until the required respondents were obtained. The information gathered through face-to-face interview techniques using a structured and pretested questionnaire, by implementing all the necessary safety precautions of the outbreak. The questionnaire was first developed in Bangla then converted to English. The questionnaire was developed from WHO guidelines and literature in different parts of the world, and revised according to our setting. The questionnaire has four parts including socio-demographics, obstetrics, knowledge related and attitude related characteristics. The data were collected and compiled on daily basis. Data were recorded and entered in to Epi data version 4.2 then transferred to SPSS version 23 for analysis. Descriptive statistics including tables and percentages were used to explain the data.

Binary and multivariable logistic regression analyses were conducted. Variables that showed association in binary logistic regression analysis and which had P-value less than 0.20 were entered into multivariable logistic regression analysis model by controlling the potential confounding factors. then significant association was announced depending on  $p < 0.05$  and adjusted odds ratio (AOR) with 95% CI.

## RESULTS

Total 70 pregnant women were enrolled with response rate of 100%. Study shows 34 (48.5%) were in to the age group 25-34 years, the study population age ranged from 15-44 years with the mean age of 29 (SD±4.72) years. Majority of the respondents, 45 (64.3%) were from urban area. 100% of the women were married, and 55 (78.5%) were housewives. 32 (45.7%) of respondents completed

secondary school certificate and 52 (74.2%) of respondent's husband had completed higher secondary certificate. Regarding economic status, majority, 45 (64.3%) of the study population belong to middle class. Among the respondents, 42 (60%) and 29 (41.5%) were multigravida and multipara respectively. Regarding the number of children 47 (67.1%) mothers has less than or equal to 2 alive children. 54 (77.1%) of the current pregnancy were wanted and planned [Table 1]. All the study population 70 (100%) mentioned that they had heard about COVID-19 [Table 2]. Our study showed that 85% of 70 of participants had a good knowledge about COVID-19 [Table 3]. Most of the participants 75% had a positive attitude toward various elements of attitude measuring questions. (45) with 95% CI of (35) of participants had positive attitude towards COVID-19.

**Table 1: Socio-demographic characteristics. (n=70)**

| Age (year)             | Frequency (n) | Percentage (%) |
|------------------------|---------------|----------------|
| 15 - 24                | 28            | 40%            |
| 25 - 34                | 34            | 48.5%          |
| 35 - 44                | 08            | 11.5%          |
| Residence              |               |                |
| Urban                  | 45            | 64.3%          |
| Rural                  | 25            | 35.7%          |
| Occupation             |               |                |
| House wife             | 55            | 78.5%          |
| Service                | 11            | 15.7%          |
| Business               | 04            | 5.7%           |
| Economic Status        |               |                |
| Upper                  | 03            | 4.3%           |
| Middle                 | 45            | 64.3%          |
| Lower                  | 22            | 31.5%          |
| Number of children     |               |                |
| □ 2                    | 47            | 67.1%          |
| > 2                    | 23            | 32.8%          |
| Condition of pregnancy |               |                |
| Wanted                 | 54            | 77.1%          |
| Unwanted               | 16            | 22.8%          |

**Table 2: Knowledge of study participants about COVID-19. (n=70)**

| Whether they heard about COVID-19 | Frequency (n) | Percentage (%) |
|-----------------------------------|---------------|----------------|
| Yes                               | 70            | 100.00%        |
| No                                | 0             | 0.00%          |
| Total                             | 70            | 100%           |

**Table 3: Staying indoors and using face mask can prevent transmission of COVID-19. (n=70)**

| Variables | Frequency (n) | Percentage (%) |
|-----------|---------------|----------------|
| Yes       | 44            | 62.8%          |
| No        | 4             | 5.7%           |
| Not sure  | 22            | 31.4%          |
| Total     | 70            | 100%           |

**Table 4: Attitudes of study participants towards COVID-19. (n=70)**

| Attitude questions                                 | Categories | Frequency | Percent (%) |
|--|------------|-----------|-------------|
| COVID-19 is due to our fault or sin                | Agree      | 38        | 54.3%       |
|  | Disagree   | 22        | 31.41%      |
|  | neutral    | 10        | 14.28%      |
| COVID-19 attacks only rich people                  | Agree      | 12        | 17.1%       |
|  | Disagree   | 49        | 70%         |
|  | neutral    | 09        | 12.8%       |
| COVID-19 is caused by eating haram food            | Agree      | 24        | 34.2%       |
|  | Disagree   | 37        | 52.8%       |
|  | neutral    | 09        | 12.8%       |
| COVID-19 is common only in cold climate            | Agree      | 27        | 38.5%       |
|  | Disagree   | 34        | 48.5%       |
|  | neutral    | 09        | 12.8%       |
| COVID-19 is common only in white people            | Agree      | 18        | 25.7%       |
|  | Disagree   | 49        | 70%         |
|  | neutral    | 03        | 4.2%        |
| COVID-19 is common only in old people              | Agree      | 19        | 27.1%       |
|  | Disagree   | 46        | 65.7%       |
|  | neutral    | 05        | 7.1%        |
| Taking preventive measures is not believing in God | Agree      | 56        | 80%         |
|  | Disagree   | 08        | 11.4%       |
|  | neutral    | 06        | 8.5%        |

#### Predictors of participants' knowledge about COVID-19

In binary logistic regression e.g. educational status, occupation, husbands' educational status, husband's occupational status and condition of current pregnancy, had a significant association with knowledge of COVID-19. The multivariable logistic regression analysis showed that age, educational status, occupation and condition of current pregnancy were statistically significant with the women's knowledge about COVID-19. Participants whose age ranged from 25-34 years were 5 times more likely to have a good level of knowledge about COVID-19 (AOR: 95% CI: 1.72-12.20) than respondents whose age was higher or equal to 35 years. Compared to those who did not attend formal education, pregnant women who attended college and above were nearly eight times more likely to have a good level of knowledge about COVID-19 (AOR: 7.78; 95% CI: 2.31-15.65). Respondents who were civil servants by occupation were two times more likely to have good level of knowledge about the corona virus pandemic (AOR: 2.26; 95% CI: 1.23-4.15) than homemakers. In addition, pregnant women whose pregnancy was wanted were 4.55 times higher odds of having good level of knowledge about COVID-19 (AOR: 4.55; 95% CI: 1.84-11.25) as compared to those whose pregnancies were unwanted.

#### Predictors of respondents' attitude towards COVID-19

The finding of binary logistic regression analysis indicated that the important predictors of pregnant women attitude towards COVID-19 were, age, educational status, occupational status, husband's educational status, husband's occupational status, existing pregnancy status and knowledge of COVID-19.

Nevertheless, the result of multivariable binary logistic regression analysis showed that age, husband's educational status, status of existing pregnancy and knowledge of COVID-19 were statistically significant with pregnant women's attitude towards COVID-19 infection. Participants whose age was ranged from 25-34 years were 2.61 Times higher the odds of positive attitude towards corona virus disease (AOR: 2.61; 95% CI: 1.23-5.55) than respondents whose age lies higher than or equals to 35 years. Respondents whose husband has completed secondary education were nearly 3 times more likely to have positive attitude (AOR: 2.75; CI: 1.13-6.70) than those whose husband had not attended formal education. Similarly, pregnant women whose husband had attended college and above were nearly four times more likely to have positive attitude towards COVID-19 (AOR: 3.77; 95%CI: 1.62-8.76) as compared to those whose husband had not attended formal education. Moreover, pregnant women whose pregnancy was wanted were nearly three times higher the odds of positive attitude towards COVID-19 (AOR: 2.70; 95% CI: 1.22-5.97) as compared to their counter parts. In addition, study participants who had good knowledge about COVID-19 were 1.65 times more likely to have positive attitude towards COVID-19 (AOR: 1.65; 95% CI: 1.06-2.572) as compared to participants who had poor knowledge.

#### DISCUSSION

There is very limited study in Bangladesh investigating the attitude and knowledge towards COVID-19 among pregnant women. This study offers information on the level of attitude and knowledge towards coronavirus infection among pregnant women in Chattogram medical college hospital at the time of the COVID-19 pandemic

in Bangladesh. Study finding showed that almost all of the respondents had heard about COVID-19 pandemic. The result is in line with study conducted in Ethiopia<sup>[32]</sup> and another study of Bangladesh.<sup>[33]</sup> Mass media was the commonest source of information at 48.6%. Similarly, study performed in Kenya and Ethiopia found that mass media was the key source of information about the pandemic.<sup>[34, 33]</sup> According to our finding, almost 85% of the pregnant women had a good level of knowledge about the COVID-19 pandemic. This finding is higher than a study conducted in Egypt (16.39%)<sup>[35]</sup> and consistent with the study conducted in Ethiopia.<sup>[33]</sup> The possible explanation for the observed difference might be due to variation in study setting since the current study was completely conducted in urban setting where there is easy accessibility of mass media and social media exposure while, in Egypt 20.8% of the respondents were from rural setting.

On the contrary, previous researches in Iran (90%),<sup>[36]</sup> Pakistan (93.2%),<sup>[37]</sup> china (90%)<sup>[38]</sup> and Tanzania (84.4%)<sup>[39]</sup> reported higher than our finding. The difference may be associated with variations in socio-demographic profile, study setting and study respondents. The other possible reason might be disparities in the presence of trained human resources and health care service system of the countries to create awareness regarding the outbreak. The current study also attempted to determine participants' attitude towards COVID-19 and overall, 75% of the women has positive attitude towards COVID-19. The result is comparable with the study held in Ethiopia<sup>[33]</sup> but is lower than a study conducted in Iran (90%).<sup>[37]</sup> The possible reason might be the variations in educational status of participants, since only 25.7% were completed HSC level in this study; while in the comparable study 81.1% of participants had attended college and above. The present finding is also lower than studies from India (97.33%)<sup>[40]</sup> and Malaysia (83.1%).<sup>[41]</sup> The most probable reason might be that there are discrepancies in socio-demographic profiles, study setting and study participants. Infrastructure limitations like human resource, media, and materials may also be the other possible factors, which indirectly affect the attitude. This study noticed that pregnant women who were in the 15-24 years of age group has improved knowledge regarding COVID-19 compared to older ones above 35 years old. The finding is comparable with studies conducted in Malaysia,<sup>[41]</sup> Ethiopia<sup>[33]</sup> and Egypt.<sup>[36]</sup> This might be due to quick access of data regarding the pandemic through mass media and social media since they are densely exposed to and profoundly use these media.

Furthermore, our study noted that being employed increased the odds of having good level of knowledge compared to house-wives. According to the study finding occupation status was another predictor variable for knowledge as it stated that being a service holder had good knowledge index. This is comparable with a study

in China.<sup>[39]</sup> This might be explained by employed-participants having higher educational achievement that positively affect their knowledge. Moreover, employed women had easy access to information, strategies and interventions regarding COVID-19 that are attributed by the government. In addition, the current finding also stated that the status of current pregnancy was another significant factor for knowledge. Women whose pregnancy was wanted and planned were more likely knowledgeable than their counter parts. The explanation might be women with wanted and planned pregnancy may have higher health care-seeking behavior, as soon as possible including ANC follow-up which permits to get information and counseling regarding the pandemic, its main expression and possible prevention strategies by health care workers. At the same time, unwanted and unplanned pregnancy may have psychological disturbance which may negatively influenced the entire wellbeing of the women. This result is consistent with a study in Ethiopia.<sup>[33]</sup> Regarding to the attitude of pregnant women towards corona virus infection, those between age of 25-34 years has positive attitude towards the infection. Study from Iran<sup>[37]</sup> was also comparable with our study finding. Because of increasing the age, understanding and attitude of women becomes optimistic. In addition, this segment of women 25-34 years may have steady life, higher educational attainment and regular job, which positively affect their knowledge and attitude.

This study also observed a significant relationship between current condition of pregnancy and attitude of women towards COVID-19. Those participants' pregnancy was wanted has positive attitude towards the pandemic. This may be due to the fact that unwanted and unplanned pregnancy has various impacts on women including psychological problems which negatively invades health-seeking behaviors. Once for all, this study noticed that level of knowledge had a strong relationship with attitude regarding the current COVID-19 outbreak. Those participants who were knowledgeable about the pandemic had positive attitude towards it. Findings from Pakistan are also comparable with this result.<sup>[38]</sup> This may be due to the reason that good and detailed knowledge about COVID-19 infection may scale-up women's insight and awareness that might lead to positive attitude towards corona virus pandemic.

## CONCLUSION

Women's age, educational status, occupational status and status of current pregnancy were statistically significant with knowledge of corona virus outbreak. In addition, age, husbands' educational status, condition of current pregnancy and knowledge of outbreak were also the important predictor variables for attitude towards the corona virus pandemic.

## RECOMMENDATIONS

Study recommends multi-center study with large sample size to draw a generalizable finding for the study.

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