# Vaccination Coverage and Knowledge on COVID-19 infection: A Survey Done at Outpatient Departments (OPD) in Community Based Medical College, Bangladesh (CBMC,B) Hospital

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## Abstract

Vaccination is one of the important preventive measures against morbidity and mortality related to the COVID-19 infection. This cross-sectional, descriptive study was conducted among patients attending outpatient departments (OPD) at Community Based Medical College, Bangladesh (CBMC,B) Hospital, Mymensingh, Bangladesh, between March and April of 2022, to determine vaccination coverage and knowledge on COVID-19 infection. We adopted a purposive sampling technique. Data were collected on a pre-designed questionnaire by direct interviewing a total of 150 patients attending at OPD. Respondents' age, sex, occupation, family living and income status, vaccination related data and knowledge level on chain of infection were inquired and recorded on the data sheet. Age of the respondents ranged between 20 and 65 years; mean age was 36.37±11.088 years. 82 were males and 68 were females (male-female ratio was 1.2:1). The majority of respondents were Muslim (95.3%), literate (87.33%), hailing from middle class family (61.33%), and married (78.67%). 33.33% had signs and symptoms suggestive of COVID-19 infection. Corona tests were adopted by 31.33%, 24.67% revealed COVID test positive. 16% was on isolation and 20% received hospital based treatment. 90% of the respondents got vaccinated; 87.33% were fully immunized and 2.67% were partially immunized. Causes for declining vaccine were – do not like, not interested (4.67%) and afraid of complications (5.33%). Correct knowledge of causative agent of COVID-19 as a virus (98.67%), animal reservoir (98.67%), human reservoir (98.67%), source of infection (100%), portal of exit (100%) and susceptible host (100%) were excellent. Correct knowledge mode of transmission as droplet infection (76%) and portal of entry (60.67%) were good.

## Introduction

The COVID-19 pandemic started in Wuhan, China in 2019 as an epidemic presenting as cluster of cases of pneumonia which spreads from person principally through droplet infection. Later on, it got spread throughout the world. The World Health Organization (WHO) included COVID-19 as an international concern to public health on 30 January 2020; the WHO later reclassified the virus as a pandemic on 11 March 2020.[1] The first identified case of COVID-19 in Bangladesh occurred on 8 March 2020. The transmission rate was under control during the initial phase of the outbreak although it started to increase rapidly from April; by early November a total of 400,251 confirmed cases were reported.[2] The government of Bangladesh adopted a rapid response by imposing about two months lock down. However, the lockdown could not continue; the country reported aggravated suicide

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incidences as of economic distress related to the lockdown.[3] The authority also imposed some of the rules and restrictions related to social distancing, mandatory wearing masks, limited transport facilities and traveling etc., as instructed by WHO.[3] Prevention is the mainstay. One of the important measures of prevention is vaccination. Community Based Medical College Hospital, Bangladesh is one of the Medical College Hospitals in Mymensingh located in rural area. Patients attending outpatient departments of a tertiary hospital is vulnerable to get COVID-19 infection. This pandemic is ongoing till now causing huge mortality, morbidity, increased health expenditure and also impacting on national economy and public life.[3] Knowledge of specific diseases acts as an essential component in public health and disease prevention and helps to convince individuals to adhere to public health measures.[2] Besides a previous outbreak (SARS outbreak in 2003) found that community focused health education campaigns which fostered attitudes towards public health measures in individuals helped to obstruct the risk of spreading disease. Bangladesh is a densely populated country with limited health care resources; the control of COVID-19 will be difficult herein without public participation.[4] From epidemiological, social and economic view points, vaccination against COVID-19 is very important5. Hence, we proposed this study to assess the vaccination coverage and knowledge on COVID-19 infection among patients attending outpatient departments (OPD) at Community Based Medical College, Bangladesh (CBMC,B) Hospital.

## Methods

This cross-sectional, descriptive study was conducted among patients attending outpatient departments (OPD) at Community Based Medical College, Bangladesh (CBMC,B) Hospital, Mymensingh, Bangladesh, between March and April of 2022. We adopted a purposive sampling technique. Data were collected on a pre-designed questionnaire by direct interviewing a total of 150 patients attending at OPD. Respondents' age, sex, occupation, family living and income status, vaccination related data and knowledge level on chain of infection were inquired and recorded on the data sheet. Knowledge score below 60% was considered as bad, from 60% to 79% as good, 80% and above as excellent. Data analysis was done by Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows. The study was approved by the Ethical Review Committee of Community Based Medical College, Bangladesh (CBMC,B), Mymensingh, Bangladesh.

## Results

In this study, age of the respondents ranged between 20 and 65 years; mean age was 36.37±11.088 years. 82 were males and 68 were females (male-female ratio was 1.2:1). The majority of respondents were Muslim (95.3%), literate (87.33%), hailing from middle class family (61.33%), and married (78.67%). 33.33% had signs and symptoms suggestive of COVID-19 infection. Corona test was done by 31.33%, 24.67% revealed COVID test positive. 16% was on isolation, and 20% received hospital based treatment (Table-I). 90% of the respondents got vaccinated; 87.33% were fully immunized and 2.67% were partially immunized. Causes for declining vaccine were – do not like, not interested (4.67%) and afraid of complications (5.33%) (Table-II). Correct knowledge of causative agent of COVID-19 as a virus (98.67%)

animal reservoir (98.67%), human reservoir (98.67%), source of infection (100%), portal of exit (100%) and susceptible host (100%) were excellent. Correct knowledge mode of transmission as droplet infection (76%) and portal of entry (60.67%) were good (Fig.1).

**Table-I:** Clinical experience and health behaviour of the respondents (n=150)

| Status | Yes | No |
|---|---|---|
| Signs and symptoms suggestive of COVID-19 | 50 (33.33%) | 100 (66.67%) |
| Corona test done | 47 (31.33%) | 103 (68.67%) |
| Test result positive | 37 (24.67%) | 113 (75.33%) |
| Isolation | 24 (16%) | 126 (84%) |
| Treatment | 30 (20%) | 120 (80%) |

**Table-II:** Vaccination against COVID-19 (n=150)

| Variables | Frequency | Percentage |
|---|---|---|
| **Vaccination received** | | |
| Yes | 135 | 90 |
| No | 15 | 10 |
| **Immunization status** | | |
| Full immunization | 131 | 87.33 |
| Partial immunization | 4 | 2.67 |
| **Causes of vaccine declination** | | |
| Do not like, not interested | 7 | 4.67 |
| Afraid of adverse effects and complications | 8 | 5.33 |
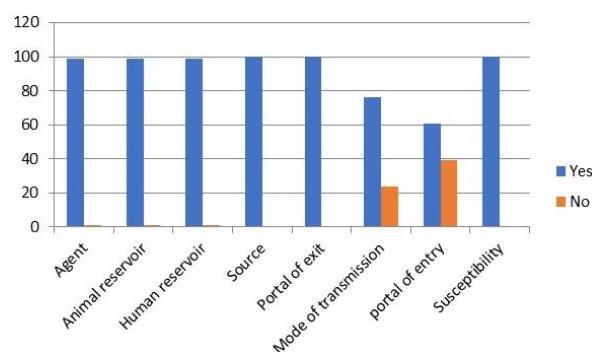


**Fig.1:** Multiple bar diagram showing respondents' knowledge about components of chain of infection (n= 150)

## Discussion

In In this study, age distribution of the respondents ranged between 20 and 65 years; mean age 36.37±11.088 years. The largest group was between 30 to 39 years, then it was on decreasing trend as age advances. 54.67% of the participants were male; male-female ratio was 1.2:1. The majority of respondents were Muslim (95.33%), literate (87.33%), hailing from the middle class family (61.33%) and married (78.67%). In a Chinese study, out of 123,768 respondents, the mean age was 30.3±6.4 years, 70.6% were males and 29.4% were females and 31.1% attained a college degree or above. 8.0% had lived in Hubei Province for the last two weeks, and 56.2% were unmarried.[6] In a Bangladeshi study, out of 10,067 participants, most of the participants (71.3%) were between 20 to 29 years of age; 56.1% were males, 58.4% were students, 70.3% were unmarried.[7] In this study, knowledge inquired were components of chain of infection. Score below 60 percent was considered as bad, from 60 to 79 as good, 80 and above as excellent. Correct knowledge of causative agent of COVID 19 as a virus (98.67%), animal reservoir (98.67%), human reservoir (98.67%), source of infection (100%), portal of exit (100%) and susceptible host (100%) were excellent. Correct knowledge mode of transmission as droplet infection (76%) and portal of entry (60.67%) were good. The results are similar and in several instances better than the findings of studies conducted in our country and neighboring countries. In a Chinese study, the overall mean score of knowledge related to COVID 19 was 16.3. There were 20 items carrying 20 points if all the answers were correct. Therefore, the score expressed in percentage was 81.50%.[6] In a Bangladeshi study, the overall

mean score of knowledge related to COVID-19 was 14.363±3.073. There were 20 items carrying 20 points if all the answers were correct. Hence, the score expressed in percentage was 71.82±15.37.[7] COVID test was done for 31.33% and 68.67% had not done COVID test. 24.67% had COVID test positive, 6.67% had negative result. 16.00% was on isolation, 8.67% was not on isolation. 20.00% was on treatment, 4.67% was not on treatment. In Bangladesh as per official data detection rate is 13.97%.[8] In this study, 90% were vaccinated; 87.33% were fully immunized, 2.67% were partially immunized. In Bangladesh, vaccination coverage against COVID-19 is 50.23%.[9]

## Conclusion

This study was conducted among patients attending outpatient departments in CBMCH, B, Mymensingh on vaccination coverage against COVID-19. Knowledge about components of chain of infection was similar and in several instances better than the findings of studies conducted in our country and neighboring countries. A sign symptom suggestive of COVID 19 was similar to other studies. COVID detection rate was higher than national average. Prevention is the mainstay. Vaccination coverage was better than national average. We have to impart health education to patients attending outpatient departments, CBMCH, B to motivate them for vaccination against COVID-19.

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