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Community Survey, Knowledge and Attitude of Bangladeshi People during the Time of Omicron Variant Emergence

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ABSTRACT

Background: *Several SARS-CoV-2 variants have been discovered in different parts of the world since the COVID-19 epidemic began. The most recent COVID-19 variant to be discovered is the Omicron strain. When we have a thorough understanding of the epidemic, we will be able to respond appropriately. The primary purpose of this research is to assess the level of Omicron variant awareness and understanding among the Bangladeshi people.*

Methods: *In the midst of the appearance of the Omicron variation, a cross-sectional analysis was performed. The survey was conducted from January 3, 2021, to February 5, 2022. Statistical data from the descriptive analysis were displayed as numbers (N), percentages (%), and averages and variances (Mean, Standard Deviation) (m SD). To examine the correlation between the dependent and independent categories, we utilized the Chi-square test (x^2) in SPSS.*

Results: *On average, the 200 respondents were 33.8 ± 12.1 years old. In a survey, more than 55 percent of respondents had a favorable impression of the new COVID-19 variation. However, males and those with lower levels of education felt there were not any measures in place to halt the spread of Omicron, and they lacked information about the disease's symptoms and transmission. The results of our survey indicate that individuals have some knowledge about the new Omicron strain (B.1.1.529).*

Conclusion: *Awareness campaigns and strategic preparation can help improve the dismal response on knowledge and preventative actions shown in the current study. While much progress has been made in our understanding of this virus, there is still a significant knowledge gap (B.1.1.529).*

Keywords
Omicron variant, Bangladesh Community survey, KAP, Omicron knowledge.

Introduction

Since the first case of coronavirus disease 2019 (COVID-19) was discovered in December 2019, several different strains of severe acute respiratory syndrome coronavirus 2 (SARSCoV2) have been discovered. Due to its unique traits, the Delta version was classified as a VOC until the month of November 2021. The CDC has recognized this variant, known as the VOC, as the cause of greater transmission, a more severe illness course, less treatment efficacy, and other concerning aspects. The World Health Organization (WHO) has officially identified the newly emerged, highly mutated SARS-CoV-2 strain, B.1.1.529, as a VOC as of November 26, 2021 [1,2]. Numerous cases have been found after the initial Omicron variant infection was verified from a sample obtained on November 9, 2021 in South Africa and reported to WHO on November 24, 2021 [3]. However, it was later discovered that the first Omicron variant positive patient was actually diagnosed with the variant a full week before the statement from Africa, and interestingly, the first Omicron variant positive patients of Africa were international travelers. Among all the VOC studied to date, the Omicron version has the highest mutation rate, making it more likely to spread and more resistant to the protective effects of the COVID19 vaccination [2,3]. SARS-CoV-2 Omicron is the next possible version of the COVID-19 virus that will spread globally after the D614G, Beta/Gamma, and Delta waves [4]. Unfortunately, as of December 15, 2021, this variation has been discovered in 80 nations throughout the world. In addition, it is affecting people at an alarming rate in Bangladesh as well. As a result, it is crucial to pay attention and do what is necessary to increase surveillance and implement public health measures. To respond effectively, it is necessary to get people thinking about the issue without going overboard [5]. Therefore, this cross-sectional study was conducted at the time of Omicron variant emergence to evaluate general population knowledge and attitude towards this new variant. The emergence of new COVID19 variations like Omicron serves as a sobering reminder that this pandemic is far from over. Until the vaccine is widely distributed, people should remain isolated from one another, use protective gear such masks and wash their hands frequently and ventilate their homes to reduce the spread of the infection. Access to vaccines and other preventative health care is a global need [6].

Methods

At the time of this cross-sectional analysis, the B.1.1.529 variant (also known as the Omicron variant) emerged. From January 3 to February 5, 2022, the research was carried out. A self-structured survey was developed. Approximately 200 residents of both rural and urban Bogura, Bangladesh, took part in the study. We started by finding out what the responder did for a living, how old they were, and where they now lived. Next, we assessed baseline knowledge of COVID-19 new variant (The Omicron), taking into account the knowledge of its symptoms, transmission pathways, and protective mechanisms.

Inclusion and Exclusion Criteria

Responses from individuals who consented to participate were included in the research. Only replies from respondents aged 18 and above were considered. Those who participated but did not agree to have their replies published were excluded.

Ethics and Informed Consent

On the first page of the questionnaire, there were detailed instructions outlining the study's goals and the participants' rights to withdraw at any moment. Everyone who took part in the research knew they could stop at any moment without any repercussions, and they were guaranteed that their participation was optional, anonymous, and confidential. Non-respondents were removed from the analysis.

Statistical Analysis

Quantitative data from the descriptive analysis were shown as numbers (N), percentages (%), and means (m SD). Using SPSS, we conducted a Chi-square test (x2) to examine the relationship between our dependent and categorical independent variables. The paired student's t-test and the Mann-Whitney test were used to evaluate demographic and clinical characteristics of the COVID-19 positive and COVID-19 negative groups, respectively (IBM SPSS Statistics, version 20).

Results

Throughout rural and urban Bangladesh, a total of 200 participants were selected (Table 1). The mean age was 33.8 ± 12.1years. There were 107 people who lived in cities (53.5% of the total) and 93 people who lived in rural regions (46.5%). Approximately 135 (67.5%) of the participants are married. Among the participants, 82 (41.4%) are stay-at-home moms, while the remaining participants are self-employed (15, 7.6%), employed by the government (2, 1.0%), and in business (12, 6.1%). Of these, 32 (16.0%) are regular smokers, and 25 (12.5%) use tobacco in some other form. Of the total participants, 161 (80.5%) had monthly incomes of less than 10,000 tk, whereas 39 (19.5%) have monthly incomes of 10,000 tk or more (Table 1). Fever was reported by 70 patients (37.8%), followed by headache by 17 patients (9.2%). Only 2.2% of people had trouble breathing, while 8.6% had a dry cough, 6.6% got tired, and 4.9% had lost their sense of taste or smell. According to the Co-morbidity variable, 45.5% of patients suffered from diabetes mellitus, 30.0% had hypertension, and 16.5% had ischemic heart disease (Table 1). For the COVID-19 RT-PCR, 44.5% participants came out to be Covid-19 positive on RT-PCR (Figure 1) while females had a greater prevalence (56.2%) than males (43.8%) (Table 2). While the age distribution among positive cases showed that patients aged 30-39 years were the most effected (36%) while the least effected (12.4%) were above 50years of age (Figure 2). For signs and symptoms such fever ($p < 0.05$), dry cough ($p < 0.05$), trouble breathing ($p < 0.05$), loss of taste or smell ($p < 0.05$), headache ($p < 0.05$), and co-morbidity with COVID-19 patients, there was a significant difference between positive and negative RT-PCR results. Patients with a positive or negative PCR result for COVID-19 did not differ significantly with respect to gender,

waist circumference, or core body temperature (Table 2). Among all the positive cases 90.6% got recovered without the need of Intensive care (ICU), while 9.4% eventually required the ICU support, however all the positive cases got recovered without any mortality (Figure 3).

Table 1: Sociodemographic characteristics of study subjects.

Variable	Mean ± SD or number (%)
Age (years)	33.8 ± 12.1
Gender	
Male	99 (49.5)
Female	101 (50.5)
Residence	
Rural	93 (46.5)
Urban	107 (53.5)
Anthropometric and behaviour parameters	
Weight (kg)	52.6 ± 12.1
Height (cm)	151.5 ± 5.3
Body mass index (kg/m^2)	22.9 ± 2.7
Waist circumference (cm)	97.4 ± 3.2
Body temperature (F)	98.2 ± 1.2
Smoking habit (%)	32 (16.0)
Tobacco consumption (%)	25 (12.5)
Educational level	
No education	17 (8.5)
Primary education	59 (29.5)
Secondary education	102 (51.0)
Higher education	22 (11.0)
Marital status	
Unmarried	65 (32.5)
Married	135 (67.5)
Occupation	
Housewife	82 (41.4)
Self-employment	15 (7.6)
Government Job	2 (1.0)
Non. Government Job	2 (1.0)
Business	12 (6.1)
Day labour	27 (13.6)
Others	58 (29.3)
Monthly income (BDT)	
<10000	161 (80.5)
>=10000	39 (19.5)
Signs and symptoms	
Fever	70 (37.8)
Dry cough	16 (8.6)
Tiredness	12 (6.6)
Difficulty breathing	4 (2.2)
Loss of tests or smell	9 (4.9)
Headache	17 (9.2)
Co-morbidity	
Diabetes mellitus	91 (45.5)
Hypertension	60 (30.0)
Heart disease	33 (16.5)
Chest pain	44 (22.0)
Kidney disease	23 (11.5)
Pulmonary disease	23 (11.5)
Asthma	34 (17.0)

Values are presented as mean ± SD for continuous variables and number (%) for categorical variables.
SD: standard deviation.

Table 2: Characteristics of respondents corresponding to Omicron variant COVID-19.

Variable	COVID-19 Positive	COVID-19 Negative	*P value*
Age (years)	36.4 ± 10.7	31.8 ± 12.7	0.007*
Gender			
Male	39 (43.8)	65 (54.1)	0.150
Female	50 (56.2)	51 (45.9)	
Residence			
Rural	28 (31.5)	65 (58.6)	<0.001*
Urban	61 (68.5)	46 (41.4)	
Anthropometric and behaviour parameters			
Weight (kg)	52.4 ± 7.2	52.8 ± 7.5	0.746
Height (cm)	151.4 ± 6.1	151.7 ± 4.6	0.673
Body mass index (kg/m^2)	22.8 ± 2.5	22.9 ± 2.8	0.877
Waist circumference (cm)	98.0 ± 2.1	97.0 ± 3.8	0.036*
Body temperature (F)	98.3 ± 0.8	98.1 ± 1.4	0.206
Smoking habit	11 (12.4)	21 (18.9)	0.209
Tobacco consumption	10 (11.2)	15 (13.5)	0.628
Signs and symptoms			
Fever	43 (48.3)	27 (28.1)	0.005*
Dry cough	13 (14.6)	3 (3.1)	0.006*
Tiredness	11 (12.9)	1 (1.0)	0.001*
Difficulty breathing	4 (4.5)	0 (0.0)	0.036*
Loss of tests or smell	8 (9.0)	1 (1.0)	0.012*
Headache	14 (15.7)	3 (3.1)	0.003*
Co-morbidity			
Diabetes mellitus	61 (68.5)	30 (27.0)	<0.001*
Hypertension	40 (44.9)	20 (18.0)	<0.001*
Ischemic heart disease	27 (30.3)	6 (5.4)	<0.001*
Kidney disease	11 (12.4)	12 (10.8)	0.733
Pulmonary Disease	23 (25.8)	0 (0.0)	<0.001*
Asthma	19 (21.3)	15 (13.5)	0.143
Chest pain	31 (34.8)	13 (11.9)	<0.001*

Values are presented as mean ± SD for continuous variables and number (%) for categorical variables.
Based on T-test for continuous variable and Pearson Chi-square test for categorical variable.
COVID-19: coronavirus disease-2019; SD: standard deviation; *$P < 0.05$.

Table 3: The association of co-morbidity of Omicron variant COVID-19 with age group among the general population.

Co-morbidity	Age<30=1	30-39	40-49	Age 50	*P value*
Diabetes mellitus	28(37.3)	32(54.2)	21(46.7)	10(47.6)	0.273
Hypertension	21(28.0)	22(37.3)	9(20.0)	8(38.1)	0.218
Ischemic heart disease	7(9.3)	11(18.6)	8(17.8)	7(33.3)	0.061
Kidney disease	0(0.0)	5(8.5)	8(17.8)	10(47.6)	<0.001*
Pulmonary Disease	8(10.7)	8(13.6)	4(8.9)	3(14.3)	0.859
Asthma	1(1.3)	6(10.2)	17(37.8)	10(47.6)	<0.001*
Chest pain	16(21.3)	16(27.1)	8(17.8)	4(19.0)	0.684

Values are presented as Percentage n (%). Based on Pearson Chi-square test. Significant at p<0.05*. COVID-19: coronavirus disease-2019.

Table 3 displays the correlation between age and the prevalence of the Omicron variation COVID-19 in the general population; this correlation is statistically significant for renal disease ($p < 0.001$) and asthma ($p < 0.001$) using Chi-square analysis at the $p < 0.05$ level. Table 3 shows that the rest of the comorbidities experienced by COVID-19 participants, however there was no statistically

significant difference between them. As can be shown in Table 4, there is a statistically significant relationship between ICU care, O2 therapy, diabetes, hypertension, and ischemic heart disease. Hypertension had an OR of 1.86 (CI = 1.31-2.63, p < 0.001), ischemic heart disease had an OR of 1.69 (CI = 1.24-2.32, p = 0.001), and O2 therapy had an OR of 1.47 (CI = 1.10-1.98, p = 0.010). Diabetes mellitus had the highest odds ratio (OR 2.89, CI 1.88-4.45, p < 0.001) among the relevant indicators (Table 4).

Table 4: Univariate regression analysis corresponding to Omicron variant COVID-19 (negative vs. positive).

Variable	Regression analysis		
	Odds ratio (OR)	**95% CI**	***P Value***
Age (years)	1.0	1.00-1.01	0.572
Gender	1.02	0.69-1.51	0.921
Body temperature (F)	1.0	1.0-1.01	0.141
Weight (kg)	1.0	1.0-1.01	0.130
Height (cm)	1.0	1.0-1.003	0.134
Body mass index (kg/m^2)	1.01	1.01-1.02	0.135
Waist circumference (cm)	1.0	1.0-1.01	0.156
Intensive care unit (ICU) support	1.44	1.08-1.93	0.014*
O2 Therapy	1.47	1.10-1.98	0.010*
Smoking habit	1.15	0.85-1.56	0.355
Tobacco consumption	1.22	0.90-1.64	0.199
Diabetes mellitus	2.89	1.88-4.45	<0.001*
Hypertension	1.86	1.31-2.63	<0.001*
Ischemic heart disease	1.69	1.24-2.32	0.001*

COVID-19: coronavirus disease-2019; CI: confidence interval; * *P* < 0.05. Based on binary logistic regression.

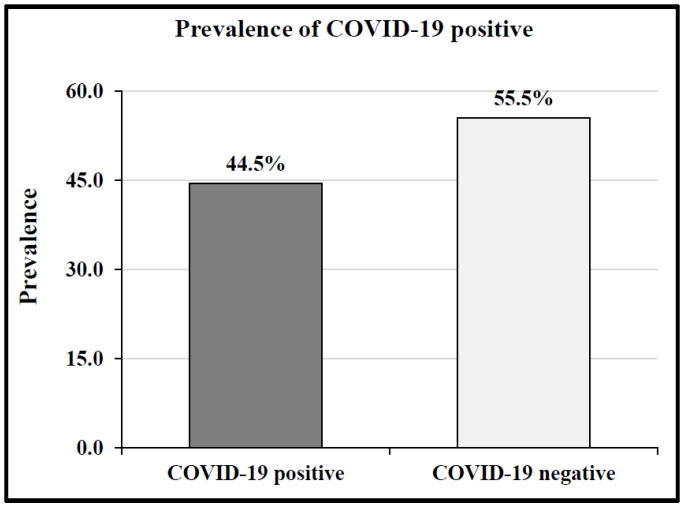

Figure 1

Discussion

When it comes to an infectious disease, people's knowledge, attitudes, and habits may be influenced by the severity of the illness, the extent of its spread, and the fatality rate. When the COVID-19's most recent variation, Omicron, first appeared, this study was conducted in Bangladesh. More than 55% of those surveyed had positive opinions about COVID-19 new strain, the Omicron. Male and less educated respondents reported using ineffective Omicron prevention strategies and having little knowledge of the disease's symptoms and transmission. Furthermore, in Bangladesh, almost half of respondents reported having "good awareness" of the Omicron variation, with age and education playing a significant role in understanding and preventative measures [7]. However, there was an emotional health declined in younger age groups.

It is important to pay greater attention to the decline in emotional health and rise in negative life evaluations among younger age groups. According to Wang et al., [8], during the COVID-19 pandemic, adolescents not only had to deal with the normal stress of adolescent development, but also the stress of COVID-19 and then its new variants, which presented challenges and dilemmas in meeting needs, acquiring skills, and forging relationships with others. This increased the risk of maladjustment and a decline in personal wellbeing.

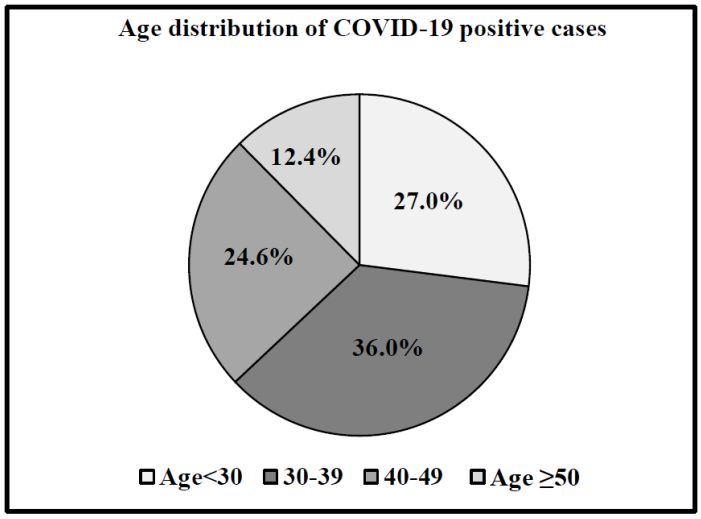

Figure 2

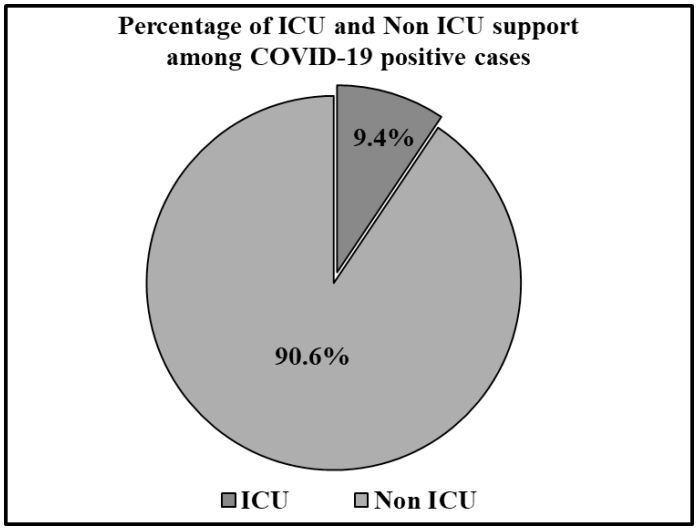

Figure 3

With regard to Omicron preventative practices, the socio-demographic status of the individuals in this study revealed

important disparities. Females were more willing to cooperate with hygienic practices for epidemic prevention and limit public activities than males, indicating a generally higher risk knowledge of the disease [9]. Furthermore, younger groups are more susceptible to "optimistic bias," which makes them feel less vulnerable than others [10,11], which may explain why they were less likely to engage in COVID-19 preventative behavioral interventions. Inaccurate risk assessment would result in younger persons having a lower impression of disease risk than older ones, which would lead to decreased adherence to preventative activities [12]. It is recommended that future research examine the optimism bias and perceived illness susceptibility; in practice, it is advised to raise the younger groups' risk knowledge of susceptibility to COVID-19 in order to prevent infection.

Limitations

This study has a number of limitations. First off, participants' subjective self-reports of their COVID-19 preventive activities in this study may not accurately reflect their real COVID-19 preventative actions. The second limitation of our study was that we were unable to compare the knowledge, attitudes, and actions of the respondents across age groups, genders, levels of education, marital statuses, and occupations. The fact that the measures we employed to assess the respondents' knowledge, attitudes, and actions were not consistent constituted another research limitation.

Conclusion

In conclusion, the current study discovered that the study population had a positive opinion of the new COVID-19 version, the Omicron. However, because a sizable portion of the participants were illiterate, their understanding of and adherence to COVID-19 preventative methods were insufficient, indicating the urgent need for mass media and communication-based awareness activities. Additionally, it is worrisome that younger generations are showing signs of declining emotional health. In order to better control COVID-19 and its variants, the findings of this study may be used as a basis for creating public awareness campaigns and guiding the actions and policies of the nation's health authorities.

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