ORIGINAL ARTICLE

Prevalence, symptom and severity of COVID 19 among permanent residents of Dhaka City

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Abstract

A study was done on 385 people who survived from COVID 19 to assess the prevalence, symptom, and severity of COVID 19 of permanent residents of Dhaka city, Bangladesh during the second wave of corona manifestation. Data were collected purposively from a government and a private hospital, and general people taking treatment from home. A significant number of respondents took treatment from the Hospital during 2nd wave of COVID 19. Two-third of participants endured moderate (67.5%) type of suffering followed by mild (18.7%) and severe (13.8%) type of suffering. Most of the participants were married (88.8%) and female (51.2%). There was no significant difference between females and males suffering and the risk and severity of COVID 19 (p=694). Most of the participants (70%) had comorbidity. Time to recover from symptoms had significant relation with symptom patterns. One-third of the respondents (33%) required 4-7 days to recover from suffering. A little higher than a quarter (27.8%) recovered within 8 to 14 days and more than a quarter 105 (27.3%) recovered by 8-12 days respectively. Most of the respondents had a fever, cough, body ache and fatigue, sore throat, and breathing difficulty. Only (7.3%) had diarrhea (3.9%) and smell loss 13 (3.4%). People of permanent residence of Dhaka city suffered from COVID 19 irrespective of sex, education, professional status. They had comorbidity, required 8-14 days of hospitalization, and endured the moderate type of suffering of COVID-19.

Keywords: COVID 19 pandemic, situation of COVID 19, second wave, Dhaka city, Bangladesh

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Introduction

COVID 19 has affected 188 countries in the world. The cases of novel virus 2019-nCoV, latter known as COVID 19 was detected in Wuhan China, and first reported on December 31 when people are suffering from severe acute respiratory syndrome-like SARS-CoV outbreak [1]. Almost within a month, by 24th January the disease was spreading to a global level and the burden of risk and death was increasing in the United States, Europe, Thailand, Japan, South Korea, Singapore, Vietnam, Taiwan, and Nepal [2]. Dr. Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (WHO) declared COVID 19 pandemic on March 11, 2020 [3]. Bangladesh published its first case of COVID 19 on March 8, 2020, who returned from Italy [4]. Then Bangladesh experienced a disease burden of 1,580,750 infected patients; deaths toll 28,043 respectively reporting till 17 December at 9 pm [5].

Report from Bangladesh was found that male was predominate to COVID 19 infection [6,7]. The government of Bangladesh also reported that the prevalence of COVID 19 among males are higher than females [8]. However, elsewhere report found that there was no significant difference between males and females in risk and severity of COVID 19 [9].

The elderly, hypertension, and diabetes have shown a worse prognosis of COVID 19. The report showed that diabetes had a link to more hospitalization and intensive care unit (ICU) admissions [10]. A high number of hospitalizations, intensive care, and ventilation support was found among the patients with asthma and COPD as well in Turkey [11]. The most common comorbidities of COVID patients were hypertension (56.6%), obesity (41.7%), and diabetes (33.8%) respectively in the USA [12]. However, hypertension was more common comorbidity in COVID 19 followed by asthma, chronic kidney diseases, and diabetes from Bangladesh [7]. The prevalence rate of diabetes, hypertension, and cardiovascular

disease (CVD) in COVID 19 patients varied in different country-specific data [13,14]. Moreover, no research has yet been done on time required for hospital stay during being infected by COVID 19.

Many of the studies were done on Bangladesh from specific hotspots or specific districts of Bangladesh. No report has yet been identified between the permanent residents of Dhaka city with risk and severity of COVID 19 those who reside with high hygiene, lighter population density, and a higher sense of physical and medical security at least theoretical term. This article tried to highlight the relation between gender, education, professional level, hospital stay, and the symptom and severity of COVID 19 in permanent residents of Dhaka city during the second wave of corona manifestation.

Materials and Methods

A retrospective cross-sectional study was done on 385 people, who survived from COVID 19 during the second wave of the corona, aged between 18 years and above to assess the prevalence, symptom, and severity of COVID 19 in permanent residents of Dhaka city, Bangladesh. Data were collected purposively according to the selection criteria, using a self-administered structured questionnaire from the Corona unit of a private (Shahabuddin Medical College Hospital), a government (Dhaka Medical College Hospital), and general people taking treatment at home. COVID 19 positive people confirmed by RT-PCR were recruited in this study. The risk and severity of COVID 19 were divided into three groups according to stay of hospital e.g. mild (4-7 days), moderate (8-14 days), and severe (16-21 days).

Informed consent was obtained from the participants after getting ethical clearance from the National Research Ethics Committee (NREC) of Bangladesh Medical Research Council (BMRC). To assure anonymity, no names or identifying information was included in the self-administered

questionnaire and the report. Participants had the right to refuse to respond to any question or withdraw from the study at any time.

Data were analyzed by using SPSS version 25.0 software IBM 2021, where marginal error-5%, CI-95%, and response distribution-50%. Demographic and other variables were analyzed by frequency and percentage distribution. The Chi-square test (x2 test) was done for the comparison mean. A $p < 0.05$ was considered statistically significant.

Results

Demography

The mean age ±SD of the respondents was 48.91 ±.15.57 range from 18 to 87 years of age. There were 197 (51.2%) females and 187 (48.6%) males among 385 respondents. There were 342 (88.8%) married, 30 (7.8%) unmarried and 13 (3.8%) widow respectively (Table 1). Most of them (70%) were educated where more than one third was graduate 152 (39.5%) from university and a little more than a quarter 119 (30.9%) had a postgraduate degree (Table 2). The profession of the

participants was varied. Most of them were housewives 163 (42.3) followed by Business 52 (13.5%), private service 48 (12.5%) and Government service 44 (11.4%) and self-employed 44 (10.9%) respectively (Table 2). Most of the respondents had no income 190 (49.4%). More than a quarter 133 (34.7%) had income between 25-50 thousand, one-tenth 38 (9.9%) had income between 50 thousand to 1 lac and 11 (2%) had more than 1 lac respectively. Only 13 (3.8%) had income less than 25 thousand (Table 2).

Health condition before being infected by COVID 19

Before corona infection most of the respondents had comorbidity. Comorbidities had significant relationships with the risk and severity of COVID 19 (p=.000). More than a quarter had the pulmonary problem (Asthma-110 (28.6%), Diabetes 74 (19.2%), Hypertension 30 (7.8%) respectively. Diabetes was common in multiple comorbidities. Diabetes with hypertension 33 (8.6%), diabetes, hypertension with a history of surgery 10 (2.6%), and diabetes with hyperthyroidism 2 (0.5%) respectively. Some did not have any problem 88 (22.9%) at all (Figure 1). Only a quarter 100 (26%) were on the hypertensive drug.

Table 1. Socio-demographic characteristics of the respondents (n=385)

| Variable	Range	Value (Percentage)	Remark
Age	Minimum	18	Mean ± SD 48.91 ±.15.57
	Maximum	87	
Sex	Female	197 (51.2%)	
	Male	187 (48.6%)	
Marital Status	Married	342 (88.8%)	
	Unmarried	30 (7.8 %)	
	Widow	13 (3.8%)	
Income	No income	190 (49.4%)	
	25-50 thousand	133 (34.7%)	
	50 thousand - 1 lac	38 (9.9%)	
	> 1 lac	11 (2%)	
	<25 thousand	13 (3.8%)	

Health condition during being infected COVID 19

More than half of the respondents 260 (67.5%) had moderate symptoms during COVID 19 infection. Of 62 (18.7%) had mild symptoms and 55 (13.8%) had severe symptoms during the corona pandemic (Table 2). In our study females suffered a little more moderate and severe form symptom than males. But there was no significant difference in risk and severity of COVID 19 between males and females (P=694) (Table 2). A significant number of respondents took treatment from Hospital during the 2nd wave of COVID 19 (p=.000). More than a half of respondents 247 (64.2%) were hospitalized and more than a quarter 138 (35.8) took medicine staying at home (Table 2). Time to recover from symptoms had significant relation with symptom pattern (p=.000). Most of the respondents 127 (33%) required 4-7 days to recover. More than quarter 107 (27.8%) recovered within 12 to 14 days and more than a quarter 105 (27.3%) recovered by 8-12 days respectively (Table 2). Table 3 showed the symptom during COVID 19. Most of the respondents had a fever, cough, body ache and fatigue, sore throat, and breathing difficulty. Only 28 (7.3%) had diarrhea 15 (3.9%) and smell loss 13 (3.4%) (Table 3).

Discussion

Demography: In our study, the maximum participants were females (51.2%) and housewives (42.3%). Research by Nazneen et al (2020) had also more female participants than males [6]. Females are easily approachable to ask a question and are more altruistic than males may be the cause of the more female respondents in our study [15]. In our study, there was no significant difference between males and females in risk and severity of COVID 19 which is consistent with the result of Jin et al. (2020) [9]. However, the Government of Bangladesh database shows that the prevalence of COVID 19 among males are higher than females [8]. WHO also said that males are infected more than females and males are higher than females in all death reporting [16]. Jin et al said that there was no difference between susceptibility of COVID 19 in males and females though men may have sought more care than females and males might have sought more care in the Government reporting system [9].
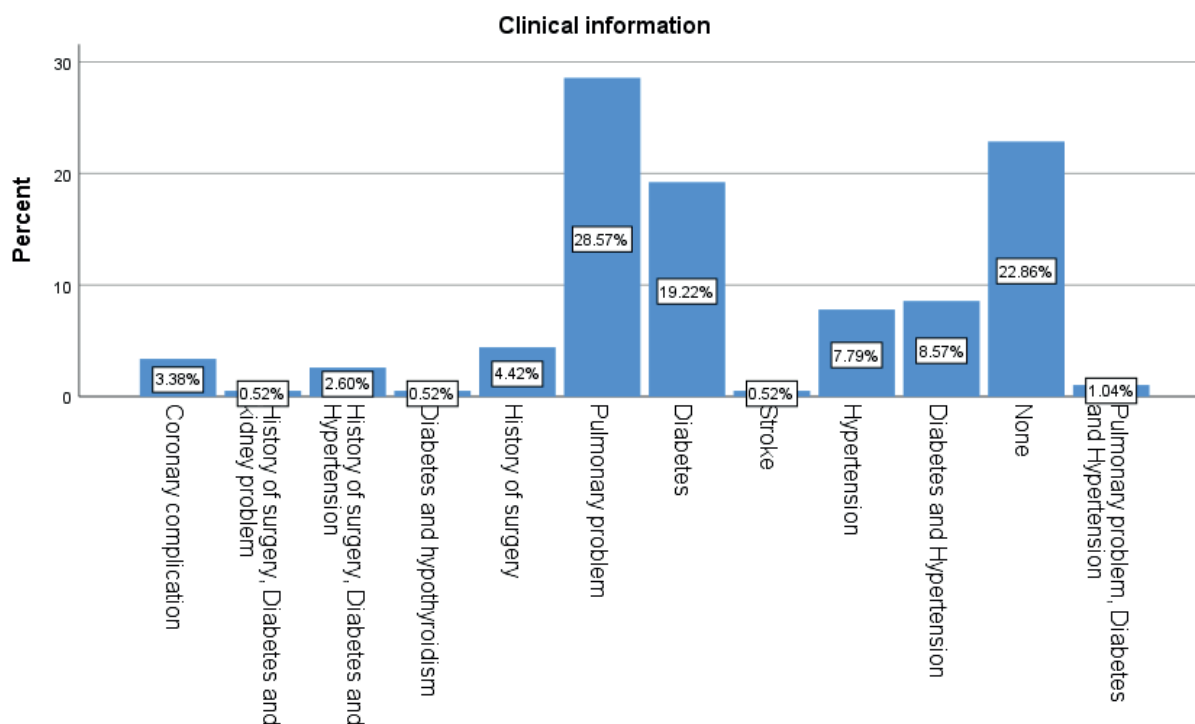
Figure 1. Clinical information of the respondents before infected by COVID 19 (n=385)

In our study, the majority of the participants were married (88.8%) and almost three-quarters were educated (70.4%). Most of them were graduates and above. Our research was done in a capital city-based setting may be the result of a higher educated population. In our research, almost half (49.4%) had no income. According to the social culture of Bangladesh, the housewife had no personal income as they usually lived on and were maintained by husbands. In addition, students, retired persons, and unemployed participants did not have a monthly salary.

Table 2. Health condition during COVID 19 (n=385)

Item	Specification	Mild	Moderate	Severe	Total/Percentage	*p*
Symptom pattern	-	72 (18.7%)	260 (67.5%)	53 (13.8%)	-	-
Gender* **Symptom pattern Cross tabulation**	Female	34	134	29	197 (51.2%)	0.694
	Male	38	126	24	187 (48.6%)	
Education* **Symptom pattern Cross tabulation**	Graduation	31	105	16	152 (39.5%)	0.144
	Post-graduation	25	81	13	119 (30.9%)	
	Secondary School Certificate (SSC)	16	72	24	2 (0.5%)	
	Below class ten	0	2	0	112 (29.1%)	
Profession* **Symptom pattern Cross tabulation**	House wife	26	111	26	163 (42.3%)	0.334
	Business	8	37	7	52 (13.5%)	
	Self-employed	11	27	4	42 (10.9%)	
	Private Service	14	30	4	48 (12.5 %)	
	Government Service	8	31	5	44 (11.4%)	
	Student	2	8	3	13 (3.4%)	
	Retired	2	10	4	16 (4.2%)	
	Rikshaw puller	0	6	0	6 (1.6%)	
	Unemployed	1	0	0	1 (0.3%)	
Place of taking treatment* **Symptom pattern cross tabulation**	Home	52	86		138 (35.8%)	0.000
	Hospital	20	174	53	247 (64.2%)	
Time to recover from symptoms* **Symptom pattern cross tabulation**	2 to 3 days	3	7	0	10 (2.6%)	0.000
	4 to 7 days	35	90	2	127 (33%)	
	8 to 12 days	21	73	11	105 (27.3%)	
	12 to 14 days	8	73	26	107 (27.8%)	
	15 to 21 days	5	17	14	36 (9.4%)	

Table 3. Symptom of the despondence during COVID 19 (n=385)

Symptom during COVID 19	Total / Percentage
Fever	16 (4.2%)
Fever, body ach and fatigue	13 (3.4%)
Fever, cough, body ach and fatigue	93 (24.2%)
Fever, cough and fatigue	44 (11.4%)
Cough and sore throat	5 (1.3%)
Fever and loss of smell	13 (3.4%)
Fever, cough and breathing difficulty	14 (3.6%)
Fever, cough, body ach and diarhoea	43 (11.2%)
Fever, cough, sore throat, body ach and fatigue	34 (8.8%)
Fever, cough, body ach and sore throat	40 (10.4%)
Fever and headache	1 (0.3%)
Cough	2 (0.5%)
Fever, cough and headache	3 (0.8%)
Fever and chest pain	2 (0.5%)
Fever and cough	30 (7.8%)
Fever and body ach	12 (3.1%)
Fever and fatigue	20 (5.2%)

In our study, we did not find any significant relationship between education, profession, and severity of COVID 19. No research has been found yet on the permanent residence of the capital city to compare our result.

Health condition before COVID infection: In our study, most of the respondents (77.1%) who were infected by COVID 19 had several comorbidities. Most of them had respiratory disease (28.6%), followed by diabetes (19.2%) and hypertension (7.8%) respectively. But rest had multiple comorbidities where diabetes was common (Figure 1). However, another study from Bangladesh showed that hypertension was more common comorbidity followed by asthma, chronic kidney diseases, and diabetes [7] and elsewhere in the world [13,14]. Most of our study population were urban, females and housewives may be the result of higher asthma followed by endocrine disease. Urban people use LPG gas for cooking causing asthma [17]. Literature also showed that asthma and Type 2 DM are two common chronic conditions of increasing prevalence and that often coexist in the same patient may be the result of higher asthma followed by endocrine in our study [18]. Some said that there was a relationship between asthma on diabetes but not significant, except for in patients with severe asthma [19].

Health condition during COVID infection: In our study, most of the respondents had several comorbidities before being infected with COVID 19. Therefore, a significant number of respondents need hospital treatment that increases the burden of government during 2nd wave of the corona. The report said that elderly, hypertension, and diabetes had a worse prognosis of COVID 19, and diabetes had been linked to more hospitalization and intensive care unit (ICU) admissions [10]. Our result was consistent with this result. Therefore, in our study, time to recover from COVID symptoms had significant relation with symptom patterns. As most of the respondents had comorbidity, they present moderate types of symptoms. The majority of the respondents 212 (54.1%) required 8-14 days to recover, where more than quarter 107 (27.8%) recovered within 12 to 14 days and more than a quarter 105 (27.3%) recovered by 8-12 days respectively. Most of the respondents had a fever, cough, body ache and fatigue, and sore throat. Hossain et al found that the most common symptom was fever followed by dry cough (60.5%), shortness of breath (52.3%), fatigue (43.7%) and sore throat (36.0%) diarrhea (49.2%), and alteration of consciousness (25%) [7]. We did not check the separate entity of symptom rather consider the combination of symptom

patterns the respondent had. However, our study was consistent with the study of Hossain et al [7].

Limitation: There were certain limitations in the present study. The research was questionnaire-based and hence the results relied upon the reply of participants received. All the questions have not been explored to the same extent. However, this study was done at Dhaka city only and data were collected from one private, one Government hospital, and permanent city dwellers. Furthermore, most of the participants were female, this may also have had subject to gender bias. Hence it needs to be validated by further study with a larger sample size in Bangladesh shortly.

Conclusion

People of permanent residence of Dhaka city suffered from COVID 19 irrespective of sex, education, professional status. Most of the participants had comorbidity, required 8-14 days of hospitalization, and endured the moderate type of suffering of COVID-19. Fever, cough, body ache and fatigue, and sore throat were the common symptoms during COVID 19. *Recommendations:* The general population needs public health education and awareness on non-communicable diseases to reduce being infected with COVID 19 and any other disease in the future that lessen the burden on health care.

Conflict of interest
Authors declared no conflict of interest.

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