Assessment of home health care seeking behaviors and socio-demographic impact on the recovery time of COVID-19 patients: A cross-sectional study in Bangladesh

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Introduction: Primary care treatment and home care received considerable importance for the management of COVID-19. This study aimed to assess health-seeking behaviors and identify factors related to the early recovery time of COVID-19 patients who recovered by taking treatment at home. **Methods:** A mobile and online-based, cross-sectional survey was conducted; patients' socio-demographic, clinical, pharmacological, and non-pharmacological treatment-taking behaviors were assessed. Basic frequency distribution and binary logistic regression were applied to data analysis. **Results:** Out of 241 COVID-19 patients, the majority adopted various non-pharmacological approaches [e.g., drinking hot drinks (85.9%), inhaling steam/gargling warm water (75.1%), consuming vegetables and fruits (67.6%) daily] and pharmacological interventions. Paracetamol (97.1%) consumption, followed by antihistamines (79.6%) and antibiotics (61.4%), were the frequent pharmacological medication taken by COVID-19 patients. Females, older and urban people were more inclined to adopt the non-pharmacological interventions than their counterparts. Inferential statistics suggested that socio-demographic characteristics and pre-existing diseases were associated with recovery time. Patients living in urban areas had higher chances of recovering early from COVID-19 than rural (OR: 3.26, 95% CI: 1.19-8.95). Respondents without pre-existing diabetes (OR: 2.76, 95% CI: 1.00-7.57) significantly recovered early from COVID-19 infection.

Conclusions: The study concludes that, along with pharmacological medication, home remedies may help recover patients early from COVID-19 infection, reducing unnecessary healthcare burdens such as hospitalisation during an outbreak in the least developed countries like Bangladesh.

Keywords: COVID-19; Home health-seeking; Pharmacological and Non-pharmacological interventions; Recovery measures; Bangladesh.

Introduction

Since December 2019, the world has been confined to an obstinate threat named Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2). This virus has spread worldwide and caused a devastating coronavirus pandemic, later announced as the Coronavirus Disease-2019 (COVID-19) by the World Health Organization (WHO).[1] Almost all the countries worldwide faced its ramification.[2]

Bangladesh has also been facing this seemingly inexorable COVID-19 outbreak, with 1,514,456 incidences and 26,563 deaths till 30th August 2021.[2] Although the infection still exists, there is a lack of COVID-19 testing equipment and dedicated hospital beds in the country.[3] The number of general beds was minimized to 9,807 beds from 10,474 beds as of 28th March 2021.[4,5] Centralized policy and inequality in health care facilities compelled the patients to take care at home, and there was no specialized hospital in most divisions. About 34% of the total COVID-19 dedicated general beds were in Dhaka city, and 2,542 out of 3,329 beds were occupied.[5] Therefore, despite the intention of going to hospitals, many infected individuals could not get to the hospital facilities and developed a preference for taking medications at home. When the survey commenced, only 13,356 COVID-19 patients out of 88,993 patients were taking treatment at hospitals, whereas more than 80% of patients were taking treatment at home.[6] Studies demonstrated pervasive mistrust of the Bangladeshi people of the health system and healthcare providers during the COVID-19 pandemic.[7,8] This distrust made people reluctant to seek medical treatment at the hospital. Moreover, this unprecedented pandemic massively disrupted the economy and raised poverty to 40.9% from 20.5% in 2020, making it difficult for many people to afford hospital treatments.[9]

Various pharmacological and non-pharmacological approaches have been taken into consideration for treating COVID-19 patients. Among non-pharmacological interventions, a healthy diet with nutritional value is considered very important. Fresh and unprocessed foods, including fruits and vegetables containing sufficient vitamins, minerals and proteins, were highly recommended.[10] Warm water and steam inhalation may be beneficial for respiratory symptoms. Hot drinks, especially tea and gargling with warm water, were useful in reducing sore throat and cough.[11] Various vitamins such as A, C, D, and minerals have been used for strengthening the immune system to fight against SARS-CoV-2.[12] Although direct evidence of reducing the viral load by these non-pharmacological approaches has yet to be confirmed, these gain significant attention as primary treatments and a form of home management. Most of the pre-existing drugs were used as pharmacological treatment and to treat symptoms associated with the disease. For example, paracetamol was used as antipyretics and analgesics, while antihistamines were used for respiratory symptoms, including cough, sore throat, and runny nose.[13] Antibiotics have been used extensively for the treatment of COVID-19 patients since many respiratory bacterial infections were associated with the disease. Several antiviral drugs (e.g., Favipiravir, remdesivir) and antiparasitic drugs (e.g., ivermectin) have been utilized as promising therapeutic options. Additionally, numerous drugs were being investigated for their potential activities against SARS-CoV-2.[14]

Many epidemiologists and infectious disease experts have warned that this novel disease will not disappear soon and advised people to adapt to safety and precautionary practices.[15] Hence, it is

essential to know what interventions were taken and which medicines were consumed by the COVID-19 patients at home. Moreover, the majority of the patients had mild to moderate symptoms. They recovered at home without special care and treatments. Due to the unavailability of any effective option and promising vaccine, infected individuals who did not require hospitalization were recommended to strengthen their immunity and follow home remedies. We, consequently, aimed to assess the health-seeking behaviors and identify the factors related to the early recovery time of COVID-19 patients who recovered by taking treatment at home.

Methods

Ethical considerations

Ethical Review Committee of the Public Health Foundation, Bangladesh (Reference number: PHFBD/ERC/03/2021) approved this study. All participants were provided with an informed consent form that concisely described the purpose, aims, and procedures of the research. Confidentiality of the information was strictly maintained.

Study design and participants

This cross-sectional, mobile, and online population-based survey was carried out from 15th October 2020 to 5th January 2021 among the patients diagnosed with COVID-19 who recovered without any hospital treatment by adopting home-based interventions and medications. A convenient sampling technique was employed to include participants of diverse age groups, education and socioeconomic status. For a population of 90000 (patients taking treatments at home) with 95% CI and an 8% margin of error, the required sample size was 150. However, we invited twice the required participants (300). Eight enumerators were chosen to ensure participants from all administrative divisions (Barishal, Chattogram, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, and Sylhet). The criteria for including participants were being willing to participate, being a Bangladeshi resident, having access to the internet, and being recovered by taking treatment at home. The exclusion criteria were incomplete form, and participants recovered in hospitals.

Data collection instrument

Initially, a semi-structured questionnaire was designed by a team of public health experts, statisticians and graduate students. The questionnaire was in both Bangla and English, the two most commonly used languages in Bangladesh. After drafting the questionnaire based on previous literature, it was sent to a panel of experts. Two experts reviewed the questionnaire for validation by rating each item for its representativeness and clarity. Next, a pretest was conducted on a sample of 10 people to identify any ambiguous and difficult questions. The questions thus identified were either reformulated or eliminated. The questionnaire was then finalized using a Google Form.

The final questionnaire had four sections; six questions in the first section regarding the socio-demographic characteristics and seven questions in the second section to identify the clinical features of the patients and confirm their infection. The clinical symptoms were selected as per the Centers for Disease Control and Prevention (CDC) guidelines.[16] The third section consisted of five questions to identify the non-pharmacological interventions and remedies taken by the subjects. The interventions were selected based on national guidelines on the clinical management of COVID-19 and WHO COVID-19 recommendations.[10,17,18] The final section consists of questions regarding the types of medication such as paracetamol, antibiotic, and antiviral drugs consumed by the respondents to cure or relieve the symptoms. The medicines were selected based on the COVID-19 treatment options recommended in the national guidelines, CDC guidelines, and the drugs reported as potential therapeutic options.[18-20] With some brand names as examples, a brief Bangla explanation was attached to questions regarding medications for a better understanding. Socio-demographic characteristics were independent variables and pharmacological and non-pharmacological interventions were dependent variables.

Data collection procedures

The Google Form was shared on online platforms like Facebook, Messenger, and WhatsApp. Most participants who shared their experience of COVID-19 on social media were contacted personally through messenger or phone calls for data collection. The respondents were encouraged to share the form with eligible participants. Many illiterate respondents included in the study were contacted via the network of the researchers through mobile phones, and their family members assisted them in responding to the questionnaire. Consent was obtained before starting the survey, and confidentiality was maintained.

Statistical analysis

Descriptive analysis was performed to present frequency and percentages. Previous studies showed that clinical recovery time for mild patients is approximately two weeks, and for severe or critical patients is 3-6 weeks.[21,22] We measured the recovery period from the time of being tested positive to recovery because the respondents were not sure of the onset of their symptoms. The recovery time was categorized into early recovery (those who recovered within two weeks and coded 1) and late recovery (those who recovered after two weeks and coded 0). The binary logistic regression model was applied to determine the most relevant factors that might significantly influence COVID-19 recovery time. The Pearson Chi-square test was carried out primarily and seven out of the thirty-four variables were selected at a 10% significance level. In the second stage, a binary logistic regression model was performed, and the most significant variables with their adjusted odds ratio were extracted at a 5% significance level.[23] The classification table was used to evaluate the predictive accuracy of the final model. The Hosmer and Lemeshow goodness-of-fit (GOF) test was also applied to provide a statement of the overall fit of the final model. All the data management and statistical analysis were performed using Microsoft Excel 2016 and SPSS (IBM SPSS version 25.0) software.

Results

Socio-demographic and clinical characteristics of participants

A total of 271 potential respondents provided consent, but 241 who completed the entire survey were finally included, with a response rate of nearly 89%. Among the 241 participants, 64.3% were males, and 35.7% were females. Most of the respondents were youth and younger adults aged between 0 and 30 years (42.3%), followed by the middle-aged population of 31 to 60 years. Representatives from all divisions participated in the survey; most of them were from the Khulna division. People belonging to the urban area responded more than the rural ones. The highest percentage of the subjects had tertiary education (57.3%), whereas 6.2% had no formal education. Participants were classified into three categories based on per capita daily income (ADB 2010).[24] The 'low-income' group was people earning <5088 BDT per month, the 'middle-income' group was people earning 5088-50880 BDT per month, and people earning above 50880 BDT per month were categorised as the 'high-income' group ($1 equivalent to 84.80 BDT, Accessed 23rd February 2021). The majority of the participants belonged to the middle-income group (81.7%). The detailed socio-demographic features have been described in Table 1.

Variables	Frequency (%)
Gender	
Male	155 (64.3)
Female	86 (35.7)
Age (in years)	
0-30	126 (52.3)
31-60	100 (41.5)
More than 60	15 (6.2)
Division	
Barishal	31 (12.9)
Chattogram	26 (10.8)
Dhaka	35 (14.5)
Khulna	42 (17.4)
Mymensingh	29 (12.0)
Rajshahi	29 (12.0)
Rangpur	24 (10.0)
Sylhet	25 (10.4)
Types of residence	
Rural	83 (34.4)
Urban	158 (65.6)
Level of education	
No education	15 (6.2)
Up to Primary	18 (7.5)
Up to Secondary	37 (15.4)
Up to Higher Secondary	33 (13.7)
Above Higher Secondary	138 (57.3)
Income status	
Low-income	7 (2.9)
Middle-income	197 (81.7)
High-income	37 (15.4)

Table 1. *Socio-demographic characteristics of respondents (N = 241)*

The majority of the people infected by the SARS-CoV-2 virus had mild to moderate symptoms. Multiple response analyses found that the most prevalent symptoms of the respondents were fever (92.5%), cough (78.4%), and sore throat (62.7%) (not illustrated). The main presenting gastrointestinal manifestation was diarrhea (13.3%). Moreover, a markedly high proportion of the population had headaches (46.9%) and muscle or body aches (39.8%). Among the participants, 23% had pre-existing respiratory complications where asthma and allergic rhinitis were predominant (15.3% each), followed by pneumonia and bronchitis. Hypertension (17.3%), diabetes (13.8%) and cardiovascular diseases (6.7%) were the most prevalent pre-existing chronic comorbidities. Additionally, participants also had underlying metabolic disorders, liver and kidney diseases, among others.

Non-pharmacological intervention

Non-pharmacological interventions were measured, including various home remedies and practices followed by the COVID-19 patients at home. The majority of the participants reported drinking any hot drink (such as tea) (85.9%), inhaling steam or gargling warm water (75.1%), and eating vegetables and fruits (67.6%) daily as a form of readily available and inexpensive measures. Only 23% of respondents reported the practice of daily physical exercise (PE), whereas over 47% did not engage in any kind of PE. The adopted non-pharmacological approaches by the respondents are summarized in Figure 1.
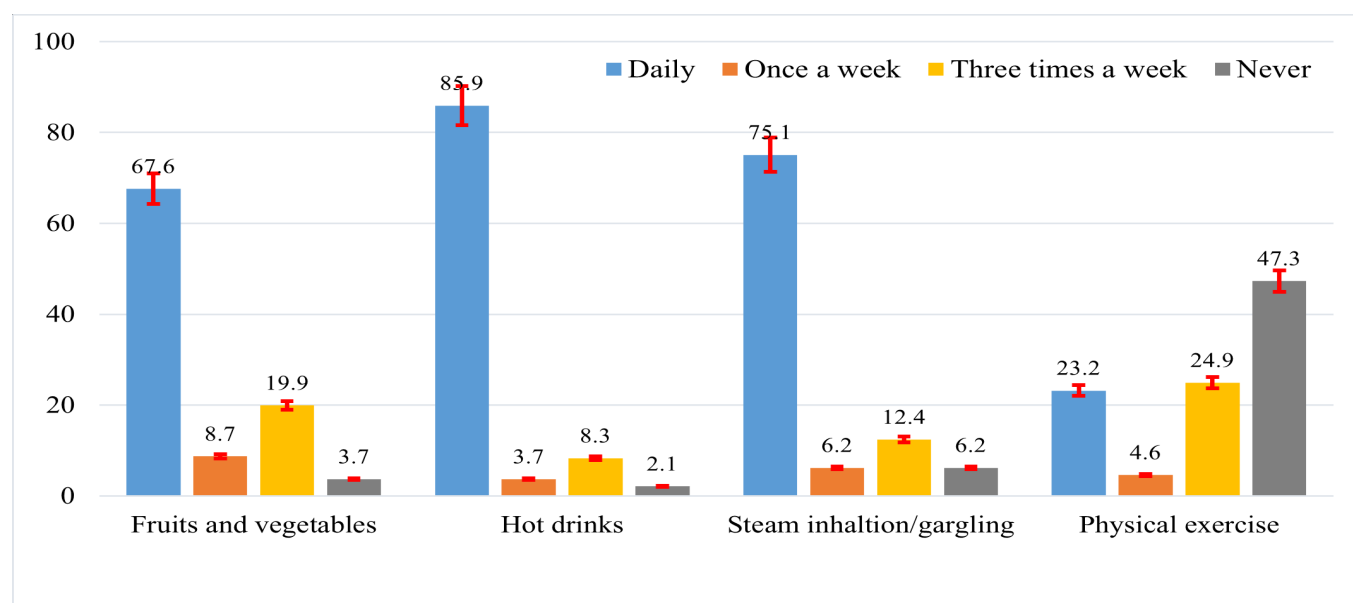
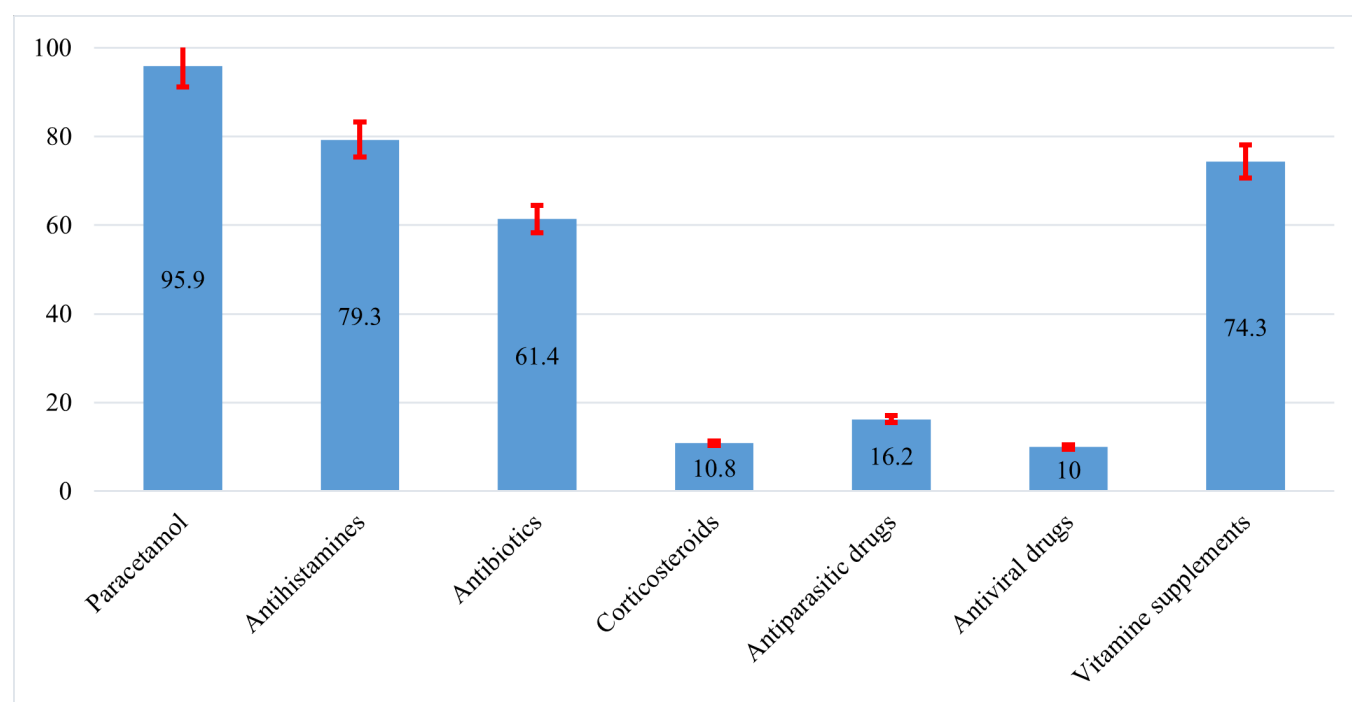**Figure 1.** *Non-pharmacological interventions (N = 241)*

Socio-demographic distributions of respondents demonstrated no significant difference in health-seeking behavior, albeit females tended to follow the non-pharmacological interventions more regularly than males. Moreover, a higher proportion of older respondents adopted the approaches daily, albeit they did not engage in PE regularly. In addition, participants living in urban areas were found to adopt non-pharmacological interventions more than the rural participants. Regarding education level, respondents with no or little education were less inclined to adopt the approaches daily (Table 2).

Variables N=241	Fruits and vegetables N= 163		Tea N= 207		Steam inhalation/gargling N=181		Physical exercise N= 56	
	N (%)	P value	N (%)	P value	N (%)	P value	N (%)	P value
Gender Male (155) Female (86)	103 (66.5) 60 (69.8)	.598	135 (87.1) 72 (83.7)	.471	114 (73.5) 67 (77.9)	.453	32 (20.6) 24 (27.9)	.201
Age (years) 0-30 (126) 31-60 (100) More than 60 (15)	90 (71.4) 62 (62.0) 11 (73.3)	.286	117 (92.9) 76 (76.0) 14 (93.3)	.001	92 (73.0) 76 (76.0) 13 (86.7)	.494	33 (26.2) 22 (22.0) 1 (6.7)	.222
Types of residence Rural (83) Urban (158)	50 (60.2) 113 (71.5)	.075	71 (85.5) 136 (86.1)	.910	57 (68.7) 124 (78.5)	.094	15 (18.1) 41 (25.9)	.169
Level of education No education (15) Primary (18) Secondary (37) Higher Secondary (33) Tertiary (138)	4 (26.7) 11 (61.1) 23 (62.2) 24 (72.7) 101 (73.2)	.005	10 (66.7) 15 (83.3) 31 (83.8) 31 (93.9) 120 (87.0)	.153	10 (66.7) 15 (83.3) 32 (86.5) 24 (72.7) 100 (72.5)	.354	1 (6.7) 2 (11.1) 7 (18.9) 12 (36.4) 34 (24.6)	.111
Income status <20000 BDT (48) 20000-40000 BDT (125) >40000 BDT (68)	29 (12.0%) 85 (35.3%) 49 (20.3%)	.415	38 (15.8%) 107 (44.4%) 62 (25.7%)	.186	34 (14.1% 98 (40.7%) 49 (20.3%)	.465	8 (3.3%) 32 (13.3%) 16 (6.6%)	.459

Table 2. *Socio-demographic distributions of respondents who adopted non-pharmacological interventions daily*

Pharmacological interventions

Medications used for treating COVID-19 have been considered pharmacological approaches. More than 97% of the respondents reported consuming at least one drug. Most of the subjects consumed paracetamol, also known as acetaminophen, followed by antihistamines. More than 60% of the infected patients consumed antibiotics. A significant proportion also reported taking antiparasitic drugs, mostly ivermectin (12.9%), while a few patients took antiviral drugs, including favipiravir (5.4%), oseltamivir (2.9%), and remdesivir (1.7%). Additionally, nearly 11% took corticosteroids. Another finding is that people consuming vitamin supplements were more prevalent than those who did not (Figure 2).

Figure 2. *Pharmacological interventions adopted by respondents*

As shown in Table 3, medication consumption was higher in males and respondents aged over 60. Specifically, elevated consumption of corticosteroids was observed in older people. Higher medicine consumption was also observed in urban people and people with no education, while a discrepancy was noticed in medication use among various income groups.

Factors influencing the recovery time of COVID-19

Pearson Chi-square test was carried out to determine factors that were significantly associated with COVID-19 recovery time. A significant association between the recovery time of COVID-19 and types of residence ($p < 0.05$) was found. No significant differences were found between the recovery time of subjects adopting non-pharmacological interventions and subjects without adopting non-pharmacological interventions, except for a moderate relation between eating vegetables and fruits daily ($p < 0.07$). Moreover, medicine consumption had no significant impact on recovery time from COVID-19. (Table 4).

Variables	Paracetamol N= 231	Antihistamines N= 191	Antibiotics N= 148	Antiparasitic drugs N= 39	Antiviral drugs N= 24	Corticosteroid N= 26	P value
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Gender Male (155) Female (86)	149 (96.1) 82 (95.3)	121 (78.1) 70 (81.4)	100 (64.5) 48 (55.8)	22 (14.2) 17 (19.8)	18 (11.6) 6 (7.0)	18(11.6) 8(9.3)	>0.05
Age 0-30 (126) 31-60 (100) More than 60 (15)	122 (96.8) 94 (94.0) 15 (100)	103 (81.7) 76 (76.0) 12 (80.0)	75 (59.5) 63 (63.0) 10 (66.7)	13 (10.3) 22 (22.0) 4 (26.7)	7 (5.6) 14 (14.0) 3 (20.0)	11 (8.7) 11(11.0) 4 (26.7)	>0.05
Types of residence Rural (83) Urban (158)	78 (94.0) 153 (96.8)	66 (79.5) 125 (79.1)	48 (57.8) 100 (63.3)	15 (18.1) 24 (15.2)	8 (9.6) 16 (10.1)	8 (9.6) 18(11.4)	>0.05
Level of education No education (15) Primary (18) Secondary (37) Higher Secondary (33) Tertiary (138)	13 (86.7) 17 (94.4) 36 (97.3) 33 (100.0) 132 (95.7)	13 (86.7) 16 (88.9) 30 (81.1) 24 (72.7) 108 (78.3)	12 (80.0) 10 (55.6) 21 (56.8) 21 (63.6) 84 (60.9)	4 (26.7) 4 (22.2) 10 (27.0) 5 (15.2) 16 (11.6)	5 (33.3) 2 (11.1) 6 (16.2) 2 (6.1) 9 (6.5)	3 (20.0) 3 (16.7) 2 (5.4) 5 (15.2) 13 (9.4)	>0.05
Income status <20000 BDT 20000-40000 BDT >40000 BDT	47 (19.5) 121 (50.2) 63 (26.1)	40 (16.6) 98 (40.7) 53 (22.0)	31 (12.9) 74 (30.7) 43 (17.8)	12 (5.0) 20 (8.3) 7 (2.9)	7 (2.9) 13 (5.4) 4 (1.7%)	5 (2.1) 16 (6.6) 5 (2.1)	>0.05

Table 3. *Socio-demographic distributions of respondents who adopted non-pharmacological interventions daily*

Variables	Early recovery (0-14 days) N (%)	Late recovery (>14 days) N (%)	P-value
Types of residence			
Rural	32 (13.3)	51 (21.2)	0.01**
Urban	88 (36.5)	70 (29.0)	
Diabetes			
Yes	9 (3.7)	22 (9.1)	0.01**
No	111 (46.1)	99 (41.1)	
Cardiovascular diseases			
Yes	4 (1.7)	11 (4.6)	0.06*
No	110 (45.6)	116 (48.1)	

Table 4. *Pearson Chi-Square test of association between recovery time and various variables*

The logistic regression model revealed that types of residence, education level and underlying diabetes were the significant factors associated with COVID-19 recovery time (Table 5). More specifically, patients living in urban areas recovered more early from COVID-19 than rural patients (OR: 3.26, 95% CI: 1.19-8.95). Patients without previous diabetes had a 2.76 times higher chance of recovering early than those with diabetes (OR: 2.76, 95% CI: 1.00-7.57). From the classification table, it was observed that almost 72.5% of respondents were correctly predicted by this model.

Variables	Odds ratio	P-value	95% Confidence Interval	
			Lower	Upper
Types of residence				
Rural	1.00a			
Urban	3.26	0.02	1.19	8.95
Diabetes				
Yes	1.00a			
No	2.76	0.05	1.00	7.57

Table 5. *Factors associated with early recovery time from COVID-19*

Discussion

Our study found that the majority of the respondents adopted non-pharmacological interventions such as inhaling steam/gargling warm water, drinking hot drinks and consuming vegetables and fruits daily to treat COVID-19. Paracetamol, antihistamines and antibiotics were the highest consumed medicines, while a large percentage consumed vitamin supplements for home treatment. Binary logistic regression found that living in rural areas had lower odds of recovering early, while participants with diabetes had higher odds of recovering late.

Although most participants reported adopting the non-pharmacological approaches daily, we found no association between non-pharmacological interventions or practices and recovery time. Instead, these approaches were mainly suggested to relieve symptoms associated with COVID-19. For example, gargling saltwater or steam inhalation was used to soothe a sore throat and clean mucus in the throat, albeit previous investigations rejected the claim these can prevent COVID-19.[25,26] Health experts and organizations have been recommending consuming vegetables and fruits with proper nutrition to boost immunity.[10] An association was observed between daily consumption of vegetables and fruits and recovery time among our subjects, where subjects who consumed vegetables and fruits daily recovered early ($p<0.07$). A previous study found that consuming vegetables and fruits was associated with lower COVID-19 infection and mortality rates.[27] Only a small percentage of our study participants reported practising daily PE. At the same time, according to the WHO, PE can reduce the risk of obesity, diabetes, and other chronic diseases, which are the risk factors for COVID-19.[17,28] Demographic distributions found that females, respondents aged more than 60 and urban people had a higher tendency to adopt the non-pharmacological interventions daily while less educated people were less inclined. Previous studies showed that knowledge and preventive behaviors against COVID-19 were significantly associated with females, higher literate, and urban people. Therefore, these studies support the higher inclination of females and urban people to non-pharmacological approaches.[29,30]

There was no strongly recommended therapeutic option for COVID-19, albeit some drugs showed promising results.[31] Fever was the predominant symptom, while muscle/body pain and headaches were also higher in the study participants, which might contribute to the elevated consumption of paracetamol. Antihistamines, especially fexofenadine consumption, were higher among subjects because cough, sore throat and rhinorrhea were higher among the study participants. Since many allergic and respiratory symptoms have similarities with COVID-19, these have been prescribed to treat patients. Several studies suggested that antihistamines are effective for primary care of the disease and prevent the disease from being severe in older patients.[32,33] Antibiotic consumption was considerably high among the participants. COVID-19 weakens innate as well as adaptive immunity. Hence, many antibiotics have gained the utmost priority as therapeutic options because of their efficacy against respiratory infection, even for severe and critical patients.[33–35].+ Nevertheless, many vitamins have gained considerable importance for their pharmacological properties.[12] Medication consumption was higher in males, elderly, urban people, and participants with no or

little education, albeit these drugs are clinically unproven or may possess little benefits. It may be due to their tendency to recover from the disease early. Moreover, various news concerning the efficacy of some unproven drugs against SARS-CoV-2 was circulated in the media. Previous studies showed that many of these drugs were used as preventive measures. People rushed for these drugs, and many consumed them even before getting infected due to fear of this novel disease.[1,10,25]

People living in urban areas were more technologically advanced and knowledgeable about the disease and followed hygiene practices more often than rural people. This might be the possible reason for their early recovery. Our study found an association between recovery and underlying diabetes and CVD, where underlying diabetes was more significantly associated with delayed recovery. A meta-analysis by Wang et al. delineated that kidney and liver diseases or even malignancies were not associated with elevated risk. Still, hypertension, diabetes, and cardiovascular diseases were considerably associated with a higher risk in COVID-19 patients.[36] However, it is yet to be confirmed which comorbidities can lead to poor prognosis since our study participants were not hospitalized and our research team did not collect the exact medication itinerary.

Though the SARS-CoV-2 infection is no longer a novel term, its pathology and genetic makeup are not clearly understood because of its continuous mutations. Moreover, one of the serious concerns is that the genome of SARS-CoV-2 has evolved and mutated in numerous countries, including Bangladesh. Many countries are facing difficulty in providing treatment facilities for all patients. These countries have depended more on readily available and traditional treatments such as home remedies and over-the-counter drugs. Additionally, non-pharmacological interventions are cheap, readily available, and safer to use and have been a part of home management for various diseases. Therefore, mild and moderate patients who would mostly recover without special treatment may adopt these approaches to suppress the disease from being severe. Developing and least-developed countries need to emphasize more on prevention and primary care. Our study demonstrated that home care got an enormous concern in reducing the hospital burden, albeit this could not significantly reduce the recovery time.

On the other hand, people should remember that these pharmacological and non-pharmacological interventions were only recommended for mild and moderate patients and as primary care treatments. Therefore, people should not follow these approaches without proper suggestions or prescriptions from healthcare experts. The strength of this study includes being the first study of Bangladesh assessing the home healthcare-seeking behaviors and recovery measures of COVID-19 patients who recovered by taking treatment at home.

Strengths and limitations

The strength of this study includes being the first study of Bangladesh assessing the home healthcare-seeking behaviors and recovery measures of COVID-19 patients who recovered by taking treatment at home. However, this research has a few limitations too. Firstly, causal relationships could not be established for a cross-sectional study design. Secondly, the small sample size may reduce the establishment of rigorous statistical significance. Finally, it was an online-based survey where only people with internet access participated in the study.

Conclusion

The COVID-19 pandemic is indeed one of the greatest disasters in the history of humankind. Hence, primary care treatment received considerable importance in resource-limited countries like Bangladesh, which can hardly tackle the disease properly. As a unique initiative, this study found that the majority of respondents adopted non-pharmacological interventions more often, whereas over-the-counter drug consumption was noticeable. These interventions would help as a form of home management strategies to reduce COVID-19-like disease severity at an early stage. They may mostly be helpful for mild and moderate patients, especially in developing countries where

treatment facilities are scarce. The government and policy-makers should ensure that patients who do not require hospitalisation adopt and follow home practices to reduce the healthcare burden.

Abbreviations

SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus-2; COVID-19: Coronavirus Disease-2019; WHO: World Health Organization; CVD: Cardiovascular diseases; PE: Physical Exercise.

Authors' contribution

AAN- Conceptualisation, Methodology, Validation, Formal analysis, Investigation, Visualisation, Writing - original draft, Writing - review & editing, Project administration.

MSH- Methodology, Validation, Formal analysis, Visualisation, Writing - original draft Writing - review & editing.

MSI, SSd, MAN, NS, JEE, MS, RIM, - Methodology, Validation, Investigation, Visualisation, Writing - review & editing.

TJ, SS and MMR- Conceptualisation, Methodology, Validation, Visualisation, Writing - review & editing, Supervision, Project administration.

Ethics approval and consent to participate

Ethical Review Committee of the Public Health Foundation, Bangladesh (Ref: PHFBD/ERC/03/2021) approved this study. All the participants gave consent to participate in the study. All authors read and approved the final version of the manuscript.

Competing Interests

The author declared no potential conflict of interest.

Funding

Acknowledgment

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