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Call for Action to a Pandemic: Perception, Attitude and Practice among Adults with Chronic Diseases towards COVID- 19 at South-East Bangladesh

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Abstract

Background: *Public awareness is the mainstay to control an emerging pandemic. This study investigated the knowledge, attitudes and practices of COVID-19 among chronic disease patients during the pandemic.*

Materials and methods: *A cross-sectional study was conducted from June-October 2021 at Chittagong Medical College Hospital, Southern Bangladesh. This study included 1537 chronic disease patients by convenient sampling using a pre-structured questionnaire. Multivariable logistic regression analyses were performed to identify factors associated with poor knowledge and practice towards COVID-19. The strength of the association between the dependent and independent variables was demonstrated by computing Odds Ratio (OR) with a 95% Confidence Interval (CI). Correlation between knowledge, attitude and practice scores were done by using Pearson correlation coefficient. p-value <0.05 was considered as statistically significant. Microsoft Xcel and SPSS version 23 was used for analysis.*

Results: *The prevalence of poor attitude and poor practice was high (49.4%, 83.4%). Age >55 years reported poor knowledge. Educational status of "can't read and write", unemployment, multi-morbidity (OR= 3.06, 1.40, 2.06 with 95% CI and OR=2.95, 2.19, 2.22 with 95% CI respectively) and low monthly family income (p =<.05) were significantly associated with poor knowledge and practice. Female, married, illiterate and rural participants (OR=2.09, 2.55, 2.6, 1.3) had significant less optimistic attitude. Poor knowledge was correlated significantly with poor attitude and practice.*

Conclusions: *Targeted health education towards the current COVID-19 pandemic, among adults with chronic diseases is necessary to reduce disease severity as well as economic burden.*

Key words: Attitude; Chronic disease; COVID-19; Knowledge.

INTRODUCTION

The novel Corona Virus Disease 2019 (COVID-19) first identified in Wuhan, China in December 2019 devastatingly spreaded globally.[1] Bangladesh confirmed 1st COVID-19 case on 8th March 2020.[2] World Health Organization declared COVID-19 as a pandemic on 11th March 2020.[3] Till October 5, 2021, a total of 236 132 082 confirmed cases of COVID-19 and 4 822 472 deaths had been identified worldwide and a total of 1 561 463 confirmed cases including 27 654 deaths in Bangladesh upto October 8,2021.[4,5] COVID-19 is an emerging disease caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2).[6] Most of the fatal cases occurred in older and patients having co-morbidities like diabetes, cancer, hypertension, heart, lung, and kidney diseases who were also found lacking the critical knowledge about COVID-19.[7] So It is very necessary to formulate safety-net

for this population while they contribute to the economy and their illness with COVID-19 itself is a threat to the economy.Moreover, actions for modifying the participants' views is expected to contribute in successful COVID-19 mitigation.

Good Knowledge, Attitudes and Practices (KAP) among the public are essential for successful control of pandemics.[8] Both self- and community protective behavior is compulsory to prevent morbidity and death toll. However, most of the measures and studiesin the world targeted health professionals and the general population. In Bangladesh, there is also no published study on KAP regarding this pandemic among chronic disease patients. Thus this study aimed to investigate the KAP towards COVID-19 among the chronic disease patients at Chattogram, South-East Bangladesh.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted from Mid-June to October 2021 at Chittagong Medical College Hospital, Chattogram, Bangladesh. The ethical review committee of Chittagong Medical College, Chittagong, Bangladesh, approved this study (Memo no: CMC/PG/2021/131).

Fifteen hundred thirty seven adult patients with chronic diseases (Hypertension, diabetes mellitus, chronic lung disease, chronic heart disease, chronic kidney diseases, malignancy and other chronic conditions) attended at Chattogram Medical College Hospital during the study period were selected by convenient sampling. Participation was voluntary, anonymous and after giving informed consent.

The data were collected using a pre-tested, structured interviewer-administered questionnaire on KAP towards COVID-19, adapted from previous studies.[9,10] The questionnaire complied with the forward and back-translation into Bangla and pre-tested by a pilot study. Socio-demographic characteristics were added.

The questionnaire assessing perception or knowledge (16 questions), attitude (10 questions) and practice (12 questions) were answered on a "yes" or "others" basis. A correct (Yes) answer was given 1 point and 0 for other responses. Overall knowledge was categorized using Bloom's cutoff point.[9] A cut point of 80% correct answers was used for all of the categories to differentiate between good and poor attitudes and practices.[10] The data were cleaned, coded and stored in Microsoft Xcel and exported to SPSS version 23 for analysis. Data were analyzed using frequency, percentage, median and interquartile range. Association between different factors with knowledge, attitude and practices were tested either by Chi-square test or Mann-Whitney U test. Binary multivariable logistic regression analyses were performed to identify associated factors of poor KAP. The strength of the association was demonstrated by Odds Ratio (OR) with a 95% Confidence Interval (CI). Correlation between knowledge, attitude and practice scores were done by using Pearson correlation coefficient. Finally, the data were presented in the tabular, graphical and narrative form accordingly. p-value <0.05 was considered statistically significant.

RESULTS

Majority of participants had multi-morbidity (Table I). Majority of participants were knowledgable (Table II). The prevalence of poor attitudes and practice was49. 4% and83.4% (Table III, Table IV). There was a significant positive correlations between knowledge-attitudes, knowledge-practice (r=0.426 and r=0.555).

Table I Socio-demographic and Clinical Characteristics of Chronic Disease Patients (n=1537)

Variables	Frequency (n=1537)	Percentage (%)
Age groups		
18-25 years	177	11.5
26-35 years	353	23.0
36-45 years	430	28.0
46-55 years	300	19.5
>55 years	277	18.0
Sex		
Male	727	47.3
Female	810	52.7
Marital status		
Married	1377	89.6
Single*	160	10.4
Education		
Unable to read and write	258	16.8
Read and write	344	22.4
Elementary	472	30.7
Secondary and above	463	30.1
Residence		
Urban	655	42.6
Rural	882	57.4
Occupation		
House maker	850	55.3
Employed outside	313	20.4
Unemployed	374	24.3
Monthly family income, BDT	13000 (10000-20000)**	
Chronic diseases		
Hypertension	802	52.2
Diabetes mellitus	622	40.5
Chronic lung disease	295	19.2
Chronic kidney disease	287	18.7
Chronic Heart disease	180	11.7
On immunosuppressive therapy	70	4.5
No. of chronic diseases		
Single disease	636	41.4
More than one	901	58.6

*Unmarried, widowed, divorced. **Median (IQR).

Table II Frequency distributions of responses for Knowledge/Perception Questions (n=1537)

Knowledge/ Perception Questions	Correct responses	
	n	%
Main symptoms of COVID-19 are fever, cough, shortness of breath and fatigue	1464	95.3
Stuffy nose, runny nose, and sneezing are less common in COVID-19 than in common cold	598	38.9
COVID-19 symptoms appear within 2–14 day of exposure	1187	77.2
Till date, there is no effective treatment or vaccine for COVID-2019 in Bangladesh	797	51.9
Persons with COVID-19 infection but with no fever can infect you	1151	74.9
Not all persons with COVID-19 will develop severe cases.	1033	67.2
Do you feel increased risk of severe illness with COVID 19 compared to others?	1343	87.4
The COVID-19 virus spreads via respiratory droplets of infected individuals during sneezing or coughing	1391	90.5
Touching or shaking hands of an infected person may result in COVID-19 infection	1371	89.2
Touching an object or surface with the virus on it, then touching your mouth, nose, or eyes with the unwashed hand would result in COVID-19 infection	1294	84.2
Wearing masks when moving out of home is important to prevent the infection with COVID-19 virus	1503	97.8
To prevent the COVID-19 infection, individuals should avoid crowded places such as religious places, Hospitals, Workplaces and public transport	1393	90.6
Washing hands frequently with soap and water for at least 20 seconds or use an alcohol based hand sanitizer (60%) is important to prevent infection with COVID-19 virus	1422	92.5
Childrens and young adults of your household can spread infection to you being asymptomatic	1129	73.5
Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus	1401	91.2
People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place.	1225	79.7
Overall good knowledge toward COVID-19	1016	66.1

Table III Frequency distributions of responses to the attitude related questions (n=1537)

Attitude questions	Yes		Others	
	n	%	n	%
Self-awareness is necessary to be free from covid19 infection.	1489	96.9	48	3.1
COVID 19 is a deadly virus	1043	67.9	494	32.1
People with chronic diseases are at high risk of being infected with COVID 19	1276	83.0	261	17.0
I should avoid social gathering and recreational trips	1171	76.2	366	23.9
I believe that working from home can help to control infection?	1034	67.3	503	32.7
I will stay at home for 14 days if you have common cold to prevent spread of infection with COVID 19	1156	75.2	381	24.8
Health care workers are at risk of COVID 19 infection while treating patients.	1303	84.8	234	15.2
Covid 19 will not be epidemic like other western countries?	683	44.4	854	55.6
Bangladesh is handling COVID 19 health crisis well	811	52.8	726	47.2
COVID 19 can finally be successfully controlled	917	59.7	620	40.3

Table IV Frequency distributions of responses to the practice related questions (n=1537)

Questions	Yes		Others	
	n	%	n	%
Avoiding social gatherings or any crowded places.	795	51.7	742	48.3
Wearing a mask when leaving home?	1421	92.5	116	7.6
Not touch the front of the mask when taking it off?	584	38.0	953	62.0
Do not reuse a mask	988	64.3	549	35.7
Wash hands with soap and water frequently for at least 20seconds or use sanitizer60% alcohol	952	61.9	585	38.
Clean and disinfect frequently touched objects and surfaces?	816	53.1	721	46.9
Practicing “physical distancing” by remaining 6 feet/2 meters away from others at all times?	719	46.8	818	53.2
Do not eat or drink in bars and restaurants?	626	40.7	911	59.3
Listen and follow the direction of your state and local authorities	959	62.4	578	37.6
Have you started working outside in last few weeks/months?	1113	72.4	424	27.5
Do you feel anxious/ stressed/ depressed/ helpless/ in this covid 19 outbreak?	1370	89.1	167	10.9

Table V Factors associated with poor knowledge, attitude and practice toward COVID-19 among chronic disease patients

Variables	%	Poor Knowledge OR (95% CI)	%	Poor Attitude OR (95% CI)	%	Poor Practice OR (95% CI)
Age Groups						
18-25 years	10.4	Reference	16.7	References	12.6	Reference
26-35 years	19.0	1.049(.649-1.696)	19.6	.538(.334-.865)	22.7	.788(.397-1.565)
36-45 years	24.2	1.204(.744-1.947)	25.3	.847(.525-1.368)	27.9	.880(.439-1.763)
46-55 years	18.8	1.148(.691-1.907)	18.6	.993(.601-1.640)	18.3	.880(.435-1.781)
>55 years	27.6	1.722(1.038-2.857)	19.8	1.163(.696-1.945)	18.5	1.557(.741-3.274)
Sex						
Male	44.7	Reference	35.0	Reference	43.7	Reference
Female	55.3	1.289(.985-1.685)	65.0	2.094(1.611-2.720)	56.3	2.307(1.641-3.243)
Marital life						
Partnered	87.5	Reference	84.5	Reference	88.8	
Single*	12.5	1.361(.871-2.125)	15.5	2.553(1.592-4.092)	11.2	1.060(.548-2.051)
Education						
Secondary and above	22.5	Reference	44.1	Reference	33.3	Reference
Read and write	30.1	2.400(1.711-3.367)	17.0	.725(.493-1.067)	21.1	1.617(1.003-2.606)
Elementary	21.7	1.244(.880-1.758)	20.7	.568(.396-.814)	29.6	1.106(.712-1.719)
Unable to read and write	25.7	3.069(2.090-4.507)	18.2	2.636(1.798-3.865)	15.9	2.959(1.753-4.995)
Residence						
Urban	44.0	Reference	52.7	Reference	44.7	Reference
Rural	56.0	1.130(.881-1.449)	47.3	1.338(1.049-1.707)	55.3	1.364(.982-1.895)
Occupation						
House maker	46.8	Reference	49.3	.636(.470-.860)	55.8	2.069(1.423-3.008)
Employed outside	20.5	.738(.513-1.062)	24.4	1.007(.715-1.418)	22.0	2.191(1.357-3.538)
Unemployed	32.6	1.403(1.041-1.891)	26.4		22.2	
Multimorbidity						
No		Reference		Reference		Reference
Yes		2.069(1.627-2.632)		.997(.784-1.267)		2.225(1.595-3.105)

DISCUSSION

So far no effective treatment till date, adequate improvement of KAP towards COVID-19 is mainstay to control the pandemic. According to this study, the prevalence of poor knowledge was 33.9% which is higher to the study done in China (10%) and Iran (20.4%).[9,11] But similar to studies done in Ethiopia (35.1%).[12] This might be due to the difference in the socio-economic status of study participants, assessment tool used for KAP and time of data collection. These data were collected at the second phase of COVID 19 in Bangladesh when already all experienced the first wave.

In this study, older age was found to be associated significantly with poor knowledge, contrary to studies done in China, Iranbut similar with study done in Chicago.[9,11,13] This might be due reduced cognition in agingcontrary to China, Iran where youngers and male were documented for risk taking behavior.[9,11] The rural and illiterate were found to have poor knowledge and practice than urban residents in agreement with others.[9,12] There is lack of access to information, updates and preventive measures those were posted mostly online.[13] However, these were not fairly understandable to illiterate participants.[13,15,16]

In this study, a low monthly income was found to be associated with poor knowledge and practice, supported by others.[13,17] Moreover, China reported that high income was associated with good knowledge and appropriate practice of COVID-19.[9] Economic status is the main determinant for attachment to recommended protective behaviors of COVID-19.[18,19]

Participants with multi-morbidity had significant association with poor knowledge and practice which is in agreement with other studies done on chronic disease patients.[12,13] This may be due to illiteracy and low family income and inclusion of

majority of participants (82%) from less than 55 years who were bound to go outside for bread and butter during the advanced second phase.

Upon this study, the prevalence of favorable attitude was low (50.6%). This is lower than other studies.[9,16] This might be due to poor understanding of high infectiousness of COVID-19 among our study population and their experience of exposure of same characteristics of the infection with SARS.[12]This study showed that about 52.8% of study participants believed that "Bangladesh can handle the COVID-19 crisis", similar to another studieswhere China found that 94% strongly agreed with the statement.[15,9] This might be due to different control measures by states of Bangladesh including traffic limits and low socioeconomic status which decrease people's confidence in winning the battle.

According to this study, the prevalence of poor practice was high (83.4%). This finding is higher than some studies.[9,12,16] This might be due to difference in knowledge, religious perspective, phase of the outbreak in the study area and application of governmental state of emergency. Moreover, the study population might believe that their immunity and religion prevent them from COVID-19 and failed to practice appropriately. While only 51% of study participants in this study avoids attending a crowded place, the rate in China more high (96.4%).[9] In the current study, low practisingbehavoiur in this outbreak of COVID-19 might be due to the economic insecurity with low income, lack of strict prevention and control measures implemented by local government in the second phase and less death and case detection in last 2-3 months, increasing health care facilities and exhaustion with pandemic.

This study found significant positive correlations between knowledge-attitudes, knowledge-practice among the respondents consistent with other studies.[9,16,21] This might be due to the reason that knowledge is the main modi er of positive attitude and practice toward COVID-19 preventive practices.[22,23]

LIMITATIONS

The survey was single centered and there might be a selection bias. This study mainly targeted participants only reported to a hospital which did not reflect the KAP of all stable chronic disease patients. The reliability of the KAP questionnaires were not checked for the chronbach's values indicating acceptable internal consistency.

CONCLUSIONS

The prevalence of poor attitude and practice among chronic disease patients were high. Targeted health education towards the current COVID-19 pandemic, among adults with chronic diseases is necessary to reduce disease severity as well as economic burden.

RECOMMENDATION

A wider study among participants from wider socio-demographics may helpto overcome the limitation. A well estimation of the public's KAP helps policy makers to design and implement policies and mitigation measures. Moreover, insights into pertinent crucial factors demonstrated in this study may strengthen public sectors' preparedness for COVID-19 in mitigation-relevant policy making now and in future.This study suggests that routine KAP analysis among at risk population, can be an effective monitoring tool to measure the performance of mitigation measures in COVID-19. The results of this study can be used as a baseline in Bangladesh.

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DISCLOSURE

All the authors declared no competing interest.

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