Original Research Article

Depression and Quality of Life among Urban Elderly during the Covid-19 Pandemic

Abstract:

Objective:

This study was conducted with the aim to determine whether there was any association between depression and quality of life among the urban elderly during the COVID-19 pandemic.

Methods:

This study was conducted across some urban areas of Dhaka city namely Gulshan, Niketan and Mohakhali areas. 91 respondents aged 60 years and above residing in urban areas were interviewed once at one point in time. All the information was to be collected within the time frame. Hence the most appropriate study design in this case would be cross-sectional study design. The duration for the thesis work was 1 year, from 1st January to 31st December 2020. Method of sampling was convenient method of sampling. Data were collected by face-to-face interview and telephone interview.

Result:

In case of clinical characteristics, elderly people aged 60 years and above participated. Mean age was 66.42 (SD± 5.106) years. Minimum and maximum age was respectively 60 years and 80 years. Among the 91 respondents, 48 (52.7%) were males and 43 (47.3%) were females. It is found that, 64 (70.3%) were married, 1 (1.1%) was unmarried, 24 (26.4%) were widowed, 2 (2.2%) were divorced. Of all the respondents, 34.1% were graduates and 24.2% were post graduates. Majority of respondents (84.6%) were the followers of Islam, followed by (11%) Hindus. Here, among the 91 respondents, some of them had only one disease, whereas some of them had more than one disease. To explain, 56 (31.8%) had Hypertension, 55 (31.3%) people had Diabetes Mellitus, 32 (18.2%) had cardiac problems, 13 (7.4%) suffered from stroke, 11 (6.3%) had chronic lung disease, 7 (4.0%) suffered from chronic kidney disease, 1 (0.6%) had cancer, and 1 (0.6%) had Alzheimer's disease. In case of association between depression and

Comment [11]: Objective: determine the associations between depression and quality of life among.....

Comment [12]: Was a cross-sectional study

psychological domain of quality of life, the highest mean score was found within those who had no depression (M=63.93), followed by mild depression (M=48.95), then moderate depression (M=40.71) and lastly severe depression (M=33.80). To see the impact of level of depression on psychological domain of quality of life, one-way between group ANOVA was conducted. There was statistically significant difference at $p<0.05$ in QOL for levels of depression: $F(3, 87) = 14.019$, $p=0.00$.

Keywords: Depression, quality, urban, elderly, covid-19

Introduction:

The COVID-19 pandemic, is an ongoing pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [1]. It was first identified in December 2019 in Wuhan, China. The World Health Organization declared the outbreak a Public Health Emergency of International Concern in January 2020 and a pandemic in March 2020 [2,3].

Old age, also called senescence, in human beings, the final stage of the normal life span [4]. The group of people who are aging are known as "elderly". By elderly, we mean people who are aged 60 years and above [5]. However, there are various discrepancies across the world as to state which age should actually denote the starting point of elderly[6].

An urban area is the region surrounding a city. Urban areas are very developed, meaning there is a density of human structures such as houses, commercial buildings, roads, bridges, and railways [7].

Quality of life means the standard of health, comfort, and happiness experienced by an individual or group [8].

The COVID-19 pandemic has changed our lives drastically. It has had a massive impact on each and every single aspect of life, be it economics, education, culture, food and agriculture, mental health and so on [9]. Many of the people lost their jobs or got their salaries reduced, which affected the parents of those people, as their children were in suffering [10]. This could be one of the causes for depression of the elderly. People have lost their normal life and adopted the "new normal": Masks, sanitizers, hand washing, social distancing, quarantine, isolation, lockdowns, etc. are the compulsories nowadays [11].

During the COVID-19 pandemic situation, the total health status of all the people of the world has been affected. Elderly is a huge risk group from the threat of the virus and prognosis remains worst. According to the Centre for Evidence-Based Medicine, the case fatality rate (CFR) is about 4% for patients over 60 years old, 8% for patients over age 70 years, and approximately 15% for patients over the age of 80[12].

Upon imposing all new guidelines of social distancing and isolation, all gatherings are at halt, putting the elderly people at greater risk of loneliness and increased chances of depression and hence, distorted quality of life [13].

Global population is ageing and Bangladesh has one of the fastest growing ageing populations in this region. Bangladesh will have a sharp rise in its elderly population in the coming decades. In the period between 1911 and 1990, the elderly population of Bangladesh has gone up from 1.375 to 5.402 million, and, by 2025, the absolute number of the elderly population in the country will be 17.64 million, and that time, they will become 10.1% of the total population. Growth in the elderly population relative to other age groups challenges existing health services, family relationships and social security. Combined with this, depression has become a major mental health problem for elderly people especially for urban elderly for nuclear family norm in urban areas [14].

Quality of life (QOL) of older adults has become an important public health issue, because of demographic changes resulting from the ageing of the population. Moreover, studies have suggested that QOL scores of elderly people are different from that of the general population. Furthermore, although the QOL has been a focus of attention for over a decade, there are few recent data available on the QOL of the elderly. Depression is another important public health problem for older adults, because late life depression might have devastating consequences, such as an increase in mortality. Depression is considered to be the most common mental health problem among older people. The degree of suffering caused by depression is not easy to assess, although one possible and effective method of assessing the suffering caused by depression might be to evaluate its impact on QOL [15].

Methods:

This study was conducted across some urban areas of Dhaka city namely Gulshan, Niketan and Mohakhali areas. 91 respondents aged 60 years and above residing in urban areas were interviewed once at one point in time. All the information was to be collected within the time frame. Hence the most appropriate study design in this case would be cross-sectional study design. The duration for the thesis work was 1 year, from 1st January to 31st December 2020.

Comment [13]: Cross-sectional study

Method of sampling was convenient method of sampling. Data were collected by face-to-face interview and telephone interview.

Selection criteria or eligibility criteria was as follows:

Inclusion Criteria:

- Elderly people aged 60 years and above.
- Both male and female.
- Who have given informed written/verbal consent.

Exclusion criteria:

- People with cognitive impairments.
- Severely ill respondents.
- Who have not given informed written/verbal consent.

Chart 1. Geriatric depression scale[16]

Score	**Level of depression (depending on age, education and complaints)**
0-4	Normal
5-8	Mild depression
9-11	Moderate depression
12-15	Severe depression

WHOQOL-BREF scale:

WHOQOL-BREF is scored from 1 to 5 on a response scale, which is stipulated as a five-point ordinal scale. The scores are then converted linearly to a 0–100-scale. The physical health domain includes items on mobility, daily activities, functional capacity, energy, pain, and sleep are included by the physical health domain [17].

Data analysis:

All collected data were entered in Statistical Package for Social Science (SPSS) software, version 26, after preparing a format according to the coding mentioned in the questionnaire. For the descriptive statistics, frequency tables, bar and pie charts were made.

In the tables, proportions are presented for categorical variables and mean ± standard deviation are used for continuous variables. ANOVA test, independent t-test, and Pearson's correlation analysis were done to fulfill the study objectives. Value of $p < 0.05$ was considered statistically significant.

The findings of the study were presented by frequency, percentage, mean and standard deviation and tables of the ANOVA, independent t-test and correlation interpreted with statistical information.

Result:

Socio-demographic Characteristics of the Respondents

Comment [14]: sample

Table 1 below shows socio-demographic characteristics of the respondents. In this study elderly people aged 60 years and above participated. Mean age was 66.42 (SD± 5.106) years. Minimum and maximum age was respectively 60 years and 80 years. Among the 91 respondents, 48 (52.7%) were males and 43 (47.3%) were females. It is found that, 64 (70.3%) were married, 1 (1.1%) was unmarried, 24 (26.4%) were widowed, 2 (2.2%) were divorced. Of all the respondents, 34.1% were graduates and 24.2% were post graduates. Majority of respondents (84.6%) were the followers of Islam, followed by (11%) Hindus. Moreover, among the 91 respondents, the majority of them were employed (45.1%). Last but not the least, 22 (24.2%) respondents had income less than BDT 100000, 45 (49.5%) had 100000-400000, 22 (24.2%) of them had BDT 500000-800000 and the rest, that is 2 (2.2%) earned more than BDT 800000.

Table 1: Socio-demographic characteristics of the respondents:

Distribution of the respondents by age (n=91)		
Age (years)	**Frequency**	**Percentage (%)**
60-69	67	73.6
70-79	23	25.3
80 and above	1	1.1
Mean SD	66.42±5.106	
Distribution of the respondents according to their gender (n=91)		
Gender of the respondents	**Frequency (n)**	**Percentage (%)**
Males	48	52.7
Females	43	47.3
Distribution of respondents by their marital status (n=91)		
Marital status of the respondents	**Frequency (n)**	**Percentage (%)**
Married	64	70.3%
Widowed	24	26.4 %
Divorced	2	2.2%
Unmarried	1	1.1%
Distribution of respondents by their educational status (n=91)		
Educational status	**Frequency (n)**	**Percentage (%)**
Primary	3	3.3
Secondary	8	8.8
Higher secondary	27	29.7
Graduate	31	34.1
Post graduate	22	24.2
Distribution of the respondents by their religion (n=91)		
Islam (%)	Hindu (%)	Christian (%)
84.6%	11%	4.4%
Distribution of the respondents according to their employment status (n=91)		
Employed	41	45.1

Comment [15]: N (%) show N

Unemployed	25	27.5
Retired	25	27.5
Distribution of the respondents by their monthly household income (n=91)		
Monthly income of the respondents (BDT)	**Frequency (n)**	**Percentage (%)**
Less than 100000	22	24.2
100000-400000	45	45
500000-800000	22	24.2
More than 800000	2	2

*BDT: Bangladeshi taka; SD: Standard deviation(1 BTD= XXUSD?)

Clinical characteristics:

The table 2 shows the distribution of the respondents according to whether they have any chronic diseases. Here, among the 91 respondents, some of them had only one disease, whereas some of them had more than one disease. To explain, 56 (31.8%) had Hypertension, 55 (31.3%) people had Diabetes Mellitus, 32 (18.2%) had cardiac problems, 13 (7.4%) suffered from stroke, 11 (6.3%) had chronic lung disease, 7 (4.0%) suffered from chronic kidney disease, 1 (0.6%) had cancer, and 1 (0.6%) had Alzheimer's disease.

Table 2: Distribution of the respondents according to whether they have any chronic diseases

Chronic Disease	Frequency (n)	Percentage (%)
Hypertension	56	31.8%
Diabetes Mellitus	55	31.3%
Cardiac disease	32	18.2%
Stroke	13	7.4%
Chronic Lung disease	11	6.3%
Chronic Kidney disease	7	4.0%
Cancer	1	0.6%

Alzheimer's disease	1	0.6%

Depression of the respondents using Geriatric Depression Scale-15

Table 3 shows distribution of depression of the respondents. Level of depression of the respondents was assessed using 15-item Geriatric Depression Scale (GDS-15). Scores of 0-4 are considered normal, 5-8 indicate mild depression, 9-11 indicate moderate depression and 12-15 indicate severe depression. The minimum score of the respondents was 0 and maximum 14. Among the respondents, 28 (30.8%) had no depression, 44 (48.4%) had mild depression, 14 (15.4%) suffered from moderate depression and the rest, that is, 5 (5.5%) were cases of severe depression.

Table 3: Distribution of level of depression of the respondents (n=91)

Level of depression	Frequency (n)	Percentage (%)
No depression	28	30.8%
Mild depression	44	48.4%
Moderate depression	14	15.4%
Severe depression	5	5.5%

Quality of life of respondents using WHOQOL-BREF scale

Table 4 illustrates the overall scores of qualities of life for each of the WHOQOL-BREF domains. It is observed that, highest mean score was found in the environmental domain (56.92±15.19), followed by psychological domain (51.46±16.31), then physical domain (47.87±12.88) and lastly social domain (46.77±17.41).

Table 4: Mean scores of each domain of WHOQOL-BREF scale (n=91)

Domain of WHOQOL-BREF	Mean ± Standard Deviation
Physical Domain	47.87±12.88
Psychological Domain	51.46±16.31

Social Domain	46.77±17.41
Environmental Domain	56.92±15.19

Association between depression and quality of life

The table 5 shows that among the respondents, the highest mean score was found within those who had no depression (M=57.11), followed by mild depression (M=45.70), then severe depression (M=40.20) and lastly moderate depression (M=38.93). To see the impact of level of depression on physical domain of quality of life, one-way between group ANOVA was conducted. There was statistically significant difference at $p<0.05$ in QOL for levels of depression: $F (3, 87) = 10.641$, $p=0.00$.

In case of association between depression and psychological domain of quality of life, the highest mean score was found within those who had no depression (M=63.93), followed by mild depression (M=48.95), then moderate depression (M=40.71) and lastly severe depression (M=33.80). To see the impact of level of depression on psychological domain of quality of life, one-way between group ANOVA was conducted. There was statistically significant difference at $p<0.05$ in QOL for levels of depression: $F (3, 87) = 14.019$, $p=0.00$. Despite reaching statistical significance, the actual difference in mean scores between the groups was explored by Post Hoc test where Tukey test indicated that the mean score for those who were not depressed (M=63.93, SD=13.15) differed from those who were mildly depressed (M=48.95, SD=13.80), moderately depressed (M=40.71, SD=14.15) and severely depressed (M=33.80, SD=12.95).

On the other hand, in case of association between depression and social domain of quality of life, among the respondents, the highest mean score was found within those who had no depression (M=57.86), followed by mild depression (M=46.00), then moderate depression (M=33.00) and lastly severe depression (M=30.00). To see the impact of level of depression on psychological domain of quality of life, one-way between group ANOVA was conducted. There was statistically significant difference at $p<0.05$ in QOL for levels of depression: $F (3, 87) = 11.061$, $p=0.00$.

Last but not the least, in this study we saw the association between depression and environmental domain of quality of life among the respondents, the highest mean score was found within those who had no depression (M=65.11), followed by mild depression (M=55.64), then moderate depression (M=49.29) and lastly severe depression (M=43.80). To see the impact of level of depression on psychological domain of quality of life, one-way between group ANOVA was conducted. There was statistically significant difference at $p<0.05$ in QOL for levels of depression: $F(3, 87) = 6.131$, $p=0.001$.

Table 5: Association between depression and quality of life

Association between depression and physical domain of quality of life (n=91)					
Depression	**N**	**Mean**	**SD**	**F, df**	**p value**
No depression	28	57.11	8.31	F=10.641 df=3,87	p=0.00*
Mild depression	44	45.70	12.90		
Moderate depression	14	38.93	7.95		
Severe depression	5	40.20	16.45		
Association between depression and psychological domain of quality of life (n=91)					
No depression	28	63.93	13.15	F=14.019 df=3,87	p=0.00*
Mild depression	44	48.95	13.80		
Moderate depression	14	40.71	14.15		
Severe depression	5	33.80	12.95		
Association between depression and social domain of quality of life (n=91)					
No depression	28	57.86	13.33		

Mild depression	44	46.00	17.15	F=11.061 df=3,87	p=0.00*
Moderate depression	14	33.00	9.05		
Severe depression	5	30.00	17.48		
Association between depression and environmental domain of quality of life (n=91)					
No depression	28	65.11	17.17	F=6.131 df=3,87	p=0.001*
Mild depression	44	55.64	12.99		
Moderate depression	14	49.29	11.19		
Severe depression	5	43.80	8.84		

*****Statistically significant

Discussion:

This cross-sectional study was conducted to explore whether there was any association between depression and quality of life among the urban elderly during the COVID-19 pandemic. The study was carried out in some residential areas of Dhaka city which reflected urban settings, namely Gulshan, Niketan and Mohakhali areas. At the same time, we tried our best to take each and every data with caution, maintaining the respondent's privacy.

The study revealed, mean age of the respondents was 66.42 with SD ±5.106. Among the 91 participants, 52.7% were males and the rest, 47.3% were females. Majority of them, 70.3% were married, widowed being 26.4% and the rest either divorced or unmarried. A similar study about QOL of elderly population in Bangladesh revealed 89.2% were married, and the rest were others [18].

As per the educational status was concerned, among the respondents, 24.2% were post graduates, 34.1% were graduates, 29.7% were higher secondarily educated, and the rest were either primarily or secondarily educated. A previous study in Pabna showed 97% of the respondents were illiterate [18]. It was found that, in terms of the monthly household income of the respondents was mostly, that is 45% of them around BDT 1,00,000-4,00,000, and 24.2% had less than 1,00,000, also 24.2% earned BDT 5,00,000-8,00,000, lastly 2% earned more than BDT 8,00,000. Previous study shows, in case of average monthly income, only 13.10% of elderly's family income is more than BDT 6,000 [18].

The study showed, 31.8% respondents had Hypertension, 31.3% had Diabetes Mellitus, 18.2% had cardiac problems, and other respondents had other chronic illnesses. A previous study showed insomnia was the commonest suffering, that is, 33.92%, and also Diabetes mellitus being 14.28% among other diseases [18].

The study revealed, by performing ANOVA test, there was significant association (p=0.000) between depression and all four domains of quality of life. In a previous study, it was found, depression in elderly increases physical QOL, psychological QOL, social QOL and vice versa. No significant relationship emerged between depression and environment quality of life [19].

Comment [16]: Limitations???
The main limiation are: Small sample size 91 this sample size is smallest there is not power to show strong assocition, show Confidence Intervals (C.I 95%). I am sure are imprecise.
2. This study used a inconsistency sampling " Method of sampling was convenient...when use this method why do you done a inferential statistics analisys? If the sample size was not at randon or the participants had not the same probability to participate in the study it was by " convenient!!!!

Conclusion:

This study was conducted to assess whether or not there was any association between depression and quality of life among the urban elderly of Dhaka city during the COVID-19 pandemic. This pandemic is a very crucial time for the elderly citizens due to their vulnerability and fragileness. It is a harsh test of time that nature put on us and it is our duty to protect the physical as well as the mental health of the senile people.

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