ORIGINAL ARTICLE

Attitudes of a geriatric population towards risks about COVID-19 pandemic: in the context of anxiety and depression

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Abstract

Background: A curfew for elderly people was announced in Turkey to protect the geriatric population during the COVID-19 pandemic. Although this may have the beneficial effect of preventing infection, psychological distress may also increase with prolongation of the pandemic.

Methods: Geriatric patients were interviewed by telephone due to the ongoing curfew. Demographical characteristics, comorbidities, personal risk perception of COVID-19, common concerns related to COVID-19, and experiences of delayed hospital admission due to the pandemic were recorded. The Hospital Anxiety and Depression Scale (HADS) was used to assess psychological distress, anxiety, and depression.

Results: Participants ($n = 136$; 82 females, 60.3%) had a mean age of 73.4 ± 5.9 years. The most common comorbidity was hypertension (75%). Approximately 80% of the participants reported a decrease in physical activity during the curfew period. The HADS scores indicated rates of anxiety as 25.7% and depression as 16.9%. Anxiety was significantly more common in females than males ($P = 0.002$). Sleep problems ($P = 0.000$), fatigue ($P = 0.000$), and hopelessness ($P = 0.000$) were more common in participants with depression and anxiety. Logistic regression analyses showed an association between a delay in hospital admission and the presence of depression ($P = 0.0029$, $R^2 = 0.146$). Personal risk perception of COVID-19 was statistically significantly higher among patients with anxiety ($P = 0.0027$, $R^2 = 0.157$).

Conclusion: Decreased adaptation to external and internal factors among older individuals may facilitate unfavourable outcomes of the pandemic. These results indicate that the geriatric population was mentally and physically affected by the restrictions and isolation.

INTRODUCTION

In December 2019, a novel coronavirus (2019-nCoV) emerged from Wuhan, China, which was announced as a pandemic by the World Health Organization on 11 March 2020 and has affected millions of people since then.[1] Due to their comorbidities and immunosuppression caused by aging, elderly people are vulnerable to COVID-19. It is highly fatal among elderly people and the outcome of the disease is poor in this population. Across the entire world, governments are ramping up various precautions to protect elderly people from COVID-19.[2] In Turkey, to ensure social distancing and reduce the rate of spread, a curfew was announced on 22 March 2020 for persons 65 years and older. But while the curfew and social isolation may have the beneficial effects of helping to prevent the spread of COVID-19, there is also the danger of psychological distress appearing among

older people due to the prolongation of the pandemic.[3]

Depression and anxiety are common mental disorders among the elderly population.[4] In the geriatric population, the prevalence of major depressive disorder has been reported as 4%–6%.[4,5] Depression has been associated with impaired quality of life, decreased physical well-being, increased susceptibility to diseases, functional disability, and increased mortality.[6,7] For this reason, screening for depressive symptoms, and early diagnosis and management of depression are important for elderly people. Depressive older patients have higher rates of comorbid anxiety disorders,[8] and the overall prevalence of anxiety in the geriatric population has been found to be 11.4%–17.2%.[5,9] Also, reduced physical activity, loneliness, impaired health-related quality of life, and decreased physical well-being have been related in the literature to the presence of anxiety.[10–12]

Social isolation is thought to be one of the etiological factors in behavioural and mental health problems.[3] Social restriction and isolation are found to be related to immunity problems, increased body mass index, sleeping disorders, mood changes, and impaired cognitive functions.[13,14] Also, social isolation and loneliness may be risk factors for depression.[15] A review that investigated the psychosocial effects of quarantine in previous outbreaks found that depressive symptoms, sleeplessness, irritability, and anxiety were more common. A prolonged quarantine period may influence the psychological state of individuals negatively.[16] A large study from China on psychological states during the COVID-19 outbreak reported that depression was found in 16.5% and anxiety in 28.8% of the participants.[17] Anxiety and depression were more common in patients with concomitant chronic diseases. Concomitant chronic diseases, higher morbidity/mortality rates due to COVID-19, and quarantine and curfews may contribute to the development of psychological distress among elderly people.[18,19]

While there are a few studies which have investigated the influence of COVID-19 in terms of psychological outcomes of the general population, as far as we know, data about anxiety and depressive symptoms among geriatric populations under curfew/quarantine are limited. Physical and mental problems, such as sleep disorders, changes in appetite, decreased physical activity, anhedonia, hopelessness, and memory problems, may be seen more commonly or worsen during a curfew period in the older population. This study aimed to investigate the attitudes of elderly people towards the risks attending the COVID-19 pandemic, and the relation of those attitudes with anxiety and depression.

METHODS

Participant selection, design of the study, and data collection

One hundred thirty-six geriatric patients (≥65 years old) who were followed up in the outpatient clinic of the Department of Geriatric Medicine at Ibn-i Sina Hospital, Ankara University, between September 2019 and March 2020 were included in the study. The patients were interviewed by telephone in June, 2020, due to the ongoing curfew for people 65 years and older in Turkey. At the beginning of the interview, participants were informed about the study and verbal informed consent was requested. The call was continued if the participant agreed to answer the queries. Exclusion criteria were moderate to severe dementia, hearing loss, speech impairments, being unable to communicate via telephone, and refusal to participate in the study. A trained researcher performed all of the telephone interviews. Each telephone call lasted approximately 20–25 min.

Demographic characteristics (age, gender, education level, concomitant chronic diseases, marital and co-resident status) of the patients, and data on current antidepressant use, common concerns related to the COVID-19 pandemic, personal risk perception of COVID-19, experience of a delayed hospital admission due to the pandemic, and symptoms mimicking manifestations of COVID-19 (cough, fever, dyspnea, anosmia, myalgia, and headache) were recorded. Chronic diseases and comorbidities of the participants were assessed using the Charlson comorbidity index (CCI).[20] The total score was calculated by adding the points of each comorbidity that a participant had.

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Ankara University (Ethical approval number: I6-338-20).

Assessment of anxiety and depression

The Hospital Anxiety and Depression Scale (HADS), consisting of 14 questions, was administered to participants by asking the questions one by one on the

telephone. The validity and reliability of the Turkish version have been demonstrated by Aydemir *et al.*[21] The HADS is a useful screening test that can be used not only for hospitalized patients, but also for patients admitted to outpatient clinics and people who are living in the community.[22] Seven of the items assess anxiety (HAD-A), and the other seven evaluate depression (HAD-D). Each item is scored on a 4-point scale ranging from 0 to 3. The cut-off point for each subscale is 8 out of 21 points. Higher scores indicate higher levels of anxiety and depression. The total HADS score was used as a measure of psychological distress, with scores above 15 assessed as indicating the presence of distress.[23,24] Apart from the HADS score, newly onset or worsened sleep and subjective memory problems, appetite and weight gain/loss, and feelings of hopelessness or fatigue during the curfew were also examined. Also, participants were asked whether they engaged in regular physical activities before the curfew and if so, changes in those physical activities were recorded as 'same', 'more', 'less', or 'none'. Additionally, passive suicidal ideation was questioned, and if the participant responded positively, any active suicidal attempts during the curfew were queried.

Statistical analysis

SPSS version 21.0 (IBM) was used for statistical analysis. Descriptive statistics were expressed as the means ± SD for measured variables, and frequencies for categorical data. Parametric tests were used in the analysis because all data were normally distributed for dependant variables. Non-parametric tests were used in the analysis of subgroups that had less than 30 participants. For comparison of the results between groups, *t*-tests, Mann–Whitney *U* tests, and Kruskal–Wallis tests were used. A value of $P < 0.05$ was accepted for significance. Binary logistic regression analyses were conducted to show the association between independent variables, including age, gender, presence of anxiety, depression, and other comorbidities, with the variables related to risk perception regarding COVID-19.

RESULTS

The study included 82 (60.3%) female and 54 (39.7%) male participants, with a mean age of 73.4 ± 5.9 years. The number of married participants was 85 (62.5%), and that of participants living alone was 27 (19.9%). Sociodemographic characteristics, information related to COVID-19, and data regarding sleep and memory problems, appetite and weight gain/loss, and feelings of hopelessness or fatigue are shown in Tables 1 and 2. The mean CCI value was 1.38 ± 1.17. One hundred and nine participants indicated that they were physically active at different levels before the curfew, whereas 88 (80.9%) reported no physical activity or a decrease in physical activity during the curfew period. Forty-two participants (30.9%) described symptoms mimicking manifestations of COVID-19, but only four of them had been admitted to the hospital for further evaluation, and none had a confirmed diagnosis of COVID-19.

Female participants had more concerns related to COVID-19 than male participants (89% and 75.9%, respectively, $P = 0.042$). Male participants were physically more active than female participants before the curfew (94.4% and 70.7%, respectively, $P = 0.001$); however, after the social isolation and curfew began, a statistically significant decrease in physical activity among male participants compared to females was found (90.2% and 72.4% respectively, $P = 0.022$). There were no statistically significant differences between female and male participants in terms of sociodemographic characteristics and parameters as shown in Table 1 ($P > 0.05$).

According to the HADS scores, the rate of anxiety was 25.7% and the depression rate was 16.9%. Psychological distress was observed in 29.4% of the participants. The mean scores for the HAD-A, HAD-D, and total HADS were 5.06 ± 3.51, 3.76 ± 3.54, and 8.72 ± 9.36, respectively. Anxiety was significantly more common in females than males ($P = 0.002$). Females had higher HAD-A, HAD-D, and HADS total scores than males ($P = 0.000$, $P = 0.029$, $P = 0.001$, respectively) (Table 3). The participants who had anxiety reported more concerns related to COVID-19, and experienced more delays in hospital admission ($P = 0.013$ and $P = 0.038$, respectively). Additionally, these participants reported sleep problems ($P = 0.000$), fatigue ($P = 0.001$), and hopelessness ($P = 0.000$) more frequently than the participants without anxiety. Participants with depression more commonly reported symptoms mimicking manifestations of COVID-19 ($P = 0.015$) and delays in hospital admission ($P = 0.001$) than those without depression. Also, memory ($P = 0.001$) and sleep problems ($P = 0.000$), fatigue

Table 1 Sociodemographic characteristics of the participants

	Participants (n = 136)	
	n	%
Gender		
Female	82	60.3
Male	54	39.7
Marital status		
Married	85	62.5
Divorced/widowed	51	37.5
Education level		
5 years and below	94	69.1
Above 5 years	42	30.9
Co-resident status		
Partner	85	62.5
Sibling	21	15.4
Alone	27	19.9
Others	3	2.2
Comorbidities		
HT	102	75
DM	62	45.6
CVD	45	33.1
COPD	19	14
History of any cancer	13	9.6
Current antidepressant use		
Yes	15	11
No	121	89

COPD, chronic obstructive pulmonary diseases; CVD, cardiovascular diseases; DM, diabetes mellitus; HT, hypertension.

Table 2 Features of participants related to COVID-19 and the curfew

	Participants (n = 136)	
Personal risk perception of COVID-19		
Yes	102	75
No	34	25
Reasons for personal risk perception		
Advanced age	50	49.1
Comorbidities	33	32.4
Others	19	18.5
Common concerns related to the pandemic		
Yes	114	83.8
No	22	16.2
Symptoms mimicking manifestations of COVID-19		
Yes	42	30.9
No	94	69.1
Delay in hospital admission		
Yes	65	47.8
No	71	52.2
Weight		
No change	76	55.9
Gain/loss	60	44.1
Appetite		
No change	32	23.5
Gain/loss	104	76.5
Sleeping problems		
Yes	39	28.7
No	97	71.3
Regular physical activity (before the curfew)		
Yes	109	80.1
No	27	19.9
Fatigue		
Yes	41	30.1
No	95	69.9
Subjective memory problems		
Yes	35	25.7
No	101	74.3
Hopelessness		
Yes	59	43.4
No	77	56.6
Depression		
Yes	23	16.9
No	113	83.1
Anxiety		
Yes	35	25.7
No	101	74.3
Psychological distress		
Yes	40	29.4
No	96	70.6

(P = 0.000), and hopelessness (P = 0.000) were more common in participants with depression. Only six participants reported passive suicidal ideation, and all of them had depression according to the HADS. No participant had an active suicidal attempt.

Binary logistic regression analyses were performed to investigate associations between personal risk perceptions of COVID-19, common concerns related to the pandemic, and delays in hospital admission, with a model of predicting variables including age, gender, the CCI, and the presence of depression and anxiety. There was a statistically significant association between a delay in hospital admission and the presence of depression ($P = 0.0029$, $R^2 = 0.146$). Personal risk perceptions of COVID-19 were statistically significantly higher among patients with anxiety ($P = 0.0027$, $R^2 = 0.157$). Common concerns about COVID-19 were higher among patient with higher CCI scores ($P = 0.063$, $R^2 = 0.181$) (Table 4).

DISCUSSION

To our knowledge, this is the first study evaluating anxiety, depression, and psychological distress in elderly people during the curfew period in Turkey. The course of the pandemic that is currently ongoing all over the world may cause negative psychological outcomes, especially among the geriatric population. A high prevalence of anxiety and depression was found in people aged 65 and over due to the curfew and COVID-19 pandemic, according to the current study.

Table 3 Comparison of female and male participants in terms of the presence of anxiety, depression, psychological distress, and HADS scores

	Female ($n = 82$)	Male ($n = 54$)	χ^2	P-value
Depression, n (%)			2.145	0.143
Yes	17 (20.7)	6 (11.1)		
No	65 (79.3)	48 (88.9)		
Anxiety, n (%)			10.022	**0.002**
Yes	29 (35.4)	6 (11.1)		
No	53 (64.6)	48 (88.9)		
Psychological distress, n (%)			7.007	**0.008**
Yes	31 (37.8)	9 (16.7)		
No	51 (62.2)	45 (83.3)		
			t	P value
HAD-A score[†]	5.95 ± 3.8	3.70 ± 2.59	4.129	**0.000**
HAD-D score[†]	4.27 ± 3.80	2.98 ± 2.98	2.204	**0.029**
HADS total score[†]	10.09 ± 6.90	6.65 ± 4.90	3.394	**0.001**

[†]Values were given as mean ± standard deviation. All significant P values are in bold. HAD-A, Hospital Anxiety and Depression Scale-Anxiety subscale; HAD-D, Hospital Anxiety and Depression Scale-Depression subscale; HADS, Hospital Anxiety and Depression Scale.

Table 4 Logistic regression analyses for delay in hospital admission and risk perception of COVID-19

		B	SE	P-value	95% CI for EXP(B)	
					Lower	Upper
Delay in hospital admission	Age	−0.057	0.032	0.073	0.888	1.005
	Gender	0.163	0.387	0.673	0.551	2.514
	CCI	0.320	0.281	0.255	0.794	2.387
	HAD-D	−1.290	0.590	**0.029**	0.087	0.875
	HAD-A	−0.431	0.474	0.364	0.257	1.647
Personal risk perception of COVID-19	Age	0.047	0.035	0.185	0.978	1.122
	Gender	0.038	0.426	0.929	0.451	2.392
	CCI	−0.298	0.323	0.356	0.395	1.397
	HAD-D	−1.064	0.848	0.209	0.066	1.817
	HAD-A	−1.747	0.790	**0.027**	0.037	0.819
Common concerns about COVID-19 pandemic	Age	−0.061	0.041	0.144	0.868	1.021
	Gender	−0.674	0.502	0.179	0.190	1.363
	CCI	0.733	0.395	0.063	0.960	4.516
	HAD-D	0.395	0.912	0.665	0.249	8.871
	HAD-A	1.849	1.098	0.092	0.738	54.691

All significant P values are in bold. B, beta; CCI, Charlson comorbidity index; CI, confidence interval; EXP(B), exponentiation of the B coefficient; HAD-A, Hospital Anxiety and Depression Scale-Anxiety subscale; HAD-D, Hospital Anxiety and Depression Scale-Depression subscale; SE, standard error.

Social isolation and restrictions may be the most important factors related to high rates of psychological distress in elderly individuals. The prevalence of psychological distress in the current study was similar to previous studies in the literature. In a recent study from China, conducted with 1556 participants who were aged over 60 years, the rate of anxiety and depression was 37.1% in the early months of COVID-19 pandemic.[25] Qui et al. similarly reported the prevalence of psychological distress as 35% in participants aged over 18 years. Also, for participants in the 18–30 and older than 60 age groups, the psychological distress scores were higher.[19] Apart from this, differences in the impact of the pandemic according to different countries and the sociocultural characteristics of their populations may be observed. The relatively higher frequencies that have been found in China may be related to the condition of living at the starting point of COVID-19. In a study that investigated anxiety and depression for participants living in quarantine-affected versus unaffected areas of China, higher rates of anxiety and depression in the quarantine-affected group were found.[26] The current study was conducted during a curfew implemented for elderly people when they were socially isolated, so as to reveal the relation with the curfew clearly.

In previous studies performed in Turkey, the prevalence of depression was found as 16%–18.5% in community-dwelling elderly populations.[27,28] Accordingly, the prevalence of depression found in the community-dwelling elderly population during the pandemic period was similar to the period before the pandemic. This may be related to the dominance of atypical symptoms of depression in the elderly population, and as this study was conducted by phone call, some insignificant and atypical symptoms may have been underestimated. Also, the prolonged quarantine period and social isolation may have led elderly people not to express their emotions due to their isolation, and family members may not have been able to recognize threshold symptoms related to depression and anxiety.

The rate of anxiety disorders was found to be 17.2% before the pandemic among an elderly population.[9] Another study from Turkey also showed that the prevalence of all types of anxiety disorders was 17.1% among people over 65 years of age.[29] Anxiety disorders are known to diminish with aging.[28] On the other hand, the prevalence of anxiety disorders was 25.7% in the current study, which was higher than the results of studies before the curfew. Social isolation, concerns related to COVID-19, fear of illness and death, and fear of failure to access health services may be reasons for the increased rates of anxiety disorders during the curfew.

The higher rates of anxiety and depression among females in the current study is similar to previous studies in the literature.[19,25] This may be explained by high vulnerability of females to stress.[30] In the current study, no relationship between marital status and anxiety and depression was found. However, a previous study performed among a younger population found that widowed/divorced people had more anxiety and depression.[26] Higher anxiety and depression scores in participants with lower education levels in the current study may be explained by cognitive errors (catastrophizing, over generalizing, dichotomous thinking) that are based on a lack of knowledge about COVID-19. While there are studies consistent with our findings in the literature, one study reported that people with higher education levels had more psychological distress because they had more self-awareness of their health.[19]

In the current study, the presence of hopelessness was found among approximately half of the participants, and its prevalence was higher among patients with depression and anxiety. Hopelessness is known to play an important role in depression and it is also one of the main symptoms of depressive disorders.[31] The impact of the pandemic and prolonged restrictions on daily activities may cause hopelessness to be felt more frequently. Also, sleep problems were present in one third of our study population, and found to be statistically significantly higher among patients with depression and anxiety. Sleep problems, which may be a component of psychological distress, have been found to be common in elderly people due to social isolation.[32] Also, restricted physical activities and concerns about COVID-19 may lead to sleep disorders. Symptoms which mimic COVID-19 in non-COVID participants were more common among the participants with psychological distress in the current study. This finding was similar to the literature.[33] However, although patients with anxiety were expected to have symptoms mimicking COVID-19 more frequently, no relationship was found between the presence of COVID-19 symptoms and anxiety. This may be related to the small sample size of the study. Somatic symptoms such as myalgia, dyspnea, fatigue, and malaise may also occur in the course of anxiety and depressive disorders. On the other hand, patients with those psychiatric problems may experience more physical complaints which might arise from negative emotional states or stress perception.

Due to prohibitions that applied except in emergency situations, daily physical activities of elderly people were restricted to different extents during the curfew. In our study, most of the participants reported that they were physically more active before the curfew, and the decrease in physical activity was more obvious in males. Physical activity is a protective factor against depression in older people.[34] As the restrictions become prolonged, decreased physical activity may provoke depressive symptoms during a curfew in older people. Furthermore, physical inactivity or a continuing decrease in physical activity may accelerate the development of sarcopenia by causing loss of muscle mass and strength.[35] Sarcopenia is related with frailty, an inability to cope with the stress of major illness, functional impairments, and mortality in the elderly.[36,37] Regular indoor physical activities should be enhanced to protect mental health, reduce depressive symptoms, and maintain physical well-being in older people.

In the current study, a delay in hospital admission was found to be associated with the presence of depression. Consistent with our findings, during the course of depressive disorders, individuals typically have to force themselves to take a required action, especially in fulfilling their responsibilities. Delay in hospital admissions may cause a delay in the diagnosis of some diseases which may lead to morbidity or mortality.

According to the current study, the presence of anxiety leads to an increased personal risk perception regarding COVID 19, which is a crucial and expected finding. On the other hand, while the presence of anxiety was higher among patients who commonly had concerns related to COVID 19, it did not reach statistical significance. The small sample size of the study group and the assessment of symptoms via self-report findings on the phone call may have been factors. Also, the increased CCI scores mean having comorbidities, which bring increased risk for morbidity and mortality. These patients had higher common concerns related to the COVID-19 pandemic, as would be expected.

There are some limitations of the current study. Only a limited number of participants were included, as the study was performed via phone call with participants due to the ongoing curfew in our country. Also, some of our follow-up patients were not suitable for interviewing due to dementia, hearing loss, etc., and they were excluded as mentioned in the Methods section. Whereas the HADS is effective for screening anxiety and depression separately, the diagnosis of depression and anxiety could also be made by a structured psychiatric examination. Patients who were infected with coronavirus might be included as a control group. Due to the small sample size comprised of follow-up patients in an outpatient clinic, the results of the study may not reflect the broader community situation. Also, while the study did reveal depression and anxiety related to COVID-19, other stressors that lead to the development of depression and anxiety should be considered. As strengths of the study, including patients who had been followed up in our outpatient clinic may have increased the reliability of the interview. The HADS is reliable and valid in outpatients as well as older patients. The HADS does not contain items related to somatic symptoms, and this prevents the misunderstanding of somatic illness as depression.[38]

Also, apart from having a prospective design, it is the first study evaluating anxiety and depression in elderly people during the curfew period in our country.

Decreased adaptation to external and internal factors are common among older individuals, which may facilitate unfavourable results during the pandemic. It is crucial to support and maintain the mental health of elderly people as well as their physical well-being. The effects of anxiety and depression on physical performance and the course of chronic diseases in the elderly are prominent. Therefore, it is important to identify individuals at high risk for the development of psychological distress. According to the current study, individuals 65 years and older were affected seriously by the pandemic and curfew period. Female participants, participants with lower education levels, and participants with sleep and memory problems have higher rates of anxiety or depression.

In conclusion, screening elderly people for psychological distress, and diagnosing anxiety and depression earlier, enable providing essential psychological and social support and making appropriate interventions. Unrecognized and untreated anxiety and depression may accelerate the development of frailty in older people. In the future, larger studies that investigate the effect of pandemics and social restrictions on elderly people are warranted.

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DATA SHARING AND DATA ACCESSIBILITY

All data are available upon reasonable request.

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