Anxiety, Depression and Death Anxiety in Individuals with COVID-19

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Abstract

This study aimed to determine the death anxiety, anxiety, and depression levels of the individuals staying at the hospital due to COVID-19. The study recruited 300 patients with confirmed COVID-19 who were staying at specialized clinics in the hospital. Three tools – A Patient Information Form, the Death Anxiety Scale (DAS), and the Hospital Anxiety and Depression Scale (HADS)–were used to collect data. The findings of the present study revealed that 28.7% of the participants were at a high risk for developing anxiety and 45.0% were equally at a high risk for developing depression. 33.3% of the participants suffered from high level of death anxiety. There was a positive and highly significant correlation between their death anxiety and their anxiety and depression scores ($p < .001$). Accordingly, more evidence-based studies need to be conducted that examine how effective non-pharmacological practices are at helping COVID-19 patients by identifying their anxiety, depression, and death anxiety. Furthermore, nurses need to take care of patient care in a holistic manner that would include addressing patients' psychological needs alongside their physical problems.

Keywords

death anxiety, nursing, anxiety, depression, COVID-19

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A viral infectious disease, COVID-19 has recently turned into a world pandemic within 3 months of its outbreak. So far, it has infected and killed millions of people (World Health Organization, 2021). As of April 13, 2022, 499.119.316 cases and 6.185.242 COVID-19-related deaths have been reported globally (World Health Organization, 2022). In most cases, it causes mild to moderate symptoms. However, it can also lead to significant complications for the elderly and/or people who suffer from other systemic diseases (World Health Organization, 2021). Some studies have reported that communicable diseases cause people to experience considerable trauma and psychological problems (Mahat-Shamir et al., 2021; Zhang et al., 2020). One study conducted during the pandemic reported that 16.5% of COVID patients experienced moderate to severe depressive symptoms, while 28.8% also suffered from moderate to severe anxiety (Wang et al., 2020). Another study reported that people with COVID-19 also suffered from post-traumatic stress disorder, anxiety, and insomnia (Bo et al., 2021). A systematic review of studies conducted in nine countries – including Turkey – revealed that 6.3%–50.9% of COVID-19 patients ended up developing anxiety, while 14.6%–48.3% had depression (Xiong et al., 2020).

Mass mortality, isolation, uncertainty, loss of family members, and a continued increase in infections all remind people of looming death. Therefore, the inability of the relatives of the decreased people to fulfill their responsibilities after death has brought a different perspective to the concept of death (Adhanom, 2020). How people perceive death differs across societies, religions, age, and even a person's cultural status. Various existential theories argue that death anxiety is an emotion that people carry throughout their lives from birth, and it is the root of most of our fears (Furer & Walker, 2008). One of the most well-known and widely examined theories on "death-anxiety" is the Terror Management Theory (TMT) (Pyszczynski et al., 1997). It argues that people suffer considerably from anxiety when they are aware of their own mortality (Mikulincer & Florian, 2007).

Death anxiety encompasses a wide range of emotions – such as fear, grief, and restlessness – and develops upon a person realizing that they will no longer exist 1 day (Mohammadzadeh et al., 2018; Menzies & Menzies, 2020). Anxiety over being away from one's family during treatment, feeling isolated, and the fear of becoming infected and infecting others all make death anxiety worse (Mahat-Shamir et al., 2021; Şiraz et al., 2020). Several studies have shown that the pandemic has triggered many people to develop death anxiety (Kandemir, 2020; Mahat-Shamir et al., 2021; Saleem & Saleem, 2020).

Additionally, the inevitability of death and its uncontrolled consequences both cause anxiety – ultimately making life more difficult. Intense anxiety of death alongside being aware of death can also adversely affect one's mental health, thus causing anxiety and depression (Kavaklı et al., 2020; Okuyan et al., 2020; World Health Organisation, 2021). Anxiety refers to perceiving mundane situations as more dangerous than they really are and worrying more than necessary. Depression is a common mental health problem, and can cause one to feel sad, grief stricken, unhappy, and pessimistic – among other emotions. It can also have a terrible impact on one's social and business

life, thereby causing significant material and immaterial losses (Kafes, 2021). Several studies have reported that COVID-19 can lead to anxiety, depression, and death anxiety (Deng et al., 2021; Nie et al., 2021; Özdin & Özdin Bayrak, 2020).

Psychological health plays a substantial role in helping patients recover from their illness faster. Those who apply effective coping strategies can help them keep their negative state of mind under control, thus accelerating their recovery (Damirchi et al., 2020). Alas, a limited number of studies have assessed psychology of COVID-19 patients, given the current priority given to physical over psychological symptoms (Kafes, 2021). Families, social circle, and healthcare professionals are all help those who have had to be hospitalized keep their stress and anxiety levels down. In particular, healthcare professionals need to understand COVID-19 patients' psychological problems if they want to facilitate their compliance, improve prognosis, and shorten their stay in hospital (Deng et al., 2021). Nurses have thus spent the most time interacting with COVID-19 patients during pandemic (Zhang et al., 2020). Hence, they also play a key role in identifying and treating mental problems of patients such as anxiety, depression, and/or death anxiety. Therefore, they definitely need to keep the psychological dimension in mind when planning the patients' care, and should approach them in a holistic manner.

Aim of the Study

Numerous studies already exist on depression and anxiety associated with COVID-19 (Bo et al., 2021; Wang et al., 2020; Xiong et al., 2020). However, none so far have specifically investigated depression, anxiety, and death anxiety levels among COVID-19 patients who have been hospitalized. This study aimed to fill that gap.

Materials and Methods

Study Design and Setting

This is a descriptive and cross-sectional study. It was conducted at COVID-19 clinics at a training and research hospital in a province of Turkey.

Sample and Participants

The hospital in question has five COVID-19 clinics, each of which have a 62-bed capacity. This study recruited 300 patients who were hospitalized in the COVID-19 clinics between April, first and June 30th, 2021. The participants consisted of patients who were diagnosed with COVID-19, had no vision, hearing, addiction or communication problems, and volunteered to participate in the study. We originally had reached out of 353 people diagnosed with COVID-19. Of those, nine ended up dying and 13 had to be referred to intensive care units. An additional 15 patients could not be included in the study because they were both physical and mental disabled, whilst 16

patients declined to participated in the study. In short, 53 patients ended up being excluded from the study, thereby bringing the number down to 300.

Data Collection Tools

Three data collection tools were used to collect the data: a patient information questionnaire, the Death Anxiety Scale, and the Hospital Anxiety and Depression Scale (HADS).

The Patient Information Questionnaire. The Patient Information Questionnaire was prepared upon literature review (Nie et al., 2021; Özdin & Özdin Bayrak, 2020; Zhang et al., 2020) consists of 13 questions about the sociodemographic characteristics and disease-related characteristics of the patients.

Death Anxiety Scale (DAS). The Death Anxiety Scale (DAS) was developed by Templer in 1970 to measure a person's anxiety levels regarding different situations including a risk of death (Templer, 1970). It is widely used in the literature, and properly distinguishes anxiety.

Akça and Köse had carried out the validity and reliability study on its Turkish version in 2008 (Akça & Köse, 2008). It contains 15 items in *True/False* format in Likert type scale. Zero (0) is the lowest score one can earn, while 15 is the highest. Any score between 4.5 and seven indicates that one has a normal level of death anxiety. When the cut-off point of the scale is >7, this indicates a high level of death anxiety (Templer, 1970). The more "yes" responses the person gives, the higher their death anxiety is. In the study by Akça and Köse, Cronbach's alpha value of the scale was .79 (Akça & Köse, 2008); while this value was found to be .895 in the present study.

Hospital Anxiety and Depression Scale-(HAD). The HAD was developed by Zigmond and Snaith in 1983 to find out the degree of risk patients were at for developing anxiety and depression, and thus to measure what level and severity they were at thereof (Zigmond & Snaith, 1983). Aydemir et al. (1997) conducted the validity and reliability study on its Turkish version. It contains 14 questions, seven of which (odd numbers) measured anxiety, while the remaining seven measured (even numbers) depression. In a 4-point Likert scale, each question ranged between 0 and three points. Items can be scored one of two ways. Items 1, 3, 5, 6, 8, 10, 11 and 13 all indicate decreasing severity and their scoring descends from three to 0. Likewise, items 2, 4, 7, 9, 12 and 14 are scored reversely, from 0 to 3. While the sum of items 1, 3, 5, 7, 9, 11, and 13 gives the score of the Anxiety subscale, the sum of items 2, 4, 6, 8, 10, 12 and 14 gives the score of the Depression subscale. The lowest score one can earn is 0, the highest is 21. The cut-off points for the Turkish version of HADS were 10 on the anxiety subscale (HAD-A) and seven on the depression subscale (HAD-D). Patients with scores above either were considered as high-risk. In the study by Aydemir et al., Cronbach's alpha values were

0.85 for HAD-A and 0.77 for HAD-D (Aydemir et al., 1997). In the present study, Cronbach's alpha coefficient was .957 for the former and .726 for the latter.

Data Analysis

Statistical analysis was performed with SPSS (IBM Corp., Armonk, New York, USA). The were analyzed using descriptive statistics (number, percentage, mean, and standard deviation) and Cronbach's alpha for the instrument's reliability. Several tests were used as well: Shapiro–Wilk normality, Kruskal–Wallis and Mann–Whitney U, in significance tests to find out the difference between two mean values. Spearman's correlation analyses were also conducted to determine how all of the data were correlated with one another. Bonferroni correction was used to compare the main effects. All of the findings were assessed at the confidence interval of 95% and significance level of $p < .05$.

Ethical Considerations

Ethical approval was obtained from Çukurova University's non-interventional clinical research ethics committee (2021/107). Institutional permission was obtained from the institution where the study was conducted. All of the participants were likewise asked to give verbal and written informed consent.

Findings

The mean age of the participants was $56.36 ± 16.34$. 53% of them were female, 80% were married, 47.7% were primary school graduates, 75% were unemployed, and 64.7% had a middle income. 55.7% of the patients suffered from at least one chronic disease, while 41.7% perceived themselves as being in moderate to good health-wise condition. 82.7% stated that some of their relatives were also diagnosed with COVID-19. Of that, 82.7% indicated that their relatives had recovered from COVID-19; whereas, 18.7% said that they lost relatives due to COVID-19 (Table 1).

Twenty-eight point seven percent (28.7%) of the participants were at a high risk for developing anxiety, whereas 45.0% were likewise at a high risk for developing depression (Table 2). It was found that the HAD-A mean scores of participants who were female, were from low-income backgrounds, and perceived their overall health to be poor were all higher than the other participants. Also, the mean HAD-D scores of those who were female, illiterate, unemployed, from low-income backgrounds, suffered from chronic diseases, and perceived their health status poor were higher than other participants as well ($p < .05$) (Table 3).

The results of the Bonferroni test analyses revealed that those from low-income backgrounds had higher HAD-A mean scores than those from medium income backgrounds. Similarly, participants who perceived poor health as bad had higher HAD-A mean scores than those who perceived their health status good – or at least moderate – health ($p < .05$) (Table 3).

Table 1. Descriptive Characteristics of the Patients.

Characteristics	n	%
Gender		
Female	159	53.0
Male	141	47.0
Age group (year)		
34 years and below	29	9.7
35–44	46	15.3
45–54	57	19.0
55–64	61	20.3
65 years and above	107	35.7
Marital status		
Married	240	80.0
Single	60	20.0
Educational level		
Illiterate	80	26.7
Primary school	143	47.7
High school	38	12.6
University/Post graduate	39	13.0
Employment status		
Employed	75	25.0
Unemployed	225	75.0
Income level		
Good	46	15.3
Moderate	194	64.7
Bad	60	20.0
Chronic disease		
Yes	167	55.7
No	133	44.3
Perception of health		
Good	125	41.7
Moderate	125	41.7
Bad	50	16.6
Relatives were diagnosed with COVID-19		
Yes	248	82.7
No	52	17.3
Relatives were recovered from COVID-19		
Yes	248	82.7
No	52	17.3
Relatives were death due to COVID-19		
Yes	56	18.7
No	244	81.3
Total	300	100.0

Table 2. Patients' HAD-A, HAD-D and DAS Scores.

Scales	n	%	$\bar{x} \pm SS$	Min-Max
HAD-A low risk (0–10)	214	71.3	7.54 ± 5.86	0–21
HAD-A high risk (11–21)	86	28.7		
HAD-D low risk (0–7)	165	55.0	7.35 ± 4.15	1–19
HAD-D high risk (8–21)	135	45.0		
DAS low (0–6)	200	66.7	5.05 ± 4.20	0–15
DAS high (7–15)	100	33.3		

Further analysis indicated that illiterate participants also had higher HAD-D mean scores than those who had primary, high school and university graduates. The HAD-D mean scores of those who had poor health status were higher than those with moderate or good health. Comparatively, those from lower income backgrounds had higher HAD-D mean scores than those from high income backgrounds ($p < .05$). (Table 3).

This study indicated that 33.3% of the patients had a high level of death anxiety (Table 2). Moreover, those who were female ($p = .037$), illiterate ($p = .007$), had a low-income ($p = .038$) and perceived their health ($p < .001$) poor earned higher mean scores than the other subjects (Table 4).

Illiterate participants earned statistically significantly higher DAS scores than primary and university graduates. Those from low-income backgrounds had a higher DAS scores than those with medium income backgrounds. Moreover, those who perceived their health as poor had higher DAS scores than those who perceived their health status as good or moderate ($p < .05$) (Table 4).

There was no significant correlation between those who lost their relatives due to C0VID-19 and death anxiety ($p > .05$). In addition, there was a positive and significant correlation between patients' death anxiety levels and their hospital anxiety ($r = .760$) and depression ($r = .663$) scores ($p < .001$) (Table 5).

Discussion

In addition to COVID-19's negative impact on one's physical health, it can also cause considerable mental health issues such as anxiety, depression, and death anxiety. Thus far, COVID-19 has led many people around the world to develop psychological disorders, thereby also affecting their quality of life (Kandemir, 2020; Xiong et al., 2020).

The COVID-19 pandemic has put many people's lives in jeopardy. Likewise, its impact on different societies is diverse compared to that of other diseases, because it has forced people to live in fear and anxiety. The fact that COVID-19 is contagious, constantly spreading, and has a high morbidity and mortality has adversely affected people's mental health by causing fear and anxiety (Çağlar & Kaçer, 2022; Okuyan et al., 2020). People feel that their lives are in danger and are aware of death – in turn

Table 3. Patients' Anxiety and Depression Scores According to Demographic Characteristics.

Characteristics	HAD-A Median (Min-Max)	HAD-A $\bar{x} \pm SD$	p	HAD-D Median (Min-Max)	HAD-D $\bar{x} \pm SD$	p
Gender						
Female	7.0 (.0–21.0)	8.4 ± 5.9	**.003***	8.0 (2.0–19.0)	8.1 ± 4.1	**.000***
Male	5.0 (.0–21.0)	6.5 ± 5.5		6.0 (1.0–18.0)	6.4 ± 3.9	
Age group (year)						
34 years and below	8.0 (.0–20.0)	8.8 ± 6.1	.593**	5.0 (2.0–18.0)	6.5 ± 4.0	0.169**
35–44	7.0 (.0–21.0)	8.0 ± 5.9		6.0 (2.0–18.0)	6.8 ± 4.0	
45–54	6.0 (.0–19.0)	7.6 ± 5.6		7.0 (2.0–16.0)	6.6 ± 3.4	
55–64	6.0 (.0–19.0)	7.1 ± 5.7		7.0 (1.0–19.0)	7.2 ± 4.3	
65 years and above	6.0 (.0–21.0)	7.1 ± 5.9		8.0 (1.0–18.0)	8.2 ± 4.3	
Marital status						
Married	6.0 (.0–21.0)	7.3 ± 5.9	.224*	7.0 (1.0–19.0)	7.2 ± 4.0	.283*
Single	7.0 (1.0–20.0)	8.1 ± 5.6		8.0 (1.0–18.0)	7.9 ± 4.4	
Educational level***						
Illiterate	8.0 (.0–21.0)	8.6 ± 6.3	.258**	9.0 (2.0–18.0)	9.5 ± 4.1	**.000***
Primary school	5.0 (.0–21.0)	6.8 ± 5.6		6.0 (1.0–18.0)	6.5 ± 3.8	
High school	7.0 (.0–20.0)	7.8 ± 5.9		6.0 (1.0–19.0)	6.6 ± 4.1	
University/ Post graduate	6.0 (.0–20.0)	7.5 ± 5.3		5.0 (1.0–18.0)	6.3 ± 3.9	
Employment status						
Employed	6.0 (.0–20.0)	7.4 ± 5.7	.934*	6.0 (1.0–18.0)	6.3 ± 3.7	**.014***
Unemployed	6.0 (.0–21.0)	7.5 ± 5.9		7.0 (1.0–19.0)	7.6 ± 4.2	
Income level***						
Good	6.0 (.0–20.0)	7.3 ± 5.4	**.023***	6.5 (1.0–18.0)	6.6 ± 3.7	**.000***
Moderate	6.0 (.0–21.0)	6.9 ± 5.5		6.5 (1.0–19.0)	6.7 ± 3.6	
Bad	8.5 (.0–21.0)	9.6 ± 6.6		9.5 (2.0–18.0)	9.8 ± 4.9	
Chronic disease						
Yes	6.0 (.0–21.0)	8.0 ± 5.9	.095*	8.0 (1.0–19.0)	8.0 ± 4.2	**.001***
No	5.0 (.0–21.0)	6.9 ± 5.7		6.0 (1.0–18.0)	6.5 ± 3.9	
Perception of health***						
Good	4.0 (.0–21.0)	5.1 ± 4.5	**.000***	4.0 (1.0–16.0)	5.0 ± 2.9	**.000***
Moderate	7.0 (.0–21.0)	7.7 ± 5.4		8.0 (1.0–19.0)	7.7 ± 3.5	
Bad	15.0 (1.0–21.0)	13.0 ± 6.1		12.0 (4.0–18.0)	12.0 ± 3.9	
Relatives were diagnosed with COVID-19						
Yes	6.0 (.0–21.0)	7.6 ± 5.9	.398*	7.0 (1.0–19.0)	7.4 ± 4.2	0.276*
No	5.0 (.0–18.0)	6.8 ± 5.5		7.0 (1.0–15.0)	6.7 ± 3.7	

(continued)

Table 3. (continued)

Characteristics	HAD-A Median (Min-Max)	HAD-A x̄ ± SD	p	HAD-D Median (Min-Max)	HAD-D x̄ ± SD	p
Relatives were recovered from COVID-19						
Yes	6.0 (.0–21.0)	6.5 ± 5.3	.192*	7.0 (1.0–19.0)	7.5 ± 4 .3	.170*
No	5.0 (.0–18.0)	7.7 ± 5.9		7.0 (1.0–15.0)	6.5 ± 3.6	
Relatives were death due to COVID-19						
Yes	7.0 (.0–20.0)	8.3 ± 5.7	.136*	7.5 (1.0–19.0)	7.8 ± 4.3	.419*
No	6.0 (.0–21.0)	7.3 ± 5.8		7.0 (1.0–18.0)	7.2 ± 4.1	

*Mann–Whitney U test.
**Kruskal Wallis test.
***Post hoc test was used in further analysis.

causing them to experience death anxiety in general. The present study indicated that 33.3% of the participants suffered from intense death anxiety. Similar studies have reported that the pandemic has caused many to develop death anxiety (Kandemir, 2020; Saleem & Saleem, 2020)

Gender, age, marital status, religion, near-death experiences, and frequent death all lead to death anxiety (Kandemir, 2020; Saleem & Saleem, 2020). In this study, it was determined that women had higher level of death anxiety than men do. Saleem and Saleem (2020) also arrived at the same conclusion (Saleem & Saleem, 2020). Various other studies support this, as well (Kandemir, 2020; Kavaklı et al., 2020). It is thought that women tend to be more emotional and fragile by nature and have more responsibilities at home. Many have also assumed greater workloads during the pandemic. All of that in turn only puts them at a greater risk of developing depression, anxiety, and death anxiety.

Another noteworthy finding of the present study is that people from low-income backgrounds had higher death anxiety. Likewise, Kavaklı et al. have found the same thing as well (Kavaklı et al., 2020). The COVID-19 pandemic has affected many people and societies economically, and forced many out of work. Hence, job and income loss cause them to experience financial difficulties and naturally worry over their future. Those who earn little money are more likely to worry about how they will be able to pay for treatment in the event they or their loved ones fall ill – hence intensifying their death anxiety.

The present study indicated that illiterate patients had higher death anxiety than those who were literate/schooled. Likewise, a study reported that the lower level of education individuals had, the more prone they were to suffering from death anxiety (Guner et al., 2021). It is thought that low education levels may promote death anxiety by causing a feeling of uncertainty in the patients. It was also found that patients who perceived their health status as poor had higher levels of death anxiety, too. Individuals have perceived COVID-19 as a major threat since it causes death. This may in turn

Table 4. Patients' DAS Scores According to Demographic Characteristics.

Characteristics	DAS Median (Min-Max)	DAS $\bar{x}$ ± SD	p
Gender			
Female	5.0 (.0–15.0)	5.5 ± 4.2	**.037***
Male	3.0 (.0–15.0)	4.5 ± 4.1	
Age group (year)			
34 years and below	4.0 (.0–9.0)	4.2 ± 3.2	.867**
35–44	4.0 (.0–14.0)	4.9 ± 3.6	
45–54	4.0 (.0–15.0)	5.0 ± 4.2	
55–64	4.0 (.0–15.0)	4.9 ± 4.3	
65 years and above	4.0 (.0–15.0)	5.4 ± 4.5	
Marital status			
Married	4.0 (.0–15.0)	4.9 ± 4.1	.626*
Single	4.0 (.0–14.0)	5.3 ± 4.4	
Educational level***			
Illiterate	5.0 (.0–15.0)	6.5 ± 4.5	**.007***
Primary school	3.0 (.0–15.0)	4.6 ± 4.2	
High school	4.0 (.0–15.0)	4.5 ± 3.7	
University/Post graduate	4.0 (.0–9.0)	4.1 ± 2.9	
Employment status			
Employed	4.0 (.0–15.0)	4.5 ± 3.6	.403*
Unemployed	4.0 (.0–15.0)	5.2 ± 4.3	
Income level***			
Good	4.0 (.0–15.0)	4.8 ± 3.7	**.038***
Moderate	3.0 (.0–15.0)	4.6 ± 4.0	
Bad	5.0 (.0–15.0)	6.4 ± 4.7	
Chronic disease			
Yes	4.0 (.0–15.0)	5.5 ± 4.5	.101*
No	4.0 (.0–15.0)	4.4 ± 3.6	
Perception of health***			
Good	3.0 (.0–13.0)	3.2 ± 3.1	**.000***
Moderate	5.0 (.0–15.0)	5.4 ± 5.1	
Bad	9.0 (.0–15.0)	8.4 ± 4.3	
Relatives were diagnosed with COVID-19			
Yes	4.0 (.0–15.0)	5.0 ± 4.0	.834*
No	4.5 (.0–15.0)	5.1 ± 4.7	
Relatives were recovered from COVID-19			
Yes	4.0 (.0–15.0)	5.0 ± 4.1	.649*
No	4.5 (.0–15.0)	4.9 ± 4.5	
Relatives were death due to COVID-19			
Yes	4.0 (.0–15.0)	5.3 ± 4.4	.574*
No	4.0 (.0–15.0)	4.9 ± 4.1	

*Mann–Whitney *U* test.
**Kruskal Wallis test.
***Post Hoc test was used in further analysis.

Table 5. Correlation between DAS and HAD scale of patients.

	Hospital Anxiety Scale (HAD-A)	Hospital Depression Scale (HAD-D)
Death anxiety scale (DAS)	$r = .760^*$ $p = .000$	$r = .663^*$ $p = .000$

*Spearman correlation test was used.

make them perceive their health status as poor, thus resulting in thought of possible death and the death anxiety.

The results of the present study also indicate that the pandemic has triggered a spike in death anxiety among people, alongside anxiety and depression – all of that ultimately prolongs how quickly COVID-19 sufferers recover, and impairs their quality of life.

The studies suggest that most people have developed anxiety and depressive symptoms during the COVID-19 pandemic (Ren et al., 2020; Wang et al., 2020; Wang et al., 2021; Xiong et al., 2020). The present study reported that 28.7% of the participants were at risk of developing anxiety, while 45.0% were at risk of developing depression. One study evaluating depression and anxiety levels among Turkish population during the pandemic revealed that 23.6% of the participants were at risk of falling into depression, whereas 45.1% were at risk of developing anxiety (Özdin & Özdin Bayrak, 2020). Other studies examining the effects of COVID-19 on mental health have reported that incidence rates for anxiety and depression were between 25 and 47%, and between 28 and 45%, respectively (Deng et al., 2021; Nie et al., 2021; Ren et al., 2020). It is thought that the high number of deaths due to COVID-19, the quarantine precautions applied, and the rapid spreading of the infection, cause individuals to experience anxiety and depression.

Many factors trigger mental disorders specific to the pandemic, namely: being in a poor economic state, having low education level, perceiving one's health as poor, feeling lonely, having COVID-19 (and suffering from various physical symptoms thereof), and suffering from chronic diseases (Wang et al., 2020). The results of the present study indicated that women's anxiety and depression levels were generally higher than those of men. Other studies have also put forward the same findings (Gu et al., 2021; Li et al., 2021). Women assume most responsibilities when it comes to looking after their families – along with their career (Çağlar & Kaçer, 2022). The effects of genetics and steroid hormones may also make women more sensitive than men (Songtachalert et al., 2018). All of these play a role in why women appear to be hit harder by pandemic psychologically in contrast to their male counterparts.

It was observed in this study that anxiety and depression levels of those from low-income backgrounds were high and those who were unemployed had also higher levels of depression. A similar study also put forth that the anxiety levels of people from low-income backgrounds were higher than those from moderate or high income ones (Deen et al., 2021). The pandemic has caused economic stagnation. In turn, it has

forced millions of people out of a job and into poverty, thereby causing a major impairment to their quality of life. That therefore triggers anxiety and depression because those in that situation are forced to worry about how they will be able to take care of themselves and their families.

The present study indicated that anxiety and depression levels were higher among those who perceived their health status as bad. At least one other study backs that (Deen et al., 2021). Multiple factors may have affected the health perception of the patients. For example, symptom intensity does not always correspond with how one perceives their own health. If one thinks that they have poor overall health, then that in turn may affect their state of mind. If they feel negative, they are likely to perceive themselves negatively as well.

Additionally, it was observed that patients who also suffered from chronic diseases also had high depression levels. This is consistent with the findings of COVID-19 studies. It has been shown that the presence of chronic diseases increases the depressive symptoms, which is consistent with the studies conducted with the COVID-19 patients (Özdin & Özdin Bayrak, 2020; Yadav et al., 2021). Moreover, this may have been associated with the fact that the presence of a chronic disease was defined as a risk factor for deaths caused by COVID-19 (World Health Organization, 2021).

The current study indicated that illiterate patients suffered from high levels of depression. Another study stated that individuals who were relatively well-educated tended to be better informed about COVID-19, and as a result, had a better attitude (Zhong et al., 2020). Likewise, it is thought that the more educated one is, more likely they are to be better at coping with negative emotions (Wang et al., 2021).

The present study indicated that COVID-19 caused those who suffer from it to develop anxiety and depression, as well as death anxiety more intensely than other people – in turn harming one's psychological well-being and ability to reason/think straight.

Limitations

This study was conducted on COVID-19 patients at a state hospital in Turkey, and therefore does not represent all COVID-19 patients – in other words, results of the study cannot be generalized to the public. Moreover, the researcher collected data whilst wearing protective gear. Doing so for prolonged periods of time forced put them at great strain – and hot weather only aggravated the situation. Beyond that, asking patients about death proved difficult, largely because most already suffered from death anxiety. Hence, most were reluctant to openly express their emotions. Also, conditions such as COVID-19 induced dyspnea forced a number of the interviews to be cancelled.

Conclusions

COVID-19 is a serious and life-threatening disease. Those who have been hospitalized because of it are commonly prone to developing psychological problems, namely anxiety, depression, and death anxiety – which ultimately also affects their physical health as well. Being away from their relatives and being treated in isolation due to the

pandemic may also have prevented the patients from developing effective coping strategies. Patients who have a good overall psychological well-being are more likely to recover faster and leave hospital sooner. Nurses play a key role in that context because they are in constant contact with patients. They therefore must be more holistic in how they approach their patients in so far that they must show the same attention and care towards their psychological ailments as they do their physical ones.

Implications for Nursing Practice

In light of the study findings, we recommend that nurses plan evidence-based approaches to evaluate the effectiveness of non-pharmacological practices to relieve COVID-19 patients by identifying their pandemic-related anxiety, depression, and death anxiety.

Data Availability Statement

This study's data and findings are available from the corresponding author upon reasonable request.

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References

Adhanom, G. T. (2020). Addressing mental health needs: An integral part of COVID-19 response. *World Psychiatry*, *19*(2), 129–130. https://doi.org/10.1002/wps.20768

Akça, F., & Köse, İ. A. (2008). Adaptation of death anxiety scale (DAS): Validity and reliability studies. *Journal of Clinical Psychiatry*, *11*(1), 7–16.

Akyol Güner, T., Erdoğan, Z., & Demir, İ. (2021). The effect of loneliness on death anxiety in the elderly during the COVID-19 pandemic. *Omega Death and Dying*, *0*, 1–2. https://doi.org/10.1177/00302228211010587

Aydemir, Ö., Guvenir, T., Kuey, L., & Kultur, S. (1997). Validity and reliability of Turkish version of hospital anxiety and depression scale. *Turk Psikiyatri Derg*, *8*(4), 280–287.

Bo, H. X., Li, W., Yang, Y., Bo, H. X., Li, W., Cheung, T., Wu, X., & Xiang, Y. T. (2021). Posttraumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China. *Psychological Medicine*, *51*(6), 1052–1053. https://doi.org/10.1017/S0033291720000999

Çağlar, A., & Kaçer, İ. (2022). Anxiety levels in patients admitted to the emergency department with myocardial infarction or COVID-19 pneumonia. *Psychology, Health & Medicine*, *27*(1), 228–236. https://doi.org/10.1080/13548506.2021.1876893

Damirchi, E. S., Mojarrad, A., Pireinaladin, S., & Grjibovski, A. M. (2020). The role of self-talk in predicting death anxiety, obsessive-compulsive disorder, and coping strategies in the face of coronavirus disease (COVID-19). *Iranian Journal of Psychiatry*, *15*(3), 182–188. https://doi.org/10.18502/ijps.v15i3.3810

Deen, N. Z., Al-Sharafi, A., Abdalla, M., Mushtaha, M., Mohamed, A., Saleem, S., Nofal, Y., Adil Shah Khoodoruth, M., & Al-Naimi, A. (2021). Prevalence of depression and anxiety among male patients with COVID-19 in Lebsayyer Field Hospital, Qatar. *Qatar Medical Journal*, *2021*(3), 68. https://doi.org/10.5339/qmj.2021.68

Deng, J., Zhou, F., Hou, W., Silver, Z., Wong, C. Y., Chang, O., Huang, E., & Zuo, Q. K. (2021). The prevalence of depression, anxiety, and sleep disturbances in COVID-19 patients: A meta-analysis. *Annals of the New York Academy of Sciences*, *1486*(1), 90–111. https://doi.org/10.1111/nyas.14506

Furer, P., & Walker, J. R. (2008). Death anxiety: A cognitive-behavioral approach. *Journal of Cognitive Psychotherapy*, *22*(2), 167–182. https://doi.org/10.1891/0889-8391.22.2.167

Gu, Y., Zhu, Y., Xu, F., Xi, J., & Xu, G. (2021). Factors associated with mental health outcomes among patients with COVID-19 treated in the Fangcang Shelter hospital in China. *Asia-Pacific Psychiatry*, *13*(2), e12443. https://doi.org/10.1111/appy.12443

Guner, T. A., Erdogan, Z., & Demir, I. (2021). The effect of loneliness on death anxiety in the elderly during the COVID-19 pandemic. *OMEGA-journal of Death and Dying*, 003022282110105. https://doi.org/10.1177/00302228211010587

Kafes, A. Y. (2021). An overview of depression and anxiety disorders. *Humanistic Perspective*, *3*(1), 186–194. https://doi.org/10.47793/hp.867111

Kandemir, F. (2020). An empirical study on the relationship between religiosity and death anxiety in the COVID-19 pandemic generation in the context of some demographic variables. *Tokat Journal of Science*, *8*(1), 99–129. https://doi.org/10.5281/zenodo.3876200

Kavaklı, M., Ak, M., Uğuz, F., & Türkmen, O.O. (2020). The mediating role of self-compassion in the relationship between perceived COVID-19 threat and death anxiety. *Journal of Clinical Psychiatry*, *23*(Supp 1), 15–23. https://doi.org/10.5505/kpd.2020.59862

Li, X., Tian, J., & Xu, Q. (2021). The associated factors of anxiety and depressive symptoms in COVID-19 patients hospitalized in Wuhan, China. *Psychiatric Quarterly*, *92*(3), 879–887. https://doi.org/10.1007/s11126-020-09865-9

Mahat-Shamir, M., Pitcho-Prelorentzos, S., Kagan, M., Kestler-Peleg, M., & Lavenda, O. (2021). Adjustment disorder in the face of COVID-19 outbreak: The impact of death anxiety, media exposure, fear of contagion and hypochondriasis symptoms. *OMEGA-Journal of Death and Dying*, *0*, 003022282110343. https://doi.org/10.1177/00302228211034372

Menzies, R. E., & Menzies, R. G. (2020). Death anxiety in the time of COVID-19: Theoretical explanations and clinical implications. *The Cognitive Behaviour Therapist*, *13*(19), e19. https://doi.org/10.1017/S1754470X20000215

Mikulincer, M., & Florian, V. (2007). The complex and multifaceted nature of the fear of personal death: The multidimensional model of Victor Florian. In: A. Tomer, G. T. Eliason, & P. T. P. Wong (Eds.), *Existenital and spiritual issues in death attitudes (chapter 2)*. Lawrence Erlbaum Associates, Publishers.

Mohammadzadeh, A., Ashouri, A., Vahedi, M., & Asgharipour, N. (2018). Death distress dimensions: Death anxiety, death depression, and death obsession. *Journal of Fundamentals of Mental Health*, *20*(6), 395–404.

Nie, X. D., Wang, Q., Wang, M. N., Zhao, S., Liu, L., Zhu, Y. L., & Chen, H. (2021). Anxiety and depression and its correlates in patients with coronavirus disease 2019 in Wuhan. *International Journal of Psychiatry in Clinical Practice*, *25*(2), 109–114. https://doi.org/10.1080/13651501.2020.1791345

Okuyan, C. B., Karasu, F., & Polat, F. (2020). The effect of COVID-19 on health anxiety levels of nursing students. *Van Health Sciences Journal*, *13*, 45–52.

Özdin, S., & Özdin Bayrak, Ş. (2020). Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. *International Journal of Social Psychiatry*, *66*(5), 504–511. https://doi.org/10.1177/0020764020927051

Pyszczynski, T., Greenberg, J., & Solomon, S. (1997). Why do we need what we need? A terror management perspective on the roots of human social motivation. *Psychological Inquiry*, *8*(1), 1–20. https://doi.org/10.1207/s15327965pli0801_1

Ren, X., Huang, W., Pan, H., Huang, T., Wang, X., & Ma, Y. (2020). Mental health during the covid-19 outbreak in China: A meta-analysis. *Psychiatric Quarterly*, *91*(4), 1033–1045. https://doi.org/10.1007/s11126-020-09796-5

Saleem, T., & Saleem, S. (2020). Religiosity and death anxiety: A study of muslim dars attendees. *Journal of Religion and Health*, *59*(1), 309–317. https://doi.org/10.1007/s10943-019-00783-0

Şiraz, M. F., Değirmenci, A., & Bozdaş, M. S. (2020). The relationship between death anxiety and emotional selfefficacy and positive religious attitudes of individuals during the COVID-19. *Mersin University Institute of Social Sciences e-Journal*, *4*(1), 77–88.

Songtachalert, T., Roomruangwong, C., Carvalho, A. F., Bourin, M., & Maes, M. (2018). Anxiety disorders: Sex differences in serotonin and tryptophan metabolism. *Current Topics in Medicinal Chemistry*, *18*(19), 1704–1715. https://doi.org/10.2174/1568026618666181115093136

Templer, D. I. (1970). The construction and validation of a death anxiety scale. *The Journal of General Psychology*, *82*(2), 165–177. https://doi.org/10.1080/00221309.1970.9920634

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*, *17*(5), 1729. https://doi.org/10.3390/ijerph17051729

Wang, Y., Di, Y., Ye, J., & Wei, W. (2021). Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. *Psychology, Health & Medicine*, *26*(1), 13–22. https://doi.org/10.1080/13548506.2020.1746817

World Health Organisation. (2021). *Coronavirus*. https://www.who.int/health-topics/coronavirus#tab=tab_1

World Health Organisation. (2022). *Coronavirus (COVID-19) dashboard*. https://covid19.who.int/

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*, *277*, 55–64. https://doi.org/10.1016/j.jad.2020.08.001

Yadav, R., Yadav, P., Kumar, S. S., & Kumar, R. (2021). Assessment of depression, anxiety, and sleep disturbance in COVID-19 patients at tertiary care center of North India. *Journal of Neurosciences in Rural Practice*, *12*(02), 316–322. https://doi.org/10.1055/s-0040-1722811

Zhang, W. R., Wang, K., Yin, L., Zhao, W. F., Xue, Q., Peng, M., Min, B. Q., Tian, Q., Leng, H. X., Du, J. L., Chang, H., Yang, Y., Li, W., Shangguan, F. F., Yan, T. Y., Dong, H. Q., Han, Y., Wang, Y. P., Cosci, F., & Wang, H. X. (2020). Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychotherapy and Psychosomatic*. *1-9*(4), 242–250. https://doi.org/10.1159/000507639

Zhong, B. L., Luo, W., Li, H. M., Zhang, Q. Q., Liu, X. G., & Li, Y. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: A quick online cross-sectional survey. *International Journal of Biological Sciences*, *16*(10), 1745–1752, https://doi.org/10.7150/ijbs.45221

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Sscandinavica*, *67*(6), 361–370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

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