

Are the Psychological Effects of the COVID-19 Pandemic Similar in Old-aged and Young Patients?

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Abstract

Objective: The Coronavirus disease-2019 (COVID-19) pandemic is a life-threatening event with high psychological effects. The old-aged are among the most vulnerable groups to the physical and psychological effects of the pandemic. This study was conducted to determine the psychological effects of the COVID-19 pandemic, such as fear, anxiety, stress, depression, and sleep disturbance, on old-aged patients and evaluate whether these effects are similar to younger patients.

Materials and Methods: A total of 302 outpatients admitted to internal medicine and geriatrics outpatient clinics were included in the study. Participants aged 65 and over were grouped into the "geriatric group" and those under 65 years of age in the "young group". The COVID-19 Fear Scale was used to assess the COVID-19 fear level of the participants, the Pittsburgh Sleep Quality Index (PSQI) was used to assess their sleep, and the Depression Anxiety Stress Scale (DASS-21) was used to assess their mood. Patient groups were compared in terms of all these parameters.

Results: Of the 302 participants, 131 (45.4%) were in the geriatric (mean age 73.07 ± 7.27) and 171 (56.6%) (mean age 42.98 ± 13.83) were in the young group. The mean FVC-19S score (26.12 ± 5.54 in the geriatric group, 15.65 ± 7.51 in the young group) and the mean DASS-21 score (39.43 ± 9.92 in the geriatric group, 25.66 ± 13.89 in the young group) were found to be significantly higher in the geriatric group (respectively $p < 0.001$, $p < 0.001$). Although the mean PSQI score was higher in the geriatric group than in the young group (7.12 ± 4.08 in the geriatric group, 6.78 ± 4.31 in the younger group), the difference did not reach the level of statistical significance ($p = 0.346$).

Conclusion: The rates of fear, anxiety, and depression caused by the COVID-19 pandemic are higher in the old-aged than in the young. More than half of the older adults included in the study have poor sleep quality. Both emotional distress and sleep disorders can predispose to many geriatric syndromes and have the potential to worsen existing problems.

Keywords: Geriatrics, COVID-19 pandemic, fear, depression, anxiety, stress, sleep quality

Introduction

Coronavirus disease-2019 (COVID-19) infection is not only a disease but also a global disaster that affects individuals and societies physically, psychologically, socially, and economically. It was declared a pandemic by the World Health Organization on January 30, 2020 (1). The COVID-19 pandemic poses a significant threat to physical health and deeply shakes the basic sense of trust. Many people have lost their abilities, status, relatives, income, and their daily life routines have changed significantly during the pandemic. Although it is thought that the pandemic causes individuals to experience long-term

feelings of fear, anxiety, stress, and sadness, there are limited studies on this subject (2,3). Studies in the COVID-19 pandemic around the world mainly focus on infection control, effective vaccine, and medical treatment; the psychological dimension of the pandemic remains in the background (4,5). It is not known clearly how much the COVID-19 pandemic affects the mental health of the community.

Due to the physiological changes that occur with aging and the increase in the frequency of chronic diseases, the old-aged have a poor prognosis for COVID-19 infection (6). The rate of exposure to the social isolation of the old-aged due to both

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physical and social restrictions or individual preferences is higher than that of young people (7,8). For these reasons, the old-aged are one of the most vulnerable groups to the physical and psychological effects of the pandemic (8,9). It is essential to investigate the effects of the pandemic on the mental health of individuals, especially in terms of identifying groups at risk. Thus, an opportunity can be created for early interventions for risk groups. In our country, there is no study comparing the psychological effects of the COVID-19 pandemic on the old-aged with its effects on the young.

We aimed to determine the psychological effects of the COVID-19 pandemic, such as fear, anxiety, stress, depression, and sleep disturbance on the old-aged patients and whether these effects were similar with younger patients.

Materials and Methods

Ethical statement

This study was approved by the İnönü University Turgut Özal Medical Center Scientific Research Ethics Committee (approval number: 102/17) and was conducted by the Helsinki Declaration guidelines. Signed informed consent was obtained from the patients before inclusion in the study.

Study population

This study is a cross-sectional study. A total of 302 patients were included in this study. One-hundred thirty-one patients 65 years who received outpatient treatment in the İnönü University Turgut Özal Medical Center Geriatrics Clinics between July 2021 and October 2021 constituted the "geriatric group". One-hundred seventy-one patients ≥ 18 years who received the İnönü University Turgut Özal Medical Center Internal Medicine Clinics between the same dates constituted the "young group".

Exclusion criteria

Patients with a current psychiatric illness, those who use psychiatric drugs, and patients with dementia were excluded from the study because; these conditions would affect the results of the scales used in the study. The patients who were diagnosed with a psychiatric illness in the past but were treated were not excluded from the study. In addition, the patients with communication disabilities, severe hearing loss, general condition disorders (such as severe pain, critical shortness of breath, altered consciousness, medical emergency) were excluded from the study because; these conditions would affect the response to the questionnaires and scales.

Data tools

Through the face-to-face data collection form, participants' age, gender, educational status, current diseases, medications they use, and vaccination status were recorded. During the

COVID-19 pandemic, it was questioned whether they disrupted their doctor's check-ups for any reason and whether they made changes in their medicines without the knowledge of the doctor. The COVID-19 Fear Scale (FCV-19S) was used to assess the level of participants' COVID-19 fear. The Pittsburgh Sleep Quality Index (PSQI) was used to assess their sleep. The Depression Anxiety Stress Scale (DASS-21) was used to assess their emotional distress. All these scales were administered to all participants by the same researcher.

Level of the COVID-19 fear

FCV-19S, validated in Turkish, was used to determine the COVID-19 fear level (10,11). Items in the scale are scored from 1 to 5 as "strongly disagree", "disagree", "neither agree nor disagree", "agree", and "strongly agree". The total score ranges from 7 to 35, as the minimum possible score for each question is one and the maximum is 5. The higher the overall score, the greater the fear of COVID-19.

Emotional distress

The DASS-21 is a shorter version of the DASS-42, a psychometric instrument that measures three dimensions of emotional distress, i.e. depression, anxiety, and stress. In this study, DASS-21, which has Turkish validity, was used to measure the severity of emotional distress (12,13). There are 21 items on the questionnaire that consist of three separate self-reported scales that are designed to assess emotional distress in terms of depression, anxiety, and stress (7 items for each dimension). Each item is rated on a four-point Likert scale ranging from 0 to 3 (0: "Did not apply to me at all," 1: "Applied to me to some degree or some of the time," 2: "Applied to me to a considerable degree or a good part of the time," and 3: "Applied to me very much or most of the time"). If the individual scores 5 points or more from the depression sub-dimension, 4 points or more from the anxiety sub-dimension, and 8 points or more from the stress sub-dimension, it indicates that he/she has a problem in that area.

Sleep quality

The PSQI, validated in Turkish, is used to evaluate sleep quality (14,15). PSQI assesses an individual's sleep quality over the past month. PSQI scores range from 0 to 21, and the sleep quality of those with a total score of 5 and below is "good"; those with a score above five are considered to have "poor" sleep quality.

Statistics

SPSS 22.0 software for Windows is used for statistical analysis. Variables were evaluated for normal distribution using Kolmogorov-Smirnov and Shapiro-Wilk tests. All parameters showed normal distribution. Comparison of normally distributed and independent continuous variables was done with Student's t-test. Continuous variables are shown as mean

\pm standard deviation. Pearson correlation coefficient was used to determine the relationship between normally distributed continuous variables, and two-way $p<0.05$ values were considered statistically significant. Chi-square (or Fisher's Exact test, where appropriate) was used to examine the relationship between categorical variables. Statistical significance level was determined as $p<0.05$.

Results

The mean age of 302 patients included in the study was 55.9 ± 18.8 (median=61, min=18, max=102). One-hundred thirty-one (45.4%) patients were in the geriatric group. One-hundred seventy-one (53.3%) patients were female (69 old-aged and 92 young) and 131 (46.7%) patients were male (62 old-aged and 79 young). There was no difference between the groups in terms of gender distribution ($p=0.155$). Geriatric and young groups were compared in terms of demographic data and clinical characteristics, and the findings are summarized in Table 1.

Geriatric and young groups were compared in terms of psychological parameters and sleep quality, and the findings are summarized in Table 2. The mean PSQI score was above the cut-off value of 5 in both groups. When all participants were evaluated, 54.6% of the patients (165/302) had poor sleep quality. The PSQI score of 75 patients (57.3%) in the geriatric group and 90 patients (52.6%) in the young group was above 5, and the difference did not reach the level of statistical significance ($p=0.248$).

PSQI, FVC-19S, DASS-21 correlation analyses were analyzed separately in the geriatric and younger groups (Tables 3, 4). A positive correlation was found between FVC-19S and DASS-21 and PSQI scores in both the old-aged and the young ($r=0.190$ $p=0.029$, $r=0.207$ $p=0.017$ in the old-aged $r=0.268$ $p=0.002$, $r=0.393$, $p=<0.001$ in the young, respectively). There was a positive correlation between PSQI scores and FVC-stress scores in the old-aged and a positive correlation between PSQI scores and depression scores in the young ($r=0.378$ $p=<0.001$ and $r=0.260$ $p=<0.001$, respectively).

Discussion

This study is the first study to compare the psychological effects of the COVID-19 pandemic on the old-aged and young people in our country. It was concluded that the fear of COVID-19 is higher in old-aged than in young people. It was found that the pandemic caused higher levels of anxiety and depression in the old-aged compared to young people. Additionally, it was seen that half of the old-aged have poor sleep quality, and sleep quality deteriorates as the fear of COVID-19 increases in both the old-aged and young people. The results of this study are very important. Because both emotional distress and sleep disorders in the old-aged can predispose to many geriatric syndromes and have the potential to worsen existing problems.

In the study by Bakioğlu et al. (16), in Turkey with 960 participants (18-76 years old, with a mean age of 29.74 ± 9.64) the mean FVC-19S of the whole group was found to be 19.44 ± 6.07 . In the

Table 1. Comparison of geriatric and young groups in terms of demographic data and clinical features

Parameters	Geriatric group (n=131)	Young group (n=171)	p
Age [#]	73.07 ± 7.27	42.98 ± 13.83	<0.001
Education level ≥8 years n (%)	20 (15.3)	59 (34.5)	<0.001
Number of chronic diseases [#]	2.37 ± 1.10	1.67 ± 1.54	<0.001
Number of drugs used [#]	4.16 ± 1.14	2.25 ± 2.0	<0.001
COVID-19 vaccinated n (%)	118 (90.1)	102 (59.6)	<0.001
Who delay their doctor's appointment n (%)	108 (82.4)	106 (62.0)	<0.001
Who change their medications themselves n (%)	9 (6.9)	8 (4.7)	0.291

[#] Mean \pm standard deviation, COVID-19: Coronavirus disease-2019

Table 2. Comparison of geriatric and young groups in terms of psychological parameters and sleep quality

Parameters	Geriatric group (n=131)	Young group (n=171)	p
PSQI [#]	7.12 ± 4.08	6.78 ± 4.31	0.346
FVC-19S [#]	26.12 ± 5.54	15.65 ± 7.51	<0.001
DASS 21# (total score)	39.43 ± 9.92	25.66 ± 13.89	<0.001
Depression score of DASS-21 [#]	14.12 ± 4.52	6.10 ± 5.49	0.008
Anxiety score of DASS-21 [#]	16.64 ± 4.61	10.11 ± 6.80	<0.001
Stress score of DASS-21 [#]	8.39 ± 4.01	9.72 ± 5.57	<0.001

[#] Mean \pm standard deviation, PSQI: Pittsburgh Sleep Quality Index, DASS-21: Depression Anxiety Stress Scale, FVC-19S: Fear of Coronavirus-19 Scale

study of Bakioğlu et al. (16), age grouping was not made. In our study, young and geriatric groups were evaluated separately, and the mean FVC-19S in the geriatric group was found to be much higher (26.12 ± 5.54) than in Bakioğlu et al's (16) study. This result is quite remarkable in terms of the risks it carries for the old-aged. The high fear of COVID-19 can cause many other situations, such as social isolation, failure to attend chronic disease controls, and postponing applications to health institutions for newly developing symptoms (17). Our study found that four out of every five old-aged patients disrupted their routine doctor control due to the pandemic, and some of the patients themselves made changes in the drugs or drug doses they used. In addition, our results show a positive correlation between FVC-19S and DASS-21 scores, and the emotional distress of individuals increases as the fear of COVID-19 increases. In parallel with the increase in emotional distress in the old-aged, it is expected that the nutritional status, energy level, interest and willingness, and quality of life will deteriorate (18). During the pandemic process, it becomes inevitable for the old-aged to regress in their physical and cognitive abilities and increase the frequency of geriatric syndromes such as malnutrition, sarcopenia, polypharmacy, and falls. Therefore, the results of our study are an indication that the old-aged are more vulnerable

psychologically and will be more vulnerable physically during the pandemic process.

Although some population-based studies were conducted during the pandemic period, the rates of anxiety disorder, depression, and posttraumatic stress disorder were found to be lower in old-aged individuals than in young people; many other studies have found opposite results (19-21). Sepúlveda-Loyola et al. (22), in their study evaluating the effects of the isolation period on the old-aged during the COVID-19 epidemic, found that the old-aged experienced anxiety, depression, poor sleep quality, and physical inactivity problems. In a study conducted by Wang et al. (23), it was found that the old-aged were more stressed, agitated, and overly suspicious during the pandemic process. Differences in the literature may be due to pandemic management practices, cultural differences, and socio-economic factors in the country where the study was conducted. In our study, depression and anxiety scores of the DASS-21 were higher in the old-aged. COVID-19 infection often progresses with a more severe clinical picture and higher mortality in old-aged individuals than in young people (24,25). For this reason, the old-aged have become the focal point of the measures and restrictions (such as going out on the street, using public transport) within the scope of combating the pandemic in our country (26). This situation has

Table 3. PSQI, FVC-19S, DASS-21 correlation analysis results in the geriatric group

	PSQI	FVC-19S	DASS-21	Depression score of DASS-21	Anxiety score of DASS-21	Stress score of DASS-21
PSQI r p	1	0.207** 0.017	0.010 0.909	0.081 0.359	0.145 0.098	0.378** <0.001
FVC-19S r p		1	0.190* 0.029	0.290** <0.001	0.350** <0.001	0.268** 0.002
DASS-21 r p			1	0.750** <0.001	0.798** <0.001	0.321** <0.001

*: <0.05 (correlation is significant at the 0.05 level), **: <0.01 (correlation is significant at the 0.01 level). PSQI: Pittsburgh Sleep Quality Index, DASS-21: Depression Anxiety Stress Scale, FCV-19S: Fear of Coronavirus-19 Scale

Table 4. PSQI, FVC-19S, DASS-21 correlation analysis results in the young group

	PSQI	FVC-19S	DASS-21	Depression score of DASS-21	Anxiety score of DASS-21	Stress score of DASS-21
PSQI r p	1	0.393** <0.001	0.095 0.367	0.260** <0.001	0.067 0.383	0.074 0.335
FVC-19S r p		1	0.268** 0.002	0.368** <0.001	0.083 0.278	0.166* 0.030
DASS-21 r p			1	0.716** <0.001	0.870** <0.001	0.718** <0.001

*: <0.05 (correlation is significant at the 0.05 level), **: <0.01 (correlation is significant at the 0.01 level) PSQI: Pittsburgh Sleep Quality Index, DASS-21: Depression Anxiety Stress Scale, FCV-19S: Fear of Coronavirus-19 Scale

been frequently brought to the agenda by health authorities and the media since the beginning of the pandemic period, and the old-aged have been exposed to this news every day from all social media channels, especially television. In addition, during the pandemic, we can estimate that the old-aged are more likely to have experienced a loss of ability, status, and closeness than younger people, the stress score was higher in the young group in our study. There are understandable reasons why young people have higher stress scores than old-aged. In our country, young people are more active in their work-life compared to the old-aged. Despite the fear of getting sick, they have to work and enter crowded environments when necessary. In addition, the worry of infecting their relatives can also cause stress by putting pressure on them. Although the COVID-19 pandemic has led to significant changes in all individuals' daily routines and lifestyles, young people may have experienced more stress in the face of these changes.

Although the COVID-19 vaccination is reduced to 12 years of age, free of charge, and campaigns that motivate people to be vaccinated in our country, the vaccination rates have still not reached the desired level. In our study, the COVID-19 vaccination rates were significantly higher in the old-aged. The biggest force that drives people to get vaccinated is the fear of catching a disease. The fact that vaccination rates are higher in the old-aged than in the young may be due to the higher fear of COVID-19 and anxiety level in the old-aged compared to the young. In addition, the initiation of COVID-19 vaccination with healthcare professionals and old-aged individuals in our country, and thus the high level of awareness and sensitivity in the geriatric population about vaccine protection, may also play a role (27).

Sleep is closely related to physical and mental health. For this reason, in our study, we evaluated the psychological effects of the COVID-19 pandemic together with the sleep quality of the patients. The literature emphasized that sleep disorders are frequently encountered during the pandemic, and this situation was named "COVID-somnia" (28,29). Our study found that FVC-19S and PSQI scores were correlated in both groups, and sleep quality deteriorated as the fear of COVID-19 increased. The fact that the sleep quality was worse in the old-aged than in the young may be due to the higher fear of COVID-19 in the elderly. In the study conducted by Pekcetin and İnal (30) just before the pandemic in our country, it was found that 44.3% of the old-aged had poor sleep quality, and the mean PSQI was 4.58 ± 2.86 . In our study, the PSQI average was even higher due to the effect of the pandemic, and it was observed that the sleep quality was poor in 57.3% of the old-aged. Considering that sleep disorders have severe effects on the old-aged, such as an increase in the risk of accidents and falls, causing depression, and regression in cognitive abilities, this result is quite remarkable.

Two years have passed since the pandemic; known about COVID-19 infection has increased, and vaccines with proven efficacy have been found. Promising drug studies are also ongoing. On the other hand, uncertainty and stress continue at both the individual and social level due to the mutation of the virus and the continuation of new cases and deaths due to COVID-19 infection (31). Our study shows that; even if they are protected from COVID-19 infection or have survived the infection with health, the pandemic has essential effects on the mental health of individuals. Considering that the mental health of the old-aged directly affects their physical health, we can predict that the frequency of geriatric syndromes such as depression, sleep disorders, dementia, malnutrition, sarcopenia, and fragility will secondary increase. Therefore, even if the pandemic ends, the effects of the pandemic will continue for the old-aged.

Study Limitations

Our study is valuable because it shows the magnitude of the psychological effects of the pandemic on the old-aged in our country and is the first study to compare these effects with the young. However, there are some limitations of our study. Our study was designed as cross-sectional, and outpatients admitted to an institution were included in the study. So it is not possible to adapt the study results to the whole society. On the other hand, when comparing the geriatric group and the young group, it is an advantage to conduct the study in a single-center as it will provide similar conditions. Since our study was designed to detect the general psychological effects of the COVID-19 pandemic on the old-aged and determine whether these effects are similar to those of the young, the factors that could affect individuals psychologically were not evaluated separately.

Conclusion

As a result, the rates of experiencing fear, anxiety, and depression due to the COVID-19 pandemic are higher in the old-aged than in the young. More than half of the older adults included in the study have poor sleep quality. Both emotional distress and sleep disorders may predispose to many geriatric syndromes and can worsen existing problems. It is of great importance in terms of public health to investigate the effects of the pandemic on individuals' mental health, identify groups that are especially at risk, and thus make early interventions.

Ethics

Ethics Committee Approval: This study was approved by the İnönü University Turgut Özal Medical Center Scientific Research Ethics Committee (approval number: 102/17) and was conducted by the Helsinki Declaration guidelines.

Informed Consent: Signed informed consent was obtained from patients before inclusion in the study.

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Authorship Contributions

Surgical and Medical Practices: F.D.Y., Concept: Ö.K.C., F.D.Y., Design: F.D.Y., Data Collection or Processing: F.D.Y., Analysis or Interpretation: Ö.K.C., F.D.Y., Literature Search: Ö.K.C., F.D.Y., Writing: Ö.K.C.

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