

ORIGINAL ARTICLE

Medicine Science 2021;10(4):1168-74

Determinants of anxiety level in patients presenting with the diagnosis of generalized anxiety disorder during the Covid-19 pandemic process

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Received 09 April 2021; Accepted 07 May 2021

Available online 23.08.2021 with doi: 10.5455/medscience.2021.04.115

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Abstract

The Covid-19 outbreak has posed a serious threat to people's mental health as well as their physical health. In recent studies, it is reported that covid-19 is associated with various psychiatric diseases such as generalized anxiety disorder, panic disorder, and depression. In our study, we aimed to determine the determinants of the level of anxiety related to Covid-19 in patients diagnosed with Generalized Anxiety Disorder during the pandemic process. This study examines the sociodemographic characteristics of 226 participants who were diagnosed with 'Generalized Anxiety Disorder', the presence of covid-19 diagnosis, the duration of social media exposure, and the relationship between coronavirus-associated anxiety levels and the participant's anxiety levels, prospectively. We applied Sociodemographic data form, Structured Clinical Interview for DSM-5 Disorders-Clinician Version (SCID-5 / CV), Hamilton anxiety scale (HAM-A) and Coronavirus anxiety scales (CAS). 86 (38.1%) of the cases were male and 140 (61.9%) were female. It is also revealed 31 (51.7%) of the cases with a past history of psychiatric illness had anxiety disorder. It was seen that the significant relationship between the duration of social media exposure and HAM-A score ($\eta^2 = 0.047$, $F(3,222) = 3.661$, $p = 0.013$). Coronavirus-related anxiety was observed in 63 cases (27.9%). The CAS scores of the female participants (5.84 ± 6.73) were higher than that of the male participants (4.41 ± 6.23), and a statistically weakly significant relationship was found between them ($Z = -1.656$, $p = 0.098$). There was a positive correlation between HAM-A and CAS scores ($r = 0.402$, $p < 0.001$). We found that women, participants with no monthly income, and people who were exposed to social media for longer periods had higher levels of coronavirus-related anxiety. It was concluded that as the duration of social media exposure or the severity of anxiety increased, the level of coronavirus-related anxiety increased.

Keywords: Covid-19, generalized anxiety disorder, coronavirus anxiety scale

Introduction

The new coronavirus infection (COVID-19; Coronavirus disease 2019) is a global health problem that first appeared in Wuhan, China in December 2019 and caused a pandemic. Covid-19 was first detected by detecting clusters of pneumonia cases of unknown etiology close to the seafood market [1]. Since then, the number of cases has continued to increase around the world, spreading to 34 regions of China by 30th of January, 2020. On the same day, the World Health Organization (WHO) declared Covid-19 an internationally alarming public health emergency, similar to the Severe Acute Respiratory Syndrome (SARS) [2]. Various measures such as social distancing, face covering, hygiene advice and isolation are taken to reduce the spread of the virus during this pandemic. However, the number of patients with the disease

and mortality rates continue to increase rapidly [1]. In Turkey, the first case was reported on March, the 11th, 2020. As the number of cases increased, various measures including an ad hoc lockdown started to be taken and a wide variety of measures are still being implemented. As of November the 18th 2020, the total number of cases reported in Turkey was 425628, 11820 of which was fatal [3].

Previous research has revealed that outbreaks have a deep and wide range of psychosocial effects on people at individual, social and international levels. On an individual basis, people have reported having experienced fear of infection, stigma if or when infected, fear of death, and feeling of helplessness. The closure of schools and businesses has further increased the negative emotions experienced by individuals [1]. Covid-19 disease not only causes physical complications in individuals, but also has a serious impact on individuals' mental health. Anxiety-related behaviors have been observed in society after some healthcare personnel in China got infected [4]. Similarly, it was observed that mental health problems occurred amongst both healthcare workers and SARS victims during the SARS pandemic. Post-traumatic stress disorder (PTSD) and depressive disorders were amongst the most

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common long-term psychological conditions [5]. Similar results have been reported in the previous MERS study [6]. The growing threat of the pandemic, intermittent travel plans, social isolation, overload of media information and panic purchases of necessities have led to a global atmosphere of anxiety and depression [7].

Covid-19 has triggered various psychiatric diseases such as generalized anxiety disorder, panic disorder and depression [1]. In our study, we aimed to determine the determinants of the level of anxiety related to Covid-19 in patients diagnosed with Generalized Anxiety Disorder amongst the patients who applied to the psychiatry outpatient clinic during the pandemic process. Therefore, we planned to investigate the relationships between the sociodemographic characteristics of the patients, social media exposure, exposure to Covid-19, and anxiety levels. However, when we scan the literature, although there are similar studies in other countries, the number of studies examining the effect of social media exposure time on coronavirus anxiety in Turkey is limited.

Materials and Methods

The sampling and procedure

The present study was conducted under the approval obtained from the local ethics committee and in agreement with the Helsinki Declaration. The patients who is volunteered to participate having provided written and verbal consent included in this study were randomly selected. Amongst the patients, who applied to the psychiatry outpatient clinic between 01.07.2020-01.10.2020, 226 were diagnosed with "Generalized Anxiety Disorder" with no other accompanying psychiatric disorder. This study sampled these 226 patients, diagnosed with "Generalized Anxiety Disorder" who does not have other psychiatric disorders such as accompanying depression, obsessive compulsive disorder or panic attack.

It was planned to include a control group at the beginning of the study, but it was considered inappropriate to form a control group afterwards. Since it was a single group, power analysis was not applied. An estimated ten new patients with a diagnosis of "Generalized Anxiety Disorder" apply to any psychiatric outpatient clinic a day. In addition, considering the sample sizes of similar studies in the literature, the sample size of the study was determined as 226.

All individuals included were aged 18 and over. Volunteers who were able to clearly and accurately understand what they read or were told, and who could express themselves clearly were included in the study. For the illiterate volunteers, the questions were read by the researcher conducting the interview, and the data form was read by the attendant accompanying the volunteer upon request. The exclusion criterias were intellectual disability or cognitive impairment, with the diagnosis of other psychiatric diseases and psychiatric drug use in the patients. Sociodemographic data form, Structured Clinical Interview for DSM-5 Disorders-Clinician Version (SCID-5 / CV), Hamilton anxiety scale (HAM-A) and Coronavirus anxiety scales (CAS) were applied in the study.

The sociodemographic and clinical data form used in the study was produced by the authors based on their clinical experience, and the information obtained from the sources in the literature,

and for the purposes of this study. Sociodemographic data obtained from the subjects included gender, age, marital status, educational background, profession, whether or not currently working actively, whether or not he/she is a healthcare worker, who they live with, monthly income level, place of residence, history of cigarette/alcohol/substance use. Patients were asked whether they or their family members had a psychiatric illness. In terms of Covid-19 exposure data, we obtained information about whether the subjects' and/or people they were in contact with were infected with Covid-19, whether they were quarantined, and the presence of any chronic disease. Patients were asked verbally how many hours a day they went to social media platforms (instagram, twitter, facebook, whatsapp, etc.) during the pandemic process, and the hours were noted within the appropriate interval based on the patients' median answers (0-1 hour, 1-3 hours, 3-5 hours, 5 hours and above).

Structured clinical interview for DSM-5 disorders-clinician version (SCID-5 / CV)

Structured Clinical Interview for DSM-5 Disorders (SCID-5) was developed by First et al. [8]. SCID-5 consists of 10 modules. There are detailed diagnostic criteria in 32 diagnostic categories, and only investigative questions in 17 diagnostic categories. The modules include investigative questions for psychotic symptoms, psychotic disorders, mood disorders, substance use disorders, anxiety disorders, obsessive-compulsive disorder and related disorders, and post-traumatic stress disorder, attention deficit and hyperactivity disorder, some question for other disorders, and adjustment disorder [8]. SCID-5 can be applied to individuals over 18 years of age without severe cognitive deficits, psychotic symptoms, and agitation. Sources of information are the patient himself, the patient's family and relatives, healthcare team, medical resources and observations. If necessary, corrections can be made in the light of additional information and can be completed in more than one session. Average application time is 40-60 minutes. The adaptation and reliability of the SCID prepared for DSM-5 (Structured Clinical Interview for DSM-5 Disorders-Clinician Version SCID5 / CV) in Turkish language was investigated by Elbir et al. [9].

Hamilton anxiety scale (HAM-A)

HAM-A was prepared to determine the level of anxiety and symptom distribution, and to measure the change in severity of anxiety [10]. The validity and reliability of this form in Turkish language was conducted by Yazıcı et al. (1998) [11]. The Cronbach's alpha coefficient of the scale was .76. The scale consists of 14 items and is scored between 0 and 4 for each symptom. The score range is between 0-56. Items 1, 2, 3, 5 and 6 were psychic sub-scores, and items 4, 7, 8, 9, 10, 11, 12, 13 are calculated as somatic subscales. Each question consists of 5 items. Answers are scored as 0 (never), 1 (mild), 2 (moderate), 3 (severe) or 4 (very severe). Generally, the total score of HAM - A is categorized as follows; no anxiety (score 0-6), mild to moderate anxiety (score 7-13), severe anxiety (score 14). The higher the total score is, the higher the anxiety level of the individual is found to be.

Coronavirus anxiety scale

The coronavirus anxiety scale (CAS; coronavirus anxiety scale) is

a self-reported mental health screening tool for coronavirus-related dysfunctional anxiety. Independent studies in adults residing in the United States confirm that the CAS is a reliable scale with robust factorial (single-factor; invariance between sociodemographics) and structural (correlate with anxiety, depression, suicidal ideation, and substance / alcohol coping) validity (> 90). The diagnostic features of CAS (90% sensitivity and 85% specificity) can be compared to related screening tools such as General Anxiety Disorder-7 [12].

Each item of CAS is rated on a 5-point scale from 0 (not at all) to 4 (almost daily) based on experience over two weeks. This scaling format is consistent with the DSM-5's intersecting symptom scale. A CAS total score of ≥ 9 indicates dysfunctional anxiety associated with coronavirus. High scores on a particular item or a high total scale score (≥ 9) may indicate an individual's problematic symptoms that may require further evaluation and/or treatment. The validity and reliability of this form in Turkish language was conducted by Evren et al. (2020) [13]. The Cronbach's alpha coefficient of the Turkish CAS was .80, which showed the reliability of the scale.

Statistical methods

In the study, continuous variables were given as mean $\pm$ standard deviation values, while categorical data were given as frequency and percentage. The categorical variables were grouped, the percentages calculated and then either Pearson's Chi-Square Test or Fisher's Test as appropriate was used to compare categorical variables between the groups. Kolmogorov Smirnov test was used for normality in continuous variables ($p > 0.05$). Kurtosis - skewness values were also evaluated. In comparison of the mean values between the two groups, independent samples t-test was used for the data showing normal distribution and the Mann Whitney U test was used for the data not showing normal distribution. When calculating the direction and severity of the relationship between quantitative variables, Spearman's correlation test was used when at least one of the variables was nonparametric. One-way ANOVA test and Kruskal-Wallis test were used for comparison of numerical datas between three or above independent groups. Post hoc analysis (Bonferroni and Tamhane's T2 tests) conducted when relevant to determine the differences. All statistical analyzes, tables, and figures were prepared using SPSS 22 (IBM Corp, Armonk, NY) program. The variables with a p value of < 0.05 were considered significant and the existence of a relationship between the variables was statistically demonstrated. In the evaluation of the effect size, eta squared value was used.

Results

Of the 226 patients who participated in the study, 140 (61.9%) were female and 86 (38.1%) were male. The youngest patient in our study was aged 18 years while the eldest was 81 years. The mean age of all patients in the study was calculated to be 41.3 ± 14.1 years. When the cases are evaluated according to age groups; It was observed that it was the most common in the 31-40 age group with sixty (26.5%) cases. In addition, it was observed that twenty-two (9.7%) cases were 61 years and older. 92 (40.7%) cases were housewives based on their answers. Seven (3.1%) of the cases were members of healthcare professionals. It was thought that the reason for the low number of healthcare professionals might be because they had difficulty in applying to the psychiatry

outpatient clinic during working hours. 95 of the cases (42.0%) had chronic disease. It was determined that the patients were most frequently ($n = 109$) exposed to social media for 0-1 hours. In addition, this exposure was 5 hours or more in 42 cases ($n = 42$). Sociodemographic and clinical data of the patients are presented in Table 1.

Table 1. Sociodemographic and clinical characteristics of the participants

Variable	n	%
Gender		
Female	140	61.9
Male	86	38.1
Age group		
18-30	56	24.8
31-40	60	26.5
41-50	54	23.9
51-60	34	15
61 and over	22	9.7
Marital status		
Single	60	26.5
Married	166	73.5
Educational attainment		
Illiterate	12	5.3
Literate	7	3.1
Primary School	96	42.5
High School	62	27.4
University	49	21.7
Employment Status		
Unemployed	23	10.2
Student	20	8.8
Worker	19	8.4
Self-employed	25	11.1
Retired	14	6.2
Housewife	92	40.7
Civil servant	33	14.6
Do you keep working?		
Yes	58	25.7
No	156	69
Working From Home		
Administrative leave	10	4.4
Income Levels		
No income	145	64.2
2000 TL or low	18	8.0
2000 – 5000 TL	29	12.8
5000 TL or above	34	15.0
Are you a healthcare professional?		
Yes	7	3.1
No	219	96.9
Place of residence		
City Center	191	84.5
District	20	8.8
Village	15	6.6
Do you have a past history of psychiatric illness?		
Yes	60	26.5
No	166	73.5
Pre-existing chronic illness		
Yes	95	42
No	131	58
Smoking		
Non-smoker	133	58.8
Smoking at the time	73	32.3
History of past use	20	8.8
Social media exposure time		
0-1 hour	109	48.2
1-3 hour	45	19.9
3-5 hour	30	13.3
5 hours and over	42	18.6

Results also revealed 31 (51.7%) of the cases with a past history of psychiatric illness had anxiety disorder, 25 (41.7%) with depression, 2 (3.3%) with anxiety disorder and depression, 1 (1.7%) with obsessive-compulsive disorder, and 1 (1.7%) was followed up with dissociative disorder. 149 of the patients (65.9%) had no family history of psychiatric illness whilst 77 of them (34.1%) did, 39 (50.6%) of whom reported that it was their siblings who had a history of psychiatric illness.

6 (2.7%) of the patients had recovered from Covid-19. 29 patients (12.8%) stated their relatives or people they were in contact with were infected with Covid-19. There were 3 people who lost their relatives due to Covid-19. Amongst the patients who reported to have chronic disease (n = 95), 27 (27.4%) had asthma, 25 (26.3%) hypertension, 15 (15.9%) type 2 diabetes, 10 (10.5%) cancer, 7 (7.5%) of them had heart disease.

When we looked at the relationship between Covid-19-related social media exposure duration and age group in our study, no statistical significance was found ($p = 0.882$). In addition, no significant relationship was found between social media exposure duration and gender ($p = 0.348$), educational status ($p = 0.175$), place of residence ($p = 0.497$), marital status ($p = 0.104$), monthly income level ($p = 0.316$), being a healthcare professional ($p =$

0.907), and presence of psychiatric illness in the family ($p = 0.635$).

According to the HAM-A scale, it was detected that 3 (1.3%) of the patients did not experience anxiety, 22 (9.7%) had moderate anxiety, and 201 (88.9%) experienced severe anxiety. The mean HAM-A score of the patients was found to be 24.1 ± 7.9 . When the HAM-A scale score of the cases was compared with some sociodemographic and clinical data (Table 2); it was found that the HAM-A scores of the female patients ($M = 26.0$, $SD = 7.4$) were statistically significant higher than that of the male patients ($M = 21.0$, $SD = 7.7$) ($t(224) = -4.9$, $p < 0.001$). There was no significant relationship between age group ($\eta^2 = 0.029$, $F(4,221) = 1.667$, $p = 0.159$), the place of residence ($p = 0.183$), getting covid 19 disease ($p = 0.949$), educational level ($\eta^2 = 0.018$, $F(2,223) = 2.083$, $p = 0.127$) and the HAM-A score. HAM-A scale scores of individuals with a family history of psychiatric disease ($M = 25.4$, $SD = 7.7$) were higher than those without ($M = 23.5$, $SD = 7.9$), and a statistically weakly significant relationship was found between them ($t(224) = -1.8$, $p = 0.072$). HAM-A score ($M = 25.7$, $SD = 7.5$) of the patients with no monthly income was higher than the HAM-A score ($M = 21.3$, $SD = 7.8$) of the patients with a monthly income ($t(224) = -4.3$, $p < 0.001$). It was seen that the significant relationship between the duration of social media exposure and HAM-A score ($\eta^2 = 0.047$, $F(3,222) = 3.661$, $p = 0.013$).

Table 2. Comparison of Ham-A scores of some sociodemographic and clinical variable.

Variable	HAM-A score Mean $\pm$ SD	p
Gender		<0.001 ^a
Female	26.0 $\pm$ 7.4	
Male	21.0 $\pm$ 7.7	
Age group		0.159 ^b
18-30	25.7 $\pm$ 6.3	
31-40	23.3 $\pm$ 8.6	
41-50	25.2 $\pm$ 8.2	
51-60	22.7 $\pm$ 8.3	
61 and over	22.0 $\pm$ 7.3	
Total	24.1 $\pm$ 7.9	
Place of Residence		0.183 ^a
City Center	23.8 $\pm$ 8.0	
District	26.4 $\pm$ 7.1	
Educational Level		0.127 ^b
Primary School or Low	24.9 $\pm$ 8.3	
High School	24.3 $\pm$ 6.9	
University	22.2 $\pm$ 7.9	
Total	24.1 $\pm$ 7.9	
Family History of Psychiatric Disease		0.072 ^a
Absent	23.5 $\pm$ 7.9	
Present	25.4 $\pm$ 7.7	
Monthly Income		<0.001 ^a
Absent	25.7 $\pm$ 7.5	
Present	21.3 $\pm$ 7.8	
The Duration of Social Media Exposure		0.013 ^b
0-1 hour	22.8 $\pm$ 7.6	
1-3 hours	23.5 $\pm$ 8.0	
3-5 hours	26.9 $\pm$ 8.2	
5 hours and over	26.4 $\pm$ 7.5	
Total	24.1 $\pm$ 7.9	

^a Student's t-test; ^b One Way Anova Test

It was found that coronavirus-related anxiety was not observed in 163 (72.1%) cases, whereas it was present for 63 cases (27.9%). The mean CAS scale score of all cases was 5.3 ± 6.6 . When the CAS scale score of the cases was compared with some sociodemographic and clinical data (Table 3); there was no significant relationship between age group and CAS score ($p = 0.652$). The CAS scores of the female patients (5.84 ± 6.73) were higher than that of the male patients (4.41 ± 6.23), and a statistically weakly significant relationship was found between them ($Z = -1.656$, $p = 0.098$). It was determined that the significant relationship between the duration of social media exposure and CAS score ($\eta^2 = 0.292$, $p < 0.001$). In post hoc Tamhane's T2 testing, it was understood that CAS scores increased especially with an exposure of 3 hours or more. There was no significant relationship between educational status ($p = 0.796$), monthly income group ($p = 0.830$), presence of chronic illness ($p = 0.391$), presence of psychiatric illness ($p = 0.200$), presence of psychiatric illness in the family ($p = 0.357$), and the CAS scale. Our study also found that CAS score (6.2 ± 7.0) of the patients with no monthly income was higher than the CAS score (3.8 ± 5.5) of the patients with a monthly income ($p = 0.013$). There was a positive correlation between HAM-A and CAS scores ($r = 0.402$, $p < 0.001$).

Table 3. Comparison of CAS scores of some sociodemographic and clinical variable

Variable	CAS score n(%) / mean $\pm$ SD	p
Gender		0.098 ^a
Female	5.8 $\pm$ 6.7	
Male	4.4 $\pm$ 6.2	
Age group		0.652 ^b
18-30	4.9 $\pm$ 6.6	
31-40	4.6 $\pm$ 5.8	
41-50	6.5 $\pm$ 7.7	
51-60	5.0 $\pm$ 6.5	
61 and over	5.8 $\pm$ 5.7	
History of Psychiatric Disease		0.200 ^a
Absent	5.0 $\pm$ 6.5	
Present	6.2 $\pm$ 6.8	
Family History of Psychiatric Disease		0.357 ^a
Absent	5.1 $\pm$ 6.4	
Present	5.8 $\pm$ 6.9	
Monthly Income		0.013 ^a
Absent	6.2 $\pm$ 7.0	
Present	3.8 $\pm$ 5.5	
The Duration of Social Media Exposure		<0.001 ^b
0-1 hour	2.4 $\pm$ 4.0	
1-3 hours	4.3 $\pm$ 6.1	
3-5 hours	9.8 $\pm$ 7.2	
5 hours and over	10.8 $\pm$ 6.9	
Total	24.1 $\pm$ 7.9	

^a Mann Whitney U test; ^b Kruskal-Wallis Test

Discussion

This study shows that coronavirus-related anxiety was associated with patients who applied to psychiatry polyclinic diagnosed with Generalized Anxiety Disorder during the Covid-19 pandemic. It has been found that those who have been exposed to social media for a long period of time and particularly women are more severely affected in terms of coronavirus-related anxiety.

The pandemic can have negative effects on the mental health of the population. Therefore, a coronavirus-related anxiety level of 27.9% is an expected result in terms of the psychological effects of a pandemic. A comprehensive study from China reported that around 35% of people are psychologically affected by this outbreak [14]. In another study in which 1210 people participated, 770 participants (63.6%) had normal anxiety scale. It was found that 91 (7.5%) had mild anxiety, 247 (20.4%) had moderate anxiety, and 102 (8.4%) had severe and extremely severe anxiety [1]. Similarly, in a study conducted in Italy, 37.1% of 18,147 participants had PTSD, 20.8% had severe anxiety symptoms, 17.3% had severe depressive symptoms [15]. In a study using the CAS scale to examine coronavirus anxiety in nurses, it was found that 123 participants (37.8%) had dysfunctional anxiety levels [16].

WHO estimates that the proportion of the global population with anxiety disorders is 3.6% and that anxiety disorders are more common in women than in men [17]. As our study also confirmed that female patients experienced an average of 1.3 times more anxiety than men. According to a large-scale study conducted in China, it shows that women have higher levels of stress, anxiety and depression [1]. Another study found that men were 0.77 times less likely to have anxiety than women [18]. A study on the psychological impact of the Covid-19 pandemic concluded that depression and anxiety are more common in women and people with lower level of education. Findings regarding the effects of age are inconsistent [19]. Similarly, in our study, no relationship was found between age group and anxiety level. However, in contrast to Vindegaard and Benros' study [19], we found no significant relationship between educational status and anxiety level.

Curfews and quarantine measures are practiced almost all over the world. It is inevitable that the economy will be affected significantly from this situation. In our study, it was found that individuals who did not have a monthly income or who were unemployed had higher levels of both coronavirus-related anxiety and general anxiety than those with income. The uncertainty in the pandemic process and the unpredictability of when it will end increase people's anxiety and despair. In a study conducted on university students in China, it was found that stable family income was an important factor in increased levels of anxiety amongst students during the Covid-19 pandemic [20]. In a study with 1311 participants, similar to our study, a negative relationship was found between monthly income level and anxiety [18].

We also observed that although the general anxiety levels of the patients with a psychiatric disease or a family history were higher than those without, there was no relationship between the coronavirus-related anxiety level and these parameters. Page et al. reported that people with a past history of psychiatric illness were significantly affected, as in previous outbreaks [21]. While no significant relationship was found between chronic disease,

advanced age and coronavirus-related anxiety in our study, when we look at the literature, it has been shown that patients with advanced age and chronic disease have higher coronavirus-related anxiety levels [22]. While the sample in the studies in the literature consists of individuals in the general population, we think that the reason for this may be that patients included in our study were diagnosed with Generalized Anxiety disorder.

In Turkey, a study conducted with 343 people it was determined Covid-19 pandemic has caused increased levels of anxiety in women, individuals with a history of psychiatric illness, individuals living in the city, Covid-19 positive individuals, and ones with existing chronic diseases [23]. In our study, we found that the anxiety levels of the patients who had coronavirus were not significant compared to the other patients. We attributed this to the small number of patients, since only 6 of our patients had confirmed coronavirus infection.

Government agencies strive to increase the public's awareness of pandemic-related measures by providing daily updates on active cases on their websites and social media [24]. However, information regarding Covid-19 pandemic on social media platforms are hardly solicited or validated. This can lead to false and excessive information overload on social media, which can lead to mental health problems [25]. WHO pointed out that it is important to determine the underlying factors of fear, anxiety and stigmatization, especially as a result of misinformation via social media [26]. In our study, we found that both the general anxiety level and the coronavirus-related anxiety level increased as the duration of social media exposure associated with Covid-19 increased. The findings of this study also reveal that the probability of anxiety is highly correlated with the time spent on social media and the increasing trend in social media use, and confirm previous findings in the literature [27,28]. In a study conducted in China with 1118 participants, 23.4% of the cases were 0-1 hours, more than 50% 1-3 hours, 14.8% 3-5 hours, 6.5% 5 has been exposed to social media for hours and more [27]. Another study found that participants who were exposed to social media for more than four hours a day had 1.52 times higher anxiety than those who were exposed for 2 hours or less [28]. A study with the participation of 1791 people showed that close contact with individuals with Covid-19 and spending 2 hours a day on Covid-19 news via social media are associated with possible anxiety and depression [29].

We found that social media duration does not have any significant relationship with gender, age group, education level. In a study involving 880 people, no significant relationship between gender and social media duration was found; however, a relationship was found with age and education level [28].

This study has some limitations. Questionnaires were used to evaluate the mental state in this study, the study focused more on the level of symptoms. Although the number of patients included in this study provides a sufficient sample size for evaluations, studies with different characteristics and larger sample sizes will contribute more to the research area.

Conclusion

As a result, in our study, we found that women, patients with no monthly income, and people who were exposed to social media

for longer periods had higher levels of coronavirus-related anxiety. Although there are similar studies in the literature, our study is the first study conducted in Turkey to examine the relationship between social media exposure duration, anxiety levels and coronavirus-related anxiety levels (CAS) of individuals diagnosed with "Generalized Anxiety Disorder". Our most striking result is that as the duration of social media exposure increases, the level of coronavirus-related anxiety increases. Similarly, the level of coronavirus-related anxiety increases as the level of general anxiety increases. These findings may provide guidance for structural interventions in order to reduce the impact of Covid-19 pandemic on the mental health of Turkish population.

Conflict of interests

The authors declare that they have no competing interests.

Financial Disclosure

All authors declare no financial support.

Ethical approval

This study was conducted in accordance with the ethical principles stated in the "Declaration of Helsinki" and permission was obtained from Local Ethics Committee for publication purposes (dated 18.06.2020- numbered 2020/11-3).

References

1. Wang C, Pan R, Wan X, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health*. 2020;17:1729.
2. Mahase E. China coronavirus: WHO declares international emergency as death toll exceeds 200. *BMJ: British Medical Journal [Internet]*. 368. *BMJ* 2020;368:m408 [Cited 2020 Jan 31]. Available from: <https://doi.org/10.1136/bmj.m408>.
3. T.C. Ministry of Health: Covid-19 statistics reports for the Turkey. [Cited 2020 Dec 11]. Available from: <https://covid19.saglik.gov.tr/TR-66935/genel-koronavirus-tablosu.html>
4. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. *Psychiatry Res* 2020;112954.
5. Lee AM, Wong JG, McAlonan GM, et al. Stress and psychological distress among SARS survivors 1 year after the outbreak. *Can J Psychiatry*. 2007; 52:233-40.
6. Lee SM, Kang WS, Cho AR, et al. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Compr Psychiatry*. 2018;87:123-27.
7. Wang C, Pan R, Wan X, et al. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain, Behavior, and Immunity* 2020.
8. First, M. B. Structured clinical interview for the DSM (SCID). In: RL Cautin, SO Lilienfeld, 1st edn. *The Encyclopedia of Clinical Psychology*; 2015.
9. Elbir M, Topbas OA, Bayad S, et al. DSM-5 bozuklukları için yapılandırılmış klinik görüşmenin klinisyen versiyonunun türkçeye uyarlanması ve güvenilirlik çalışması. *Türk Psikiyatri Dergisi* 2019; 30:51-6.
10. Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol*. 1959;32:50-5.
11. Yazici MK, Demir B, Tanrıverdi N, et al. Hamilton anksiyete değerlendirme ölçeği, değerlendiriciler arası güvenilirlik ve geçerlik çalışması. *Türk Psikiyatri Dergisi* 1998;9:114-17.
12. Lee SA. Coronavirus anxiety scale: A brief mental health screener for COVID-19 related anxiety. *Death studies* 2020;44:393-401.
13. Evren C, Evren B, Dalbudak E, et al. Measuring anxiety related to COVID-19: A Turkish validation study of the Coronavirus Anxiety Scale. *Death Stud*. 2020; 1-7.
14. Shi L, Lu ZA, Que JY, et al. Prevalence of and risk factors associated

- with mental health symptoms among the general population in China during the coronavirus disease 2019 pandemic. *JAMA network open* 2020;3:e2014053-e2014053.
15. Rossi R, Socci V, Talevi D, et al. COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Front Psychiatry*. 2020;11:790.
 16. Labrague LJ, De los Santos JAA. COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *J Nurs Manag*. 2020;28:1653-61.
 17. World Health Organization [Internet]. Depression and other common mental disorders: global health estimates (No. WHO/MSD/MER/2017.2), 2017 - [Cited 2020 Dec 11]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/254610/WHO-MSD-MER-2017.2-eng.pdf>
 18. Islam MS, Ferdous MZ, Potenza MN. Panic and generalized anxiety during the COVID-19 pandemic among Bangladeshi people: An online pilot survey early in the outbreak. *J Affect Disord*. 2020;276:30-7.
 19. Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: systematic review of the current evidence. *Brain Behav Immun*. 2020 Oct;89:531-42.
 20. Cao W, Fang Z, Hou G, et al. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res*. 2020;112934.
 21. Page LA, Seetharaman S, Suhail I, et al. Using electronic patient records to assess the impact of swine flu (influenza H1N1) on mental health patients. *J Ment Health*. 2011;20:60-6.
 22. Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: A retrospective cohort study. *Lancet* 2020;395:1054-62.
 23. Ozdin S, Ozdin SB. Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. *Int J Soc Psychiatry*. 2020;0020764020927051.
 24. Bao Y, Sun Y, Meng S, et al. 2019-nCoV epidemic: Address mental health care to empower society. *Lancet* 2020;395:e37-e38.
 25. Gao J, Zheng P, Jia Y, et al. Mental health problems and social media exposure during COVID-19 outbreak. *Plos One* 2020;15:e0231924.
 26. COVID, W. Public Health Emergency of International Concern (PHEIC). Global research and innovation forum: towards a research roadmap. [Cited 2020 Dec 11]. Available from: <https://covid19-evidence.paho.org/handle/20.500.12663/714>
 27. Liu C, Liu Y. Media exposure and anxiety during COVID-19: The mediation effect of media vicarious traumatization. *Int J Environ Res Public Health*. 2020;17:4720.
 28. Hossain MT, Ahammed B, Chanda SK, et al. Social and electronic media exposure and generalized anxiety disorder among people during COVID-19 outbreak in Bangladesh: A preliminary observation. *Plos One*. 2020;15:e0238974.
 29. Ni MY, Yang L, Leung CM, et al. Mental health, risk factors, and social media use during the COVID-19 epidemic and cordon sanitaire among the community and health professionals in Wuhan, China: Cross-sectional survey. *JMIR Mental Health* 2020;7:e19009.