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Anxiety and Loneliness Levels of Quarantined Citizens Who Brought from Abroad: An Example from Turkey

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ABSTRACT

Objective: The quarantine process implemented to prevent the spread of infection during the coronavirus disease (COVID)-19 pandemic may negatively affect individuals. We aimed to evaluate the anxiety and loneliness levels of the quarantined individuals and determine the related factors.

Materials and Methods: Two hundred ninety individuals who were brought to Turkey from abroad in May 2020, quarantined in Sakarya province, participated in our descriptive cross-sectional study. The loneliness and anxiety levels, along with the effects of the quarantine process, were evaluated. The sociodemographic information form prepared, Loneliness Scale (UCLA), State Anxiety Scale (STAI-1), and Trait Anxiety Scale (STAI-2), were used to collect data.

Results: The mean age of the participants was 35.32±9.86 years and 79.7% were male. Participants who stated that they had a mental illness before the pandemic and those who reported that they needed a mental health professional during the pandemic scored significantly higher in the UCLA, STAI-1, and STAI-2 scales compared to others. The UCLA and STAI-2 scores of participants with a high concern about contracting COVID-19 were higher than those with moderate and low levels of anxiety. The quarantine process did not significantly affect the UCLA, STAI-1, and STAI-2 scales of participants.

Conclusion: Although quarantine was not found to affect anxiety and loneliness levels, it was observed that the basis of anxiety in highly anxious individuals was constituted by worry about themselves or loved ones contracting the disease and economic effects of the process.

Keywords: Anxiety, coronavirus disease-19, loneliness, quarantine, Turkey

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INTRODUCTION

A new type of coronavirus (CoV) called severe acute respiratory syndrome CoV (SARS-CoV-2), which causes atypical pneumonia and first occurred in Wuhan city of Hubei province of China in December 2019 quickly spread to the entire world, and turned into a pandemic (1). Countries have taken various precautions to prevent the spread of this highly infectious virus. The first case was identified on March 11, 2020, in Turkey, after which measures were implemented (2). One of these measures was quarantining individuals who arrived in Turkey from abroad in various dormitories beginning on March 15, 2020.

Quarantine is a pandemic precaution to separate individuals who were most likely exposed to the disease, those with unknown disease statuses, or possible asymptomatic carriers (3). Factors such as being separated from their loved ones, getting bored and feeling frustrated due to isolation, having to comply with something imposed from the outside, marked disruption of the life routine, uncertainty about the disease status of him/herself and surrounding people, and the length of the quarantine period may have negative psychological and emotional effects on individuals (4).

Anxiety associated with many situations under unexpected quarantine conditions is a natural and non-pathological response. There is a sudden change in people's plans for their near future. Furthermore, they need to spend time alone in a foreign environment, away from their usual social setting. Anxiety and loneliness may turn into an illness if quarantine survivors are completely disconnected from their relationship or do not know that the needs of those who depend on them can be met regularly (5).

The successful implementation of quarantine, a protective public health measure, is possible only by minimizing its negative effects, which are necessary to reveal. The purpose of our study is to evaluate the anxiety and loneliness levels of the quarantined individuals and determine possible related factors.

MATERIALS and METHODS

Type of Study

This study is a cross-sectional descriptive study conducted in May 2020 in various student dormitories in Sakarya Province, Turkey.

The Population and Sample Size of the Study

Two hundred ninety people who were quarantined in the province of Sakarya participated in the survey; 41 filled out the questionnaire both at the beginning and end of the quarantine period. Individuals brought from abroad and quarantined for 14 days (the incubation and contamination period of SARS-CoV-2) due to the pandemic were evaluated. After the individuals entered the country, they were placed in various student dormitories. All individuals were informed about the study during the entry health screening. Anyone who accepted to participate in the study and had a smartphone that could access the web-based questionnaire was included in the study.

Description of Quarantine Applied to People from Abroad in Turkey

As of March 15, it was decided that every individual arriving from abroad should be quarantined. After the individuals entered the country, they were transferred to different provinces and placed in various student dormitories by the relevant institutions. Considering the incubation and contamination period of SARS-CoV-2, the quarantine period of the individuals was determined as 14 days. During this period, individuals underwent a health check every day (if any symptoms may occur; individuals were directed to the pandemic hospital) and completed the quarantine process in single and isolated rooms.

Data Collection Tools

The study data were collected with the Personal Information Form prepared by the researchers.

This Personal Information Form has a two-part. First part contains age, gender, educational status, marital status, smoking, and alcohol consumption (before and during quarantine [the last day of quarantine was asked]), social media using status (before and during quarantine [the last day of quarantine was asked]), presence of mental illness, and general anxiety state-related questions. Second part contains 14 rules to be followed during the pandemic as announced by the Ministry of Health.

14 rules against the risk of new CoV

1. Wash your hands frequently with soap and water for at least 20 s by scrubbing
2. Keep at least 3–4 steps away from people who show symptoms of colds
3. Cover your mouth and nose with disposable wipes during coughing and sneezing. If there are no wipes, use the inside of the elbow
4. Avoid physical contacts such as handshaking and hugging
5. Do not touch your eyes, mouth, and nose with your hands
6. Cancel or postpone your travels abroad
7. Spend the first 14 days at home on your return from abroad
8. Ventilate your environment frequently

9. Wash your clothes at 60–90°C with regular detergent
10. Clean frequently used surfaces such as door handles, fixtures, and sinks with water and detergent every day
11. If you have cold symptoms, avoid contact with people, especially the elders and those with chronic diseases, and do not go out without wearing a mask
12. Do not share your personal belongings such as towels
13. Drink plenty of fluids, maintain a balanced diet, and pay attention to your sleep patterns
14. If you have persistent fever, cough, and shortness of breath, go to a health facility wearing a mask.

In the study, access to information about CoV disease (COVID)-19; interventions for diagnosis and treatment; he or his family caught COVID-19; the level of anxiety about himself or his family's economic situation was asked to be scored from 1 to 10. Collecting these answers as points will not be valid and reliable, so we aimed to evaluate them by categorizing. Overall, the distribution clustered to high satisfaction levels. We wanted to categorize the satisfaction levels and compare them with the scales (Loneliness Scale [UCLA], State Anxiety Scale [STAI-1] and Trait Anxiety Scale (STAI-2). If we made a group according to the distribution, we should make two groups for those who gave 8 or more points and those who gave a score below 8. In this case, we thought that those with low or medium satisfaction levels would be overlooked, so we planned to categorize them into three equally spaced. Regarding confidence, satisfaction, and anxiety levels, the scores of the participants between 1 and 10 were classified into three equally spaced intervals using the tertiles; low giving 1–4 points, medium giving 5–7 points, and high giving 8–10 points.

UCLA, STAI-1, and STAI-2

UCLA

Developed by Russell, Peplau, and Cutrona, it is a Likert-type self-assessment questionnaire that helps to determine the general loneliness of the individual. It has a four-point Likert-type rating with a total of 20 items, 10 of which do not contain positive loneliness, and the other 10 directed at identifying negative, namely, lonely individuals (6).

The validity and reliability studies of the scale in our country were performed by Demir (7). The Cronbach alpha internal consistency coefficient was calculated as 0.96, and the test-retest reliability coefficient was calculated as 0.94.

STAI-1 and STAI-2

Developed by Spielberger, the inventory has two 20-question scales. STAI-1: It determines how the person feels at a certain time and condition. STAI-2: It determines how the person feels, regardless of the time and situation. The emotions or behaviors expressed on the STAI-1 and STAI-2 Scale are answered by choosing one of the "Not at all," "A little," "Somewhat," and "Very much so" options according to the severity of such experiences. The total score of the opposite expressive expressions is subtracted from the total score obtained for direct expressions, and a predetermined constant value is added to this number. The total value obtained shows the anxiety score of the individual. The total score value obtained from each scale varies between 20 and 80 (8).

Table 1. Participants' level of knowledge about COVID-19, distribution of features related to information access channels

Features	Number	Percentages
Statements about the transmission of SARS-CoV-2		
No idea	20	6.9
Touching the face, eyes, nose, or mouth with unwashed hands	34	11.7
Inhaling droplets scattered to the air with coughing and sneezing	20	6.9
Both ways	216	74.5
Where they follow data related to the pandemic		
Do not follow	12	4.1
Television	57	19.7
Social media	153	52.8
Internet	62	21.4
Persons they were in contact with	6	2.1
The effect of information about the pandemic followed from the social media on level of anxiety		
Does not follow social media	32	11.0
Those without any anxiety	45	15.5
Those with decreased anxiety	28	9.7
Those with unchanged anxiety	81	27.9
Those with increased anxiety	104	35.9
Change in social media use during the quarantine		
Those with increased use	89	51.7
Those with decreased use	13	7.6
Those with unchanged use	70	40.7

COVID: Coronavirus disease; SARS-CoV: Severe acute respiratory syndrome coronavirus

The Turkish adaptation study was conducted by Öner and Le Compte (9), and the Cronbach alpha internal consistency coefficient of the scale was between 0.83 and 0.87, test-retest reliability was between 0.71 and 0.86, and item reliability was between 0.34 and 0.72.

Process the Research

Single-use QR codes and informed consent forms prepared for access to the questionnaire forms were distributed to all quarantined individuals. Data collected online for 48 h were recorded by the researchers. On the last day of the quarantine period, single-use QR codes and an informed consent forms were redistributed. The data obtained were recorded in the online database by the researchers.

Ethical Considerations

Ethics Committee approval was obtained from the local ethics committee of Sakarya University (Decision number: E.4246, Date: 27.04.2020).

Data Analysis

Normality of the numerical variables of the participants was assessed with graphical and analytical methods. Normally distributed parameters were presented as mean±standard deviation, non-normally distributed parameters, as median and quartile distribution, and categorical variables by percentage and number. Mann-Whitney U and Kruskal-Wallis tests were used to compare non-normally distributed variables between two and more than two independent

groups, respectively. A post-hoc test was performed after Kruskal-Wallis test to find pairwise significant groups. Wilcoxon test was utilized to compare two non-normally distributed dependent variables. $P < 0.05$ was considered statistically significant. The data obtained electronically were analyzed in SPSS package program.

RESULTS

The mean age of all participants was 35.32 ± 9.86 years and 79.7% were males. Among all, 74.5% ($n=216$) of the participants perfectly defined the transmission routes of the novel CoV, while 6.9% stated that they had no idea about the subject. They had followed the data about the disease and the pandemic mostly from social media (52.8%). Increased anxiety due to what they learned from the social media about the pandemic was reported by 35.9% and 51.7% stated that their use of social media increased during the quarantine (Table 1).

Fourteen participants (4.8%) stated that they needed professional mental health support in the pandemic process and 7 stated that they were diagnosed with a mental illness diagnosed before the pandemic. Those with a mental illness before the outbreak constituted 5.2% ($n=15$) of the participants. Situations that may be related to participants' levels of satisfaction and anxiety associated with the outbreak process are shown in Table 2.

Those who knew all 14 rules to be obeyed during the pandemic, as determined by the Ministry of Health, were 30.7% of all partici-

Table 2. Possible situations related to levels of satisfaction and concern associated with the pandemic process

Situations	Number	Percentages
Level of satisfaction as to whether the available information about COVID-19 is sufficient		
Low	25	8.6
Medium	95	32.8
High	170	58.6
Level of trust into interventions regarding the diagnosis and treatment of COVID-19 in Turkey		
Low	13	4.5
Medium	56	19.3
High	221	76.2
Level of anxiety about contracting COVID-19 him/herself		
Low	121	41.7
Medium	89	30.7
High	80	27.6
Level of anxiety about other family members contracting COVID-19		
Low	75	25.9
Medium	75	25.9
High	140	48.3
Anxiety about the future economic effects of the COVID-19 outbreak on him/herself and family		
Low	24	8.3
Medium	53	18.3
High	213	73.4

Participants were asked to score between 1–10 on the levels of satisfaction and anxiety. Scores between 1–4, 5–7, and 8–10 were classified as low, medium, and high, respectively. COVID: Coronavirus disease

Table 3. Distribution of awareness of 14 rules to be obeyed during the pandemic as determined by the ministry of health

Rules	Number	Percentages
Scrub your hands frequently with water and soap for 20 s	284	89.7
Keep at least 3–4 steps away from people who show signs of a cold	244	84.1
Cover the mouth and nose with disposable wipes during coughing or sneezing. If there is no wipe, use the inside of the elbow	250	86.2
Avoid close contact, such as handshaking or hugging	256	88.3
Do not touch your eyes, mouth, and nose with your hands	214	73.8
Cancel or postpone international travel	151	52.1
Spend the first 14 days at home upon returning from abroad	212	73.1
Frequently ventilate your current environment	249	85.9
Wash your clothes at 60–90°C with normal detergent	196	67.6
Clean frequently used surfaces such as door handles, fixtures, sinks, with water and detergent daily	174	60.0
If you have cold symptoms, do not contact the elderly and those with chronic diseases, do not go out without wearing a mask	230	79.3
Do not share your personal belongings such as towels	242	83.4
Drink plenty of fluids, eat a balanced diet, pay attention to your sleep patterns	240	82.8
If you have a fever, cough, and shortness of breath, wear a mask, and seek medical advice	186	64.1

pants, while 4.8% (14 people) knew only one rule. The distribution of the sum of the rules that the participants know is the median and their 1st and 3rd quarters, 12 (9–14) (Table 3).

Participants who stated that they needed a mental health professional during the pandemic and those who reported having

a mental illness before the pandemic process scored significantly higher on UCLA, STAI-1, and STAI-2 scales than other participants. Those with high levels of concern about other members of the family contracting COVID-19 disease scored higher on the UCLA scale than those with moderate and lower

Table 4. Distribution of UCLA loneliness scale, STAI-1, and STAI-2 according to various features

Features	UCLA Median (1.–3.quartiles)	STAI-1 Median (1.–3.quartiles)	STAI-2 Median (1.–3.quartiles)
Gender			
Female (n=59)	41 (31–50)	41 (31–51)	41 (36–48)
Male (n=231)	43 (37–49)	37 (30–45)	41 (35–47)
p*	0.275	0.023	0.347
Marital status			
Married (n=160)	43 (37–49)	37 (29–46.75)	41 (35–47)
Single (n=120)	42 (35–49)	38 (32–47)	42 (35–47)
Widowed (n=10)	39.5 (28.75–49)	33.5 (28.5–41)	39 (36.5–43.25)
p**	0.494	0.380	0.726
Chronic diseases			
Yes (n=43)	45 (36–50)	40 (29–52)	41 (35–48)
None (n=247)	42 (35–49)	37 (30–46)	41 (35–47)
p*	0.559	0.177	0.616
History of mental illness before the pandemic			
Yes (n=15)	52 (49–62)	50 (40–80)	47 (45–69)
None (n=275)	42 (35–49)	37 (30–46)	41 (35–47)
p*	<0.001	<0.001	<0.001
Help requirement from mental health professionals during the pandemic			
Yes (n=14)	46.5 (33.25–63.5)	47.5 (34.25–67.5)	45 (39–49.5)
None (n=276)	42 (36–49)	37 (30–46)	41 (35–47)
p*	0.203	0.046	0.123
Level of satisfaction as to whether the available information about COVID-19 disease is sufficient			
Low (n=25)	46 (40–51.5)	42 (32–57)	45 (40–52.25)
Medium (n=95)	42 (35–48)	38 (31–45)	42 (35–47)
High (n=170)	43(35.75–49)	37 (29.75–46.25)	41 (34–47)
p**	0.149	0.144	0.096
Level of trust into interventions regarding the diagnosis and treatment of COVID-19 in Turkey			
Low (n=13)	42 (38–47.50)	46 (32.5–57)	41.5 (36–57)
Medium (n=56)	42.5 (37–49.75)	40 (34–48) ^a	44 (38–47)
High (n=221)	43 (35–49)	36 (29–44.5)	41 (34–47)
p**	0.508	0.011	0.170
Level of anxiety about contracting COVID-19 him/herself			
Low (n=121)	41 (36–47) ^a	33 (24–41) ^a	39 (32–46) ^a
Medium (n=89)	42 (33.5–49) ^a	37 (31–45.5) ^a	42 (35–46.50) ^a
High (n=80)	47 (40–50.75)	44 (37–52)	46 (41–49)
p**	<0.001	<0.001	<0.001
Level of anxiety about other family members contracting COVID-19			
Low (n=75)	41 (37–47)	32 (24–42) ^a	38 (32–44) ^a
Medium (n=75)	42 (35–48)	35 (30–42) ^a	40 (34–46) ^a
High (n=140)	45 (36–50)	41 (34–50)	45 (38–48)
p**	0.039	<0.001	<0.001
Anxiety about the future economic effects of the COVID-19 outbreak on him/herself and family			
Low (n=24)	41 (33.5–47)	28.50 (21–36.25) ^{a,b}	32 (28.25–40) ^{a,b}
Medium (n=53)	39 (33–47) ^a	34 (27.50–42) ^a	39 (31.50–44) ^a
High (n=213)	44 (37–50)	38 (32–49)	44 (37–48)
p**	<0.001	<0.001	<0.001

*: Mann–Whitney U test; **: Kruskal–Wallis test was used; ^aAnd ^bsignify p<0.017 for post-hoc comparison; a: Refers to comparison between the high group and the medium group or the low group; b: Refers to comparison between the medium group and the low group; COVID: Coronavirus disease; UCLA: Loneliness scale; STAI-1: State Anxiety Scale; STAI-2: Trait Anxiety Scale

levels ($p=0.036$, $p=0.37$, respectively). The UCLA and STAI-2 scores of participants with a high concern about contracting COVID-19 were higher than those with moderate and low levels of anxiety (Table 4).

While there was no difference between genders on UCLA and STAI-2 scales, women scored higher in men than in STAI 1 ($p=0.023$). There was no difference in UCLA, STAI-1, and STAI-2 according to marital status. People with previous mental illness scored higher on UCLA loneliness, STAI-1, and STAI-2 scales ($p<0.001$; $p<0.001$; $p<0.001$, respectively). Individuals who are highly concerned about their own or family members' encounter with COVID-19 or that their or their family's economic situation will be affected have been found to score higher on UCLA, STAI-1, and STAI-2 scales than those who are moderately and lowly concerned (Table 4).

"Family" and "walking outside" ranked first among the distribution of needs in the quarantine process, and 11.1% ($n=19$) needed mental support (Table 5).

Forty-one participants, with a mean age of 34.37 ± 10.04 (range: 20–64) years, comprising 73.2% ($n=30$) males, scored comparably in UCLA, STAI-1, and STAI-2 scales at the beginning and end of the quarantine process. There was no statistically significant difference in anxiety and loneliness levels (Table 6).

DISCUSSION

To minimize the risk of transmission and prevent the spread of the pandemic, the movements of individuals should be limited as much as possible. From this point of view, the quarantine application is an important measure to be taken in the fight against pandemic (10). However, quarantined individuals are isolated from the society they live in and become lonely. The limitation of the individuals to speak face to face, lack of physical communication, being alone in a room, and getting away from their daily routines deepens the feeling of loneliness. This can result in various mental problems or exacerbation of existing mental problems (11).

In our study, the levels of loneliness and anxiety were higher among quarantined individuals with a previous mental illness and those who needed professional mental health support during the quarantine process. The effect of quarantining alone was not found to affect loneliness and anxiety levels of individuals. We believe that the brief period of 14 days, which was determined considering the incubation period of COVID-19, and individuals knowing that they will return to their routine at the end of this process, may have caused this. However, it was observed that those with elevated levels of loneliness and anxiety had a high degree of concern about themselves and their families contracting the infectious disease and the economic effects of these processes.

In the statement issued by the Chinese National Health Commission, it is reported that individuals quarantined during the epidemic may experience feelings of loneliness and anxiety (12). Studies in the literature show that besides the psychological effects on individuals, loneliness may also pose a substantial risk for chronic diseases in the upcoming period (13, 14). Furthermore, its negative effects on the immune system, causing various persecutory delusions and preparing the ground for serious

Table 5. Distribution of those most needed in the quarantine process

Features	Number	Percentages
Those stating they had no needs	27	15.8
Family	49	28.7
Walking, jogging, going outside	40	23.4
Patients, power, love, psychological support	19	11.1
Television, internet	11	6.4
Special foods and drinks	8	4.7
Others	17	10.0
Total	171	100.0

Table 6. Comparison of participants' level of loneliness and anxiety at the start and end of the quarantine process ($n=41$)

Scales	Score at the beginning of the quarantine median (1.–3. quartiles) ($n=41$)	Score at the end of the quarantine median (1.–3. quartiles) ($n=41$)	p^*
UCLA	44.0 (35.5–49.5)	42.0 (33.5–49.5)	0.094
STAI-1	39.0 (30.5–46.5)	40.0 (37.0–44.0)	0.251
STAI-2	34.0 (28.5–41.0)	40.0 (34.0–44.5)	0.196

*: Wilcoxon test was used; UCLA: Loneliness Scale; STAI-1: State Anxiety Scale; STAI-2: Trait Anxiety Scale

mental disorders that may result in suicide, show that loneliness should be handled and managed well in quarantined individuals (15). Although quarantine was not found to affect anxiety levels, it was observed that the basis of anxiety in highly anxious individuals was constituted by worry about themselves or loved ones contracting the disease and economic effects of the process. In fact, this consequence may emerge because of many measures taken during pandemic periods, regardless of the quarantine application. The possibility of transmitting the disease to others has also been stated to increase anxiety levels in those under quarantine (16). The negative economic effects of the process are also often inevitable. Especially quarantined individuals must disrupt their daily routines and cannot carry out their income-generating business, which leads to economic losses. This loss and uncertainty increase anxiety about the future. These processes cause serious mental disorders and constitute a serious risk factor for anger and anxiety symptoms (17, 18).

Thanks to the smartphones and tablets used in today's technology, the use of social media is quite common, and the usage time is much more than that of the television and radio. Instant developments, announcements, news, and friendships are followed through mobile applications and social media. For quarantined individuals, the connection with the outside world is the fastest and most comprehensive on social media, which increased the time spent there (19). The fact that most of the news in social media needs confirmation causes anxiety in the individuals in the quarantine (20, 21). In our study, 51.7% of the participants stated that the duration of social media usage

increased during quarantine, and the information they learned from the social media about the pandemic increased the anxiety levels of 35.9%.

Informing is essential in health management during the quarantine, for it removes question marks about the current situation and the future. Daily disease data announced by the Ministry of Health and public informative videos help answer most of the questions during the quarantine (21, 22). In our study, 58.6% of the participants scored high levels in the question regarding satisfaction about the accessibility of information on COVID-19 and 76.2% scored high levels in trusting the diagnosis and treatment of COVID-19 disease in Turkey.

The participants had a prominent level of knowledge about 14 rules to be followed during the pandemic, as announced by the Ministry of Health. The most and least known rules were “scrubbing the hands frequently with water and soap for at least 20 seconds” and “canceling or postponing international travel,” respectively. Considering that all the participants arrived from abroad, it is safe to say that they did not abide with the latter rule. We believe that taking measures quickly, determining the rules to be followed, and effectively informing the public during the preliminary stages of the pandemic process contributed to the elevated level of awareness in our country. It was observed that in countries where the rules to be followed during the pandemic were determined early and compliance with the hand hygiene and mask use rules became widespread during the preliminary period, the pandemic was controlled much faster (22).

Participants stated that what they needed most in the quarantine process was “family,” which was followed by daily routine activities such as going out and walking. Staying away from family and daily routines may also be grave factors that increase loneliness and anxiety levels (18).

Limitations

This study was conducted only in Sakarya province and may not be representative for the entire population in Turkey. Furthermore, it was single-centered and may include center-specific variations.

CONCLUSIONS

An increase in anxiety and loneliness is expected during the quarantine. One of the policies followed in the quarantine process in our country was bringing the citizens from abroad with private flights and placing them in facilities in good condition with readied infrastructure in an organized and planned manner. All quarantined citizens were provided with all the materials needed daily in single and isolated rooms prepared for them, and their needs such as 24 h-internet, hot water, and food were provided free of charge. We concur that providing psychological and social support along with healthcare services provides basis for decreasing anxiety and loneliness levels. Quarantined citizens with a history of mental illness or those who require psychological support during this process should be monitored closely.

Ethics Committee Approval: The Sakarya University Clinical Research Ethics Committee granted approval for this study (date: 27.04.2020, number: E.4246).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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