

HEALTH ANXIETY AND EMOTION REGULATION DURING THE PERIOD OF COVID-19 OUTBREAK IN TURKEY

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SUMMARY

Background: The process of COVID-19 outbreak has affected Turkey as it has affected the whole world. The purpose of the current study is to investigate individuals' health anxiety and emotion regulation during the period of COVID-19 outbreak in Turkey in relation to some variables. The study also aims to explore the relationship between emotion regulation and health anxiety.

Subjects and methods: The study was conducted on 874 individuals reached online through the google e-forms. The participants were administered the "Health Anxiety Scale and Emotion Regulation Scale" to collect data. In the analysis of the collected data, Mann-Whitney U Test, Kruskal Wallis-H Test, Spearman Correlation Coefficient were used.

Results: In the current study, healthy anxiety scores of the participants were analyzed depending on some variables. Health anxiety was found to be higher in women, 18-30 age group, singles, students, and groups with physical and mental health problems. The research also found that there is a low and negative relationship between health anxiety and cognitive reappraisal. It is understood that men's suppression scores are higher than women. There is no significant difference between suppressing emotions and health anxiety. It was found that educators received the highest scores in terms of cognitive reappraisal. The cognitive reappraisal level of the group without mental disorder was found to be higher than the other group.

Conclusion: According to the results of the research, more supportive services should be provided for the groups with the higher health anxiety. Considering that especially students and young people are affected more, it can be said that mental health preventive services should be included more in these groups. At the same time, the fact that men have higher emotion suppression scores than women shows that this situation should also be taken into consideration in mental health services.

Key words: health anxiety - emotion regulation - COVID-19 outbreak

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INTRODUCTION

Coronavirus disease (COVID-19), which occurs in Wuhan, China and spreads all over the world, causes many negative conditions including mental and behavioral reactions and disorders, as well as it poses a serious threat to health and life (Jakovljevic et al. 2020). There is a sudden and big change for the majority of people in the form of home-stay and quarantine, which is unknown how long it will last. Causes such as isolation, social distance, staying away from family and friends, job loss are associated with increased mental risks (Jakovljevic 2020). The COVID-19 pandemic caused mental states such as anxiety and panic (Marčinko et al. 2020). During the course of the outbreak, many people in Turkey have been both physically and psychologically affected. Various studies have been conducted all over the world about the psychological effects of the COVID-19 outbreak (Wang et al. 2020, Mazza et al. 2020, Li et al. 2020, Lee & You 2020). Especially health anxiety is thought to increase in most people during the epidemic period (Ekiz et al. 2020).

Health anxiety, although there is no physical illness in the person, refers to an excessive interpretation of the usual body sensations towards a disease (Aydemir et al. 2013). In health anxiety, person's perception of a threat

related to health triggers anxiety. Occasionally, everyone may have mild health anxiety. However, it becomes a problem when health concerns are excessive, there is no real and serious medical problem and the tests are normal and it disrupts daily functionality (Anderson et al. 2011). Health anxiety is a situation that everyone can experience, but sometimes it can be constant and debilitating. When health anxiety is maladaptive, it is called serious health anxiety and this is associated with various dysfunctional beliefs and health-related control behaviours (Asmundson & Fergus 2019). In a study by Sunderland et al. (2013), the lifetime prevalence of health anxiety was found to be 5.7%. Kırkpınar et al. (2016) found that health anxiety was observed at a higher level in hypochondriasis compared to somatization disorder. Believing to a sick, anxiety related to the sick and seeking treatment are basic symptoms of hypochondriasis (Ghanizadeh & Firoozabadi 2012). Ekiz et al. (2020) found that health anxiety was seen moderately in epidemic process in Turkey. Health anxiety is also associated with emotion regulation. There are various studies reporting relationship between health anxiety and emotion regulation (Görgeç et al. 2014, Love et al. 2018).

Emotions which are important and basic processes in functions such as adaptation, emergence of targeted behaviours, decision making increase the quality of life

and functionality of the person if the message they convey is pondered about and can be properly understood (Ceçen 2002). Therefore, emotion regulation is thought to be a life skill that must be learned in the early stages of life (Macklem 2010, Shoutham-Gerow 2013). Emotion regulation is defined as the ability to observe, experience, evaluate and change emotional responses. Emotion regulation involves external processes such as “others” in the interpersonal environment that are responsible for achieving the goal, and internal processes like the person himself/herself (Thompson 1994). It is possible to divide the internal processes in emotion regulation into two as antecedent-focused and response-focused. The antecedent-focused emotion regulation involves the processes that the person applies before or when the emotion is about to emerge, while response-focused emotion regulation involves the processes of regulation of the emotion after it has emerged (Gross 1998a).

Cognitive reappraisal, which is one of the antecedent-focused emotion regulation methods, is defined as loading a new meaning into a situation that may give rise to an emotional response (Gross & John 2003). Studies have found that cognitive reappraisal is positively associated with well-being while suppressing emotions is negatively associated with well-being (Gross & John 2003, Haga et al. 2009). Emotion suppression, which is one of the response-focused emotion regulation methods, is a method that includes efforts to erase emotional experiences and prevent emotional expressions (Gross 1998b). The existing research shows that these two emotion regulation methods are used extensively and are related to the indicators of psychological health (John & Gross 2004). Studies have shown that there is a relationship between emotion regulation strategies and depression, anxiety, eating disorder, and substance abuse (Aldao et al. 2010, Martin & Dahlen 2005, Harrison et al. 2010, Joormann & Gotlib 2010, Omran 2011, D’Avanzato et al. 2013, Hopwood et al. 2015, Ruscitti et al. 2016, Weinbach et al. 2018).

The number of studies examining the relationship between health anxiety and emotion regulation appears to be few. Görgen et al. (2014) reported a significant relationship between health anxiety and emotion regulation.

Due to Coronavirus (COVID-19), which is declared as a pandemic worldwide, many people in our country are affected both physiologically and psychologically. The virus threatens the individual's own health and the health of the people around him/her, leading to sense of fear and anxiety. In this process, an increase in people's health anxiety levels is predictable. The current study is the first study to investigate health anxiety and emotion regulation in relation to some variables in the COVID 19 epidemic period. This study is considered to be important because it is the first study to examine health anxiety and emotion regulation in detail. It is thought that taking the findings of the current study into consideration while planning mental health services during the epidemic is important for public mental health. The

aim of this study was to examine emotion regulation and health anxiety in terms of some variables.

SUBJECTS AND METHODS

A total of 874 individuals reached online from different provinces of Turkey through the google e-forms in April-May 2020 are the participants of the current study. All the participants were administered a Socio-demographic Data Form, the Health Anxiety Scale and Emotion Regulation Questionnaire. In the Socio-demographic Data Form developed by the researchers, there are items to elicit information about gender, age, marital status, education level and occupation.

Psychometric measures

Emotion Regulation Questionnaire: The questionnaire was developed by Gross & John (2003). In the validity and reliability studies of the questionnaire conducted by Totan (2015), it was concluded that the original version of the questionnaire was confirmed in the

Table 1. Socio-demographic characteristics of the study group

Variables	n	%
Age groups		
18-30 years	519	59.4
31-40 years	181	20.7
41-50 years	124	14.2
>51 years	50	5.7
Gender		
Males	232	26.5
Females	642	73.5
Marital status		
Single	544	62.2
Married	330	37.8
Education level		
Elementary-secondary	25	2.9
High school	101	11.6
Associate’s degree	58	6.6
Bachelor’s degree	597	68.3
Graduate degree	93	10.6
Occupation		
Student	331	37.9
Healthcare personnel	187	21.4
Educator	130	14.9
Private sector	111	12.7
Public worker	36	4.1
Unemployed-retired	79	9.0
Health problem		
Yes	131	15.0
No	743	85.0
Mental illness		
Yes	33	3.8
No	841	96.2

Turkish culture. The Cronbach alpha values of the questionnaire were found to be as follows: 0.78 for cognitive reappraisal and 0.71 for emotion suppression. Test-retest correlation was found to be 0.67 for cognitive reappraisal and .65 for emotion suppression.

Health Anxiety Scale: The scale was developed by Salkovskis et al. (2002) and adapted to Turkish by Aydemir et al. (2013). The Cronbach alpha internal consistency of the scale was found to be 0.91. The item total score coefficients of the scale were found to be ranging from 0.40 to 0.76. The test-retest coefficient of the scale was found to be 0.57. In the construct validity study, the scale was found to be consisted of two sub-dimensions explaining 54.5% of the total variance. These two sub-dimensions are excessive sensitivity to bodily symptoms and anxiety about physical illnesses.

Statistical Analysis

In the analysis of the collected data, IBM SPSS Statistics for Windows 20.0 programme package was used. Mann-Whitney U test and Kruskal Wallis- H test were used to determine whether health anxiety and emotion regulation vary significantly depending on some variables. In the analysis of the relationship between health

anxiety and emotion regulation, Spearman Correlation Analysis was used. Prior to the analyses, whether the data had a normal distribution was tested with Kolmogorow Smirnov test. In the current study, $p < 0.05$ value was accepted to be statistically significant.

The study was approved by Amasya University Social Sciences Ethics Committee (21/04/2020-E.8809) and Provincial Health Directorate.

RESULTS

A total of 874 individuals (642 (73.5%) women and 232 (26.5%) men) participated in the current study. Descriptive statistics about the characteristics of the study group are given in Table 1.

The health anxiety scores of the participants were analyzed in relation to different variables. The health anxiety scores were found to be varying significantly depending on gender (U: 56174.50, $p < 0.05$). When mean ranks were taken into consideration, the mean health anxiety score of the female participants was found to be higher than that of the male participants. The health anxiety scores of the participants were found to be varying significantly depending on age ($\chi^2 = 16.25$, $p < 0.05$).

Table 2. Evaluation of health anxiety in terms of different variables

Variables	n	Mean±SD	Median	Min	Max	Mean rank	p-value
Age groups							0.00
18-30 years	519	16.53±6.65	16.00	1	43	465.90	
31-40 years	181	14.75±7.18	14.00	1	41	398.12	
41-50 years	124	14.89±7.49	14.00	0	45	395.45	
>51 years	50	14.26±7.28	14.00	2	35	389.54	
Gender							0.00
Males	232	13.66±6.56	13.50	0	41	358.63	
Females	642	16.57±6.95	16.00	1	45	466.00	
Marital status							0.04
Single	544	16.15±6.71	15.00	1	43	451.14	
Married	330	15.23±7.35	15.00	0	45	415.01	
Education level							0.07
Elementary-secondary	25	19.88±8.83	20.00	4	45	561.86	
High school	101	15.91±8.70	15.00	0	44	429.71	
Associate's degree	58	16.46±7.17	16.00	3	30	459.13	
Bachelor's degree	597	15.73±6.61	15.00	1	41	437.30	
Graduate degree	93	14.61±6.08	14.00	2	41	400.32	
Occupation							0.04
Student	331	16.32±5.97	16.00	3	39	464.07	
Healthcare personnel	187	16.01±7.08	16.00	1	44	447.61	
Educator	130	14.75±6.78	14.00	2	41	399.21	
Private sector	111	14.73±7.63	14.00	1	41	390.18	
Public worker	36	13.44±6.96	12.00	2	29	346.31	
Unemployed-retired	79	17.44±9.13	16.00	0	45	473.32	
Health Problem							0.02
Yes	131	17.35±7.99	16.00	0	44	482.34	
No	743	15.53±6.74	15.00	1	45	429.59	
Mental illness							0.00
Yes	33	21.45±8.72	21.00	10	41	598.88	
No	841	15.58±6.80	15.00	0	45	431.17	

SD - Standard Deviation

According to the mean ranks, the highest mean health anxiety score was found to belong to the participants in the age group of 18-30, followed by the age group of 31-40 and 41-50. The health anxiety scores were also found to be varying significantly depending on marital status (U: 82339.50, $p < 0.05$) and the mean rank of the single participants was found to be higher than that of the married participants. The health anxiety scores were found to be not varying significantly depending on education level ($\chi^2 = 8.62$, $p > 0.05$). The health anxiety scores were found to be varying significantly depending on profession ($\chi^2 = 17.18$, $p < 0.05$) and the students' healthy anxiety were found to be significantly higher than educators, private sector and public workers. A significant difference was also found between the groups having health problems and not having health problems (U: 42793.00, $p < 0.05$); the mean health anxiety score of the participants having health problems was found to be higher. A significant difference was found between the participants having mental disorders and not having metal disorders (U: 8551.00, $p < 0.05$); the participants having mental disorders were found to have a higher mean health anxiety score. Results are presented in Table 2.

In the analyses conducted to determine whether cognitive reappraisal scores vary significantly depending on some variables, it was found that cognitive cognitive reappraisal scores vary significantly depending on occupation ($\chi^2 = 18.14$, $p < 0.05$). The educators cognitive reap- praisal scores were found to have be higher healthcare personells and unemployed-retireds. When the groups having mental disorders and not having mental disorders were compared, it was found that the mean cognitive reappraisal score of the group not having mental disorders is significantly higher than that of the group having mental disorders (U: 9421.00, $p < 0.05$). Results are presented in Table 3.

In the analyses conducted to determine whether emotion suppression scores vary significantly depending on different variables, it was found that the emotion suppression scores vary significantly depending on gender (U: 58158.50, $p < 0.05$) and when the mean ranks were compared, it was concluded that the mean emotion suppression score of the male participants is higher than that of the female participants. Results are presented in Table 4.

Table 3. Evaluation of cognitive reappraisal in terms of different variables

Variables	n	Mean±SD	Median	Min	Max	Mean rank	p-value
Age groups							0.27
18-30 years	519	30.30±5.83	31.00	6	42	434.32	
31-40 years	181	30.95±6.10	31.00	6	42	466.55	
41-50 years	124	29.67±6.49	30.00	9	40	410.67	
>51 years	50	30.08±5.75	31.50	14	38	431.92	
Gender							0.67
Males	232	29.95±6.80	31.00	6	42	431,49	
Females	642	30.47±5.66	31.00	6	42	439,67	
Marital status							0.83
Single	544	30.35±5.79	31.00	6	42	436.13	
Married	330	30.30±6.30	31.00	6	42	439.75	
Education level							0.10
Elementary-secondary	25	28.56±6.81	28.00	12	40	362.54	
High school	101	29.33±6.91	30.00	9	40	412.43	
Associate's degree	58	29.50±5.47	30.00	16	40	388.58	
Bachelor's degree	597	30.50±5.87	31.00	6	42	443.88	
Graduate degree	93	31.34±5.50	32.00	16	42	474.44	
Occupation							0.00
Student	331	30.63±5.38	31.00	10	42	443.85	
Healthcare personnel	187	29.75±5.98	30.00	7	42	407.14	
Educator	130	31.80±6.10	30.00	6	40	511.09	
Private sector	111	30.00±6.22	30.00	6	40	423.11	
Public worker	36	29.44±7.59	31.50	14	38	436.10	
Unemployed-retired	79	28.92±6.58	30.00	12	40	383.51	
Health Problem							0.82
Yes	131	30.41±6.19	31.00	11	42	442.10	
No	743	30.32±5.95	31.00	6	42	436.69	
Mental illness							0.00
Yes	33	26.87±7.03	29.00	6	36	302.48	
No	841	30.47±5.90	31.00	6	42	442.80	

SD - Standard Deviation

Table 4. Evaluation of emotion suppression in terms of different variables

Variables	n	Mean±SD	Median	Min	Max	Mean rank	p-value
Age groups							0.11
18-30 years	519	15.53±4.70	16.00	4	28	443.32	
31-40 years	181	14.79±4.58	15.00	5	28	400.00	
41-50 years	124	15.62±4.56	16.00	5	25	450.80	
>51 years	50	16.16±5.07	17.00	4	28	478.11	
Gender							0.00
Males	232	16.78±4.97	17.00	4	28	507.82	
Females	642	14.93±4.48	15.00	4	26	412.09	
Marital status							0.13
Single	544	15.49±4.77	16.00	4	28	442.57	
Married	330	15.31±4.54	15.00	4	28	429.15	
Education level							0.32
Elementary-secondary	25	17.68±4.87	17.00	6	26	550.28	
High school	101	15.99±5.25	16.00	4	28	461.63	
Associate's degree	58	15.60±3.61	16.00	8	24	441.38	
Bachelor's degree	597	15.29±4.71	16.00	4	28	431.91	
Graduate degree	93	14.95±4.28	16.00	7	23	414.45	
Occupation							0.52
Student	331	15.44±4.79	16.00	4	28	441.01	
Healthcare personnel	187	15.69±4.38	16.00	5	26	451.20	
Educator	130	14.29±4.47	14.00	2	45	376.13	
Private sector	111	15.42±4.99	16.00	5	28	438.64	
Public worker	36	15.55±4.83	17.00	4	24	454.69	
Unemployed-retired	79	16.56±4.55	16.00	7	28	481.92	
Health Problem							0.95
Yes	131	15.37±4.75	16.00	5	26	436.32	
No	743	15.43±4.68	16.00	4	28	437.71	
Mental illness							0.15
Yes	33	16.57±5.02	17.00	4	26	498.06	
No	841	15.38±4.67	16.00	4	28	435.12	

SD - Standard Deviation

Table 5. Relationship between health anxiety and sub-dimensions of emotion regulation

	Cognitive Reappraisal	Emotion Suppression
Health Anxiety	-0.13**	0.04

** p<0.01

When the correlation between health anxiety and emotion regulation was examined, it was found that there is a low and negative correlation between them ($r=-0.13$, $p<0.01$). This correlation was found to be statistically insignificant ($r= 0.04$, $p>0.05$). Results are shown in Table 5.

DISCUSSION

In the current study, health anxiety scores of the participants were examined in relation to different variables. The healthy anxiety of the female participants was found to be higher than that of the male participants. This can be because of the effects of the culture, women cannot easily express their concerns. This finding seems to concur with the findings of the previous research. In their study conducted on individuals during an epidemic period in Turkey, Ekiz et al. (2020) found that health anxiety of the women is

higher than that of the men. During the epidemic period, stress, anxiety and depression were found to be higher among women (Wang et al. 2020, Mazza et al. 2020). Moreover, when the literature is examined, it is seen that particularly somatoform disorders are seen more among women (Faravelli et al. 1997, Koç & Polat 2006, Ozenli et al. 2009, Karaşar & Oğülmüş 2016). All these findings support the finding of the current study showing that healthy anxiety is higher among the female participants.

The health anxiety of the participants aged 18-30 was found to be higher than those of the other age groups. A significant increase seen in the level of anxiety of this age group about the illness during the outbreak period might be because in this age group, people can be ill without showing any symptoms of the illness, thus, their risk of infecting other people is high. Moreover, as the individuals in this age group generally live with their families, they may feel more concerned

about infecting their family members. In their study conducted during the outbreak period, Ekiz et al. (2020) found that the individuals in the age groups of 18-25 and 26-35 have higher anxiety levels than the other age groups, and this supports the finding of the current study.

In the current study, health anxiety was found to be higher among the university students compared to the other groups. Because of the outbreak, the education of university students was interrupted and they had to return to their families. They had to continue their education with distance education. Their lifestyle has changed dramatically. It may be thought that the students experienced health anxiety more than the other groups as a result of having various difficulties in adapting to this process. At the same time, fears of infecting family members may explain their increased health anxiety. This finding of the current study seems to be consistent with the findings reported by Wang et al. (2020), who found higher anxiety, depression and stress scores among students when compared to other people.

The healthy anxiety of the participants having physical and mental health problems was found to be higher. Since the presence of physical health problems during the outbreak may increase anxiety that the disease will be severe, health anxiety of these people might have increased. This finding concurs with the findings of the previous studies. Wang et al. (2020) found that people with weak / very poor health status and those with chronic disease had higher anxiety, depression and stress scores than those without chronic disease. Mazza et al. (2020) found that people with medical problems have high levels of anxiety and depression. In a study conducted by Unalan (2014), it was found that the health anxiety of the participants with low level of psychological problem was significantly lower than the participants with medium and high level of psychological problem.

In the current study, in the evaluation of emotion regulation in terms of various variables; the male participants were found to have emotion suppression scores than the female participants. This finding of the current study is consistent with the findings reported in the literature (Chen et al. 2005, Haga et al. 2009, Flynn et al. 2010, Demirtaş 2018). Various studies in the literature found that women express their feelings more than men (Gross & John 2003, Kring & Gordon 1998, Parkins 2012). In our study, the male participants' high emotion suppression scores seem to be related to the cultural roles attributed to men. The fact that men's showing their feelings of fear, anxiety and sadness is considered to be weakness from a young age may explain the high emotion suppression scores in the male participants. This finding of the study seems to be important because of the negative consequences of suppressing emotions. Gross & John (2003) reported that suppressing emotions is associated with worse interpersonal functionality. Chen et al. (2005) pointed out that expressing emotions is considered important in terms of well-being. Traue et al. (2016) emphasized that

blocking emotions is a dysfunctional coping style and has harmful consequences. Pennebaker (2009) also stated that not expressing emotions is a condition that can cause various health problems.

In the current study, the educators were found to have the highest cognitive reappraisal scores. This finding of the study can be explained by the fact that the professional roles of educators contribute to the development of their emotion regulation skills. Karabay (2019) pointed out that having effective emotion regulation skills is very important for teachers.

The cognitive reappraisal level of the group without mental disorders was found to be higher than that of the other group. This finding of the study shows that the group without mental disorders can be healthier as a result of having better emotion regulation skills. Studies have found that cognitive reappraisal is positively associated with well-being while suppressing emotions is negatively associated with well-being (Gross & John 2003, Haga et al. 2009).

In the current study, it was found that there is a low and negative correlation between health anxiety and cognitive reappraisal. It was found that there is no correlation between emotion suppression and health anxiety. When the literature is reviewed, it is seen that there are a limited number of studies on the subject (Görgeç et al. 2014, Love et al. 2018). Reiser et al. (2019) found that there is no relationship between emotion regulation and health anxiety in their research conducted on children and adolescents.

Children and adolescents were not included in the sample of this study. This situation can be considered as the limitation of the research. In the future studies, comprehensive researches on children and adolescents can be made.

CONCLUSIONS

The findings of the current study are thought to be important for psychological health protection services offered during the epidemic period. In light of these findings, following suggestions can be made:

In the study, a low and negative correlation was found between health anxiety and cognitive reappraisal. On the basis of this finding, activities directed to reappraisal can be organized to decrease anxiety in groups experiencing high levels of anxiety.

According to the results of the current study, more supportive services should be offered to the groups having the highest levels of anxiety. Given that students and young people are affected more, more mental health protective services should be offered to them. It can be important to organize online psycho-educational activities to reduce particularly students' anxiety level and to increase their psychological resilience.

The fact that men have higher emotion suppression scores than women shows that this should be taken into consideration while developing mental health services.

In future research, men's emotion suppression can be investigated in relation to other variables. It can be thought that not expressing anxiety and fear arising from pandemic can affect men's health negatively. Therefore, it seems to be important to include activities to regulate emotions for men in mental health services so that they can express their feelings more effectively. Organization of psycho-educational programs for men to express their emotions can play an important role in the protection of men's health.

In future studies, variables such as depression, anxiety disorder and post-trauma stress disorder can be explored in more detail.

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Contribution of individual authors:

Derya Canlı: study design, data collection, literature review, first draft, approval of the final version.

Burcu Karaşar: study design, data collection, statistical analysis, approval of the final version.

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