Original Research / Orijinal Araştırma

The Relationship Between Depression, Anxiety, Stress Levels and Coping Strategies and Self-Compassion of Healthcare Workers During the COVID-19 Pandemic

COVID-19 pandemisi sırasında Sağlık Çalışanlarının Depresyon, Anksiyete, Stres Düzeyleri ile Başa Çıkma Stratejileri ve Öz- şefkat Arasındaki İlişki

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Abstract

Background and objectives: Previous studies have shown that stress, anxiety levels, and depressive symptoms were more common in healthcare workers than in the normal population during the COVID-19 pandemic. The aim of our study was to compare the depression, anxiety and stress levels, coping strategies and self-compassion levels of healthcare workers who had significant anxiety of transmitting the disease to their loved ones and others. Method: Our study was conducted in May 2020. The sample was consisted of 113 healthcare professionals actively working during the COVID-19 pandemic. The research scales were transferred to the electronic environment via the Google Forms program and delivered to the participants. Result: In our study, it was found that the most important reason for the anxiety of healthcare workers was to infect their loved ones. People who had significant anxiety about infecting loved ones used more functional coping strategies, had lower levels of depression, anxiety, and stress, and higher levels of self-compassion than those who did not have significant anxiety about infecting loved ones. Conclusion: It has been observed that this anxiety may have a functional effect rather than a loss of function in healthcare workers who are concerned about transmitting the disease to their loved ones. In order to protect health professionals from depression, anxiety and stress, studies should be carried out for individuals to gain self-compassion skills and functional coping strategies.

Key words: Self-compassion, healthcare workers, covid-19, depression, anxiety, coping strategies.

Özet

Giriş: Önceki çalışmalar, COVID-19 pandemisi sırasında sağlık çalışanlarında stres, kaygı düzeyleri ve depresif semptomların normal popülasyona göre daha yaygın olduğunu göstermiştir. Çalışmamızın amacı, hastalığı sevdiklerine ve başkalarına bulaştırma konusunda belirgin kaygı yaşayan sağlık çalışanlarının depresyon, kaygı ve stres düzeylerini, baş etme stratejilerini ve öz-anlayış düzeylerini karşılaştırmaktır. Yöntem: Çalışmamız Mayıs 2020'de yapılmıştır. Örneklemi COVID-19 pandemisi sırasında aktif olarak çalışan 113 sağlık profesyoneli oluşturmuştur. Araştırma ölçekleri Google Forms programı aracılığıyla elektronik ortama aktarılmış ve katılımcılara ulaştırılmıştır. Bulgular: Çalışmamızda sağlık çalışanlarının kaygılarının en önemli nedeninin hastalığı sevdiklerine bulaştırmak olduğu saptanmıştır. Hastalığı sevdiklerine bulaştırma kaygısı olan kişilerin, hastalığı sevdiklerine bulaştırma kaygısı olmayanlara göre daha işlevsel başa çıkma stratejileri kullandıkları, depresyon, kaygı ve stres düzeylerinin daha düşük olduğu ve öz-şefkat düzeylerinin daha yüksek olduğu bulundu. Sonuç: Hastalığı sevdiklerine bulaştırma kaygısı taşıyan sağlık çalışanlarında bu kaygının işlev kaybından çok işlevsel bir etkisi olabileceği gözlemlendi. Sağlık profesyonellerini depresyon, kaygı ve stresten korumak için bireylerin öz-anlayış becerilerini ve işlevsel başa çıkma stratejilerini kazanmalarına yönelik çalışmalar yapılmalıdır.

Anahtar kelimeler: Öz-anlayış, sağlık çalışanları, Covid-19, depresyon, anksiyete, başetme becerileri

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Introduction

The COVID-19 outbreak started in China in December 2019 and was declared as a pandemic by the World Health Organization after it spread globally.[1] Significant changes are taking place throughout the world, such as travel restrictions, school closures, curfews, and restrictions on social life.[2] In a community screening study conducted in China, it was shown that depression and anxiety increased due to the acute stress response to COVID-19.[3]

Previous studies have shown that healthcare workers experience more stress and anxiety and depression symptoms than the normal population.[4] The high frequency of infection of healthcare workers compared to the normal population during the pandemic, the difficulty in using protective equipment for safety, the inadequate access to protective equipment, and staying away from home within the scope of epidemic measures can be considered as additional stress factors that occur during the COVID-19 epidemic[5-7]. Anxiety and depression symptoms may worsen in stressful situations. Personal differences in response to stress are important in addition to the stressful situation. Coping strategies include cognitive and behavioral responses of people to stressful situations. Despite the fact that a variety of strategies are defined, these strategies are generally classified as functional and dysfunctional coping strategies. Active coping, planning, seeking social support methods are functional coping strategies, whereas substance/drug use, distraction and avoidance are dysfunctional coping strategies.[8,9] It has been reported that some coping strategies in patients in intensive care could be protective against anxiety and depression[10,11] It has also been discovered that focusing on emotions protects caregivers of dementia patients from increased anxiety.According to recent research, self-compassion is an important factor in coping and emotion regulation. The concept of self-compassion, introduced by Kristin Neff, is defined differently in the literature. Self-compassion is defined as a person's awareness of personal painful emotions, understanding them rather than ignoring them, and treating himself/herself with compassion by making room for these feelings in the here and now.[12,13] It has been demonstrated that self-compassion predicts resilience, quality of life, and psychological well-being strongly and positively.[14] Because of the potential consequences of difficult situations encountered during the pandemic, healthcare workers may higher level of perceived stress disorder. Self-compassion has been shown to be a protective process in people suffering from post-traumatic stress disorder. In our clinical observation, healthcare professionals have concerns about infecting their loved ones. Feeling of guilty about this may be one of the factors that make it difficult to cope with anxiety. At this stage, being compassionate and understanding self can be an important factor for healthcare professionals in coping with the difficulties. Thus, in this study, we aimed to investigate the coping strategies in healthcare professionals. First hypothesis in this study is that healthcare workers with anxiety of transmitting the disease to their loved ones have higher levels of depression-anxiety and stress and lower self-compassion. Second hypothesis is that dysfunctional coping strategies are used more in those who have anxiety about infecting their loved ones.

Method

Participants: The study was conducted in May 2020 with 120 healthcare professionals who were actively working during the COVID-19 pandemic and who volunteered to participate in the study. Healthcare workers who were at least primary school graduates, aged 18–65 years, who were actively working during the pandemic were included in the study, and those with problems or diseases (intellectual disabilities, schizophrenia spectrum and other psychotic disorders, primary or acquired neurological disease affecting cognitive abilities, and current alcohol or substance use disorder) that would prevent them from filling out the questionnaires were excluded from the study. The scales were transferred to digital environment via Google Forms and delivered to the participants. Written informed consent was obtained from all participants.

Data collection tools

Sociodemographic data form: It is a form designed by researchers to inquire about sociodemographic characteristics including information such as age, gender, marital status, occupation, as well as where the person lives, people with whom they live, alcohol and substance use, psychiatric and family history.

Covid-19 Related Anxiety Survey Question: It was created as a result of Covid-19 related studies in the literature and our clinical observations. Its clarity was checked by reading the items to 10 healthy volunteers. The participants were asked 'What worries you most during the Covid-19 pandemic?' The answers included 'Getting sick and dying', 'Infecting my children, family, or loved ones', 'Being a patient in intensive care unit',

'Number of patients increasing and not being able to cope with their care', 'Need to decide among patients for receiving intensive care', and 'other'. Participants were asked to select one answer.

Coping Styles Scale-Brief Form (CSS-BF): CSS was developed by Carver in 1997.[15] It consists of 28 items and 14 subscales. These 14 subscales are grouped under 3 dimensions termed problem-focused coping (planning, suppression of competing activities, restraint coping, using instrumental social support), emotionally focused coping (using emotional social support, positive reinterpretation, acceptance, humor, and turning to religion), and dysfunctional coping (focus on and venting of emotions, denial, behavioral disengagement, mental disengagement, substance use). Turkish validity and reliability study of CSS-BF was conducted in 2013.[16]

Depression-Anxiety-Stress Scale (DASS-21): DASS-21 is used, the short version of the old scale with 42-items.[17] Scale items are scored between 0–3 points. The scale consists of depression, anxiety, and stress sub-dimensions, and scores are evaluated as normal, mild, moderate, and severe for each dimension. Turkish validity and reliability study was conducted by Sarıçam.[18]

Self-Compassion Scale (SCS): SCS is a 5-point Likert-type scale consisting of 24 items. The scale was developed by Neff and Turkish reliability and validity study was conducted.[13,19] Unlike the original version of the SCS, the Turkish version has a one-dimensional structure.

Statistical Analysis

Data were summarized as mean ± standard deviation and median (Range) for continuous variables, frequencies (percentiles) for categorical variables. Student's t test or Mann Whitney U test was used for independent group comparisons, depending on the distributional properties of the data. Chi-square test was used for proportions and its counterpart Fisher's Exact test was used when the data were sparse. Spearman's rho was used to determine for correlation analysis. All analyses were performed IBM SPSS Statistics for Windows, Version 20.0. A p value <0.05 was considered as statistically significant.

Results

120 people who participated completed the research; however, the data of 113 participants were evaluated as the data of 5 people who filled the form inappropriately and 2 participants who were not working actively during the pandemic were excluded from the analysis. Sociodemographic information of the participants is shown in Table 1.

Table 1. Socio-demoghrapic characteristics

		n (%)
Gender	Female	70 (61,9)
	Male	42 (37,2)
	Unknown	1 (0,9)
Marital Status	Single	41 (36,3)
	Married	63 (55,8)
	Divorced	7 (6,2)
	Living together	2 (1,8)
Professional	Doctor	54 (47,8)
	Nurse	24 (21,2)
	Hospital staff	6 (5,3)
	Secretary	17 (15,0)
	Medical technician	11 (9,8)
	Dentist	1 (0,9)
Living places	Home	105 (92,9)
	Dormitory	4 (3,5)
	Hotel & other	4 (3,5)
Living conditions	Nuclear family	76 (67,3)
	Extended family	9 (8,0)
	Living alone	18 (15,9)
	Living with friends	10 (8,8)
Smoking	Yes	26 (23,0)
	No	87 (77,0)
Alcohol use	Yes	24 (21,2)
	No	89 (78,8)
Psychiatric history of individual	Yes	29 (25,7)
	No	84 (74,3)
Psychiatric history of family	Yes	24 (21,2)
	No	85 (75,2)
	Unknown	4 (3,5)
Chronic Illness	Yes	18 (15,9)
	No	95 (84,1)

89 people (78.8%) answered the question 'What worries you most during the Covid-19 pandemic?" as 'Infecting loved ones'. Other answers and rates for this question are given in Table 2.

Participants were divided into AILO+ and AILO- groups according to the presence of significant anxiety of infecting loved ones. The mean total depression score was mild (5.63 ± 4.42) in the AILO+ group and moderate (9.29 ± 5.79) in the AILO− group, and a statistically significant difference was found between the groups (p = 0.006). The mean total anxiety score was mild (4.10 ± 4.36) in the AILO+ group and severe (8.04 ± 5.16) in the AILO− group, and a statistically significant difference was found between the groups (p = 0.001). The mean total stress score was normal (6.09 ± 4.23) in the AILO+ group and moderate (10.00 ± 5.26) in the AILO− group, and a statistically significant difference was observed between the groups (p = 0.001) (Table 3).

It was found that SCS scores were significantly higher in the AILO+ group (80.58 ± 11.59) than in the AILO− group (72.67 ± 15.28) (p = 0.004) (Table 3).

The coping strategies of turning to religion and planning were most commonly used in the AILO+ group, whereas planning, turning to religion, and positive reinterpretation strategies were most commonly used in the AILO- group (Table 3).

When CSS-BF subscale scores were compared between the groups, it was found that using instrumental social support (UISS) and acceptance subscale scores were significantly higher in the AILO+ group than in the AILO− group (6.21 ± 1.55 and 6.25 ± 1.43 vs. 5.38 ± 1.61 and 5.63 ± 1.38, respectively), whereas substance use (SU) and behavioral disengagement subscale scores were significantly lower in the AILO+ group compared to the AILO− group (2.27 ± 0.67 and 2.88 ± 1.10 vs. 3.13 ± 1.68 and 3.58 ± 1.53, respectively). When the other subscale scores of CSS-BF were evaluated, no statistically significant difference was found between the groups ($p > 0.05$).

Table 2: Answers and rates of the question 'What worries you most during the Covid-19 pandemic?'

	n (%)
-Infecting loved ones	89 (78.8)
-Number of patients increasing and not being able to cope with their care	8 (7.1)
-Being a patient in intensive care unit	4 (3.5)
-Getting sick and dying	6 (5.3)
-Having to choose among patients for receiving intensive care	2 (1.8)
-My relatives get sick	1 (0.9)
-I have no idea	1 (0.9)
-I’m not anxious	2 (1.8)

Table 3. Differences between significant anxiety of infecting loved ones (AILO+) and non-significant AILO (AILO-) CSS-BF, SCS and DASS-21 scale scores in the groups

	AILO-		AILO+		p
	Mean±SD	**Median (Min.-Max.)**	**Mean±SD**	**Median (Min.-Max.)**	
UISS	5.38±1.61	6.00 (2.00-8.00)	6.21±1.55	6.00 (2.00-8.00)	0.025*
Humor	4.88±2.13	4.50 (2.00-8.00)	4.78±1.82	4.00 (2.00-8.00)	0.915
FEV	5.08±1.44	5.00 (2.00-8.00)	5.33±1.52	5.00 (2.00-8.00)	0.650
SU	3.13±1.68	2.00 (2.00-8.00)	2.27±0.67	2.00 (2.00-5.00)	0.004*
ACC	5.63±1.38	6.00 (2.00-8.00)	6.25±1.43	6.00 (2.00-8.00)	0.047*
SCA	5.42±1.06	5.00 (3.00-8.00)	5.16±1.42	5.00 (2.00-8.00)	0.266
Denial	3.50±1.56	3.00 (2.00-7.00)	3.13±1.31	3.00 (2.00-8.00)	0.332
BD	3.58±1.53	3.00 (2.00-8.00)	2.88±1.10	3.00 (2.00-6.00)	0.020*
MD	4.96±1.46	5.00 (2.00-8.00)	5.09±1.60	5.00 (2.00-8.00)	0.822
RES	4.75±1.29	5.00 (2.00-7.00)	4.69±1.34	5.00 (2.00-8.00)	0.794
POS	5.67±1.37	6.00 (3.00-8.00)	5.84±1.30	6.00 (2.00-8.00)	0.594
UESS	4.67±1.46	4.50 (2.00-8.00)	5.15±1.34	5.00 (2.00-8.00)	0.108
PL	6.17±1.31	6.00 (4.00-8.00)	6.28±1.40	6.00 (2.00-8.00)	0.542
REL	6.08±1.93	6.00 (2.00-8.00)	6.73±1.67	8.00 (2.00-8.00)	0.097
SCS	72.67±15.28	73.50 (43.00-110.00)	80.58±11.59	80.00 (52.00-107.00)	0.004*
DASS-D	9.29±5.79	10.00 (0.00-19.00)	5.63±4.42	5.00 (0.00-18.00)	0.006*
DASS-A	8.04±5.16	8.00 (0.00-17.00)	4.10±4.36	3.00 (0.00-19.00)	0.001*
DASS-S	10.00±5.26	11.50 (0.00-19.00)	6.09±4.23	5.00 (0.00-17.00)	0.001*

UISS: Using instrumental social support, FEV: Focus on and venting of emotions, SU: Substance use, ACC: Acceptance, SCA: Suppression of competing activities, BD: Behavioral disengagement, MD: Mental disengagement, RES: Restraint coping, POS: Positive reinterpretation, UESS: Using emotional social support, PL: Planning, REL: Turning to religion, SCS: Self-Compassion Scale, DASS-D: Depression-Anxiety-Stress Scale-Depression Subscale, DASS-A: Depression-Anxiety-Stress Scale-Anxiety Subscale, DASS-D: Depression-Anxiety-Stress Scale-Stress Subscale
*: p<0,005

Discussion

Coping strategies, depression, anxiety, stress, and self-compassion levels in healthcare workers who are concerned about infecting their loved ones during the Covid-19 outbreak was the focus of our study. We found that AILO was prominent in most of the healthcare professionals participating in the study. It was found that AILO + participants had lower levels of depression, anxiety, stress, and higher levels of self-compassion than AILO - participants. Using the instrumental social support and acceptance coping strategies were higher in the participants with AILO+ than AILO- group.

In a study conducted during the SARS epidemic, it has been found that two thirds of the healthcare professionals participating in the study were worried about their relatives and their own health.[20] Haozheng C. et al reported that the most significant concern of the majority of healthcare workers (n = 89, 78.8%) was transmitting Covid-19 to their loved ones, consistent with the results of the present study.[21]

To our knowledge, there is no published study about the depression, anxiety, and stress levels related to AILO in healthcare workers. Studies conducted on healthcare workers during the Covid-19 pandemic have shown the symptoms of depression, anxiety, and stress[22,23] Contrary to our expectations, the lower levels of

depression, anxiety, and stress in the group AILO+ in our study suggest that AILO could be a protective factor for individuals.

Similarly, another important finding of our study was that AILO+ individuals had higher self-compassion than the AILO- group. The thought that the presumption that AILO+ individuals are more prone to blame themselves is not valid, however, it suggests that the anxiety of transmitting the disease to another person which seems to be pathological may in fact be humane and constructive. The higher self-compassion in AILO + people may also explain the lower levels of depression, anxiety, and stress compared to the AILO- group. Although it was not directly investigated in our study, high level of self-compassion may be predictive of using more functional methods for coping. Angyang L. et al. reported that self-compassion was positively associated with functional coping strategies and life satisfaction among female participants in quarantine. This finding also supports our interpretation.[24] High self-compassion may increase AILO by increasing compassion and empathy towards others. In literature, there are varying findings about the relationship between self-compassion and compassion for others[25,26]. More comprehensive studies are needed to understand this relationship in healthcare professionals.

It is also supported by the theories of evolution that anxiety occurs in situations that people care about in their lives.[27] According to the literature, it can be said that the concept of value which is one of the processes that belongs to psychological flexibility terminology defining the individual state of well-being in the Acceptance and Commitment Therapy. Values can be defined as long-term life goals that are verbally created and personal choices of individuals.[28] Studies conducted in different fields (e.g., adolescent, PTSD, chronic pain) have shown that contact with values had positive effects on psychological flexibility and functionality.[29,30] From this point of view, it can be said that AILO + people have contact with their interpersonal values and this has a healing effect on depression, anxiety, and stress levels. Further studies taking into account the values subject with larger samples are needed to understand this relationship.

Although there are studies on coping strategies in healthcare workers during Covid-19, surveys organized by researchers specifically for Covid-19 were used rather than more structured scales. In a study conducted by Cai et al., it was found that healthcare workers frequently used coping strategies, such as using masks, paying attention to social distance, hygiene measures, avoiding crowded environments, obtaining information about virus-related issues, reading books in their spare time, and watching movies.[21] These findings are consistent with the results of studies conducted during the MERS epidemic in 2015.[31] Considering its content, UISS (Using instrumental social support) which includes behaviors, such as directing and seeking help, can be considered within the scope of coping strategy. In our study, in accordance with the literature, it was observed that UISS was higher in AILO+ group. When the aforementioned studies are examined, they give us a clue that the coping strategies that healthcare professionals prefer to use acceptance the existence of the current situation. In our study, it was observed that AILO+ healthcare workers use the acceptance strategy highly which refers to accepting the existence of a stressful situation. Considering these data, it was observed that AILO + people preferred functional coping strategies. It can be called as protective in terms of depression, anxiety, and stress and it may also explain the low levels of depression, anxiety, and stress contrary to expectations. In addition, this situation indicates that AILO+ group accept the existence of a pandemic, under current circumstances seek help, provide information and guidance and all that means being in touch with one's values that creates a positive reinforcing effect.

In the AILO- group, substance use that includes smoking, drug, and behavioral disengagement which refers to behaviors of giving up are used more often as coping strategies, and this may cause an increase in depression-anxiety and stress levels by cutting people's contact with positive reinforcers. As known that people's mindfulness levels decrease in cases of depression, anxiety and stress, which may be a situation that reduces contact with positive reinforcers.[32] The less substance use and behavioral disengagement strategies in AILO + group may indicate that their coping skills are more functional and explain the low levels of depression, anxiety, and stress. A study on survivors of the Nepal earthquake showed that people with post-traumatic stress disorder (PTSD) utilized substance use coping strategy more than people without PTSD.[33] AILO- group may have gravitated toward substance use or behavioral avoidance due to their high levels of depression, anxiety, and stress. Another factor may be that AILO - group have never had functional coping strategies. There is a need for further researches with wide sample groups to show this relationship.

Healthcare workers facing with many difficulties during the pandemic have concerns about themselves, their loved ones, their patients, and their future, and coping with these concerns is important for the course of the pandemic and their psychological well-being afterwards. Our study contributes to the literature as it is the first study evaluating coping strategies, depression, anxiety, stress, and self-compassion levels in healthcare workers during the Covid-19 pandemic.

There are certain limitations of the present study. The relationship in terms of personal values was not evaluated. Also, other variables like empathy, communication skills that affect coping strategies and self-compassion levels were not covered. Another limitation is that the causality between these variables could not be examined due to the cross-sectional design of the study. Follow-up studies are needed in order to reach certain results on this issue.

Conclusion

According to this study, AILO may have a functional effect rather than a loss of function in healthcare workers who are concerned about transmission of infection to their loved ones. Our findings that healthcare workers who are more concerned about transmission of infection to their loved ones use more functional coping strategies, have higher self-compassion, and lower levels of depression, anxiety, and stress are significant findings that may guide future research. Future research should focus on individuals' psychological skills prior to the pandemic, contact with values, and positive reinforcement processes. Studies should be carried out to assist healthcare professionals in developing self-compassion skills and functional coping strategies in order to protect themselves from depression, anxiety, and stress.

Conflict of İnterest

No conflict of interest present.

Ethical Considerations

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Our study was approved by the ethical commitee of Aksaray University with the number of 2020/03-28.

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