Psychological Reports
2022, Vol. 125(6) 3069–3083

DOI: 10.1177/00332941221129131
journals.sagepub.com/home/prx
SAGE

Research of the Coronavirus Anxiety, Post-Traumatic Stress, Generalized Anxiety Disorder, Quality of Life, and Stress Coping Styles in COVID-19 Survivors

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Abstract

The COVID-19 survivors suffer from severe psychosocial challenges related to the current pandemic. In this context, it was aimed to evaluate the coronavirus anxiety, generalized anxiety disorder (GAD), and post-traumatic stress symptoms (PTSS) and also determine the quality of life (QOL), and coping styles with stress in survivors by comparing them with non-COVID controls (NCs). This study was conducted from April 15 to October 15, 2021, as a cross-sectional study design. The study included 339 survivors who were confirmed with COVID-19 through clinical tests in the last 3 months and 321 NCs who had not been infected with COVID-19. Besides socio-demographic and clinical data, a set of valid and reliable assessment tools were used to measure outcomes of coronavirus anxiety, coping styles, post-traumatic stress, generalized anxiety, and quality of life. The total scores of IES-R, GAD-7, and CAS were significantly higher in survivors than in the NCs. These results revealed that survivors manifested higher levels of coronavirus anxiety, generalized anxiety, and post-traumatic stress symptoms ($p < 0.05$). In survivors, the rates of GAD and coronavirus anxiety were found to be 59.3% and 25.7%, respectively. Additionally, the majority of survivors (89.4%) reported the severity of anxiety as moderate to severe, and also almost two-thirds of them reported the psychological impact of the pandemic as moderate to

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severe. Furthermore, survivors were found to have a lower quality of life. The findings of this study indicate that survivors experienced higher levels of coronavirus anxiety, generalized anxiety, and post-traumatic stress, and had lower QOL. In addition, it was determined that survivors haven't been using active styles adequately in coping with stress. Thus, psychological intervention studies should be conducted and public mental health strategies should be developed. Providing psychosocial support and psychological guidance will contribute to mental health well-being, and improve the QOL and coping strategies.

Keywords
COVID-19 survivors, coronavirus anxiety, generalized anxiety disorder, post-traumatic stress, quality of life, coping styles

Introduction

The coronavirus disease 2019 (COVID-19), which first emerged in China and then spread rapidly throughout the world, was declared a pandemic by the World Health Organization in March 2020 (World Health Organisation, 2020). The virus that causes COVID-19 has been defined as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by the Coronaviridae Study Group (Coronaviridae Study Group, 2020). Currently, there is no curative treatment for COVID-19. Also, the primary scope of the studies is to prevent the spread of SARS-CoV-2. Due to the high transmissibility and high mortality of SARS-CoV-2, serious health problems have emerged or existing health problems have increased. Studies conducted with survivors of previous outbreaks such as SARS and MERS (Cheng et al., 2004; Lam et al., 2009; Rogers et al., 2020) and current pandemic (Taquet et al., 2021) have proven that survivors have a significantly higher rate of psychiatric disorders.

Post-traumatic stress symptoms (PTSS) are common after serious trauma such as a pandemic (Cénat et al., 2020; Lam et al., 2009; Mak et al., 2010). PTSS can lead to severe psychophysical health problems such as poor mental health, suicidal behavior, somatic symptoms, and cardiovascular disease (McFarlane, 2010; Pompili et al., 2013). PTSS are manifested with avoidance (the tendency to avoid thoughts or reminders about the event), intrusion (difficulty in staying asleep, dissociative experiencing, similar to flashbacks) and hyperarousal (irritated feeling, angry, difficulty in sleep onset) (Christianson & Marren, 2012). Studies conducted during the COVID-19 outbreak have reported high levels of PTSS and anxiety in general population (Bo et al., 2020; Xiang et al., 2020) and in survivors (Halpin et al., 2021; Mazza et al., 2020). COVID-19 has caused significant changes in people's daily lives, disrupted their routine activities, and caused socio-economic difficulties. Increased stress due to these factors triggered anxiety disorders in people. Accordingly, recent studies have reported

high levels of generalized anxiety disorder in individuals (Huang & Zhao, 2020; Liu, Zhang, et al., 2020; Salari et al., 2020).

Coronavirus anxiety, which was defined specifically related to the COVID-19 outbreak, describes the dysfunctional anxiety with which this disease is associated (Lee, 2020a). Recent studies have reported that high levels of coronavirus anxiety are associated with impaired psychological function (Lee et al., 2020) and can cause severe psychological problems (Milman et al., 2020). Although it has been a long time since the beginning of the pandemic, considering that it is still not under control, it can be suggested that the rate of coronavirus anxiety will increase over time and will be an important mental health problem. To the best of author's knowledge, the present study is the first to examine coronavirus anxiety in COVID-19 survivors.

The ability to manage stress can be greatly influenced by people's perceptions of the potential stressor and their styles of coping with stress. Lazarus and Folkman defined coping with stress as managing stress and adapting to stressful conditions (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). Effective coping styles can help manage and deal with stressful situations positively. In this context, there have been studies in the literature on the relationship between coping styles and psychological disorders (Dunkley et al., 2003; Farley et al., 2005). Moreover, it has been reported that high levels of optimism, which is one of the effective coping style, are negatively associated to coronavirus anxiety, coronavirus stress, and depression (Yıldırım et al., 2021; Yıldırım & Çiçek, 2021).

During COVID-19 outbreak, governments of many countries implemented several preventive restrictions to controlling the spread of the infection, including careful infection control, contact tracing, social distancing, isolation, confinement and quarantine. The quality of life (QOL) of individuals is adversely affected due to limitations in social life, uncertainty about the pandemic, perceived danger, fear of being infected with the virus, negative news on social media, and financial problems caused by the pandemic all over the world. Consistent with this, it has been reported that the current pandemic has caused low QOL in individuals (Algahtani et al., 2020; Choi et al., 2021).

To the best of author's knowledge, there are no previous studies that simultaneously evaluating coronavirus anxiety, GAD, QOL, and coping styles with stress in survivors. In this context, it was aimed to evaluate the levels of coronavirus anxiety, generalized anxiety disorder (GAD), and post-traumatic stress symptoms (PTSS), and also determine QOL and coping styles with stress in survivors by compared them with non-COVID controls (NCs).

Methods

This cross-sectional study, which was conducted from April 15 to October 15, 2021, in a large tertiary care hospital in Antalya, Turkey. The COVID-19 survivors who were randomly selected from the hospital records, contacted by phone or email and agreed to participate were included in the study. The study population included 339 survivors who were diagnosed with COVID-19 by clinical reverse transcription polymerase chain

reaction (RT-PCR) tests in the last six months, and 321 hospital staff who agreed to participate in the study were included as the non-COVID-19 controls (NCs). None of the NCs had been infected with COVID-19 or suspected for infection with SARS-CoV-2. Basic social-demographic and clinical data were collected. The Coping Style Scale (CSS), Generalized Anxiety Disorder 7-Item (GAD-7) Scale, Corona Anxiety Scale (CAS), Impact of Event Scale-Revised (IES-R) Scale, and World Health Organization Quality of Life questionnaire-Turkish Version (WHOQOL Bref-TR) were applied to the participants in accordance with the purpose of the study.

Exclusion criteria of the study were as follows; under aged 18 years, have a severe neuropsychiatric disorder (mental retardation, dementia, schizophrenia, psychosis, mood disorders, alcohol/substance addiction, etc.), have history of psychiatric treatment within the last 1 month. The study was conducted in accordance with the principles of the Helsinki Declaration and the approval of the Local Ethics Committee was obtained (number of approval: 2021–113).

Assessment Tools

Coping Style Scale (CSS). The Ways of Coping Inventory developed by Folkman and Lazarus (1980) is a 4-point Likert-type and 66-item scale that is frequently used in studies examining the issue of coping with stress (Folkman & Lazarus, 1980). The short form of this scale was developed by Sahin and Durak (1995) as a derivative that was adapted to Turkish society and named the Coping Style Scale (Sahin & Durak, 1995). The CSS is a 4-point Likert-type (ranging from 0 to 3) and 30-item self-report scale. It consists of five sub-dimensions: self-confident (7 items), optimistic (5 items), helpless (8 items), and submissive (6 items) styles, and seeking social support (4 items). The CSS also includes a two-dimensional structure as well as an active style and an inactive style. High scores with regard to the sub-dimensions indicate which style an individual uses most. Cronbach's α was 0.87 in this study.

Generalized Anxiety Disorder 7-Item Scale (GAD-7). It is validated screening instrument for anxiety and measures its severity. It is a seven-item, self-report scale and items are rated on a 4-point Likert-type, ranging from 0 (not at all) to 3 (nearly every day). Total scores range between 0 and 21, with higher scores indicating more severe functional impairments as a result of anxiety (Spitzer et al., 2006). According to the total score received, anxiety severity is categorised as none (0–4), mild (5–9), moderate (10–14), and severe (15–21). The most acceptable cut-off point for the Turkish version of the GAD-7 scale was found to be 8. Scores above the cut-off point is considered a probable case of GAD. The Turkish validity and reliability study was performed (Konkan et al., 2013). Cronbach's α was 0.92 in this study.

Impact of Event Scale-Revised (IES-R). This is a self-report scale developed by Weiss and Marmar (Weiss & Marmar, 1997). The IES-R is a 5-point Likert-type scale (ranging from 0 to 4 point) with a 22-item self-report questionnaire that assesses traumatic stress

symptoms of intrusion, avoidance, and hyperarousal and presents a total score for the subjective stress related to a traumatic event. The scale does not have a specific cut-off score, high scores are interpreted as high traumatic stress (Christianson & Marren, 2012). According to the total IES-R score, psychological impact levels were divided into 4 groups as; 0-23 minimal, 24-32 mild, 33-38 moderate, and >39 severe (Creamer et al., 2003). The Turkish validity and reliability study was performed (Corapcioglu et al., 2006). Cronbach's alpha values were as intrusion, avoidance, hyperarousal, and total; 0.90, 0.86, 0.85 and 0.95, respectively.

World Health Organization Quality of Life Scale- Brief Form- Turkish Version (WHOQOL-BREF-TR). The WHOQOL-BREF consists of 26 questions in four domains, namely physical health (7 items), psychological health (6 items), social relationships (3 items), and environmental (8 items) and also contains two items that examine self-perception of overall quality of life (QOL) and overall health (WHO, 1996). The 27th question has been added to the Turkish version, and this question has been added to the calculation in the environmental score. This is why the environmental domain score is called "environmental-TR" (Fidaner et al., 1999; Eser et al., 1999). Each question rated on a 5-point Likert scale. The scores within each domain are averaged. These average domain scores are multiplied by 4 to obtain transformed scores on a scale of 4–20 according to the guideline of the study instrument. Finally, the transformed domain scores are transformed linearly to a 0–100 scale with a higher score indicating better QOL (WHO, 1996). The WHOQOL-BREF scale does not have a total score, that is, a single quality of life score cannot be reached by adding the scores of all domains. Cronbach's α was 0.89 in this study.

Coronavirus Anxiety Scale (CAS). CAS developed by Lee (2020) to identify possible causes of dysfunctional anxiety associated with the COVID-19 outbreak (Lee, 2020a). Each item was rated on a 5-point scale to reflect the frequency of the symptom, ranging from 0 (not at all) to 4 (nearly every day). While the optimal cut-off score was found as ≥9 in a study (Lee, 2020a), it was found as ≥5 in other study (Lee, 2020b), and also the results were found to be consistent with the first study and reported to support its validity (Lee, 2020c). Thus, the cut-off score was taken as ≥5 in this study. The Turkish validity and reliability was performed (Biçer et al., 2020). Cronbach's α was 0.85 in this study.

Statistical Analysis

Descriptive analyses (frequencies or means and standard deviations) were obtained initially.

Independent sample t-test was used to determine the differences between groups. Chi-square ($\chi 2$) analysis was used to test the homogeneity of the groups and the relationships of categorical variables. Pearson's correlation analysis was used to evaluate the relationship between variables. The value of statistical significance was

Table 1. Comparison of the Sociodemographic Characteristics Between The Groups.

		COVID-19 Survivors (*n*)(%)	Non COVID-19 Controls (*n*)(%)	χ2	*p*
Gender	Male	153 (%45.1)	150 (%46.7)	0.156	0.812
	Female	186 (%54.9)	171 (%53.3)		
Marital status	Married	195 (%57.5)	179 (%55.8)	0.421	0.518
	Single	144 (%42.5)	142 (%44.2)		
Living status	Alone	107 (%31.6)	94 (%29.3)	0.617	0.251
	not alone	232 (%68.4)	227 (%70.7)		
Graduated from university	yes	247 (%72.9)	248 (%77.3)	1.276	0.094
	no	92 (%27.1)	73 (%22.7)		

χ2: Chi-square test.

accepted as $p < 0.05$ in all tests. Statistical analysis was performed using the 21.0 version of SPSS Windows program.

Results

In the study, COVID-19 survivors were between the age of 23–66 and the mean age was 38.33 ± 11.12. NCs were between age of 22–68 and the mean age was 38.43 ± 10.31. There was no significant difference between the groups in terms of age distribution (t = 0.71; $p = 0.943$). Of survivors, 45.1% ($n = 153$) were men and 54.9% ($n = 186$) were women. Of NCs, 46.7% ($n = 150$) were men and 53.3% ($n = 171$) were women. There was no significant difference between the groups in terms of gender ($\chi2 = 0.056$; $p = 0.812$). Also, there was no significant difference between groups in terms of educational level, marital, and living status (Table 1).

The mean total score of the GAD-7 scale was 14.58 ± 3.63 in survivors, and was 11.58 ± 4.02 in NCs. There was significant difference between the groups ($p < 0.05$). Additionally, the rates of generalized anxiety disorder were found to be 59.3% ($n = 201$) in survivors and 34.6% ($n = 111$) in NCs, according to the cut-off score of ≥8 on the GAD-7 (Konkan et al., 2013). The severity of anxiety was evaluated according to the total GAD-7 score. Accordingly, the frequency of the anxiety severity as none, mild, moderate and severe 3.5%, 7.1%, 43.4%, 46.0% were in survivors, and 2.8%, 29.9%, 39.3%, 28% in NCs, respectively. There was a significant difference between the groups ($\chi2 = 20.836$; $p < 0.05$) (Table 2).

The mean total score of the CAS were 4.03 ± 1.99 in survivors, and 2.67 ± 2.15 in NCs. There was a significant difference between the groups ($p < 0.05$) (Table 2). Additionally, the rates of coronavirus anxiety were found to be 25.7% (n 87) in survivors, and 16.8% ($n = 54$) in NCs, according to the cut-off score of ≥5 on the CAS (Lee, 2020c).

Table 2. Comparison of the total mean scores of the IES-R, CAS, CSS, WHOQOL Bref-TR and GAD-7 Scale Scores between the groups.

		COVID-19 Survivors	Non COVID-19 Controls	t/χ2	p
GAD-7 Score (m ± sd)		14.58 ± 3.6	11.58 ± 4.02	5.201[a]	0.001
The severity of anxiety according to the total GAD-7 total score (*n*)(%)	Mild	4 (%3.5)	3 (%2.8)	20.836[b]	0.001
	Moderate	8 (%7.0)	32 (%29.9)		
	high	49 (%43.3)	42 (%39.3)		
	Severe	52 (46.2)	30 (28.0)		
IES-R total score (m ± sd)		36.65 ± 14.79	30.54 ± 8.15	0.562[a]	0.025
IES-R subscales scores (m ± sd)	Intrusion	13.05 ± 6.89	13.38 ± 4.09	1.751[a]	0.082
	Avoidance	13.64 ± 5.55	11.76 ± 4.24	0.531[a]	0.152
	Hyperarousal	10.24 ± 4.59	6.39 ± 1.55	4.054[a]	0.001
CAS score (m ± sd)		2.67 ± 2.15	4.03 ± 1.99	4.871[a]	0.001
CSS subscales scores (m ± sd)	Self-confident	1.61 ± 0.62	1.54 ± 0.36	1.141[a]	0.268
	Optimistic	1.48 ± 0.60	1.53 ± 0.41	0.745[a]	0.457
	Seeking social support	1.87 ± 0.54	1.43 ± 0.46	6.545[a]	0.001
	Helpless	1.64 ± 0.34	1.48 ± 0.21	4.275[a]	0.001
	Submissive	1.52 ± 0.37	1.50 ± 0.32	0.545[a]	0.587
WHOQOL Bref-TR (m ± sd)	Self-perception of overall Quality of life	3.17 ± 1.71	3.56 ± 1.73	2.951[a]	0.004
	Self-perception of overall health	2.86 ± 1.43	3.22 ± 1.36	4.562[a]	0.031
	Physical health	62.57 ± 16.34	64.34 ± 18.18	0.597[a]	0.551
	Psychological health	61.76 ± 18.10	63.55 ± 17.81	1.466[a]	0.144
	Social relationships	62.66 ± 15.33	65.19 ± 1.87	2.275[a]	0.024
	Environmental	59.87 ± 14.63	63.79 ± 4.64	2.747[a]	0.007

[a]t: t test. [b]χ2: Chi-square test. m: mean. Sd: standard deviation. CSS: coping style scale. GAD-7: generalized anxiety disorder scale. IES-R: impact of event scale-revised. WHOQOL Bref-TR: world health organization quality of life scale brief form-Turkish version. CAS: coronavirus anxiety scale.

The mean total score of the IES-R scale was 36.65 ± 14.79 in survivors and 30.54 ± 8.15 in NCs. There was significant difference between the groups ($p < 0.05$) (Table 2). The severity of the psychological impact was as minimal, mild, moderate and severe; 18.6% ($n = 63$), 16.8% ($n = 57$), 28.3% ($n = 96$), 36.3% ($n = 123$) in survivors and 23.4% ($n = 75$), 20.6% ($n = 66$), 27.1% ($n = 57$), 28.9% ($n = 93$) in NCs, respectively. Additionally, the mean scores of IES-R sub-dimensions are shown in Table 2. Although there was no significant difference between the groups in terms of intrusion and avoidance ($p > 0.05$), there was a significant difference in hyperarousal subscale ($p < 0.05$) (Table 2).

In the study, styles of coping with stress were evaluated with the CSS. Notably, there was a significant difference between the groups in 'seeking social support' and

Table 3. Relationship Between The Scores of IES-R, CAS, and GAD-7 Scales.

	COVID-19 Survivors		Non COVID-19 Controls	
	r	*p*	r	*p*
GAD-7 – CAS	r = 0.486	*p* = 0.001	r = 0.164	*p* = 0.013
CAS – IES-R	r = 0.315	*p* = 0.008	r = 0.115	*p* = 0.031
IES-R – GAD-7	r = 0.473	*p* = 0.001	r = 0.102	*p* = 0.036

r: Pearson's correlation analysis.

'helpless' styles ($p < 0.05$). However, no significant difference was found in other sub-dimensions ($p > 0.05$) (Table 2).

The QOL of was evaluated with the WHOQOL Bref-TR. The QOL domains and items were compared between the groups. There was significant difference was found between the groups in the items of 'self-perception of overall QOL' and 'self-perception of overall health', as well as in the domains of 'social relationship' and 'environmental-TR' ($p < 0.05$). There was no significant difference in other domains ($p > 0.05$) (Table 2).

The relationship between the scores of the scales which used in the study was examined by Pearson's correlation analysis. In survivors, GAD-7 score positively correlated with CAS (r = 0.486; $p < 0.05$) and IES-R (r = 0.473; $p < 0.05$) scores, and also CAS was also positively correlated with IES-R score (r = 0.315; $p < 0.05$). Similarly, GAD-7 score positively correlated with CAS (r = 0.164; $p < 0.05$) and IES-R (r = 0.102; $p < 0.05$) and also CAS has positive correlation with IES-R (r = 0.115; $p < 0.05$) in NCs (Table 3).

Discussion

The important aspect of this study is that, although there are many studies investigating the symptomatology of PTSS and GAD in the general population and in COVID-19 patients, no study has been found in the literature in which these were studied simultaneously in survivors and compared with controls. COVID-19 has disrupted virtually every aspect of people's daily routines, caused socio-economic hardship, and increased anxiety and stress. Recent studies have reported high levels of anxiety, PTSS and generalized anxiety disorder in the individuals due to COVID-19 outbreak (Cao et al., 2020; Liu, Zhang, et al., 2020; Salari et al., 2020). In this context, anxiety levels were higher in survivors than NCs in this study. As expected, anxiety severity rates as moderate to severe were also found to be significantly higher in survivors (89.4) than NCs (67.3%). The frequency of GAD was found to be 59.3% in survivors and 34.6% in NCs. Considering that the prevalence of GAD was found to be 35.1% in a study conducted in the general population during COVID-19 (Huang & Zhao, 2020), according to the findings of this study, it can be considered that survivors are at significantly higher risk for GAD.

Studies conducted during the current pandemic found that PTSS increased in general population during this pandemic (Liu, Zhang, et al., 2020; Sun et al., 2021; Wang et al., 2020). Furthermore, it has been reported in a study that the level of PTSS was higher in COVID-19 patients than in the general population (Bo et al., 2020). In a study conducted in the early period of the pandemic (July, 2020) in which the level of PTSS of the survivors was investigated (Mazza et al., 2020), the PTSS level was found to be lower than in this study (while the mean IES-R in this study was 36.65 ± 14.79, it was 23.83 ± 20.02 in that study). This result can be interpreted as the level of PTSS, which was lower in the early period of the pandemic, increased over time. On the other hand, the level of PTSS was found to be higher in survivors than NCs in this study. In addition, 64.6% of survivors experienced the psychological impact of the pandemic as moderate to severe. This rate was lower with 56.0% in NCs. Furthermore, it was found that 'hyperarousal' symptom was higher in survivors. Factors such as exposed to the severity and life-threatening conditions of disease, experienced considerable fear of death related to COVID-19, and associated extremely anxiety may result in higher levels of post-traumatic stress in survivors.

The coronavirus anxiety refers to the dysfunctional anxiety associated with the COVID-19 outbreak (Lee, 2020a). In recent studies has reported that the rate of coronavirus anxiety was high in general population (Lee et al., 2020) and in healthcare workers consisting of nurses (Labrague & De Los Santos, 2020). In this study, coronavirus anxiety was found to be higher in survivors than NCs. Additionally, the rate of coronavirus anxiety was found to be 25.7% in survivors and 16.8% in NCs. To the author's best knowledge, this is the first study to investigate coronavirus anxiety in survivors by compared with NCs. The factors such as the inability to control the pandemic, the continuing increase in the number of COVID-19 cases and deaths, and the uncertainty regarding the pandemic process may cause high levels of coronavirus anxiety.

Studies have shown that there is a positive relationship between stress caused by the COVID-19 pandemic and psychological disorders (Liu, Zhang, et al., 2020; Qiu et al., 2020). Having effective coping strategies is crucial to deal with mental health problems. The ability to cope with stress effectively can be defined as reducing or eliminating psychological distress associated with stressors (Lazarus & Folkman, 1984). It has been determined that individuals who can effectively cope with stress use active/effective coping styles more (Sahin & Durak, 1995). Furthermore, there are studies reporting a positive relationship between passive/ineffective coping styles and psychopathology (Boxer et al., 2012; Junne et al., 2018). In this study, it was found that survivors more used 'seeking social support' from active coping styles, and 'helpless' from passive coping styles, compared to NCs. This result indicate that active coping styles except seeking social support (e.g., self-confident, optimistic) were not used effectively in survivors. Additionally, considering the high levels of COVID-19-related stress in these people, it is clear that active coping styles should be used more.

In recent studies, it was found that the COVID-19 pandemic has influenced the QOL of individuals in various aspects, and has caused low QOL (Algahtani et al., 2021; Choi et al., 2021; Méndez et al., 2021). In addition, limited studies have reported a decrease in the QOL of survivors (Carfi et al., 2020; Méndez et al., 2021). Consistent with this, participants in this study were found to have low QOL. In particular, survivors had a lower QOL in social relationships and environmental domains than NCs. They also had a lower self-perception of overall QOL, and health. The reason for this result may be the isolation and quarantine process applied during the infection, fear of being infected with virus again, thus the decrease in social relationship and environmental communication. In the study, a positive correlation was found between coronavirus anxiety, generalized anxiety and post-traumatic stress in both groups. As expected, this result can be considered as a reflection of the interaction between anxiety and stress factors, whose synergistic relationship is well known.

This study has some limitations. First, because of the cross-sectional design of study, the findings provide only a snapshot of psychological impacts at a particular point in time, and a longitudinal study is required to provide information on whether the observed impact will last for longer periods. Second, the results could not be generalized because the study was conducted in a single center and with limited participants. Therefore, multicenter studies with larger samples are required. Third, the temporal variation of psychosocial impacts could not be evaluated due to the design of the study. Studies in a prospective or case-control design will reduce this limitation. Despite all the limitations above, the important findings of this study will be noteworthy for further studies.

Conclusion and Recommendations

In summary, the findings of this study indicate that in general survivors experienced high levels of coronavirus anxiety, generalized anxiety, post-traumatic stress symptoms, and had a poor QOL. These data have important clinical implications for health policies aimed at reducing the psychological impact in survivors. In this context, maintaining mental health in survivors will lead to an improvement in QOL and daily functioning. Therefore, psychosocial support and guidance services should be provided in cooperation with public health administrators, psychiatrists, psychologists, social workers, psychological support units, and social support teams. Lastly, it was determined that survivors had not use active styles adequately in coping with stress, so it would be useful to provide public education and counselling services about how to cope with stress and have effective coping strategies.

Acknowledgments

The authors thank to statistician Dr Alper SINAN who assisted in the statistical analysis of the study.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Informed Consent

Informed consent was obtained from the individuals who participated in this study.

Data Availability Statement

The data presented in this article are not readily available because the Ethical Committee approved this research under the condition of no data sharing even in anonymous conditions. Requests to access the data should be directed to Dr. Süleyman Korkut at: dr.korkut@hotmail.com.

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