

Vulnerability and self-efficacy predict loneliness among the Turkish public during the COVID-19 pandemic

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Abstract

Introduction: The COVID-19 pandemic has caused several negative psychological effects as well as physical effects. There are numerous studies indicating that individuals have experienced high levels of loneliness during the current health crisis. However, the relationship between vulnerability and self-efficacy with loneliness has not been sufficiently discussed during the pandemic. Therefore, in the present study, we investigated the predictive effect of vulnerability and self-efficacy in loneliness among Turkish adults during the second wave of the COVID-19 pandemic in Turkey.

Methods: This study is a cross-sectional study using the snowball sampling method. The vulnerability and self-efficacy related to COVID-19 were measured with single questions, and

loneliness was measured by the *UCLA Loneliness scale (ULS-8)*. Data were analyzed using Pearson correlation and hierarchical multiple regression.

Results: The results indicated that vulnerability was negatively correlated with self-efficacy ($\beta = -0.36, p < 0.001$) and positively correlated with loneliness ($\beta = 0.13, p < 0.001$). Similarly, self-efficacy was negatively correlated with loneliness ($\beta = -0.12, p < 0.001$). Furthermore, the current research revealed that vulnerability positively predicted loneliness ($\beta = 0.10, p < 0.05$). On the other hand, self-efficacy negatively predicted loneliness ($\beta = -0.11, p < 0.05$) after controlling for age and gender.

Discussion: The study examined the relationship between vulnerability, self-efficacy, and loneliness among Turkish adults during COVID-19, and revealed that vulnerability is a potential risk factor for loneliness, while self-efficacy is a potential protective factor for loneliness.

Take-home message: The findings of the study will provide practical information for intervention programs aimed at reducing or preventing loneliness among Turkish adults.

Keywords: COVID-19 pandemic; loneliness; vulnerability; self-efficacy.

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INTRODUCTION

Common physical symptoms of COVID-19 are high fever, fatigue, cough, myalgia, and shortness of breath [1–3]. More importantly, it leads to serious physiological problems such as respiratory tract infection and pneumonia, causing death at a rate of about 5% [4–7]. In addition to these physical effects, COVID-19 has caused vulnerability to negative psychological experiences, and the adverse psychological impact of COVID-19 have been experienced at a high level among vulnerable individuals [8–12].

Vulnerability reflects sensitivity to life difficulties, and facing stressful life events can make individuals vulnerable to significant psychological problems such as developing depressive symptoms [4,5]. Furthermore, previous studies carried out during the early stages of COVID-19 have revealed that vulnerability causes psychological problems after stressful life events. For example, being a woman [1], having low economic status [13], low education level and old age [14], being a health worker [15–19], being imprisoned and homeless [20] were found to be vulnerable groups to the negative psychological effects of COVID-19, and people belong to these groups experienced many negative psychological problems such as high levels of sleep problems, burnout, anxiety, and depression [21–23].

Individuals have experienced a high level of loneliness during COVID-19 [24,25]. Loneliness is a negative emotion arising from perceived inconsistency between expected and achieved social relationships [26,27]. This inconsistency may be related to the quantity, quality, and frequency of the relationships with others [28]. Although loneliness is more common in the elderly, it also affects younger age groups [29], and living conditions such as lack of social support and social activity, poor health quality, low quantity, and quality of relationships, and living alone are also risk factors for loneliness [28]. Loneliness increases stress and negatively affects mental and physical health [30].

Loneliness is negatively related to social support [31], sleep quality [32], life satisfaction [33], and subjective well-being [34]. However, it is positively related to risky health behaviours [35], hopelessness [36], uselessness and nervousness [37], rumination, and having a pre-existing psychiatric condition [38], anxiety [39], depressive symptoms [40], and mortality [41]. Many studies have also reported that measures, including social distancing and quarantine, taken during the current health crisis have led to increased loneliness compared to pre-COVID-19 [42]. Li et al. [43] stated that over one-third of British sometimes or often experience loneliness during the pandemic. In addition, during COVID-19, loneliness is positively associated with coronavirus anxiety [44], and psychological distress [45], and negatively associated with meaning in life, positive religious coping [46], and self-efficacy [47].

Self-efficacy is a general expression of belief in their capacities to exercise control over tasks or difficulties and to overcome tasks and problems [48,49]. Self-efficacy affects beliefs about abilities [50], motivation, personal achievements [51], decision-making processes, goals, emotional reactions [52], and self-control [53]. It is also positively related to many psychological traits, such as health-related intentions and behaviours [54], psychological well-being [55], and mental health [56]. Similarly, studies conducted during COVID-19 have revealed that self-efficacy is negatively correlated with anxiety and depression [57], and positively correlated with improved performance at work [51], resilience [58], sleep quality [59], protective behaviors, and mental health [60].

Although studies have been conducted with vulnerable groups during COVID-19, studies examining the relationship between vulnerability and psychological factors and focusing on self-efficacy and loneliness during the pandemic are limited. Therefore, the purpose of this study was to examine the roles of vulnerability and self-efficacy in the prediction of loneliness of the Turkish public during the COVID-19 pandemic within the literature and theoretical framework presented above. To that end, we hypothesized that (i) vulnerability would be positively associated with loneliness and negatively associated with self-efficacy, and (ii) self-efficacy would be negatively associated with loneliness.

METHODS

Study design and procedure

This cross-sectional study was conducted using an online survey on a data collection platform. A unique and secure URL was generated. Before participating in the online survey, participants had to show their willingness to participate in the study by responding to the question "I agree to participate". Following this, the participants proceeded to complete the self-report online questionnaires. They were informed about the aim of the research and their rights to participate in the study. All participants were ensured the confidentiality and anonymity of their responses. The presentation order of questionnaires was the same for all participants.

Study participants and sampling

This study used a snowball sampling approach (a non-probability sampling method) to recruit participants. Participants included 608 adults drawn from the Turkish public. There were 63.2% women and 36.8% men. Their ages ranged from 18 to 50 years ($M = 26.42$, $SD = 9.49$). The majority of participants held a bachelor's degree (75.7%), followed by high school or below (17.3%) and postgraduate (7.1%). Nearly four-fifth of participants (79.6%) reported that they had average perceived socioeconomic status, followed by below average (13.0%) and above average (7.4%). All

participants were volunteers and were not paid for their involvement in the study.

Study instruments

Loneliness

Loneliness was measured by the Short-form UCLA Loneliness scale (ULS-8) [61]. The UCLA includes 8 items answered on a 4-point Likert scale ranging from “never” to “always”. In the current study, the internal reliability of the ULS-8 was 0.75. The psychometric properties of UCLA in Turkish were carried out by Doğan et al. [62].

Vulnerability

The vulnerability was assessed with a single question “In your opinion, what is the probability of developing coronavirus disease during the coronavirus outbreak?” [63] utilising a 5-point Likert scale varying from 1 = *improbable* to 5 = *highly probable*. Higher scores refer to a greater level of vulnerability to coronavirus.

Self-efficacy

The level of self-efficacy related to COVID-19 was measured using a single question: “How confident are you that you can prevent getting COVID-19 in case of an outbreak” [64]. The question was answered on a 5-point Likert-type ranging from 1 = not confident to 5 = very confident. A higher score reflects higher self-efficacy. Turkish adaptation of the item was conducted by Yıldırım et al. [60].

Ethical Approval

The study procedure received ethical approval from the Agri Ibrahim Cecen University Ethics Committee (reference number: 313). All procedures performed in studies involving human participants were under the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

RESULTS

The results of preliminary analyses (see Table 1) demonstrated that skewness scores varied between -.46 and .37 and kurtosis values ranged between -0.37 and 1.01, indicating that all three main variables had relatively normal distribution [65]. Following this, Pearson product-moment correlation was conducted to explore the correlation between loneliness, vulnerability, and self-efficacy. The results of the analysis are presented in Table 1. As can be seen from the table, loneliness had a positive correlation with vulnerability ($r = .13, p < .001$) and a negative correlation with self-efficacy ($r = -.12, p < .001$). Also, the vulnerability was negatively correlated with self-efficacy ($r = -.36, p < .001$).

Table 1. Descriptive statistics and correlation coefficients for the study variables.

Variable	Min	Max	Mean	SD	Skew	Kurt	1.	2.	3.
1. Loneliness	8	27	15.08	3.99	0.37	-0.37	—	.13**	-.12**
2. Vulnerability	1	4	2.88	0.60	-0.46	1.01		—	-.36**
3. Self-efficacy	1	5	2.62	0.80	-0.13	0.25			—

**. $p < 0.01$

Hierarchical multiple regression analysis was carried out to examine the roles of vulnerability and self-efficacy in predicting loneliness after controlling for age and gender. Table 2 reports the results of two-step hierarchical multiple regression analyses. In Step 1, age and gender were added

to the regression analysis, while vulnerability and self-efficacy were entered in Step 2. In the model, loneliness was considered a dependent variable.

Table 2. Vulnerability and self-efficacy predicting loneliness after controlling for age and gender.

Predictor	B	SE	β	t	p
<i>Step 1</i>					
	$F(2, 607) = 3.23, p < 0.05, R = .10, R^2 = .01$				
Age	-0.02	0.02	-0.04	-0.95	0.34
Gender (1=female, 2=male)	-0.77	0.33	-0.09	-2.30	0.02
<i>Step 2</i>					
	$F(4, 607) = 6.28, p < 0.01, R = .20, R^2 = .04, \Delta R^2 = .03$				
Age	-0.03	0.02	-0.08	-1.87	0.06
Gender (1=female, 2=male)	-0.91	0.33	-0.11	-2.73	0.01
Vulnerability	0.49	0.21	0.10	2.31	0.02
Self-efficacy	-0.77	0.29	-0.11	-2.61	0.01

The findings indicated that in Step 1, age and gender explained 1% of the variance in loneliness, with gender ($B = -.77, p < 0.05$) being a significant predictor of loneliness, [$F(2, 607) = 3.23, p < 0.05, R = .10, R^2 = .01$]. This suggests that the female gender reports a greater level of loneliness. In Step 2, the unique contributions of vulnerability and self-efficacy to loneliness were 3%, meaning that vulnerability ($B = .49, p < 0.05$) and self-efficacy ($B = -.77, p < 0.05$) contributed a significant amount of variance in loneliness after controlling for age and gender, [$F(4, 607) = 6.28, p < 0.01, R = .20, R^2 = .04, \Delta R^2 = .03$]. These results suggest that higher levels of vulnerability and lower levels of self-efficacy are associated with greater levels of loneliness.

DISCUSSION

In addition to the widespread physical effects of COVID-19, it caused an increase in negative emotions among individuals [66]. Brooks et al. [67] reported that individuals experience frustration, irritability, boredom, fear, distress, anger, and anxiety during the current health crisis. Similarly, there is well-documented evidence of increased loneliness during COVID-19 [24,25,43]. Therefore, the present study aimed to examine the impact of vulnerability and self-efficacy on loneliness among Turkish adults during the COVID-19 pandemic.

We hypothesized that vulnerability and self-efficacy would be significant predictors of loneliness after controlling for age and gender. The study's findings supported our hypotheses and revealed that vulnerability positively and significantly predicted loneliness, and self-efficacy negatively and significantly predicted loneliness. This suggests that individuals with a high level of vulnerability are more likely to experience increased loneliness. On the contrary, people high in self-efficacy are more likely to have poor loneliness. These results are consistent with previous research findings. For example, although studies examining the effects of vulnerability are limited, Yıldırım et al. [63] reported that vulnerability was positively correlated with fear and perceived risk of COVID-19. In addition, previous studies have documented that self-efficacy negatively predicted loneliness among college students [68, 69] and older adults [70]. More recently, Kupcewicz et al. [47] stated that self-efficacy positively predicted general loneliness among Polish nursing students during COVID-19.

Additionally, Kiamarsi et al. [71] reported that psychological vulnerability was negatively associated with self-efficacy. Similarly, in this study, we also found that vulnerability was negatively associated with self-efficacy. Taken together, the current findings are in accordance with the findings showing the impact of pandemic-related stressors on well-being and mental health outcomes [72-79].

The current findings enhance our understanding of the relationships between vulnerability, self-efficacy, and loneliness by showing vulnerability and self-efficacy explain a significant amount of variance in the prediction of loneliness over and above the effects of age and gender. The roles of psychological strengths in promoting well-being and positive mental health outcomes have been highlighted in earlier research [80–87]. In light of previous studies and the current study's findings, future prevention and intervention programs should focus on enhancing the self-efficacy and vulnerability of individuals to cope with loneliness in the face of adversity.

Despite the implications mentioned above, some limitations of the current study should be kept in mind when interpreting the results. Firstly, the findings of our study are solely based on self-report data, which may cause social desirability, self-report errors, and poor recall. The present study is also a cross-sectional design study. Therefore, there is no causal relationship between the variables. It would be helpful to carry out longitudinal and experimental studies to reveal the causal relationships between the variables. Another limitation of the study stems from the sample. The sample consists of Turkish adults, thus limiting their generalizability.

Additionally, we used an online approach to collect data. Therefore, those who cannot use the internet or have limited access to the internet were underrepresented. For this reason, conducting face-to-face studies with different sample groups may increase the generalizability of the research findings. Despite all these limitations, the results suggest that vulnerability can explain increases in loneliness, and self-efficacy can explain decreases in loneliness. In addition, our study has contributed to the literature revealing the relationship between critical psychological traits such as vulnerability, self-efficacy, and loneliness during adverse life events such as pandemics.

CONCLUSION

In conclusion, the present study revealed that vulnerability positively predicted loneliness, while self-efficacy negatively predicted loneliness. These findings suggest that people with high vulnerability are more likely to experience increased loneliness, while people with high self-efficacy are less likely to experience loneliness. In other words, the current study suggests that vulnerability may be a risk factor for loneliness and self-efficacy may be a protective factor. Therefore, the present study sheds light on the psychological intervention programs aimed to be developed in this context of the COVID-19 pandemic.

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Data Availability Statement: Some or all data and models that support the findings of this study are available from the corresponding author upon reasonable request.

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