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The role of uncertainty tolerance and meaning in life on depression and anxiety throughout Covid-19 pandemic

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ABSTRACT

The aim of the current study was to investigate the predictive role of intolerance to uncertainty, meaning in life, gender, marital status, having a child, chronic illness, living with a relative over the age of 65, having health care worker relative, the presence of someone infected with Covid-19 around, and frequency of hand washing on depression and anxiety throughout Covid-19 pandemic. 426 adults (263 women, 163 men) participated to the study. The range of age was between 18 and 74, with the mean of 37.40. Intolerance to Uncertainty Scale, Meaning in Life Scale, Beck Anxiety Scale, Beck Depression Scale were used to collect data. The results indicated that 13.8% (59) of participants had depression, 7% had moderate, 7.5% severe anxiety. Findings yielded that meaning in life and intolerance of uncertainty were significant predictors of depression and anxiety. Chronic illness significantly predicted anxiety, the frequency of washing hand significantly predicted depression. It was concluded that the most important variables predicting both depression and anxiety was intolerance to uncertainty and meaning in life.

1. Introduction

Epidemic diseases are one of the natural disasters that humankind has faced throughout history. The novel coronavirus (SARS-COV-2), which emerged in Wuhan, China, in December 2019, and spread all over the world subsequently, is a member of the family of viruses that can lead to diseases ranging from mild colds to severe Middle East respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS). Considering the struggle of humanity against epidemics from the past to the present, it is well-known that epidemics have psychological, economic, and social effects on individuals (Jones & Salathe, 2009; Lau et al., 2003; Leung, Lam, Ho, & Ho, 2003). Similarly, COVID-19 pandemic has brought not only a high mortality rate from viral infection, but also various mental health problems (Xiao, 2020). A study conducted in China at the beginning of the COVID-19 pandemic in order to determine the psychological distress of individuals, revealed that various mental health problems, such as panic disorder, anxiety, and depression was triggered by the pandemic (Qiu et al., 2020). Furthermore, in a study conducted in Germany at the initial stage of COVID-19 pandemic, over 50% participants reported suffering from anxiety and psychological distress. The results of study conducted in Italy at the

beginning of the pandemic indicated that 17% of the participants had severe, 15.4% very severe depression, 7.2% severe, 11.5% very severe anxiety, 14.6% had severe, 12.6% very severe stress symptoms (Mazza et al., 2020).

Besides the fear of being infected with COVID-19 and the consequences for oneself or loved ones, the strict measures taken to prevent the spreading of the pandemic might increase the probability of developing mental health problems (Dsouza et al., 2020; Tull et al., 2020). In a study conducted in the United States, it was found that 'stay at home' orders were positively associated with health anxiety, depression and financial concerns (Tull et al., 2020). 34.1% of adult Egyptians reported an increase in stress from work, 55.7% financial stress, 62.7% stress from home. 53.9% of the felt horrified and 52% helpless (El-Zoghby et al., 2020). The findings of the study, which examined 69 suicide cases in India, revealed that 21 individuals committed suicide due to the fear of being diagnosed with Covid-19, 19 due to financial problems, and others due to the difficulties of loneliness and being in quarantine (Dsouza et al., 2020). Hence, studies pointed out that being women, young, poor health perception, separated or divorced, not practicing personal precautionary measures, not being able to work at home, being infected COVID-19 or knowing someone infected carry a risk to develop

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mental health problems (Alkhamees et al., 2020; Choi et al., 2020; Sousa et al., 2020).

The COVID-19 pandemic has a devastating impact on the mental health due to the fact that individuals face a new situation and the nature of the process contains plenty of uncertainty (Kaya, 2020) which alerts the individual to initiate the behaviors that lead to control over uncontrolled situation. Individual rushed to the supermarkets and emptied the shelves because of two reasons; perceiving COVID-19 as a real threat and gaining control over the situation (El-Terk, 2020). Since uncertainty is perceived as threatening by these individuals. Intolerance to uncertainty described as the tendency of the individual to think about encountering a threatening event regardless of the possibility of its occurrence (Carleton et al., 2007) and put the individual into risk to develop mental health problems. A study conducted during the peak period of the H1N1 pandemic that emerged in 2009, showed that individuals with high intolerance of uncertainty reported high level of HINI-related anxiety, and use emotion-focused coping strategies (Taha et al., 2013). Similarly, the relationship between intolerance of uncertainty and generalized anxiety, depression, health anxiety was mediated by maladaptive coping strategies (Rettie & Daniels, 2020). Moreover, Smith et al. (2020) found that the relationship between social isolation and psychological distress was moderated by intolerance of uncertainty. Further studies indicated that intolerance of uncertainty was identified as a potent factor for the fear of COVID-19 and well-being (Bakioglu et al., 2020; Deniz, 2020; Satıcı et al., 2020).

Life-threatening events make individuals face the reality of death and, thus, lead to an existential questioning (Güleç & Büyükkıncı, 2011; Hallaç & Öz, 2011). It creates the need to understand why the event occurred, what its effect is, and what its repercussions are in the life of the individual. Therefore, the role of meaning is important in the cognitive adjustment process in terms of finding a meaning in the event and re-evaluating the conditions in the process of coping with unexpected and uncertain events. Meaning emerges as individuals struggle to adapt to the necessary changes and restore a sense of control over negative life changes (Park & Folkman, 1997). According to Taylor (1983), this process will contribute positively to the individual's restructuring of life. Covid-19 pandemic changed the life that individuals are accustomed to in a sudden and unexpected way. Trzebiński et al. (2020) found that meaning in life act as a buffer mechanism against the negative reactions on pandemic. Another study reported that meaning in life predicted resilience (Karataş & Tagay, 2021). Further study conducted with families having member with special education needs in Greece indicated that meaning in life associated with low level of anxiety (Tsibidaki, 2021).

1.1. The current study

COVID-19 pandemic has brought sudden and unexpected changes and uncertainties to the world and the individuals. On one hand individuals were trying to protect themselves and their loved ones', on other hand they were adapting to the changes in their lives. In order to mitigate the spread of the pandemic, most of the countries received strict measures. Turkey has also instituted measures, including switching schools into distance education, restructuring working conditions, limiting the size of gatherings, forbidding travel within the country, and curfew at weekends, after the first case was declared on March 11. All these factors raise the possibility of developing mental health problems, such as depression, and anxiety.

It appeared to be crucial to determine the prevalence of mental health problems and protective and risk factors for the development of mental health problems throughout COVID-19 pandemic. Hence, the current study has two aims. Firstly, the aim was to determine the prevalence of the depression and anxiety among Turkish people throughout Covid-19 pandemic. Second aim was to investigate the predictive role of gender, marital status, having a child, chronic illness, living with a relative over the age of 65, having health worker relative,

the presence of someone diagnosed with Covid-19 around, and frequency of hand washing, intolerance of uncertainty, and meaning in life on the depression and anxiety. It was hypothesized that all these variables contributed to the development of depression and anxiety in a positive or negative way.

2. Method

2.1. Research model

A cross-sectional research model was utilized in order to investigate the anxiety and depression in association with intolerance of uncertainty, meaning in life, gender, marital status, having a child, chronic illness, living with a relative over the age of 65, having health worker relative, the presence of someone diagnosed with Covid-19 around, and frequency of hand washing.

2.2. Study group

The population of the study included individuals (+18) who were living in Turkey during the COVID-19 pandemic. The study group consisted of 426 adults 263 female (61.7%) and 163 male (38.3%). The age range of the participants was 18–74, with the mean of 37.40, and standard deviation of 11.95. A total of 238 (55.9%) them were married, 156 (36.6%) were single, 26 were divorced (6.1%), and 5 (1.2%) had lost their spouse. A total of 213 (50%) of the participants had children. Regarding level of education, 216 (50.7%) of the subjects had an undergraduate education, 100 (23.5%) had a postgraduate education. Seventy-one (16.7%) participants had a chronic illness. During the pandemic, 129 (30.3%) of the participants lived with their parents, 155 (36.4%) with their spouse and children, 70 (16.4%) only with their spouse, 8 (1.9%) with their child, 6 (1.4%) with their friends, and 34 (8%) lived alone. A total number of 240 (56.3%) participants stated that they washed their hands over ten times in a day while 186 (43.7%) less than ten times in a day. Only one participant stated that they were infected with COVID-19 whereas 94 (22.1%) participants stated that there was an individual infected with COVID-19 in one of their family members and social surrounding. A total of 96 (22.5%) participants stated that they have a health worker relative. Moreover, 67 (15.7%) participants were living with a relative over the age of 65. Additionally, 63 (14.8%) of the participants reported that their use of cigarette was increased after the pandemic. Lastly, 16 (3.8%) of the participants stated that they received psychological support during the pandemic.

2.3. Data collection instruments

2.3.1. Demographic information form

Alongside questions that aimed at getting the participants to know, such as gender, age, marital status, level of education, and having a child or not, COVID-19 related questions, such as; Do you have a chronic illness? Have you been diagnosed with COVID-19? Is there anyone in your inner circle who is COVID-19 positive? Who do you live with during this period? How often do you wash your hands within a day?, Has your cigarette use increased after the pandemic?, Did you receive psychological support during the pandemic? Have you started to use psychiatric drugs during the pandemic? were asked to the participants.

2.3.2. The Intolerance of Uncertainty Scale (IUS)

The Intolerance of Uncertainty Scale was developed by Freeston et al. (1994) in order to measure cognitive, emotional, and behavioral responses of individuals to uncertain situations. It consists of 27 items rated on a 5-point Likert scale (1-Does not describe me at all, 5-Totally describes me). In the adaptation study, the internal consistency coefficient of the scale consisting of 26 items, was found to be 0.93, and test-retest reliability was found to be 0.66 (Sarı & Dağ, 2009). The results of the factor analysis showed that the scale has four factors, namely;

“uncertainty is stressful and sad”, “negative self-evaluations about uncertainty”, “not knowing the future is disturbing”, and “uncertainty prevents taking action”. In our study, the Cronbach alpha internal consistency coefficient of the IUS was 0.96, and for the subscales it was 0.92 for “uncertainty is stressful and sad”, 0.88 for “negative self-assessments about uncertainty”, 0.85 for “not knowing the future is disturbing”, 0.85 for “uncertainty prevents taking action”.

2.3.3. Meaning in Life Questionnaire (MLQ)

The Meaning in Life Scale which was developed by Steger et al. (2006) consisting of 10 items rated on a 7-point Likert (1- definitely not true, 7-definitely true). It has two sub-scales: “search for meaning in life” and “existence of meaning in life”. The reliability and validity study of the scale was conducted by Demirbaş (2010). While 9 of the 10 items of the MLQ are composed of positive expressions, one item (the 9th item) contains a negative expression. Therefore, the 9th item is scored in reverse. The fit indexes were found as RMSEA = 0.054, RMR = 0.052, GFI = 0.96, CFI = 0.98 and AGFI = 0.93. The reliability coefficient was found to be 0.88 for the “search for meaning in life” sub-scale, and 0.87 for the “presence of meaning in life” sub-scale, and 0.86 for the total of the scale (Demirbaş, 2010). In the current study, Cronbach’s alpha coefficient of each subscale was found as 0.85 for existence of meaning, and 0.88 for search for meaning.

2.3.4. Beck Depression Inventory (BDI)

Beck Depression Inventory was developed in order to measure the risk of depression and the severity of depressive symptoms among individuals (Beck et al., 1961). The scale consists of 21 items rated on a 4-point Likert. Each item consists of self-assessment sentences containing depressive symptoms, such as restlessness, lack of satisfaction, sense of failure, indecisiveness, pessimism, decreased appetite, sleep disturbance, social withdrawal, and fatigue. The range of scores that can be obtained from the scale is between 0 and 63. A high score indicates that the level of depression may be high. The Cronbach alpha value in the adaptation of the scale to Turkish was found to be 0.74 (Hisli, 1988). The Cronbach alpha value of the scale in the present study was found to be 0.90.

2.3.5. Beck Anxiety Inventory (BAI)

Beck Anxiety Inventory was developed in order to measure the level of the anxiety symptoms experienced by the individual (Beck et al., 1988). The scale consists of 21 items rated on a 4-point Likert. The total score obtained from the items relates to the mood of the individuals during the past one month and can be between 0 and 63, and higher scores indicate the severity of anxiety. Scores between 0 and 17 refers to mild anxiety, 18–24 to moderate anxiety, 25 and above to severe anxiety. The adaptation studies of the scale to Turkish were made by Ulusoy et al. (1998), and the Cronbach alpha value was calculated as 0.93. The original Cronbach alpha value of the scale is 0.92. In the current study, the Cronbach alpha value of the BAI was found to be 0.91. For the subscales, the Cronbach alpha was 0.87 for the subjective anxiety and 0.79 for the somatic anxiety 0.79.

2.4. Data collection procedure

The recruitment of the study was carried out between April 20 and May 13, 2020. Snowball sampling was used with the aim of maximizing the recruitment during the confinement period. Invitation to the study was sent through official channels of the university and researchers own social media accounts (e.g., Instagram, Facebook and WhatsApp). Participants who received the questionnaire via social media accounts were also encouraged to distribute the questionnaire with their surroundings. By this way, different social media accounts and WhatsApp groups were reached. Before starting to answer the questionnaire, the informed consent, including aim of the study, confidentiality, the right of withdrawal whenever they want were given online. The participants were

able to see the research questions if they clicked on the button saying; “I agree to participate in the study.” All participants gave their informed consent.

2.5. Data analysis

The analyses of the data were conducted using SPSS 25. In order to analyze the means, standard deviations, and percentages of variables, descriptive statistics were used. The prevalence of depression and anxiety levels of the participants was analyzed by conducting frequency analysis to the BDI and BAI scores’. Multiple linear regression (MLR) was utilized to predict the dependent variable (depression and anxiety separately) on the basis of more than two independent variables (intolerance of uncertainty, meaning in life, gender, marital status, having a child, chronic illness, living with a relative over the age of 65, having health care worker relative, the presence of someone infected with Covid-19 around, and frequency of hand washing).

Before the analysis, assumptions of MLR were tested. Skewness (>2) and kurtosis (>4) values of some of the variables (depression, anxiety, the presence of meaning in life) in the current study indicated the non-normality of the variable (Kline, 2005). Although the scatter plots of residuals met the assumptions of normality, linearity and homoscedasticity, MLR was carried out using 2000 bootstrap samples to calculate the 95% bias-corrected and accelerated bootstrap confidence intervals (CI). Since the normality assumption of some variables was violated, the multicollinearity issue among study variables was investigated by Spearman’s correlation which indicated that multicollinearity ($r < 0.85$) was not an issue in the present study (Kline, 2005). Additionally, the variance inflation factor (VIF) and tolerance value (TV) were utilized to determine multicollinearity in the data. For all the variables, VIF values were found to be lower than 10, and TV were greater than 0.10 (Field, 2009). In order to determine the multivariate outliers of the data, Mahalanobis distance was used and no outliers were found. Durbin-Watson coefficient which was utilized to test autocorrelation was found as 1.979 for depression model, and 1.802 for anxiety model. These values were within the acceptable range of 1.5 and 2.5 (Tabachnick & Fidell, 2007) and revealed that there is no autocorrelation problem. The categorical variables were converted into dummy variables to be proper for the MLR. Categories of female, married, having child, chronic illness, living with an elderly, having health care worker relative, the presence of someone infected with Covid-19, washing hands less than 10 times in a day were coded as 1.

3. Results

3.1. Prevalence of depression and anxiety during the COVID-19 pandemic

When the cut-off point of 17 which is determined by the total score of the scale is taken, the depression prevalence rate during the COVID-19 pandemic was found to be 13.8% (59) among the participants. For sub-scales, one standard deviation above the mean was taken as the cut-off point, as the scale did not specify a cut-off point itself. Accordingly, it was found that 64 (15%) of the participants had performance deterioration, 64 (15%) had negative feelings towards themselves, 57 (13.4%) had somatic disturbances, and 45 (10.6%) had feelings of guilt. Furthermore, the results indicated that 85.2% (N = 363) of the individuals had mild anxiety, 7% (N = 30) had moderate anxiety, and 7.5% (N = 32) had severe anxiety. Findings of frequency analysis were presented in Table 1.

3.2. Preliminary analysis

The skewness, kurtosis, means, standard deviation (SD), and Spearman’s Correlation were presented in Table 2. The results revealed that there was a negative correlation between depression and marital status, having a child, presence of meaning in life and search for meaning in

Table 1
Frequency distribution of depression and anxiety level of participants.

Depression	n	%
Depression total	59	13.8
Performance deterioration	64	15
Negative affect	64	15
Somatic disorders	57	13.4
Feeling guilty	45	10.6
Anxiety		
Mild	363	85.2
Moderate	30	7
Severe	32	7.5

life, but positive correlation with intolerance of uncertainty. There was no correlation between depression and gender, having chronic illness, the presence of someone infected with Covid-19 around, living with a relative over the age of 65, having health care worker relative and frequency of hand washing. Moreover, it was found that there was a positive correlation between anxiety and gender, chronic illness, intolerance of uncertainty, and search for meaning in life, however negative correlation with frequency of hand washing, and presence of meaning in life. There was no relationship between anxiety and marital status, having a child, the presence of someone infected with Covid-19 around, living with a relative over the age of 65, and having health care worker relative.

3.3. Findings related to the prediction of depression and anxiety

Multiple linear regression by using bootstrapping carried out to investigate whether intolerance of uncertainty, meaning in life, gender, marital status, having a child, chronic illness, living with a relative over the age of 65, having health care worker relative, the presence of someone infected with Covid-19 around, and frequency of hand washing predict depression and anxiety. According to the results, presented in Table 3, gender, marital status, having a child, chronic illness, the presence of someone infected with Covid-19 around, living with a relative over the age of 65, having health care worker relative, frequency of hand washing, intolerance of uncertainty, the presence of meaning in life, and search of meaning in life predict the depression of Turkish people throughout Covid-19 and the constructed model was statistically significant ($R = 0.657$, $R^2 = 0.432$, $F_{11,414} = 28.583$, $p < .001$). Since all the study variables explained 43.2% of the total variance in the level of

depression, the constructed model had an extensive effect on the depression level of individuals ($R^2 > 0.26$) (Cohen, 1988). However, the results of the significance of bootstrap coefficients indicated that washing hands, presence of meaning in life and intolerance of uncertainty were significant predictors of depression. According to the bootstrap coefficient (B), the order to the relative importance of the predictor variables for depression was found as follows; washing hands ($B = -1.833$), presence of meaning in life ($B = -0.496$), and intolerance of uncertainty ($B = 0.134$). The frequency of washing hands and presence of meaning in life contributed to the depression negatively whereas intolerance of uncertainty made positive contribution.

Similarly, it was found that gender, marital status, having a child, chronic illness, the presence of someone infected with Covid-19 around, living with a relative over the age of 65, having health care worker relative, frequency of hand washing, intolerance of uncertainty, the presence of meaning in life, and search of meaning in life predict the anxiety of Turkish people throughout Covid-19 and the constructed model was statistically significant ($R = 0.570$, $R^2 = 0.325$, $F_{11,414} = 18.083$, $p < .001$). All these variables accounted for 32.5% of the variance in the level of anxiety. Hence, the constructed model had a substantial impact on the anxiety level. Nevertheless, the significance of bootstrap coefficients revealed that chronic illness, presence in life and intolerance of uncertainty were significant predictors of anxiety. Based on the bootstrap coefficient (B), the relative importance order of the predictor variables for anxiety was found as follows; chronic illness ($B = 3.357$), presence of meaning in life ($B = -0.191$), and intolerance of uncertainty ($B = 0.169$). While chronic illness and intolerance of uncertainty made positive contribution, presence of meaning in life contributed negatively.

4. Discussion

One of the aims of the study was to investigate the prevalence of depression and anxiety in Turkish people during Covid-19 pandemic. The results indicated that 13.8% of participants had depression, 15% had negative feelings towards themselves, 13.4% somatic disturbances, and 10.6% had feelings of guilt. Moreover, 7% of participants had moderate, and 7.5% severe anxiety. In a similar vein, the results of the study conducted in Saudi Arabia indicated that 23.6% of participants had psychological reactions against COVID-19 outbreak, 28.3%, 24%, and 22.3% reported moderate to severe depressive, anxiety, and stress symptoms, respectively (Alkhamees et al., 2020). Furthermore, 25% of

Table 2
Results of correlational analysis, skewness, kurtosis, mean, and standard deviation of variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	-	-0.077	-0.005	0.093	0.093	0.022	0.113*	-0.096*	0.036	0.253**	0.067	0.051	-0.021
2. Marital status		-	0.690**	0.156**	-0.097*	-0.032	0.004	-0.009	-0.166**	-0.046	-0.121*	0.281**	-0.140**
3. Having child			-	0.195**	0.136**	0.058	0.045	0.009	-0.193**	-0.054	-0.133**	0.278**	-0.142**
4. ChroILL				-	-0.071	0.118*	0.045	-0.051	0.062	0.143**	0.097*	0.064	-0.017
5. Covid19INF					-	0.003	0.119*	-0.069	0.046	0.076	0.051	0.027	0.049
6. LivingELD						-	-0.017	-0.068	-0.034	0.013	-0.067	-0.057	0.018
7. RelativeHCW							-	-0.010	0.004	0.015	0.047	0.057	0.050
8. HandWASH								-	-0.093	-0.117*	-0.022	-0.104*	0.043
9. Depression									-	0.664**	0.554**	-0.423**	0.262**
10. Anxiety										-	0.503**	-0.245**	0.184**
11. In_UNCERT											-	-0.325**	0.396**
12. ML_Search												-	-0.277**
13. ML_Presence													-
Skewness									11.110	13.533	0.038	-8.796	-1.102
Kurtosis									7.131	12.750	2.741	3.813	3.330
Mean									9.088	30.086	76.654	27.967	18.992
SD									8.134	9.277	23.854	6.163	8.495

ChroILL: chronic illness, Covid19INF: the presence of someone infected with Covid19, LivingELD: living with a relative over the age of 65, RelativeHCW: having health care worker relative, HandWASH: frequency of hand washing in a day, In_UNCERT: Intolerance of Uncertainty, ML_Search: searching meaning in life, ML_Presence: presence of meaning in life.

** p < .01.
* p < .05.

Table 3
Results of multivariate linear regression with bootstrapping to determine predictor variables of depression and anxiety throughout Covid-19 pandemic.

	B	Bias	p	Bootstrap 95% CI	
				Lower	Higher
Depression					
Constant	13.115	-0.049	0.000	7.352	18.676
Gender	0.306	-0.027	0.616	-0.952	1.638
Marital status	-0.311	-0.001	0.701	-1.903	1.218
Having a child	-0.332	-0.001	0.698	-1.857	1.185
Chronic illness	1.595	0.007	0.094	-0.248	3.484
Covid19Infected	0.300	-0.011	0.714	-1.296	1.803
LivingElderly	-0.975	0.024	0.275	-2.762	1.007
Relative_HCW	0.416	0.007	0.604	-1.049	1.986
WashingHand	-1.833	-0.014	<i>0.005</i>	-3.009	-0.609
IU_Total	0.134	0.000	<i>0.000</i>	0.103	0.167
ML_Presence	-0.496	0.001	<i>0.000</i>	-0.625	0.360
ML_Search	0.014	-0.001	0.733	-0.058	0.087
Anxiety					
Constant	20.244	-0.156	0.000	14.286	25.721
Gender	4.095	-0.014	0.000	2.830	5.289
Marital status	0.576	0.001	0.624	-0.1723	2.711
Having a child	0.149	-0.010	0.902	-2.066	2.556
Chronic illness	3.357	0.043	0.010	1.011	6.021
Covid19Infected	-0.002	-0.055	0.996	-1.755	1.647
LivingElderly	0.276	0.005	0.802	-1.775	2.476
Relative_HCW	0.914	0.035	0.397	-1.241	3.114
WashingHand	-1.389	0.018	0.062	-2.845	0.173
IU_Total	0.169	0.000	0.000	0.127	0.212
ML_Presence	-0.191	0.005	0.006	-0.325	-0.050
ML_Search	-0.046	0.001	0.347	-0.139	0.049

For depression model: R = 0.657, R² = 0.432, R²_{ch} = 0.432, F = 25.583.

For anxiety model: R = 0.570, R² = 0.325, R²_{ch} = 0.325, F = 18.083.

Italic data indicate significant results (p < .05).

Spanish people reported mild to moderate levels of anxiety, 41% depression, and 41% stress at the initial stage of COVID-19 pandemic (Rodríguez-Rey et al., 2020).

The findings of this study also showed that intolerance of uncertainty, meaning in life, gender, marital status, having a child, chronic illness, living with a relative over the age of 65, having health care worker relative, the presence of someone infected with Covid-19 around, and frequency of hand washing altogether were significant predictors of depression and anxiety. The models constructed separately were significant. On the basis of findings, it might be claimed that meaning in life, intolerance of uncertainty, and washing hands significantly predicted depression. Individuals who possess meaning in life had low level of depression, and those do not tolerate uncertainty and washing hands less than 10 times had high level of depression. In addition, chronic illness, meaning in life, and intolerance of uncertainty significantly predicted anxiety. Individuals who have chronic illness and do not tolerate of uncertainty had high level of anxiety, and those having meaning in life had low level of anxiety.

Contrary to the expectation, gender, marital status, living with a relative over the age of 65, having health care worker relative, the presence of someone infected with Covid-19 around did not predict depression and anxiety significantly. Inconsistent with the findings of this study, Wang, Li, et al. (2020), Wang, Pan, et al. (2020), and Wang, Zhang, and Du (2020) found that anxiety disorder was found to be three times higher in women compared to men in COVID-19 pandemic in China. However, the findings of a study conducted by Liu et al. (2012) three years after the SARS epidemic which examined depression after exposure to stressful events support the findings of this study. Further study conducted with healthcare professionals during the COVID-19 pandemic showed that there was no difference in anxiety between male and female healthcare professionals (Zhang et al., 2020). This finding supports the notion that risk perception is important in mental health (Bandelow & Michaelis, 2015; Çırakoğlu, 2011; Leung et al., 2003; Wang, Zhang, & Du, 2020). Regardless of gender, all individuals

are equally exposed to the risk of infection and death during the COVID-19 pandemic. Possibly, this situation removed the significant difference in favor of women.

A supportive spouse acts as a buffer against the problems that individuals encounter in their lives (Bird & Melville, 1992). However, it is considered that marriage is not a protective factor against depression and anxiety for every individual. It is believed that it is the quality of the marriage that is important rather than being married. Hawkins and Booth (2005) found that individuals in unhappy marriages showed more psychological symptoms compared to divorced individuals, and they were also found to be behind in terms of self-respect, happiness, and general health. Studies comparing women with and without children found that women with children have lower levels of depression (Koropeckyj, 2002), higher life satisfaction (McQuillan et al., 2007), less life stress, and low health problems (McDonough et al., 2002). The findings of a study conducted with fathers with and without children also indicate that fathers with children are better in terms of psychological health (Helbig et al., 2006). On the other hand, it has been shown that many women who have children do not display a significant difference in their psychological well-being in advanced adulthood when compared to those who do not have children (Beckman & Houser, 1982). In addition, there are many women without children who have a happy life (Benzies et al., 2006). In fact, parents who have negativity in their relationships with their children have higher levels of depression (Koropeckyj, 2002). With the COVID-19 pandemic, factors such as the fact that the roles of being parent and businessperson, are experienced in the same place and the need to be alone cannot be met, can be a challenge for individuals with children. Therefore, it is considered that further studies should examine the level of depression and anxiety in individuals with and without children.

The level of anxiety among those with chronic diseases was higher than those without chronic diseases. When the most important risk factors for mortality due to the pandemic are evaluated, chronic diseases accompanying COVID-19 stand out (Zhou et al., 2020). In other words, the risk of developing the illness increases in people with chronic diseases (Wang, Li, et al., 2020). It is expected that individuals with chronic diseases have high levels of anxiety. Contrary to expectations, it was found that the presence of someone infected with COVID-19 around, living with elderly, and having health care worker relative did not significantly predict depression and anxiety. Having family, relatives, and friends diagnosed with Severe Acute Respiratory Syndrome (SARS) which is a member of the coronavirus family, was found to be associated with the levels of depression among the individuals (Liu et al., 2012). A study found that individuals concern for others were more vulnerable to PTS symptoms (Jiang et al., 2020). Similarly, another study conducted in Italy showed that having an acquaintance infected and medicate problems related to high level of depression and anxiety (Mazza et al., 2020). On March 21, Turkish Government takes extraordinary measures to reduce the possibility of being infected for the individuals who are 65 years old and those have chronic illness. Moreover, a social support line which is called as 'vefa' has been established to meet the needs of these people. This measure and support systems might lead individuals to feel that their loved ones are safe and have less concern for their health.

According to the results of the regression analysis of the present study, intolerance of uncertainty and meaning in life seems to be important predictors for both depression and anxiety. While there is already uncertainty in the usual flow of daily life, the reasons such as the unknowns about the pandemic, not knowing how long the pandemic will last, the uncertainty of having the illness without showing any symptoms but the possibility of being infectious to others as a carrier, and the inability to control the process, make the concept of intolerance of uncertainty even more important in this period. The uncertain and continuous threat during the COVID-19 outbreak can cause the fear to become chronic and severe (Mertens et al., 2020). According to Dugas et al. (2004), intolerance of uncertainty may be the source of generalized

anxiety disorder known as extreme anxiety that cannot be controlled. In addition, intolerance of uncertainty is seen as the transdiagnostic factor underlying many psychological disorders other than anxiety and depression (Einstein, 2014; McEvoy & Mahoney, 2012). Moreover, Norr et al. (2013) conceptualized intolerance of uncertainty as a characteristic feature of individuals who are in the group at risk for anxiety disorders. Valle et al. (2020) found a negative relationship between intolerance of uncertainty and depression and anxiety. Young women with the high level of intolerance of uncertainty demonstrated the highest level of depression and anxiety.

Within the scope of the COVID-19 pandemic precautions, it is thought that with the implementation of quarantine, being separated from the person the loved ones, losing their freedom, feeling as if they are losing control, obeying something required from the outside which is not subject to choice, and uncertainty about the infected status of themselves and the individuals around them might create dramatic effects. This process, also including the economy, has caused a change of order in the social dimension and has led to a universal existential crisis that questioned values and was dominated by uncertainty. The fact that every individual from all segments of society is under risk, has turned the pandemic into a global trauma. Many of the psychological symptoms expected after trauma were witnessed during the pandemic period (Sim et al., 2010; Wu et al., 2005). Since the day COVID-19 entered the living space, perhaps, individuals have been experiencing death anxiety more severely than in the past because life-threatening events confront individuals with the reality of death and cause the individual to have an existential questioning (Güleç & Büyükkınacı, 2011; Hallaç & Öz, 2011). According to Jonas et al. (1997), the search for meaning in life which is one of the reliable criteria of mental health, explains the predictive role of meaning in life. In a longitudinal study conducted in China before the pandemic and 7 weeks later the pandemic indicated that meaning in life was associated with depression, anxiety and stress negatively before the pandemic, and positively related to COVID-19 related behavioral engagement (Lin, 2020). Further study indicated that meaningfulness was negatively correlated with general mental distress, and it also moderated the relationship between COVID-19 stress and general mental distress (Schnell & Krampe, 2020).

5. Implications and limitations

Meaning in life and intolerance of uncertainty are complex and relatively new fields of research. On the basis of the findings of present research, it was concluded that meaning in life and being able to tolerate the uncertainties are crucial factors for the mental health of the individuals in these tough days. Given that the current pandemic and ongoing precautionary measures, such as social isolation, quarantine that take place across the world, developing and implementing effective interventions to mitigate the detrimental effects on mental health seems imperative. The results of the current study suggest that interventions targeting meaning in life and tolerance to uncertainty may be promising approaches to buffer against negative outcomes of pandemic.

The research has some limitations. Firstly, self-report measures which are less valid and reliable than measures for clinical evaluations were used in the study. Since, the bias of the participants to give socially acceptable answers is high. Thus, future research should investigate the correlation among variables by using different data collection instruments and approaches (e.g., quantitative). Secondly, participants could not be contacted face-to-face due to pandemic conditions and the data were collected online. Individuals who have internet access and know how to use the internet were able to participate in the research. Hence, the findings of the current study were limited to the study group and can't be generalized to the Turkish society. Additionally, while collecting data online provides the opportunity to reach more participants, it increases the possibility of giving inaccurate information by the participants. Further studies should be conducted to examine whether the findings of the current study can be replicated in different

populations in order to increase the generalizability of the study.

CRedit authorship contribution statement

Hande Korkmaz (HK): Conceptualization, Data collection, Writing original draft, Investigation, Resources.

Berna Güloğlu (BG): Conceptualization, Methodology, Data analysis, Writing review.

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