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ORIGINAL ARTICLE

Intolerance of uncertainty, curiosity, generalized anxiety disorder, and subjective happiness in the time of earthquakes in Türkiye

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BACKGROUND
On February 6, 2023, a devastating earthquake disaster occurred in Türkiye, affecting millions. Mental health concerns were high due to people's exposure to loss and possible earthquakes. In these times, variables that predict individuals' mental health should be determined. The aim of this study was to investigate the relationship between intolerance of uncertainty, curiosity, generalized anxiety disorder, and subjective happiness using structural equation modeling.

PARTICIPANTS AND PROCEDURE
The research was conducted on Turkish individuals in 29 different cities in Türkiye. For the purpose of the research, data were collected from 345 participants (79.7% females, 20.3% males, age range = 18-61, M_{age} = 26.73 years). One hundred eighty nine of the participants were single (54.7%), 77 were married (22.4%), and the remaining 79 were in a relationship or engaged (22.9%). Additionally, it was found that 52 of the participants were parents (15.1%). In terms of socio-economic status, the majority fell into the middle-class category (n = 263, 76.2%).

RESULTS
It was found that intolerance to uncertainty predicted subjective happiness, and generalized anxiety disorder mediated this relationship. In addition, curiosity predicted subjective happiness, and generalized anxiety disorder mediated this relationship.

CONCLUSIONS
All the findings obtained in the research revealed the mental health problems experienced by individuals after the earthquake. This research on earthquakes and mental health makes important contributions to the field of psychology.

KEY WORDS
curiosity; generalized anxiety disorder; intolerance of uncertainty; subjective happiness; earthquake

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BACKGROUND

On February 6, 2023, there were two deadly earthquakes that happened in Kahramanmaras (southeast of Türkiye) at 04.17 a.m. and 01.24 p.m., with magnitudes of 7.7 and 7.6 (AFAD, 2023). Based on the official records, over 50 thousand people died, and in the following two months there were more than 27 thousand aftershocks (TRT Haber, 2023). More than two million people face the problem of accommodation (Presidency of Strategy and Budget, 2023). Earthquakes caused not only the deaths and evacuations of thousands of people but also mental health issues. People who witnessed the earthquake were affected by its devastating outcomes. Moreover, those who watch the news and encounter the stories of victims are affected secondarily. As a result, the population's mental health has been badly affected. Therefore, measurements of wellbeing and happiness are expected to be lower overall.

Happiness, or subjective wellbeing, is basically having life satisfaction, positive feelings, and low negative feelings (Diener, 1984). For decades, many researchers investigated the determinants of happiness as income or economic wealth (Headey & Wooden, 2004), life events (Lucas, 2007), and social cohesion (Delhey & Dragolov, 2016). However, recent studies have shown that these objective factors cannot explain happiness completely (Akın & Satıcı, 2011). The observed variation in happiness regardless of life circumstances has led researchers to use the term 'subjective happiness' because some people consider themselves happy during extremely hard life events, while others consider themselves unhappy despite having all the life benefits (Lyubomirsky & Lepper, 1999). Kobasa (1979) also stated that stressful life events have a significant influence on mental health. The study conducted by Maddi and Hightower (1999) emphasized that hardiness is important for individual wellbeing and happiness in difficult lives. Thus, some people may consider themselves happy after tough life events, such as earthquakes, because the level of happiness depends on how an individual experiences, interprets, and remembers any event (Lyubomirsky & Tucker, 1998). Another research finding that supports this was reported by Jasielska and Rajchert (2020). Their study suggested that the level of happiness is related to the individual's perception style.

Generalized anxiety disorder (GAD) is excessive and intrusive worry in day-to-day situations and many domains of life, such as work, home, and finance. The worry individuals experience is persistent and chronic (Lathabhavan & Lathabhavan, 2022). GAD has high rates of comorbidity, and it brings functional and physical symptoms such as sleep disturbance, persistent headaches, gastrointestinal problems, restlessness, and muscle tension (APA, 2013; Locke et al., 2015). The lifetime prevalence of anxiety disorders is between approximately 13% and 29%, and 75% of individuals with anxiety disorders have had another mental disorder at some point in their lives (Michael et al., 2007). Therefore, anxiety has negative effects on individuals' subjective happiness.

After disasters, populations' mental health is affected in various ways, such as emotional instability, stress, trauma, and anxiety (Makwana, 2019). Because earthquakes are one of nature's natural disasters, they also have a significant effect on individuals' mental health. After the 2010 earthquake in Haiti, 20% of individuals had significant levels of anxiety and other mental health problems (Cénat et al., 2020). Similarly, after the Wenchuan earthquake in China, almost 19% of individuals had anxiety symptoms (Xu et al., 2012). Because earthquakes happen suddenly and may cause massive destruction, it is inevitable that they may cause higher levels of anxiety in individuals. Moreover, aftershocks from an earthquake may contribute to psychological symptoms. Dorahy et al. (2016) found that aftershocks were related to elevated levels of anxiety in survivors of the Christchurch earthquake in New Zealand. This might contribute to anxiety in the Turkish population because the affected area also has lots of aftershocks. Therefore, measuring the level of their generalized anxiety and subjective happiness may shed light on the population's mental health after such devastating events.

INTOLERANCE OF UNCERTAINTY, GENERALIZED ANXIETY DISORDER, AND SUBJECTIVE HAPPINESS AFTER AN EARTHQUAKE

Intolerance of uncertainty (IoU) is an emotional, cognitive, and behavioral reaction to everyday uncertainties (Freeston et al., 1994). IoU is considered a trait of an individual rather than a condition stemming from perceived characteristics of a situation, unlike situational uncertainty (Rosen et al., 2014). According to Dugas et al. (1998), intolerance of uncertainty is the main component of generalized anxiety disorder, as explained in their conceptual model. While worry is a common reality in daily life and often can be seen in clinical and nonclinical individuals (Dugas et al., 2001), the level of intolerance of uncertainty may distinguish patients with GAD from the nonclinical population (Freeston et al., 1994; Ladouceur et al., 1998). Intolerance of uncertainty is related to many mental health problems, including generalized anxiety disorder (Dugas et al., 1998), obsessive-compulsive disorder (Holaway et al., 2006; Reuther et al., 2013), and social anxiety (Boelen & Reijntjes, 2009; Counsell et al., 2017). IoU is also related to elevated stress (Greco & Roger, 2003; Rosen

et al., 2014), and its negative effects are related not only to mental disorders but also to overall mental wellbeing. In Hromova's (2022) study, IoU was associated with post-traumatic stress disorder and it was inferred that stress is triggered more as one cannot tolerate the uncertainty experienced. For instance, IoU has a significant direct effect on mental wellbeing (Deniz, 2021; Satıcı et al., 2022) and has negative associations with quality of life (Bailey et al., 2009) and happiness (Sarıçam, 2014). In the study conducted by Büyükçolpan and Özdemir (2023) during the COVID-19 pandemic, a negative relationship between IoU and happiness was reported. This finding may also represent the post-earthquake period, as it reveals the relationship between IoU and happiness during the crisis period.

After February 6, there were speculations about new prospective earthquakes all around Türkiye. These speculations caused people to expect new earthquakes. Furthermore, the unpredictability of the earthquake triggered greater panic among earthquake survivors. When previous research is examined, it can be concluded that this state of panic is normal. For instance, Pistoia et al. (2018) found that earthquake victims had increased anxiety and anticipation of threats after the 2009 earthquake in Italy. In addition, people high in IoU tend to interpret uncertainties as a threat (Beatty et al., 2022). Therefore, if anticipation of a threat increases after an earthquake, intolerance of uncertainty may also increase. Moreover, IoU is a core component of generalized anxiety disorder (Dugas et al., 1998), and this association has been shown many times (Boelen & Reijntjes, 2009; Carleton et al., 2007; McEvoy et al., 2019). Additionally, GAD has a strong negative effect on quality of life and happiness (Cramer et al., 2005). Huang et al. (2021) found that generalized anxiety scores strongly predicted low happiness.

Hypothesis 1. Generalized anxiety disorder mediates the relationship between intolerance of uncertainty and subjective happiness.

CURIOSITY, GENERALIZED ANXIETY DISORDER, AND SUBJECTIVE HAPPINESS AFTER AN EARTHQUAKE

Berlyne, who is a leading contributor to research on curiosity (Spielberger & Reheiser, 2009), defined curiosity as an internal state that an individual enters when taking action to solve or reduce perceived uncertainty (Walker, 1978). The significance of curiosity and anxiety is that they can motivate a wide range of behaviors (Spielberger & Reheiser, 2009). Curiosity seemed like a positive feature and an auxiliary to learning only after the 1950s (Berlyne, 1978).

The information gap is an incompatibility between what one knows and what one wants to know, and it is one of the reasons behind curiosity because when an individual focuses on this gap, they feel deprivation of knowledge, which motivates them to learn more (Loewenstein, 1994). After the earthquake, earthquake risks in Türkiye were mentioned in the mass media, and programs were developed to show how people could protect themselves. All of these factors have drawn attention to the knowledge gap in the minds of people who directly or indirectly experienced the earthquake. This kind of attention may also influence anxiety in people. In addition, curiosity may be another factor that is triggered in these kinds of situations when tragic events may occur. However, curiosity is found to be related to higher wellbeing and happiness (Gallagher & Lopez, 2007; Kashdan & Silvia, 2021). Also, curiosity may reduce GAD scores. Because curiosity is a novelty-seeking state and works in a reward system that resists avoidance (Silvia, 2017), the anti-avoidance part of curiosity may reduce generalized anxiety because avoidance is a maladaptive behavioral reaction to anxiety and keeps anxiety disorders persistent (Hofmann & Hay, 2018). Moreover, Berlyne (1978) stated that this reward system produces positive affect, which may help decrease generalized anxiety scores. In short, higher levels of curiosity may protect against anxiety. From the explanations above, hypothesis two is created.

Hypothesis 2. Generalized anxiety disorder mediates the relationship between curiosity and subjective happiness.

THE PRESENT STUDY

To our knowledge, there has not been a study regarding these variables in the post-earthquake scenario. We will investigate the relationship between intolerance of uncertainty, curiosity, generalized anxiety, and subjective happiness. Furthermore, the present study aimed to investigate whether GAD is a mediator in the relationship between intolerance of uncertainty, curiosity, and subjective happiness. Subjective happiness is one of the factors that contributes to mental health, and it is important to examine how it changes after these kinds of destructive events. Many different studies in the literature report that earthquakes significantly influence mental health. For instance, in Satıcı et al.'s (2024) study on earthquakes, it was found that devastating life events were reflected in mental health. Similarly, Prizmić-Larsen et al. (2023) also reported that individuals' psychological health may be impaired after a disaster. Generalized anxiety scores may also show the population's mental health and how much it is affected. Intolerance of uncertainty and curiosity may provide two different paths to subjective happiness via generalized anxiety.

PARTICIPANTS AND PROCEDURE

PARTICIPANTS

From March 2023 to April 2023, cross-sectional research was conducted on Turkish individuals in 29 different cities in Türkiye. A total of 345 voluntary participants took part in the study, with 275 (79.7%) being female and 70 (20.3%) being male. The participants' mean age was 26.73 years (*SD* = 2.01, age range = 18-61). One hundred eighty nine of the participants were single (54.7%), 77 were married (22.4%), and the remaining 79 were in a relationship or engaged (22.9%). Additionally, it was found that 52 of the participants were parents (15.1%). In terms of socio-economic status, the majority fell into the middle-class category (*n* = 263, 76.2%).

PROCEDURE

Participants in the study were recruited using the convenience sampling method. The questionnaires were administered in an online setting. Participants were reached through open groups on their social media accounts. In this study, where volunteering was essential, no fee was paid to the participants. Since the questionnaires were anonymous, individual participants' identities could not be determined. It was clearly communicated to the participants that they had the option to withdraw from the study at any time. Each participant required approximately 10 to 15 minutes to complete the questionnaires. Informed consent was obtained before data collection. Additionally, detailed information about the research was given to the participants in writing. This study was conducted in accordance with all ethical standards set forth in the 1964 Declaration of Helsinki and its subsequent updates.

MEASURES

Intolerance of Uncertainty Scale (IUS). The IUS was developed by Carleton et al. (2007) to assess participants' level of intolerance of uncertainty, and adapted to Turkish by Sarıçam et al. (2014). It includes 12 items (e.g., "I always want to know what the future has in store for me") on a five-point Likert scale between *not suitable for me at all* and *totally suitable for me*. The scale has two factors, which are prospective anxiety and inhibitory anxiety. There are no reverse items, and higher points indicate a higher intolerance of uncertainty. The adopted version of the scale has a Cronbach's α coefficient of .88 for the whole scale, .88 for the prospective anxiety factor, and .77 for the inhibitory anxiety factor. In this study, Cronbach's α coefficient was calculated as .88.

Curiosity and Exploration Inventory-II Scale (CEIS). The CEIS was developed by Kashdan et al. (2009) to measure curiosity and adapted to Turkish by Acun et al. (2013). It comprises 10 items (e.g., "Everywhere I go, I am out looking for new things or experiences") on a five-point Likert scale from 1 (*not at all*) to 5 (*extremely*). The scale has two factors: stretching and embracing. Higher points indicate higher curiosity. Acun et al. (2013) found that the Cronbach's α level of the whole scale was .81, for the stretching factor it was .81, and for embracing factor it was .68. Cronbach's α value in this study was found to be .81.

Generalized Anxiety Disorder Scale (GADS). The GADS was developed by Spitzer et al. (2006) to measure generalized anxiety disorder and adapted to Turkish by Konkan et al. (2013). It comprises seven items (e.g., "Inability to control or stop your concerns") on a four-point Likert scale from 0 (*not at all*) to 3 (*nearly every day*). The scale has one factor, and higher points indicate a higher generalized anxiety disorder. The adapted scale's Cronbach's α coefficient is .85. In this study, the Cronbach's α coefficient of the scale was found to be .90.

Subjective Happiness Scale (SHS). The SHS was developed by Lyubomirsky and Lepper (1999) for subjective happiness and adapted to Turkish by Akın and Satıcı (2011). It comprises four items (e.g., "Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?") on a seven-point Likert scale from 1 (*not at all*) to 7 (*a great deal*). The scale has one factor, and higher points indicate higher subjective happiness. The adapted scale's Cronbach's α coefficient is .86. In this study, Cronbach's α coefficient was calculated as .71.

DATA ANALYSIS

To begin with, a correlational analysis was conducted to explore the associations among intolerance of uncertainty, curiosity, anxiety disorder, and subjective happiness measures. Additionally, descriptive statistics, including mean, standard deviations, skewness, and kurtosis, were examined using IBM SPSS Statistics version 20. The mediation role of anxiety disorder was examined using a two-step structural equation analysis procedure. In the first step, a measurement model was constructed to assess whether each latent variable was appropriately represented by its indicators. Once the measurement model was deemed satisfactory, the second step involved testing the structural model using maximum likelihood estimation in AMOS Graphics. The fit indices utilized in the analysis comprised SRMR, CFI, NFI, GFI, and IFI. As per prior studies, a model is

considered to have an acceptable fit if the SRMR and RMSEA values are less than .08 and the CFI, NFI, GFI, and IFI values are greater than .90 (Hoyle & Panter, 1995).

RESULTS

PRELIMINARY ANALYSIS

The mean scores were as follows: 17.76 (± 4.38) for subjective happiness, 39.37 (± 8.81) for intolerance of uncertainty, 29.31 (± 5.98) for curiosity, and 8.53 (± 5.22) for anxiety disorder (see Table 1). Considering the recommended criteria for skewness and kurtosis when using structural equation modeling (SEM), the distribution of the study variables was found to be normal. The skewness coefficients ranged from −.05 to .40, and the kurtosis coefficients ranged from −.56 to .47. These values fell within the acceptable range of −3 to +3 for skewness and −10 to +10 for kurtosis, as suggested by Brown (2006). All variables displayed significant associations with each other. As anticipated, subjective happiness and curiosity exhibited negative correlations with intolerance of uncertainty and anxiety disorders.

MEASUREMENT MODEL

The measurement model consists of four latent variables (subjective happiness, intolerance of uncertainty, curiosity, and general anxiety disorder) and eight observed variables. The fit indices for the measurement model were as follows: $\chi^2_{(14,\ N = 345)} = 46.20$, $\chi^2/df = 3.30$, $p < .001$; GFI = .968; NFI = .961; CFI = .972; TLI = .944; SRMR = .036; RMSEA = .08. The values of the fit indices indicate that the measurement model demonstrated an adequate fit to the data. Furthermore, all indicators significantly loaded on their respective latent constructs, with loadings ranging from .63 to .92 ($p < .001$). These results suggest that the observed variables effectively captured and operationalized the underlying latent variables.

STRUCTURAL MODEL

The initial analysis tested a full mediation model for anxiety disorders between intolerance of uncertainty-curiosity and subjective happiness. In this full mediation model, there was no direct path between intolerance of uncertainty-curiosity and subjective happiness. The goodness-of-fit indices for the full mediation model were as follows: $\chi^2_{(16,\ N = 345)} = 63.39$, $\chi^2/df = 3.96$, $p < .001$; GFI = .960; NFI = .946; CFI = .959; TLI = .928; SRMR = .066; RMSEA = .09; AIC = 103.38; ECVI = .301. All fit indices, except for RMSEA (.09), were at acceptable levels, indicating a reasonably good fit. To identify the best model, the researchers investigated a partial mediating model. In this model, direct paths between intolerance of uncertainty-curiosity and subjective happiness were added. After the analyses, the goodness-of-fit indices for the partial mediator were satisfactory: $\chi^2_{(14,\ N = 345)} = 46.20$, $\chi^2/df = 3.30$, $p < .001$; GFI = .968; NFI = .961; CFI = .972; TLI = .944; SRMR = .036; RMSEA = .08; AIC = 90.20; ECVI = .262. In both models, all the path coefficients were found to be significant, indicating significant relationships between the variables. These findings suggest that the partial mediation model with anxiety disorder as a mediator provides a better fit to the data than the full mediation model without direct paths between intolerance of uncertainty-curiosity, and subjective happiness.

The researchers employed a chi-square difference test to compare whether the partial mediating role of anxiety disorder was superior to the full mediating role of anxiety disorder. The result showed that adding the direct path between intolerance of uncertainty-curiosity and subjective happiness significantly improved the model fit ($\Delta\chi^2 = 17.18$, $df = 2$, $p < .001$). Furthermore, the AIC and ECVI values for the partial mediation model were found to be smaller than the AIC and ECVI values for the full mediation model. Smaller AIC and ECVI values indicate a better model fit. Based on all these findings, the model with anxiety disorder playing a partial mediating role between intolerance of uncertainty-curiosity and subjective happiness was chosen. The path coef-

Table 1

Descriptive statistics

Variables	Descriptive statistics and reliabilities						Correlations		
	M	*SD*	Skewness	Kurtosis	α	ω	1	2	3
1. Subjective happiness	17.76	4.38	−.05	−.38	.71	.71	–		
2. Intolerance of uncertainty	39.37	8.81	.00	−.53	.88	.89	−.39**	–	
3. Curiosity	29.31	5.98	.17	.47	.81	.82	−.33**	−.24**	–
4. General anxiety disorder	8.53	5.22	.40	−.56	.90	.90	−.45**	.53**	−.31**

Note. **$p < .001$

ficients related to this selected model are presented in Figure 1.

BOOTSTRAPPING

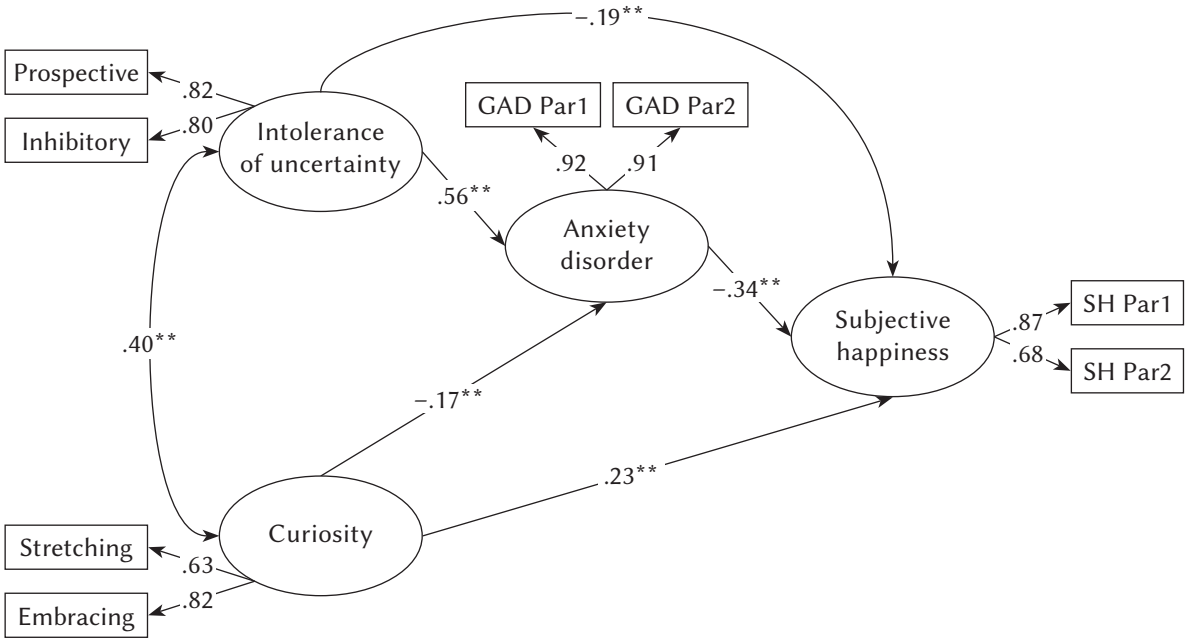
The researchers conducted a bootstrapping procedure to examine the significance of anxiety disorder as a mediator between intolerance of uncertainty, curiosity, and subjective happiness. The results, as shown in Table 2, include the indirect effects with their corresponding 95% confidence intervals (CI). Regarding the indirect effect of intolerance of uncertainty as the predictor, the bootstrap estimate was −.19, and the 95% CI was [−.31; −.08]. This indicates that anxiety disorder significantly mediates the relationship between intolerance of uncertainty and subjective happiness. Similarly, for the indirect effect of curiosity as the predictor, the bootstrap estimate was .06, with a 95% CI of [.01; .13]. This finding suggests that anxiety disorders significantly mediate the relationship between curiosity and subjective happiness. In conclusion, the mediation analysis demonstrates that anxiety disorder plays a crucial mediating role between both intolerance of uncertainty and curiosity, predicting their respective effects on subjective happiness.

DISCUSSION

People's mental health can be seriously influenced as a result of earthquakes. There are studies in the literature that prove this (Frijters et al., 2021; Prizmić-Larsen et al., 2023). Indicators of this situation may be anxiety levels and subjective happiness. The pres-

Figure 1

Results for the hypothesized structural model



Note. N = 345; GAD – general anxiety disorder; SH – subjective happiness; $^{**}p < .05$.

Table 2

Standardized bootstrapping coefficients for the model

Model pathways	Coefficient*	95% CI	
		Lower	Upper
Indirect effect			
IoU ⟶ GAD ⟶ Subjective happiness	−.19	−.31	−.08
Curiosity ⟶ GAD ⟶ Subjective happiness	.06	.01	.13

Note. *Because the CIs do not cover zero, all the coefficients are significant; IoU – intolerance of uncertainty; GAD – general anxiety disorder; CI – confidence interval.

ent study aimed to offer a model that examined the relationship between earthquakes and psychological variables.

The first hypothesis of the present study, that generalized anxiety disorder mediated the relationship between intolerance of uncertainty and subjective happiness, was also confirmed (H1). The association between IoU and GAD has been studied previously (Counsell et al., 2017; Holaway et al., 2006; Yook et al., 2010). According to the conceptual model of Dugas et al. (1998), the primary component leading to GAD is intolerance of uncertainty. Furthermore, an experimental study showed that when intolerance of uncertainty is manipulated, higher intolerance of uncertainty causes higher worry (Ladouceur et al., 2000). In addition, Hromova's (2022) study demonstrated that not being able to tolerate uncertainty triggers stress. A recent meta-analysis study also showed that IoU is an important factor for anxiety disorders, especially GAD (McEvoy et al., 2019). Moreover, higher GAD scores predicted lower subjective happiness. Studies have shown the effect of anxiety disorders (Norberg et al., 2008; Olatunji et al., 2007), stress (Satıcı, 2020), and GAD (Henning et al., 2007) on quality of life. The negative relationship between GAD scores and subjective happiness has also been shown (Milić et al., 2019).

The second hypothesis of the study is that generalized anxiety disorder mediates the relationship between curiosity and subjective happiness (H2). The present study also showed that higher curiosity predicts lower generalized anxiety disorder. Kashdan et al. (2013) found that curious people are more tolerant of anxiety, and their intolerance of uncertainty is lower, which is a core component of generalized anxiety disorder. Thus, if someone's intolerance for uncertainty score is low, their generalized anxiety score may also be low. Furthermore, curiosity is a positive psychological state that encourages exploratory behavior to solve problems (Spielberger & Reheiser, 2009). Curiosity's propensity for problem-solving may also contribute to anxiety and generalized anxiety disorder. Furthermore, greater subjective happiness is predicted with lower generalized anxiety. Generalized anxiety disorder creates a lower quality of life (Bourland et al., 2000) and causes impairment in many domains of life, such as relationships, work, money, self-esteem, values, etc. (Henning et al., 2007). Thus, a lower quality of life may contribute to lower subjective happiness. Additionally, Costa and McCrae (1980) found that people who are less anxious or worried are happier.

IMPLICATIONS

This study demonstrates that IoU, curiosity, and general anxiety scores are determinants of subjective happiness. Since this finding was obtained with data collected after the earthquake, it may mean that the earthquake had an effect on other variables, especially subjective happiness. However, Türkiye's different busy agendas may also play a role in determining subjective happiness. It would be healthier to evaluate the research results in this context. In this context, some interventions may be implemented to boost subjective wellbeing. Because intolerance of uncertainty predicts generalized subjective happiness indirectly, eliminating or reducing intolerance of uncertainty may be helpful to increase happiness. There is an effective intervention program designed to be used in intolerance of uncertainty, which elevates quality of life (Rahimi et al., 2023) and may also be used to elevate happiness. These intervention programs may play an important role in obtaining accurate information and providing relief, which may have a positive impact on people's IoU and curiosity levels. Additionally, the effectiveness of cognitive behavioral therapy for generalized anxiety disorder has been shown many times (Dugas et al., 2010; Linden et al., 2004; Stefan et al., 2019). Furthermore, curiosity does not predict lower happiness as intolerance of uncertainty does, so encouraging people's curiosity may be a psychologically healthier option. Moreover, positive psychology interventions may be used to increase happiness (Lambert et al., 2019; Van Zyl & Rothmann, 2014). Finally, all these interventions can be implemented to reduce the negative effects of earthquakes on people's mental health. For this reason, studies on institutions can be carried out by policy makers in order to increase the widespread impact of the findings obtained in this research. Increasing clinical practices may be important in strengthening people's mental health after a disaster.

LIMITATIONS AND FUTURE RESEARCH

Although the present study suggests a significant relationship between variables, it has some limitations. Firstly, data were obtained via self-reported questionnaires, which may cause biased answers due to the social-desirability effect. Secondly, because of the nature of the cross-sectional design, causal relationships cannot be inferred from the present study. Experimental designs or longitudinal studies would be better suited for that kind of purpose. In these experimental and longitudinal studies, resilience factors that buffer against psychological distress caused by earthquakes can be investigated. Finally, using convenience sampling is another limitation because this sampling method limits the generalizability of the research. In this study conducted after the earthquake, participants were not asked any demographic questions about exposure to or being affected by the earthquake. Therefore, future research can be con-

ducted on those who are exposed to earthquakes or those who are directly or indirectly influenced by the earthquake.

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