Journal of Evidence-Based Psychotherapies,
Vol. 22, No. 1, March 2022, 1-20.

10.24193/jebp.2022.1.1

RELATIONSHIPS BETWEEN HOSTILITY, RESILIENCE AND INTOLERANCE OF UNCERTAINTY: A STRUCTURAL EQUATION MODELING

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Abstract

The aim of this study is to examine the relationship between hostility, resilience, and intolerance of uncertainty within the framework of structural equation modeling. In order to determine the relationship between the concepts, structural equation modeling was made, and the mediation role of resilience between hostility and intolerance of uncertainty was investigated. A total of 359 individuals participated in the study from different regions of Turkey. The short version of the intolerance of uncertainty scale, brief resilience scale, and hostility in pandemic scale were used as research instruments. The test of the measurement model resulted in an acceptable fit to the data, and all loadings of the measured variables on the latent constructs were statistically significant. The test of the direct relationship between hostility and intolerance of uncertainty model and mediation role of resilience between hostility and intolerance of uncertainty resulted in an acceptable fit to the data. The results of the Bootstrap analysis were used to determine whether the mediation role of resilience between hostility and intolerance of uncertainty was statistically significant. According to the results of the research, it is determined that psychological resilience is a partial mediator variable between hostility and intolerance to uncertainty. In order to control the feelings of intolerance and hostility toward uncertainty,

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which are risky for the psychological health of individuals during the Covid-19 pandemic, the protective intervention factors of improving psychological resilience and increasing the capacity to tolerate uncertainty should be addressed in terms of individual and social mental health.

Keywords: Hostility, resilience, intolerance of uncertainty, COVID-19, mediation model.

Introduction

Pandemics trigger changes in the psychological and sociological structures of society (Trauer et al., 2011). The COVID-19 pandemic, which is a global health threat (Cao et al., 2020; Wang et al., 2020), was first detected in Turkey on March 11 (T.R. Ministry of Health, 2020) and has brought about changes in social life which later affected the psychological well-being of the whole society. For this reason, it is necessary to understand the epidemiology of the pandemic and to define the changes that have occurred in Turkey, which is going through the pandemic like the rest of the world, and to guide the public health responses in the upcoming pandemics (Trauer et al., 2011). In this context, it is important to examine the concepts of hostility, intolerance of uncertainty, and psychological resilience during the pandemic process.

Hostility is a complex set of tendencies that involves negative beliefs, angry emotions, and aggressive interactions (Spilberger et al., 1983). In a study conducted by Pérez-Fuentes, Molero Jurado, Martos Martínez, and Gázquez Linares (2020) with 1004 people, it is concluded that the perceived threat during the pandemic increases the levels of sadness-depression, anxiety, and anger-hostility. At the same time, it is concluded that anxiety and anger-hostility directly affect the perception of threat from the virus. A negative attitude, hostility often causes people to experience anger. An individual with a hostile attitude experiences a negative and pessimistic view of the world, distrust towards other people, and a desire to harm. These individuals generally have anxiety in the face of problems and cannot cope with uncertainty (Eckhardt, Bradley & Deffenbacher, 2004).

Pandemics cause compelling life events and increase the need for psychological resilience (Cao et al., 2020; Wang et al., 2020). It is known that pandemics also increase the stress level in individuals. Due to the process experienced, post-traumatic stress disorder (Lee et al., 2018), stress, anxiety, depressive symptoms, rejection, fear, and anger (Jones et al., 2017) may be observed in individuals. Kobasa (1979) states that each individual responds differently to high-stress situations. She also stated that some individuals get sick when they are highly stressed, while some others do not due to the difference in personality traits, and she calls this difference in personality psychological resilience. Psychological resilience can also be defined as the capacity to come out of difficulties and become stronger.

Psychological resilience provides the individual the opportunity to heal the pain s/he experienced, to take responsibility for his/her life, and to continue his/her life full of love (Walsh, 2006). Individuals with high psychological resilience have stated that the trauma they experienced helped them understand the value of life, increased their rapprochement with their family and friends, helped them understand the meaning of life, and brought a new mission to their lives (Southwick & Charney, 2012).

One of the characteristics of psychological resilience is that it enables withdrawal with flexible adaptability in intense threats and crisis situations encountered in life. Studies have shown that positive emotions lead to creative thoughts in the individual in times of stress (Onwukwe, 2010). Resilient people tend to be flexible. They do not keep to a single method in coping with the difficult situations they experience. They can move from one coping strategy to another depending on the circumstances. (Southwick & Charney, 2012).

Individuals with high psychological resilience have a higher ability to cope with unexpected events that may occur in the future (Tompkins & Adger, 2004). The obscurity or uncertainty in the pandemics creates anxiety. Each person's reaction to such worrisome situations of uncertainty can be different. Some individuals can easily identify solutions to these situations and continue their lives. It is seen that especially individuals with high psychological resilience can continue their lives in the face of intense threats and in crisis situations. However, while life is full of uncertainties that may emerge at any time, people intolerant to uncertainty can easily find many reasons to worry and they mostly focus on this worry and anxiety. Also, they have difficulty in making decisions and finding solutions to get rid of the uncertainty in question (Dugas, Buhr & Ladouceur, 2004). These individuals experience an intense threat perception, see uncertain situations in life as intolerable and challenging, and may experience various mental disorders (Carleton et al., 2012). Intolerance of uncertainty is defined as the individual's belief that uncertain situations will result in negativity and perceiving uncertainty as a threat (Carleton, 2012). Individuals who are intolerant of uncertainty use inappropriate coping skills due to negative emotions and may act impulsively (Robichaud, 2013; Pawluk & Koerner, 2016). This situation causes individuals to experience intense stress and impairs their functionality (Barahmand & Haji, 2014). The fact that the pandemic process is a compelling life event can increase the anxiety level of individuals with intolerance towards uncertainty (Asmundson & Taylor, 2020).

Some studies on the variables of hostility, psychological resilience, and intolerance of uncertainty have been conducted so far. In one such study, which was conducted during the latest pandemic by Becerra-García, Giménez Ballesta, Sánchez-Gutiérrez, Barbeito Resa, and Calvo Calvo (2020) with 151 participants aged 18-76, it is revealed that individuals aged 18-35 have higher hostility rates. In another research study, conducted by Bartos, Bauer, Cahlíková, and Chytilová, (2020) with 2186 people in the pandemic, it is revealed that hostility towards foreigners increased in the Czech Republic. In yet another study conducted during the pandemic by Becerra-García, Giménez Ballesta, Sánchez-Gutiérrez, Barbeito

Resa & Calvo Calvo (2020) with 151 people aged 18-76 years, it is seen that younger participants aged 18-35 have shown higher levels of hostility, depression, anxiety, and interpersonal sensitivity. One more study conducted during the pandemic by Achterberg, Dobbelaar, Boer, and Crone (2021) with 106 parents and 151 children shows that there is a significant increase in the negative emotions of parents, such as anxiety, depression, hostility, and interpersonal sensitivity.

World Health Organization (WHO) Europe director Kluge emphasizes that maintaining our optimism during the pandemic and trying to stay physically and mentally healthy has an important role in increasing psychological resilience. He states that the greatest strengths we have as human beings in managing stressful life events such as pandemics are psychological resilience and cooperation (Kluge, 2020). In a study conducted by Baykal (2020) with 191 people, it was found that high levels of anxiety reduce the level of psychological resilience and decrease life satisfaction. A research study conducted by Celebi (2020) with 499 people revealed that individuals with low psychological resilience during the pandemic are more negatively affected by the COVID-19 pandemic. In a study conducted by Kasapoglu (2020) with 565 adult individuals during the COVID-19 pandemic, it is seen that psychological resilience directly, significantly, and negatively affects intolerance to uncertainty. Yet another study conducted by Guduk, Guduk, and Vural (2021) with 284 healthcare professionals showed that individuals who have not stayed in quarantine, have worked flexible hours, and lived with their friends have lower intolerance of uncertainty. Social support network, which is one of the components of psychological resilience, seems to reduce intolerance of uncertainty. Duman (2020) revealed through 100 university students that the students are moderately intolerant to uncertainty and that there is a positive relationship between the fear of COVID-19 and intolerance of uncertainty.

Based on the above-mentioned literature, it is thought that an increase in the level of intolerance to uncertainty may cause the individual to experience difficulties in life and develop hostile feelings and actions. It is suggested that individuals with high psychological resilience may have a higher level of tolerance to uncertainty and a decrease in hostile emotions and actions. The aim of this study was to examine the relationship between hostility, resilience, and intolerance of uncertainty within the framework of structural equation modeling. In order to determine the relationship between the concepts, structural equation modeling was made, and the mediation role of resilience between hostility and intolerance of uncertainty was investigated.

Method

Research Model and Participants

The aim of this study was to examine the relationship between hostility, resilience, and intolerance of uncertainty within the framework of structural equation

modeling. The relationships between variables were investigated using the Structural Equation Model (SEM), which is a statistical analysis that integrates a number of statistical techniques and which investigates and tests the predictive relationships between variables in a multidimensional way (Şimşek, 2020).

The study was carried out through an online data collection platform. The individuals participating in the study were over the age of 18, could understand Turkish, and volunteered to participate in the research. Ethics committee approval for the study was received from the ethical committee of Okan University, Turkey, on 10.03.2021. The privacy of all the participants was protected, and confidentiality requirements for data collection and analysis were strictly followed. It was guaranteed that the data obtained would be stored in encrypted files and would not be shared with anyone or any organization other than scientific research. Informed consent was obtained from the participants who agreed to participate in the research. Thus, this research study complies with research publishing ethics. The authors declare no conflicts of interest.

Before proceeding to the answering phase of the scale items, information on demographic variables of age and gender was collected in order to describe the participants. A total of 359 individuals participated in the study in Turkey. The mean age of the sample was 29.08 (SD=9.52) ranging from 18 to 67 years. Of the participants, 292 were female (81.3%) and 67 were male (18.7%).

Research Instruments

The Short version of the intolerance of uncertainty scale (ius-12) (Sarıçam, Erguvan, Akın, Akça, 2014):

The validity and reliability of the scale were investigated by test-retest, Cronbach alpha, exploratory and confirmatory factor analysis, and criterion-related validity methods. Coping Flexibility Scale and Educational Stress Scale were used for criterion-related validity. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was found as .85. A significant result on Bartlett's test of Sphericity $\chi 2= 5052,53$ ($p< .001$, $df= 66$) was also found. Results confirmatory factor analyses demonstrated that 12 items yielded two factors as original form and that the two-dimensional model was well fit ($\chi^2= 147.20$, $df= 48$, RMSEA=.073, CFI=.95, IFI=.95, GFI=.94, and SRMR=.046). Factor loadings ranged from .55 to .87. Cronbach alpha internal consistency coefficient was found as .88 for overall scale, .84 for prospective anxiety subscale, and .77 for inhibitory anxiety subscale. In the concurrent validity, significant relationships were found between the Intolerance of Uncertainty Scale (IUS-12) and Coping Flexibility Scale, Educational Stress Scale ($r= -.43, .41$ respectively). The test-retest reliability coefficient was .74. Corrected item-total correlations ranged from .42 to .68.

Brief Resilience Scale (Doğan, 2015):
The Brief Resilience Scale (BRS) was developed to measure the level of individual resilience. The psychometric properties of the scale were examined by internal consistency, exploratory and confirmatory factor analysis methods, and criterion-related validity. After the exploratory and confirmatory factor analysis, it comes to the view that the scale has a structure with only one factor. Related to the BRS, the internal consistency coefficient was found .83. In the context of the criterion-related validity, positive correlations were found between BRS and Oxford Happiness Questionnaire, Ego Strength Scale, and Connor Davidson Resilience Scale. It is concluded that the BRS is a valid and reliable instrument to measure the resilience levels of individuals.

Hostility in Pandemic Scale (HPS) (Tunç, Parlak, Uluman & Eryiğit, 2021):
Hostility in Pandemic Scale (HPS) was developed to measure the hostility levels of individuals, which is a factor affecting the mental well-being of society during the pandemic. The study group consists of 855 individuals between the ages of 18-65 from different genders, socioeconomic levels, who have experienced the pandemic process. For the construct validity of the scale results, exploratory factor analysis was made and a one-dimensional structure consisting of 22 items was presented. It was determined that the variance explained by the scale showing a one-dimensional structure was 42.2. As a result of the confirmatory factor analysis performed through a separate study group, it was revealed that all the items have significant t values, and the model established according to model fit indexes has meaningful and acceptable fit values. Buss-Perry Aggression Scale was applied with HPS for criterion validity. As a result of the criterion validity analysis, a significant relationship was found between the scale results. The internal consistency of the scale results was calculated with Cronbach Alpha, and a reliability level of 0.93 was obtained. Test-retest reliability results were found to be 0.89. Item statistics also revealed that 22 items are discriminant.

The strategy of analysis

The aim of this study was to examine the relationship between hostility, resilience, and intolerance of uncertainty within the framework of structural equation modeling. To determine the relationship between the concepts, structural equation modeling was made, and the mediation role of resilience between hostility and intolerance of uncertainty was investigated.

First, the measurement model was estimated prior to the structural model. For measurement and structural model, the hostility and resilience construct was defined using item-parceling, since hostility and resilience have only one factor. Item parceling is a method that normalizes the distribution of observed variables and increases the reliability of these indicators (Şimşek, 2020). If the main purpose of the study is to examine the structural relationships among multiple constructs, parceling greatly helps to eliminate theoretically unimportant noises, and thus, to unveil the latent structure that otherwise may be eclipsed by measurement and sampling error debris (Matsunaga, 2008). The aim of this study was to examine the structural relationships among multiple constructs, so indicators as parcels were created for hostility and resilience latent variables by rank-ordering the items by the size of the item-total correlation and summing up the sets of items to obtain equivalent indicators for those constructs. Thus, four parcels for hostility and two parcels for resilience were created.

After the descriptive statistics and correlation analysis, the measurement model was tested before the structural model. The Maximum Likelihood estimation method was preferred because its fit values are less likely to be influenced by sample size and distribution than other methods are (Hu & Bentler, 1998; Anderson & Gerbing, 1988). There are different goodness-of-fit indices used in the evaluation of the model fit, and these indices limit values for accepting the model. Chi-Square Goodness of Fit is the most commonly used goodness-of-fit index among the suggested indexes. Due to the sensitivity of the Chi-Square statistic regarding sample size, researchers developed alternative goodness-of-fit measures, such as RMSEA, GFI, CFI, SRMR, IFI, NNFI, and RMR (Kline, 2005; Şimşek, 2020).

To analyze the mediation role of resilience between hostility and intolerance of uncertainty, Bootstrap analysis was applied. This analysis was carried out at a 95% confidence interval, and the number of Bootstrap samples was adjusted to 5000. The absence of the "0" value between lower (BootLLCI) and upper (BootULCI) Bootstrap values have been interpreted as the effect of the mediator variable is significant (Hayes, 2018).

The distribution of the variables was analyzed by using skewness and kurtosis value. All the values were between -1.00 and +1.00. Skewness for hostility scales ranged from -0.23 and 0.68; kurtosis ranged from -0.60 and 0.03., skewness for resilience scales ranged from -0.21 and 0,27; kurtosis ranged from to -0.37 and -0.16. Skewness for intolerance of uncertainty scales ranged from -0.26 and -0.05; and finally, kurtosis ranged from -0.91 and -0.11. These results indicate that there was no problem with normal distribution for any variables and that all the variables were normally distributed in the sample. In addition to the skewness and kurtosis analyses, the Kolmogorov-Smirnov test was used, and the results ($p > .05$) supported the normality.

Results

Test of the measurement model

First of all, the descriptive statistics and correlation values of the observed variables were examined. Means, standard deviations, and correlations of observed variables are shown in Table 1.

Table 1. Means, standard deviations, and correlations of observed variables.

Observed variables	M	SD	1	2	3	4	5	6	7	8
Hostility										
1 H1PARCEL	11.39	4.38	1.00							
2 H2PARCEL	12.73	4.89	.81**	1.00						
3 H3PARCEL	15.25	5.24	.84**	.80**	1.00					
4 H4PARCEL	13.28	5.12	.82**	.79**	.77**	1.00				
Intolerance of Uncertainty										
5 IU1	23.65	5.73	.44**	.49**	.51**	.44**	1.00			
6 IU2	15.72	5.63	.43**	.43**	.43**	.40**	.75**	1.00		
Resilience										
7 R1PARCEL	9.61	3.00	-.26**	-.28**	-.25**	-.24**	-.47**	-.51**	1.00	
8 R2PARCEL	9.47	2.77	-.19**	-.17**	-.17**	-.11*	-.37**	-.44**	.79**	1.00

Notes: N=359. **p <0.01 *p <0.05
H1PARCEL-H4PARCEL= parcels created for Hostility; R1PARCEL-R2PARCEL= parcels created for Resilience; IU1: prospective anxiety subscale IU2: inhibitory anxiety subscale.

Before the measurement model was tested, the correlations between all the latent variables in the model were checked and all of them were found statistically significant (p <.01, see Table 2).

Table 2. Correlations among the latent variables

Latent variables	1	2	3
1 Hostility	1.00	0.58**	-0.31**
2 Intolerance of Uncertainty	-	1.00	-0.57**
3 Resilience			1.00

Notes: N= 359, **p<.01.

After descriptive statistics and correlation values, the measurement model was tested. Factor loadings, standard errors, and t-values for the measurement model

are shown in Table 3, and standardized parameter estimates for the measurement model are shown in Figure 1.

Table 3. Factor loadings, standard errors, and t-values for the measurement model.

Measure and variable	Unstandardized factor loading	SE	t	Standardized factor loading
Hostility				
H1PARCEL	4.07	0.31	23.04	0.93
H2PARCEL	4.28	0.52	20.74	0.87
H3PARCEL	4.75	0.51	21.93	0.90
H4PARCEL	4.52	0.54	21.10	0.88
Intolerance of Uncertainty				
IU1	4.94	1.33	18.42	0.86
IU2	4.92	1.29	18.78	0.87
Resilience				
R1PARCEL	2.96	0.57	19.79	0.98
R2PARCEL	2.23	0.38	15.85	0.81

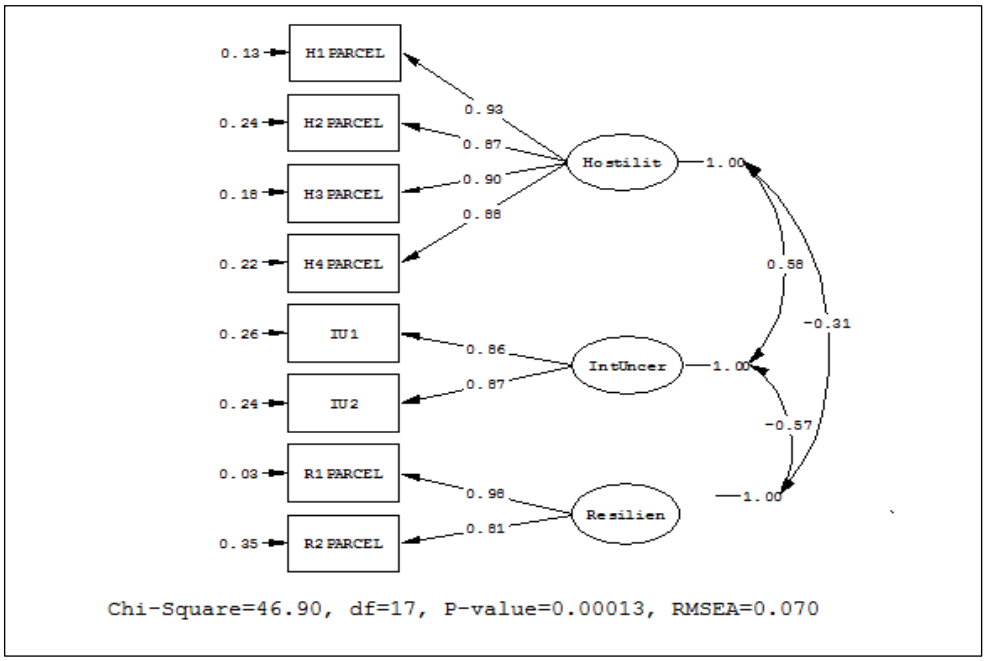

Figure 1. Standardized parameter estimates for measurement model.

The test of the measurement model resulted in an acceptable fit to the data, as indicated by the following goodness of fit statistics: $\chi 2$ (17, N=359) = 46.90; Root Mean Square Error of Approximation (RMSEA) = 0.070 (90 Percent Confidence Interval for RMSEA = (0.047;0.094); Goodness of Fit Index (GFI) = 0.97; Comparative Fit Index (CFI) = 0.99; Standardized Root Mean Square Residual (SRMR)= 0.028; Incremental Fit Index (IFI) = 0.99; Non-Normed Fit Index (NNFI) = 0.98; Root Mean Square Residual (RMR) = 0.59. As Table 3 demonstrates, all loadings of the measured variables on the latent constructs were statistically significant.

Test of the structural models

Within the aim of the research, firstly the direct relationship between hostility and intolerance of uncertainty was tested and shown in Figure 2.

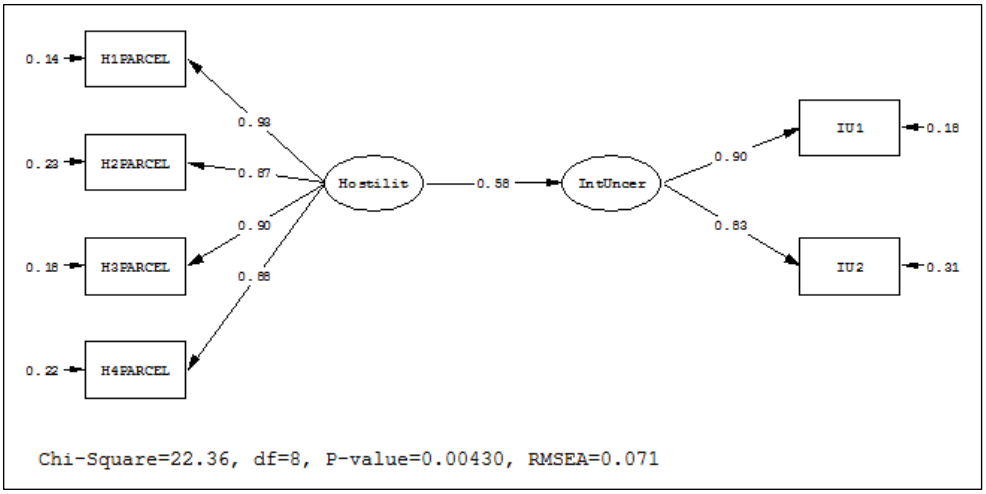

Figure 2. Standardized parameter estimates for the direct relationship between hostility and intolerance of uncertainty

The test of the direct relationship between hostility and intolerance of uncertainty model resulted in an acceptable fit to the data, as indicated by the following goodness of fit statistics: $\chi 2$ (8, N=359) = 22.36; Root Mean Square Error of Approximation (RMSEA) = 0.071 (90 Percent Confidence Interval for RMSEA= (0.037 ; 0.11); Goodness of Fit Index (GFI) = 0.98; Comparative Fit Index (CFI)= 0.99; Standardized Root Mean Square Residual (SRMR) = 0.017; Incremental Fit Index (IFI) = 0.99; Non-Normed Fit Index (NNFI) = 0.99; Root Mean Square Residual (RMR) = 0.48.

Then, the direct relationship between hostility and intolerance of uncertainty, and the mediation role of resilience between hostility and intolerance of uncertainty were investigated and shown in Figure 3.

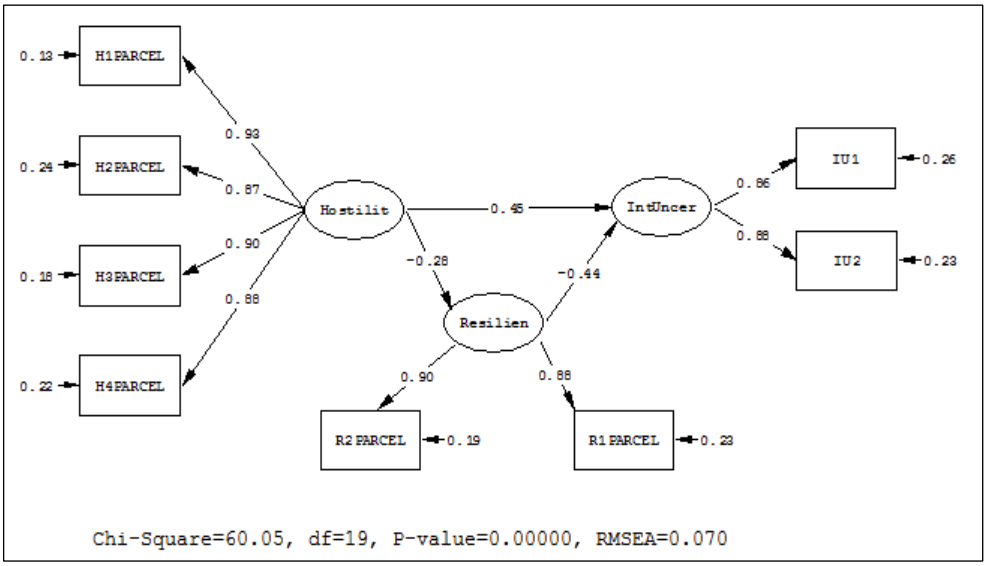

Figure 3. Standardized parameter estimates for the mediation role of resilience between hostility and intolerance of uncertainty

The test of the mediation role of resilience between hostility and intolerance of uncertainty model resulted in an acceptable fit to the data, as indicated by the following goodness of fit statistics: $\chi 2$ (19, N=359) = 60.05; Root Mean Square Error of Approximation (RMSEA) = 0.07 (90 Percent Confidence Interval for RMSEA = (0.056 ; 0.10); Goodness of Fit Index (GFI) = 0.96; Comparative Fit Index (CFI) = 0.98; Standardized Root Mean Square Residual (SRMR) = 0.044; Incremental Fit Index (IFI) = 0.98; Non-Normed Fit Index (NNFI) = 0.97; Root Mean Square Residual (RMR) = 0.77.

The path coefficient between hostility and intolerance of uncertainty in the basic model decreases from 0.58 to 0.45 in the mediation model. The relationship between hostility and intolerance of uncertainty decreases in this way in the mediation model but still indicates a significant relationship, which points out the partial mediating effect of resilience between these two variables (Baron & Kenny, 1986).

Bootstrap Analysis

Although the structural model resulted in a good fit to the data, bootstrap confidence intervals were calculated for mediation. The bootstrapping procedure is used to determine whether or not the indirect pathways were significantly different

from zero (Shrout & Bolger, 2002). This method is based on testing the significance of the indirect paths from the independent variable (hostility) to the mediator (resilience) and from the mediator to the dependent variable (intolerance of uncertainty). Bootstrapping produces a large number of samples from the dataset and uses them to obtain estimates of the standard errors. In the present study, 5.000 bootstrap samples were drawn. The interval confidence of these standard errors is considered when testing the significance of indirect effects. These standard errors were used to calculate the 95% confidence interval (CI) for each indirect effect. Significant mediation is indicated when the upper and the lower limits of the 95% CI do not include zero.

The results of the Bootstrap analysis, used to determine whether the mediation role of resilience between hostility and intolerance of uncertainty is statistically significant, are given in Table 4.

Table 4. Bootstrap analysis results regarding the indirect effect of resilience.

Standardized indirect effect	Boot standard error	BootLLCI (Lower value)	BootULCI (Upper value)
0.057	0.013	0.031	0.085

Standardized values for lower value is: 0.031 and upper value is: 0,085. Significant mediation is indicated when the upper and the lower limits of the 95% CI do not include zero.”0” is not between these two values, so it can be said that the mediation role of resilience between hostility and intolerance of uncertainty is statistically significant.

Discussion

It is claimed that situations such as social distance, isolation, losing a close person, being infected, and the uncertainty of the course of the COVID-19 pandemic cause negative psychological effects on some individuals (Bhuiyan et al., 2020). It is stated that the challenging life situations caused by COVID-19 result in various psychosocial problems, such as depression, anxiety, and somatization (Arslan et al., 2020; Satici, Kayis, Satici, Griffiths & Can, 2020). For this reason, the mediation of psychological resilience between hostility and intolerance to uncertainty has been investigated in this study. According to the results of the research, it is determined that psychological resilience is a partial mediator variable between hostility and intolerance to uncertainty. The relationship between hostility and intolerance to uncertainty changes when resilience enters the model. Psychological resilience is determined as a variable that reduces the strength of the relationship between the two variables.

In the research carried out in the period of March-May 2021, when the Covid-19 pandemic continued to affect individuals, it is seen that hostility increases as the intolerance of uncertainty increases. Supporting the results of the research, the finding in the literature that individuals who are intolerant of uncertainty tend to resort to maladaptive coping behavior to get rid of negative emotions (Robichaud, 2013) and that they can turn to impulsive behavior (Pawluk & Koerner, 2013; Pawluk & Koerner, 2016). In a study conducted by Celik et al. (2021) with 714 people during the COVID-19 period, it is concluded that as the intolerance of uncertainty increases, there is an increase in hostile behaviors, similar to the results of the current research. In a study conducted by Rona, et al., (2007), it is stated that uncertainty causes feelings of intolerance and tension in people. Aytac and Aydın's study (2021), conducted with 283 healthcare professionals, found that COVID-19 has increased the burnout and hostility levels of individuals, in support of the research results. In a study conducted with 256 participants in Morocco, it is concluded that psychological problems resulting from suspicion, hostility, and fear of losing autonomy, and feelings of inadequacy, restlessness, and discomfort during interpersonal interactions are experienced during the COVID-19 pandemic (Sfendla & Hadrya, 2020). The coronavirus pandemic can lead to mental anger, intolerance, feelings of tension, unhappiness, feelings of helplessness, burnout, guilt, loneliness, aimlessness, and pessimism in individuals. In this case, it can cause anxiety disorders, depressive disorders, acute stress response, sleep disorders, post-traumatic stress disorder, and alcohol-substance use disorders (Aslan & Turkili, 2021).

In the study conducted, it has been concluded that as psychological resilience increases, intolerance to uncertainty decreases. Supporting the result of the research, a study conducted with 565 adult individuals during the COVID-19 pandemic shows that psychological resilience has a direct, significant, and negative effect on intolerance against uncertainty (Kasapoglu, 2020). In studies conducted with different sample groups, it is seen that intolerance of uncertainty during the COVID-19 pandemic reduces the psychological resilience of individuals (Karatas & Tagay, 2021; Di Blasi, et al., 2021). In a study conducted by Bozdag (2020) with 237 adult individuals, it is determined that the participants with higher levels of psychological resilience have lower levels of depression and anxiety. Altundag (2021), in a study examining 841 people through regression analysis, found a negative significant relationship between fear of COVID-19 and resilience.

In the research that tested the mediation of psychological resilience between hostility and intolerance to uncertainty, it is concluded that as psychological resilience increases, intolerance to uncertainty decreases, and this also decreases hostility. In a study conducted by Cevizci (2019) with 106 healthcare professionals, it was found that employees with low psychological resilience have higher anger/aggression levels than employees with high psychological resilience. With the examination of user correspondence on the social media platform Weibo in China, the expressions of anxiety, depression, anger, and happiness were detected in the data obtained in the study conducted during the COVID-19 pandemic, and it was

determined that while anger, anxiety, and depression increases, happiness decreases (Li, et al., 2020). In a study conducted by Bilge & Bilge (2020), it is stated that individuals with low psychological resilience and who use a dysfunctional coping style with stress feel the need for psychological help more. A decrease in the level of resilience may lead to a decrease in the self-control capacity of the individual, which can lead to hostile behavior (Soysal, 2016). In the reports of the WHO, it is stated that psychological resilience is an important tool in coping with the psychological effects of COVID-19 (Kluge, 2020). These studies, which support the research results, show that psychological resilience reduces intolerance to uncertainty and thus reduces hostility. The obscurity or uncertainty in the pandemic creates anxiety. It seems likely that individuals with a low tolerance to uncertainty may experience failure in maintaining their life and functionality and may develop hostile feelings and actions. Psychological resilience is thought to have an important role in overcoming this process in a healthy way.

Resilience is vital for effectively coping with adversity, uncertainty, and change. It is stated that the psychological resilience levels of individuals have decreased during the pandemic (Killgore et al., 2020). It is important to examine the effects of the changes experienced on the mental well-being of the individual in order to improve the resilience necessary for the well-being of the individual and the protection of mental health during the pandemic. The process experienced in determining the strategies of mental health services and creating intervention steps should be understood. The ability of the individual to manage the internal anger caused by uncertainty, perceiving the other as a threat, and developing hostility both directly affect the mental health of the individual and negatively affect the dynamics of social solidarity and the fight against the pandemic. Identifying the mental dynamics experienced through this study is important in terms of community mental health. In order to control the feelings of intolerance and hostility toward uncertainty, which are risky for the psychological health of individuals during the COVID-19 pandemic, the protective intervention factors of improving psychological resilience and increasing the capacity to tolerate uncertainty should be addressed for the good of individual and social mental health.

Although advanced statistical procedures have been used in this study to examine the mediation of resilience between hostility and intolerance to uncertainty, some limitations should be noted. In the present study, data have been obtained using self-report measures, so only the psychological resilience variable has been included in the model as a mediator variable. However, in future research, the model can be tested by using different mediating variables between hostility and intolerance to uncertainty. The current research is carried out in the screening model, but experimental studies can also be carried out by applying a program to increase the psychological resilience levels of individuals. Furthermore, the participants were mostly women, and thus gender-based differences could not be mentioned in this research. In future studies, examining these variables through gender-based

differences could contribute a lot to the literature. Despite its limitations, the findings of this study could help mental health professionals to treat mental health problems caused by the COVID-19 pandemic.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Acknowledgements

We would like to thank all of the participants who participated in this study for their support.

Funding Information

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical Consideration

All procedures performed in studies involving human participants were in accordance with 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. Ethics committee approval for the study was received from the ethical committee of Okan University, Turkey, on 10/03/2021. The privacy of all participants was protected, and confidentiality requirements for data collection and analysis were strictly followed. Thus, this research study complies with research publishing ethics. The authors declare no conflicts of interest.

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