

RESEARCH ARTICLE

Intolerance of Uncertainty as a Mediator on the Relationship Between Adult Attachment and PTSD

Şeyda Eruyar¹ | Merve Yılmaz²

¹ Asst. Prof. Dr., Necmettin Erbakan University, Konya /Türkiye
ORCID: [0000-0003-0605-0837](https://orcid.org/0000-0003-0605-0837)
E-Mail: seruyar@erbakan.edu.tr

² Asst. Prof. Dr., Necmettin Erbakan University, Konya / Türkiye
ORCID: [0000-0001-5682-7136](https://orcid.org/0000-0001-5682-7136)
E-Mail: merve.yilmaz@erbakan.edu.tr

Corresponding Author:
Şeyda Eruyar

October 2023

Volume:20

Issue: Special Issue-Human Behavior and Social Institutions
DOI: [10.26466/opusjsr.1350680](https://doi.org/10.26466/opusjsr.1350680)

Citation:
Eruyar, Ş. & Yılmaz, M. (2023). Intolerance of uncertainty as a mediator on the relationship between adult attachment and

ptsd.
OPUS– Journal of Society Research, 20(Special Issue-Human Behavior and Social Institutions), 929-937.

Abstract

Established evidence suggests that intolerance of uncertainty (IU) is associated with both adult attachment and traumatic stress, yet the role of IU as an underlying mechanism between attachment and posttraumatic stress disorder (PTSD) is to be explained. This study aimed to examine the mediating role of IU in the relationship between adult attachment styles and PTSD. A cross-sectional study with 335 university students was conducted in Türkiye. Life Events Checklist for DSM-5 (LEC-5), The Experiences in Close Relationships Revised (ECR-R) Questionnaire, The Intolerance of Uncertainty Scale (IU) and PTSD Checklist for DSM-5 (PCL-5) were used to measure potential traumatic events (PTE), adult attachment styles, intolerance of uncertainty and PTSD, respectively. Results revealed that IU mediated the relationship between anxious and avoidant attachment and PTSD. The results offer a valuable understanding of the intricate interplay between attachment styles and PTSD, shedding light on the underlying factors that contribute to the emergence and persistence of PTSD symptoms. For those who have experienced trauma and show anxious or avoidant attachment patterns, combining strategies to address intolerance of uncertainty with attachment-oriented therapies could have beneficial effects on conditions like PTSD, which are often passed down between generations.

Keywords: Intolerance Of Uncertainty, Anxious Attachment, Avoidant Attachment, Post Traumatic Stress Disorder

Öz

Bulgular belirsizliğe tahammülsüzlüğün (BT) hem yetişkin bağlanması hem de travmatik stres ile ilişkili olduğunu ileri sürmektedir, ancak BT'nin bağlanma ile travma sonrası stres bozukluğu (TSSB) arasındaki temel mekanizma olarak rolü henüz ortaya konulmamıştır. Bu çalışmanın amacı yetişkin bağlanma stilleri ile TSSB arasındaki ilişkide BT'nin aracı etki rolünü incelemektir. Türkiye'de yaşayan 335 üniversite öğrencisinin katıldığı çalışmada kesitsel araştırma yöntemi kullanılmıştır. Potansiyel travmatik olaylar (PTO), yetişkin bağlanma stilleri, belirsizliğe tahammülsüzlük ve TSSB'yi ölçmek üzere sırasıyla Yaşam Olayları Kontrol Listesi (YOKL), Yakın İlişkilerde Yaşantılar Envanteri-II (YİYE-2), Belirsizliğe Tahammülsüzlük Ölçeği (BTÖ) ve DSM-5 TSSB Kontrol Listesi (TSSBBKI) kullanılmıştır. Sonuçlar, BT'nin kaygılı ve kaçınan bağlanma ile TSSB arasındaki ilişkiye aracılık ettiğini ortaya koymuştur. Çalışmanın bulguları bağlanma stilleri ile TSSB arasındaki karmaşık etkileşimi anlamamıza yardımcı olarak, TSSB semptomlarının ortaya çıkmasına ve kalıcı olmasına katkıda bulunan altta yatan faktörlere ışık tutmaktadır. Travmaya maruz kalmış ve kaygılı ya da kaçınmacı bağlanma stillerine sahip kişiler için, belirsizliğe karşı tahammülsüzlüğü azaltmaya yönelik stratejileri bağlanma odaklı terapilerle birleştirmek, nesiller arasında aktarılan TSSB semptomları açısından faydalı etkiler sağlayacaktır.

Anahtar Kelimeler: Belirsizliğe Tahammülsüzlük, Kaygılı Bağlanma, Kaçınan Bağlanma, Travma Sonrası Stres Bozukluğu

Introduction

Traumatic events are common life experiences and their prevalence varies across the world due to differences in countries' income levels, historical, socio-cultural, and economic characteristics (Atwoli et al., 2015). Data obtained from various countries on different continents worldwide indicate that the rate of exposure to traumatic events approaches around 70%, with approximately 30% of these individuals reporting five or more traumatic experiences (Benjet et al., 2015). Similarly, a study conducted with older adults who are likely to be excluded from such surveys also revealed a high rate, approaching 90%, of exposure to one or more potential traumatic events (Ogle et al., 2013). Although a significant portion of individuals exposed to traumatic events do not develop Post-Traumatic Stress Disorder (PTSD), a notable minority, about 5.6%, develop PTSD following traumatic experiences (Koenen et al., 2017).

When faced with traumatic stress, one of the fundamental factors that helps maintain psychological well-being is the support provided by our social bonds (Fredette et al., 2016; Ozer et al., 2003). Attachment theory, one of the foundational theories explaining our connections with others, defines attachment as an innate motivational system that allows us to form meaningful emotional bonds (Bowlby, 1982, as cited in Fraley, 2019). Through the attachment system, when we encounter difficulties, we turn to our attachment figures who can provide us with social support, care, and protection. Situations where attachment figures do not meet these needs, or are not accessible or sufficient, can lead to hyperactivation (increased intense need for closeness and approach behaviours) or deactivation (denial of the need for closeness and avoidance of activation of the attachment system) of the attachment system, and both of these strategies are associated with insecure attachment (Leary & Hoyle, 2009).

Attachment theory provides guidance in understanding interpersonal relationships and their functionality both in childhood and adulthood (Candel et al., 2019; Groh et al., 2014). Attachment styles related to the functionality of

interpersonal relationships are also associated with responses to stress-inducing experiences in adulthood (Pietromonaco et al., 2013; Pietromonaco & Powers, 2015). For instance, a meta-analysis on PTSD and adult attachment (Woodhouse et al., 2015) found that insecure attachment was associated with an increase in traumatic stress symptoms, while secure attachment was related to a decrease in PTSD symptoms. Individuals with secure attachment representations, characterized by accessible, sensitive, and responsive attachment figures, may hold beliefs that the world is a reliable place and that others will support them when needed (Leary & Hoyle, 2009), which can offer insight into the relationship between PTSD and attachment styles.

Individuals with a secure attachment style may perceive the world as secure, and therefore, they may view the outcomes of unexpected negative experiences as manageable. For example, an insecure attachment style has been associated with an increased intolerance of uncertainty towards ambiguous, unclear, and yet-to-occur life events (Zdebik et al., 2018). Intolerance of uncertainty (IU), based on cognitive-behavioural models of anxiety, refers to a tendency to exhibit excessive intolerance towards the possibility of a negative event occurring, regardless of the likelihood of its actual happening (Dugas, Gosselin, & Ladouceur, 2001). Beliefs about IU can be either prospective or inhibitory (Buhr & Dugas, 2002; Carleton, Norton, & Asmundson, 2007). This cognitive mechanism, which is also related to attachment styles, has been found to be highly correlated with worry both in clinical and non-clinical populations (Carleton et al., 2012, p.470; De Bruin et al., 2007).

In recent years, studies have suggested that IU could play a role as a transdiagnostic mechanism in explaining the development of mood and anxiety disorders (Boswell, Thompson-Hollands, Farchione, & Barlow, 2013, p. 635; Rosser, 2018). There is yet scarce evidence on the role of intolerance of uncertainty in the relationship between adult attachment styles and PTSD. The present study aims to understand the mediating role of intolerance of uncertainty in the relationship between adult attachment styles and PTSD. We specifically predicted that:

(1) The mediating role of intolerance of uncertainty in the relationship between anxious attachment and PTSD symptoms will be statistically significant.

(2) The mediating role of intolerance of uncertainty in the relationship between avoidant attachment and PTSD symptoms will be statistically significant.

Methods

Sample

The sample of the study consists of 335 (275 Female, 82.09%) university students between the ages of 18-57 (Mean=22.58, SD=5.10) studying at the universities in (concealed) at the undergraduate, graduate and doctorate levels. Participants were volunteers. The inclusion criterion of the study was determined as being over 18 years old.

Measurements

Life Events Checklist for DSM-5 (LEC-5)

The list, which consists of 17 items and evaluates potential traumatic events (PTE) throughout life, was adapted according to the DSM-5 definition of trauma (LEC-5; Weathers et al., 2013). Accordingly, six different categories of nominal responses are used for each life event (happened to me, witnessed, learned, part of my job, not sure and not suitable for me). LEC-5 does not have a standard scoring system. In this study, participants choosing one or more of the answers 'happened to me', 'witnessed', 'learned' or 'part of my job' were included to create the PTE index indicating trauma exposure (Table 1).

The Experiences in Close Relationships Revised (ECR-R) Questionnaire

The scale developed by Fraley, Waller, and Brennan (2000, p. 360), consisting of 36 items, measures adult attachment styles and includes two subscales assessing anxious and avoidant attachment. Anxious attachment evaluates the extent to which participants feel insecure about the

accessibility of their romantic partners and how they respond to them. On the other hand, avoidant attachment measures the degree to which individuals are uncomfortable with being close to others and relying on them for safety. The scale is scored using an 8-point Likert rating (1: Strongly Disagree, 7: Strongly Agree). Sümer (2006), by examining the factor structure of the scale, identified the anxious ($\alpha = .86$) and avoidant attachment ($\alpha = .90$) subscales in the Turkish sample. In this study, the reliability coefficient was found to be .86 for the anxious attachment subscale and .67 for the avoidant attachment subscale.

The Intolerance of Uncertainty Scale (IU)

This scale consists of a total of 12 items (Carleton et al., 2007). The scale, which includes subscales for prospective anxiety and inhibitory anxiety, used a 5-point Likert-type rating (1: Not suitable for me at all, 5: Completely suitable for me). The items in the prospective anxiety subscale assess the desire for cognitive predictability regarding future events, while the inhibitory anxiety subscale measures avoidance or experiential inhibition in the face of uncertain events. The scale was adapted into Turkish by Sarıçam et al. (2014), and the validity coefficient of the scale for the total score was reported as .88. In this study, the total score of the scale was used, and a reliability coefficient of .91 was reported.

PTSD Checklist for DSM-5 (PCL-5)

This self-report scale, consisting of a total of 20 items, has four subscales that measure the re-experiencing (Criterion B), avoidance (Criterion C), negative alterations in cognitions and mood (Criterion D), and hyperarousal (Criterion E) criteria of PTSD as outlined in DSM-5 (Weathers et al., 2013). It employs a 5-point Likert rating (0: Not at all, 4: Extremely) and provides a total scale score range of 0 to 80. In the Turkish adaptation study, the scale's cutoff score was reported as ≥ 47 (Boysan et al., 2017, p.305). In this study, the Cronbach's alpha value for the total score was found to be .94.

Statistical Analysis

A Kolmogorov-Smirnov test was conducted to assess the normal distribution of the data. The results of the test showed normal distribution for the variables of PTSD, anxious and avoidant attachment, intolerance to uncertainty and PTE ($p > .05$); whilst the normality assumption was not met for age. Descriptive and correlational analyses of the data were conducted using the SPSS 29 program, while the mediation role was assessed using the PROCESS macro (Hayes, 2017). Simple Mediation Analysis was employed to test the mediating role of intolerance of uncertainty between attachment styles and PTSD symptoms. Pearson’s Correlation Analysis was conducted to assess the strength and direction of the relationship between continuous variables, i.e. age, PTE, PTSD, attachment styles and IU. Additionally, an independent samples t-test was run to examine whether there was a significant difference in PTSD, attachment styles, and intolerance of uncertainty between females and males.

Process

In this study, a cross-sectional design, a quantitative research method, was employed. Ethical permission for the study was obtained from the Ethics Committee of the Faculty of Social Sciences at (concealed) (Date: 16/04/2021, Decision Number: 2021/235). Participants consisted of university students majoring in psychology, sociology, business, and economics from two universities. Demographic information (age and gender) and questionnaires consisting of four scales with established Turkish validity and reliability were administered to students via Google Forms. Participation was based on voluntariness, and a Consent Form was presented before the study questionnaires. The completion time for the questionnaires were approximately 15 minutes.

Results

Descriptive Statistics

The frequency and percentages of participants' lifetime traumatic experiences (PTE) are provided in Table 1. According to this, the most commonly reported PTEs were natural disasters, motor vehicle accidents, and fire/explosion, respectively. It is observed that 98% of the participants ($n=330$) reported at least one PTE, and 79% reported four or more PTEs. Analyses were conducted with all participants regardless of their exposure to PTEs.

Table 1. Potential Traumatic Events Index of the Study Participants

PTEs	N	%
Natural Disasters	299	89.3
Fire/explosion	200	59.7
Motor vehicle accident	259	77.3
Other serious accident	155	46.3
Exposure to toxic substance	96	28.7
Physical assault	170	50.7
Assault with weapon	110	32.8
Sexual assault	89	26.6
Unwanted sexual experience	72	21.5
Combat	60	17.9
Captivity	30	9
Life-threatening injury/illness	147	43.9
Severe suffering	92	27.5
Witness violent death	122	36.4
Sudden death of important others	167	49.9
Caused death/injury of other	13	3.9
Other stressful events	197	58.8

An independent samples t-test was conducted to determine whether there was a significant difference in PTSD, attachment styles, and intolerance of uncertainty between females and males. According to the analysis results, the total score of anxious attachment did not significantly differ by gender ($t(333)=0.75, p=.45$); whilst, the total score of avoidant attachment showed a statistically significant difference between females and males ($t(333)=4.41, p<.001$). Females had higher scores in avoidant attachment (Mean=91.04, SD=10.34) compared to males (Mean=84.67, SD=9.13). Additionally, the total score of PTSD also differed by gender ($t(333)=3.80, p<.001$). Females had higher PTSD scores (Mean=48.034, SD=18.07) compared to males (Mean=38.63, SD=17.17). However, the total score of intolerance of uncertainty ($t(333)= -.22, p=.82$) did not significantly differ by gender.

The Mediating Role of Intolerance of Uncertainty

Due to the differentiation of adult attachment styles and PTSD by gender, as well as the statistically significant correlations between age and traumatic events; gender, age, and total traumatic event scores were included as control variables in the simple mediation analysis, as these variables correlated with the scale scores used in the study. Descriptive and correlational analysis results of the employed scales in the study are presented in Table 2.

Table 2. Descriptive and Correlation Analysis Results of the Employed Scales in the Study

N=33	M	SD	1	2	3	4	5	6
5								
1. PCL	46.6	18.2	-	.44**	.26**	.48**	.18**	.23**
Total				*	*	*	*	*
2. Anx A	66.1	18.6	-		.34**	.45**	-	.10*
Total					*	*		.17**
3. Avo A	89.9	10.4	-			.30**	.19**	.09
Total						*	*	
4. IU	25.5	5.97	-				-.12*	.04
Total								
5. Age	22.5	5.10	-					.03
Total								
6. LEC-5	6.80	4.11	-					-
Total								

Note. PCL Total=Total score of PTSD; AnxA=Anxious attachment; AvoA=Avoidant attachment; IU=Total score of Intolerance of Uncertainty; LEC-5 Total=Total score of PTE; *** $p < .001$; ** $p < .005$; * $p < .05$

The first model tested the mediating role of intolerance of uncertainty in the relationship between anxious attachment and PTSD and found that anxious attachment significantly predicted the total score of IU (path a; $B=.25$, $SE=.02$, $p < .001$, 95% CI [.20, .31]), and the total score of IU also significantly predicted the total score of PTSD (path b; $B=.62$, $SE=.08$, $p < .001$, 95% CI [.45, .79]). After controlling for gender and age, anxious attachment had a significant direct effect (path c'; $B=.22$, $SE=.04$, $p < .001$, 95% CI [.13, .32]) and a significant total effect on PTSD (path c; $B=.38$, $SE=.04$, $p < .001$, 95% CI [.29, .48]) on PTSD. As stated in Hypothesis 1, the mediating role of intolerance of uncertainty in the relationship between anxious attachment and PTSD was confirmed (path a1b1;

95% CI [.11, .21]). The model explained 38% of the variance. The model depicting the mediating role of intolerance of uncertainty in the relationship between anxious attachment and PTSD is presented in Figure 1.

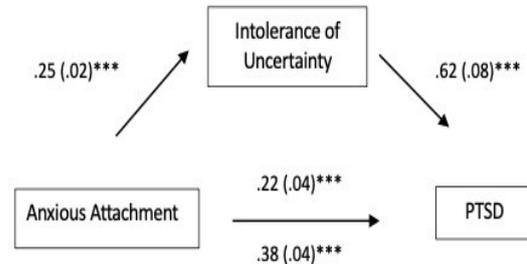


Figure 1. The Mediating Role of Intolerance of Uncertainty in the Relationship Between Anxious Attachment and PTSD

The second model tested the mediating role of intolerance of uncertainty in the relationship between avoidant attachment and PTSD (see Figure 2). The results showed that avoidant attachment significantly predicted the total score of IU (path a; $B=.31$, $SE=.05$, $p < .001$, 95% CI [.20, .42]), and the total score of IU significantly predicted the total score of PTSD (path b; $B=.77$, $SE=.08$, $p < .001$, 95% CI [.61, .93]). After controlling for gender, age, and traumatic events, the direct effect of avoidant attachment on PTSD was not statistically significant (path c'; $B=.08$, $SE=.08$, $p=.34$, 95% CI [-.08, .25]). However, the total effect of avoidant attachment on PTSD was significant (path c; $B=.32$, $SE=.09$, $p < .001$, 95% CI [.13, .50]). Intolerance of uncertainty fully mediated the relationship between avoidant attachment and PTSD, confirming Hypothesis 2 (path a1b1; 95% CI [.15, .33]). The model explained 34% of the variance.

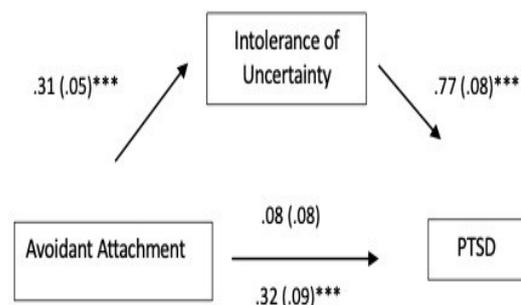


Figure 2. The Mediating Role of Intolerance of Uncertainty in the Relationship Between Avoidant Attachment and PTSD

Discussion

This study aimed to investigate the mediating role of intolerance of uncertainty in the relationship between adult attachment styles and PTSD symptoms. The findings supported the hypotheses of the study: Intolerance of uncertainty mediates the relationship between anxious and avoidant attachment styles, and PTSD symptoms. Both models controlled for demographic variables of age and gender, and the effects of potential traumatic events that could influence the relationship.

Results indicated a significant relationship between anxious and avoidant attachment, and PTSD. This is consistent with findings in the literature regarding insecure attachment styles and PTSD (Mikulincer et al., 2015; Nielsen et al., 2017). Higher anxious and avoidant attachment scores are associated with the development of more severe PTSD symptoms (Schuman et al., 2023). According to attachment theory, attachment relationships established in the early years of life can subsequently affect emotion regulation and interpersonal skills (Barazzone et al., 2018; Benoit et al., 2010). The lower likelihood of individuals with anxious or avoidant attachment seeking and accessing necessary social support to effectively process traumatic experiences (Cloitre et al., 2008) helps us understand the relationship between insecure attachment styles and PTSD symptoms.

Another finding of this study consistent with the evidence is the relationship between intolerance of uncertainty and PTSD (Fetzner, et al., 2013; Oglesby et al., 2017). A study conducted with university students who experienced an armed attack in the United States showed that intolerance of uncertainty predicted post-traumatic symptoms (Oglesby et al., 2016). Individuals who struggle to develop adaptive coping strategies in the face of uncertainty may experience increased distress when confronted with reminders of traumatic events. Particularly, individuals with high inhibitory anxiety, a component of intolerance of uncertainty, may develop a fear of being unable to effectively respond to current threats or cope with the stress

generated by trauma-related triggers (Fetzner et al., 2013).

In this study, both anxious and avoidant attachment styles are shown to be significantly related to intolerance of uncertainty. Similarly, the relevant literature indicates that insecure attachment predicts intolerance of uncertainty (Sternheim et al., 2017). Individuals with anxious and avoidant attachment styles commonly perceive the world as unsafe and dangerous, and they may lack the necessary resources to cope with uncertain events. Especially in anxious attachment characterized by seeking excessive reassurance and approval, individuals may have a high need for predictability and control to minimize the anxiety caused by the threat of abandonment. This situation can pose a risk of developing high levels of intolerance of uncertainty (Wright et al., 2017).

These findings emphasize the existing evidence on the associations between insecure attachment types, and PTSD and intolerance of uncertainty. The current study extended our knowledge by showing the mediating role of intolerance of uncertainty in the relationship between insecure attachment and PTSD symptoms. To our knowledge this finding is a significant contribution to the present studies on explaining how PTSD symptoms might develop in individuals with insecure attachment styles and provide a potential pathway which require further research with more robust methodologies.

The findings of the study should be evaluated in light of several limitations. Firstly, the cross-sectional nature of the data prevents establishing cause-and-effect relationships. Longitudinal studies can provide more reliable information about the temporal sequence and potential bidirectional relationships between attachment styles, intolerance of uncertainty, and PTSD symptoms. Additionally, the use of self-report measures in the study can introduce issues of reliability in the provided responses. The reliability of the findings could be enhanced in future research by incorporating physiological measurements and clinician assessments.

Having patterns of insecure attachment is associated with the effectiveness of psychotherapy targeting trauma symptoms (Stalker et al., 2005). There are also studies that demonstrate the

positive impact of trauma-focused psychotherapy on attachment styles (Rimane et al., 2021). One way to enhance the effectiveness of psychotherapies for individuals with insecure attachment who have developed PTSD could be to incorporate maladaptive cognitive mechanisms related to attachment patterns into treatment goals. The findings of the current research suggest that interventions aimed at increasing tolerance for uncertainty could be important in the psychotherapy of individuals with insecure attachment patterns and a history of traumatic life events. Controlled intervention studies conducted with clinical samples should investigate whether any observed changes in tolerance towards uncertainty have an impact on the effectiveness of trauma-focused treatments in individuals with different attachment styles.

Conclusion

The findings provide valuable insights into the complex interaction between attachment styles and PTSD, aiding our understanding of the underlying mechanisms contributing to the development and maintenance of PTSD symptoms. For individuals with a history of trauma who exhibit anxious and avoidant attachment, developing adaptive strategies to cope with intolerance of uncertainty alongside attachment-focused psychotherapies may yield positive outcomes in psychopathologies with high intergenerational transmission, such as PTSD.

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