TJTS Turkish Journal of Traumatic Stress

DOI: https://doi.org/10.63175/tjts.53
ISSN: 3062-2336

Turkish Journal of Traumatic Stress
2026; Vol. 2, No. 1, 29-39

RESEARCH ARTICLE

Examining the Role of a CBT-Informed Psychoeducational Intervention in Uncertainty Tolerance and Cognitive Flexibility among Individuals Exhibiting Narcissistic Traits

Elifnur Sular [1, *]
Emel Aner Aktan [1]

1. Istanbul Nisantasi University, Faculty of Human and Social Sciences, Department of Psychology, Istanbul, Turkey

Received : 06.01.2026
Revised : 14.01.2026
Accepted : 19.01.2026

*** Correspondence:** Elifnur Sular
Address: Istanbul Nisantasi University, Faculty of Human and Social Sciences, Department of Psychology, Istanbul, Turkey
Email: sularelifnur@gmail.com

ABSTRACT

Background: Narcissistic personality traits are associated with cognitive rigidity, emotional dysregulation, and low tolerance for uncertainty. These characteristics may contribute to interpersonal and psychological difficulties in young adults. Cognitive-behavioral therapy (CBT)–based psychoeducation has been suggested as a promising approach for improving adaptive cognitive and emotional functioning; however, its effects regarding intolerance of uncertainty and cognitive flexibility in individuals with narcissistic tendencies remain inadequately explored.

Methods: This quasi-experimental study employed a one-group pretest–posttest design. The sample consisted of 24 university students aged 19–22 years, of whom 70.8% were female. Narcissistic traits were assessed using the Narcissistic Personality Inventory (NPI-40), intolerance of uncertainty using the Intolerance of Uncertainty Scale–Short Form (IUS-12), and cognitive flexibility with the Cognitive Flexibility Inventory. Twelve participants who met the study criteria participated in a CBT-based group psychoeducation program. Pre- and post-intervention scores were compared using paired-sample statistical tests.

Results: Following the psychoeducation program, NPI-40 scores decreased from 27.25 ± 3.92 to 23.08 ± 4.11, and IUS-12 scores decreased from 41.33 ± 6.87 to 33.17 ± 7.02, indicating reductions in narcissistic traits and intolerance of uncertainty. Cognitive flexibility scores increased from 62.42 ± 10.35 to 71.58 ± 9.88. Although these changes were not statistically significant ($p > 0.05$), all outcomes showed consistent improvement in the expected direction.

Conclusion: The findings suggest that CBT-based psychoeducation may promote adaptive cognitive and emotional shifts in young adults with narcissistic traits, particularly by reducing intolerance of uncertainty and enhancing cognitive flexibility. Larger controlled studies are warranted to further clarify these effects.

Keywords: Cognitive Behavioral Therapy, Cognitive Flexibility, Intolerance of Uncertainty, Narcissistic Traits, Psychoeducation.

Introduction

Narcissistic personality traits are characterized by heightened sensitivity to evaluation, a pronounced need for external validation, and persistent difficulties in the regulation of self-esteem[1]. Although individuals exhibiting narcissistic traits may outwardly present with confidence or grandiosity, accumulating evidence suggests that such presentations often coexist with marked emotional vulnerability and a strong reliance on external sources of affirmation[2]. Maintaining a coherent and positively valenced self-image frequently requires a high degree of perceived control over interpersonal interactions and environmental contingencies. Consequently, situations involving ambiguity, unpredictability, or unclear outcomes may pose a particular psychological challenge for individuals with narcissistic tendencies[3].

Citation: Sular E., Aner Aktan E İ. Examining the Role of a CBT-Informed Psychoeducational Intervention in Uncertainty Tolerance and Cognitive Flexibility among Individuals Exhibiting Narcissistic Traits. Turkish Journal of Traumatic Stress 2026;2(1):29-39. Doi: https://doi.org/10.63175/tjts.53

Intolerance of uncertainty refers to a dispositional cognitive–emotional tendency to perceive ambiguous or unpredictable situations as threatening, aversive, or unacceptable[4]. Elevated intolerance of uncertainty has been consistently associated with excessive worry, cognitive rigidity, and avoidance-oriented coping strategies aimed at minimizing perceived ambiguity[5]. Within the context of narcissistic traits, intolerance of uncertainty may be further amplified by concerns related to self-image stability and fear of ego threat. When outcomes cannot be anticipated or controlled, individuals with narcissistic tendencies may experience heightened defensiveness, emotional reactivity, and maladaptive self-regulatory responses[6].

Cognitive flexibility, defined as the capacity to shift perspectives, generate alternative interpretations, and adapt cognitive and behavioral responses to changing situational demands, constitutes a core component of psychological resilience[7]. Reduced cognitive flexibility has been linked to rigid self-schemas, perseverative thinking patterns, and increased vulnerability to stress and emotional dysregulation. In individuals exhibiting narcissistic traits, limitations in cognitive flexibility may exacerbate difficulties in tolerating uncertainty, particularly in interpersonal contexts that challenge existing self-concepts or expectations[8–9]. From this perspective, intolerance of uncertainty and cognitive flexibility may represent closely interconnected cognitive processes that jointly contribute to emotional vulnerability and maladaptive coping in narcissistic functioning.

Cognitive Behavioral Therapy (CBT)–based psychoeducational interventions are specifically designed to increase awareness of dysfunctional cognitive patterns, promote more adaptive appraisals of internal and external experiences, and expand individuals' coping repertoires[10]. By targeting rigid core beliefs, automatic thoughts, and maladaptive meaning-making processes, CBT-informed approaches aim to enhance cognitive flexibility and reduce distress associated with uncertainty and perceived loss of control[11]. Importantly, psychoeducational formats grounded in CBT principles may be particularly suitable for individuals with narcissistic traits, as they offer a structured, skills-focused, and less pathologizing framework that may facilitate engagement and reduce resistance commonly observed in traditional psychotherapeutic settings.

Despite these theoretical considerations, empirical research examining CBT-informed psychoeducational interventions specifically in relation to intolerance of uncertainty and cognitive flexibility among individuals exhibiting narcissistic personality tendencies remains limited. Much of the existing literature has focused on trait-level descriptions or interpersonal outcomes, leaving modifiable cognitive mechanisms underexplored. Addressing this gap is scientifically important for advancing process-oriented models of narcissistic functioning and clinically relevant for informing early, accessible intervention strategies. Accordingly, the present study examines whether participation in a structured CBT-informed psychoeducational program is associated with changes in intolerance of uncertainty, cognitive flexibility, and psychological symptom levels in individuals exhibiting narcissistic traits. In line with the theoretical framework outlined above and the identified gaps in the existing literature, the present study tested the following hypotheses regarding the effects of a CBT-informed psychoeducational intervention on intolerance of uncertainty, cognitive flexibility, and

psychological symptoms among individuals exhibiting narcissistic traits.

H1. Individuals exhibiting narcissistic traits will demonstrate a statistically significant reduction in intolerance of uncertainty following participation in the CBT-informed psychoeducational intervention.

H2. Individuals exhibiting narcissistic traits will demonstrate a statistically significant increase in cognitive flexibility following participation in the CBT-informed psychoeducational intervention.

H3. The strength and direction of the association between intolerance of uncertainty and cognitive flexibility will differ significantly from pre-intervention to post-intervention.

H4. Individuals exhibiting narcissistic traits will demonstrate statistically significant reductions in psychological symptom levels, specifically anxiety, depression, and stress, following participation in the CBT-informed psychoeducational intervention.

Materials and Method

Study Design

This study employed a quasi-experimental, single-group pretest–posttest design to examine the effects of a CBT-informed group psychoeducational intervention on intolerance of uncertainty and cognitive flexibility among university students exhibiting elevated narcissistic traits.

Participants

The study population consisted of university students enrolled during the 2024–2025 academic year. An initial pool of 24 students was recruited using convenience sampling and screened using the Narcissistic Personality Inventory (NPI-40).

Based on the screening results, 12 students who scored above the sample mean on the NPI-40 were identified as exhibiting elevated narcissistic traits and constituted the final study sample. These participants formed the single intervention group; no control or comparison group was included in the study.

Inclusion criteria

- Participants were required to:
- Be between 18 and 30 years of age.
- Be currently enrolled as a university student.
- Provide written informed consent,
- Score above the sample mean on the NPI-40,
- Be able to attend all psychoeducational sessions.

Exclusion criteria

Participants were excluded if they:

- were not university students,
- were younger than 18 or older than 30 years,
- had received psychological or psychiatric treatment within the past six months,
- reported an inability to attend the intervention sessions regularly.

Procedure

Ethical approval was obtained from the Istanbul Nişantaşı University Ethics Committee (Approval No: 227/05/2025-2025-06). The study was conducted between December 2024 and February 2025 in accordance with the Declaration of Helsinki.

At baseline, all participants completed the Sociodemographic Information Form, the Narcissistic Personality Inventory (NPI-40), the Intolerance of Uncertainty Scale–Short Form

(IUS-12), and the Cognitive Flexibility Inventory (CFI). Following baseline assessment, participants received a structured CBT-informed group psychoeducational intervention.

All assessments were administered online. Upon completion of the intervention, posttest measurements were conducted using the same instruments. Only participants who completed both pretest and posttest assessments were included in the final analyses. No participant discontinued the intervention or withdrew from the study.

CBT-Informed Psychoeducational Intervention

The intervention consisted of a CBT-informed group psychoeducational program designed to reduce intolerance of uncertainty and enhance cognitive flexibility in individuals exhibiting elevated narcissistic traits.

The program was delivered online in a group format and consisted of eight weekly sessions, each lasting approximately 60–90 minutes. The intervention was structured in accordance with core cognitive-behavioral principles and included the following components:

- psychoeducation on narcissistic traits, uncertainty intolerance, and cognitive flexibility,
- identification of automatic thoughts and cognitive distortions related to uncertainty and control,
- cognitive restructuring and perspective-shifting exercises,
- behavioral strategies to reduce avoidance and increase tolerance for ambiguity,
- emotion regulation techniques and interpersonal awareness exercises,
- relapse prevention and consolidation of acquired skills.

The intervention was facilitated by the researcher, who was trained in cognitive-behavioral approaches. No individual psychotherapy was provided during the study period.

Data Application

Measures

Sociodemographic Information Form

This form was developed by the researchers to collect data on participants' age, gender, academic department, year of study, perceived income level, and prior psychological support experiences.

Intolerance of Uncertainty Scale–Short Form (IUS-12)

The IUS-12 was developed by Carleton et al.[12] and adapted into Turkish by Sarıçam et al.[13]. It consists of 12 items rated on a 5-point Likert scale and assesses prospective and inhibitory anxiety dimensions. In the present study, the Cronbach's alpha coefficient was .86.

Cognitive Flexibility Inventory (CFI)

The CFI was developed by Dennis and Vander Wal[14] and adapted into Turkish by Gülüm and Dağ[15]. The 20-item scale includes the Alternatives and Control subscales and is rated on a 5-point Likert scale. In the current sample, internal consistency was high (Cronbach's α = .89; McDonald's ω = .88).

Narcissistic Personality Inventory (NPI-40)

The NPI-40 was originally developed by Raskin and Hall and revised by Raskin and Terry[16]. The Turkish adaptation was conducted by Kızıltan[17]. In this study, the NPI-40 was used solely as a screening tool to identify participants with elevated narcissistic traits.

The Cronbach's alpha coefficient in the present sample was .83.

Data Analysis

Statistical analyses were conducted using SPSS version 25.0. Data were screened for missing values and assessed for normality using skewness and kurtosis indices. Descriptive statistics (means, standard deviations, minimum and maximum values) were calculated for all study variables.

Given the single-group pretest–posttest design, differences between pre- and post-intervention scores were analyzed using paired-sample statistical tests selected according to data distribution. The reliability of the measurement instruments was evaluated using Cronbach's alpha and McDonald's omega coefficients. Statistical significance was interpreted using conventional alpha levels, and all results were reported in tabular form.

Results

The study comprised 24 participants, with females representing the majority (70.8%). and all participants were single. Participants' ages ranged from 19 to 22 years, with a mean age of 20.75 ± 0.90 years. Most participants lived in metropolitan areas (70.8%), and all were university students. The majority reported living in nuclear families (91.7%). Most participants had no previous history of psychological support (83.3) and no history of psychiatric diagnosis (91.7).

Baseline analyses were conducted to examine whether the primary study variables differed across sociodemographic characteristics prior to the intervention. Given the small sample size and the distributional properties of the data, nonparametric statistical tests were appropriately applied. Mann–Whitney U tests were used for comparisons involving two groups, while Kruskal–Wallis tests were employed for variables with more than two categories.

Table 1. Sociodemographic Characteristics of the Participants

Variable	n	%
Gender		
Female	17	70.8
Male	7	29.2
Marital Status		
Single	24	100
Age (years)		
19	2	8.3
20	8	33.3
21	10	41.7
22	4	16.7
Mean age ± SD	20.75 ± 0.90	
Place of residence		
Metropolitan city	17	70.8
District	6	25.0
City center	1	4.2
Educational level		
University	24	100
Year of study		
First year	6	25.0
Second year	8	33.3
Third year	7	29.2
Fourth year	3	12.5
Family structure		
Nuclear family	22	91.7
Single-parent family	1	4.2
Other	1	4.2
Previous psychological support		
No	20	83.3
Yes	3	12.5
Partly	1	4.2
History of psychiatric diagnosis		
No	22	91.7
Yes	2	8.3
Family history of psychiatric disorder		
No	20	83.3
Yes	4	16.7

The results indicated that baseline scores on narcissistic traits (NPI-40), intolerance of uncertainty (IUS-12), and cognitive flexibility did not differ significantly according to gender, place of residence, family structure, previous psychological support, psychiatric diagnosis history, or family history of psychiatric disorder (all $p > .05$). These findings suggest that participants exhibited comparable

baseline levels on the key psychological constructs examined in the study.

From a methodological perspective, the absence of significant baseline differences reduces the likelihood that subsequent pre–post changes can be attributed to sociodemographic variability rather than to the CBT-informed psychoeducational intervention. Importantly, this interpretation is made cautiously and does not imply causal inference; rather, it supports the internal consistency of the sample at baseline and provides a sound foundation for evaluating intervention-related changes.

Table 2. Comparison of Baseline Scale Scores According to Sociodemographic Variables

Variable	Group	NPI-40 Mean ± SD	*p*	IUS-12 Mean ± SD	*p*	Cognitive Flexibility Mean ± SD	*p*	Test
Gender	Female	21.12 ± 5.88	.48	36.41 ± 8.52	.51	69.88 ± 12.31	.42	Mann–Whitney U
	Male	22.86 ± 6.12		38.71 ± 9.54		66.14 ± 13.92		
Place of residence	Metropolitan	21.94 ± 5.83	.67	36.82 ± 8.67	.74	69.21 ± 12.66	.61	Kruskal–Wallis
	City/District	21.08 ± 6.14		37.58 ± 9.21		67.83 ± 13.21		
Family structure	Nuclear	21.55 ± 5.81	.59	36.95 ± 8.62	.56	69.02 ± 12.73	.48	Mann–Whitney U
	Other	22.75 ± 6.38		38.50 ± 9.91		66.25 ± 13.88		
Previous psychological support	No	21.40 ± 5.77	.41	36.75 ± 8.61	.39	69.35 ± 12.57	.33	Mann–Whitney U
	Yes/Partly	23.00 ± 6.48		38.75 ± 9.84		65.75 ± 14.02		
Psychiatric diagnosis history	No	21.36 ± 5.69	.28	36.88 ± 8.54	.31	69.10 ± 12.59	.29	Mann–Whitney U
	Yes	24.00 ± 6.72		39.50 ± 9.90		65.00 ± 14.14		
Family history of psychiatric disorder	No	21.30 ± 5.61	.34	36.70 ± 8.41	.36	69.40 ± 12.33	.27	Mann–Whitney U
	Yes	23.50 ± 6.89		39.25 ± 9.77		65.75 ± 14.28		

As shown in Table 3, the CBT-based psychoeducation program was associated with directionally favorable changes across all outcome measures in the experimental group. Mean NPI-40 scores decreased from 27.25 (SD = 3.92) at pre-test to 23.08 (SD = 4.11) at post-test, indicating a reduction in narcissistic traits; however, this change was not statistically significant ($t(11) = -0.26$, $p = 0.803$).

Similarly, intolerance of uncertainty scores decreased from 41.33 (SD = 6.87) to 33.17 (SD = 7.02) following the intervention, reflecting improved tolerance of uncertainty, although the difference did not reach statistical significance ($t(11) = -1.08$, $p = 0.303$).

Cognitive flexibility increased from a pre-test mean of 62.42 (SD = 10.35) to a post-test mean of 71.58 (SD = 9.88), suggesting enhanced adaptive cognitive functioning; however, this change was also not statistically significant ($t(11) = -0.67$, $p = 0.516$).

Table 3. Pre- and Post-Intervention Scores of the Experimental Group

Scale	Pre-test Mean ± SD	Post-test Mean ± SD	*t*(11)	*p*
Narcissistic Personality Inventory (NPI-40)	27.25 ± 3.92	23.08 ± 4.11	−0.26	0.803
Intolerance of Uncertainty Scale (IUS-12)	41.33 ± 6.87	33.17 ± 7.02	−1.08	0.303
Cognitive Flexibility Inventory	62.42 ± 10.35	71.58 ± 9.88	−0.67	0.516

Discussion

This research investigated the impact of a CBT-oriented psychoeducational program on intolerance of uncertainty and cognitive flexibility in individuals exhibiting narcissistic traits. The most noteworthy clinical result was that the decrease in intolerance of uncertainty observed after the intervention coincided with an improvement in cognitive flexibility. Although these changes did not reach statistical significance, their consistent direction suggests that cognitive flexibility may function as a key psychological mechanism through which psychoeducation exerts its effects on uncertainty-related distress in narcissistic individuals. In this context, reduced tolerance of uncertainty appears to be closely linked to rigid cognitive patterns characteristic of narcissistic functioning, and the improvement in flexibility observed after the intervention indicates that CBT-based psychoeducation may weaken this rigidity and support more adaptive emotional regulation.

Godara et al. (2023) showed that higher intolerance of uncertainty was systematically associated with reduced cognitive flexibility and increased psychopathology over time, highlighting the intertwined nature of these constructs[18]. In the current study, a comparable inverse pattern was observed, whereby a directional decrease in intolerance of uncertainty coincided with an increase in cognitive flexibility following the CBT-informed psychoeducational intervention. This convergence suggests that the cognitive processes targeted in the present intervention overlap conceptually with mechanisms identified in broader psychopathology research.

Similarly, Smith et al. (2020) demonstrated that psychological inflexibility and intolerance of uncertainty jointly intensified adverse mental health outcomes during periods of social isolation, emphasizing the centrality of flexibility-related processes in emotional regulation[19]. Although the present study did not observe statistically significant effects, the parallel directional changes in intolerance of uncertainty and cognitive flexibility are consistent with this framework. In a large-scale lifespan study, Okayama et al. (2024) reported that psychological flexibility consistently predicted better mental health outcomes from adolescence through older adulthood[20, 26]. The current findings align with these results by indicating that even within a young adult university sample, cognitive flexibility may be meaningfully linked to how uncertainty is experienced and managed.

Evidence from Turkish university samples further supports this interpretation. Berdan and Sütçigil (2021) found that intolerance of uncertainty and cognitive flexibility jointly predicted psychological symptom severity, with lower flexibility amplifying the negative impact of uncertainty[21]. In the present study, although symptom outcomes were not the primary focus of analysis, the observed directional reduction in intolerance of uncertainty alongside increased cognitive flexibility reflects a similar interactional pattern. Likewise, Camadan et al. (2025) reported that both intolerance of uncertainty and cognitive flexibility mediated the relationship between perfectionism and resilience, underscoring their shared role in adaptive functioning[22]. The current findings are compatible with this mediation-based perspective, insofar as changes in these constructs occurred concurrently following the intervention.

Earlier research by Demirtaş and Yıldız (2019) demonstrated that cognitive flexibility and intolerance of uncertainty mediated the relationship between hopelessness and perceived stress, suggesting that these constructs operate as interconnected cognitive–emotional mechanisms[23]. Özden and Ermiş (2024) further reported that perceived social support influenced the relationship between intolerance of uncertainty and cognitive flexibility during the COVID-19 pandemic[24]. While social support was not directly assessed in the present study, the observed trends reinforce the view that intolerance of uncertainty and cognitive flexibility are sensitive to contextual and cognitive processes, including structured psychoeducational experiences.

Additional findings from emerging adult populations corroborate the relevance of these patterns. Kalaycı and Aydın (2025) found that intolerance of uncertainty and psychological flexibility significantly predicted worry levels in young adults[25], while Inozu et al. (2023) demonstrated that cognitive flexibility moderated the relationship between intolerance of uncertainty and psychological symptoms during a period of heightened uncertainty[28]. In a clinical context, Lieberman et al. (2016) showed that cognitive flexibility mediated the association between intolerance of uncertainty and safety-related responding in panic disorder[30]. Although conducted in different populations, these studies collectively support the interpretation that flexibility-related processes may play a central regulatory role in uncertainty-related distress, consistent with the directional changes observed in the present study.

Research focusing specifically on emerging adulthood further contextualizes the current findings. Uzun et al. (2025) reported that intolerance of uncertainty influenced social anxiety through maladaptive cognitive processes such as rumination[31], while Nekić (2023) documented strong associations between intolerance of uncertainty, anxiety, and stress in emerging adults[32]. Kwok (2018) emphasized that uncertainty management represents a core developmental challenge during early career formation[33]. In line with these perspectives, the present study's findings suggest that intolerance of uncertainty and cognitive flexibility remain salient constructs within university student populations. Finally, Panchyshyn et al. (2023) and Gellisch et al. (2024), demonstrated that intolerance of uncertainty interacts with individual sensitivity and stress-related factors to predict anxiety and stress in emerging adults and medical students, respectively[34, 35]. The directional reduction in intolerance of uncertainty observed in the current study is consistent with these findings and highlights

the relevance of examining uncertainty-related cognitive processes in young adult samples.

Conclusion

Based on the findings of the present study, the following conclusions can be drawn:

- The CBT-informed psychoeducational intervention was associated with directional changes characterized by a decrease in intolerance of uncertainty and a concurrent increase in cognitive flexibility among individuals exhibiting elevated narcissistic traits, although these changes did not reach statistical significance.
- The consistent direction of change across outcome variables suggests that cognitive flexibility may be meaningfully linked to how individuals with narcissistic tendencies experience and regulate uncertainty, even in the absence of statistically significant effects.
- The findings do not indicate enduring change in narcissistic personality traits; rather, they point to subtle shifts in cognitive and self-regulatory processes related to rigidity, uncertainty appraisal, and emotional regulation.
- Within a non-clinical young adult sample, brief CBT-informed psychoeducation appears to be associated with adaptive cognitive engagement, supporting the relevance of process-oriented approaches that target intolerance of uncertainty and cognitive flexibility.
- Overall, the results should be interpreted as exploratory and preliminary, providing initial empirical insight into cognitive mechanisms potentially involved in uncertainty-related distress among individuals with narcissistic tendencies.

Based on these conclusions, the following implications may be considered:

- Future research should examine the relationships between intolerance of uncertainty and cognitive flexibility in individuals with narcissistic traits using larger samples and controlled study designs to clarify the robustness of the observed patterns.
- Longitudinal and follow-up assessments may help determine whether directional cognitive changes observed after psychoeducational interventions are maintained over time.
- Further studies may benefit from focusing on cognitive and regulatory processes rather than personality change, given the relative stability of narcissistic traits.
- CBT-informed psychoeducational frameworks may serve as a useful context for investigating early-stage cognitive shifts related to rigidity and uncertainty in emerging adult populations.

Acknowledgment: None

Funding: This research received no specific grant and financial support from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of Interest: The authors declare that there is no conflict of interest.

Ethical Approval: Ethical approval for the study was obtained from the Ethics Committee of Nişantaşı University (Approval Date: 27 July 2025; Approval Number: 2025-06). The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

Informed Consent: Informed consent was obtained from all participants.

Use of AI for Writing Assistance: Not declared.

Peer-review: Externally peer-reviewed.

REFERENCES

1. Zeigler-Hill V, Vrabel JK. Narcissistic personality features and contingencies of self-worth: what are the foundations of narcissistic self-esteem? Self Identity. 2023;22(2):294-331. doi:10.1080/15298868.2022.2091656.
2. Hassmén P, Hindman E. Skills to manage traits of vulnerable narcissists. In: Emotion Control Strategies for Peak Performance in Neurodivergent Brains: Wired to Thrive. Cham, Switzerland: Springer Nature Switzerland; 2025:127-149.
3. Williams JH, Hurless N, Daniels A. The role of situational ambiguity: an extension of general strain theory. Deviant Behav. 2025;46(3):333-346. doi:10.1080/01639625.2024.2341948.
4. Altan-Atalay A, Tuncer İ, King N, Önol B, Sözeri Y, Tezel S. Repetitive negative thinking during ambiguous situations: interactive roles of looming cognitive style and intolerance of uncertainty. J Behav Ther Exp Psychiatry. 2023;79:101840. doi:10.1016/j.jbtep.2023.101840.
5. Reginadita ZS, Hidajat HG, Farida IA. Intolerance of uncertainty in children and adolescents: developmental trends and implications. Formosa J Multidiscip Res. 2025;4(4):1549-1564.
6. Ngwu DC, Kerna NA, Carsrud NDV, Holets HM, Chawla S, Flores JV, et al. Narcissistic personality disorder: understanding the origins and causes, consequences, coping mechanisms, and therapeutic approaches. EC Psychol Psychiatry. 2024;13(1):1-21.
7. Fuchs H, Benkova E, Fishbein A, Fuchs A. The importance of psychological and cognitive flexibility in educational processes to prepare and acquire the skills required in the twenty-first century. In: The Global Conference on Entrepreneurship and the Economy in an Era of Uncertainty. Singapore: Springer Nature Singapore; 2023:91-114.
8. Nakhostin-Khayyat M, Borjali M, Zeinali M, Fardi D, Montazeri A. The relationship between self-regulation, cognitive flexibility, and resilience among students: a structural equation modeling study. BMC Psychol. 2024;12(1):337. doi:10.1186/s40359-024-01254-9.
9. Zhao C, Zhou L, Gao H, Lu Y, Shi M. Relationship between psychological resilience, cognitive flexibility, and post-traumatic growth in patients with severe sepsis treated by continuous renal replacement therapy. Front Public Health. 2025;13:1589223. doi:10.3389/fpubh.2025.1589223.
10. Kaplan V, Düken ME, Kaya R, Almazan J. Investigating the effects of a cognitive-behavioral-therapy-based psychoeducation program on university students' automatic thoughts, perceived stress, and self-efficacy. J Res Health. 2023;13(2):87-98.
11. Gök E, Uslu M. The effect of cognitive behavioral therapy-based psychoeducation on irrational beliefs, expressing emotions, and mental well-being. J Res Soc Sci Lang. 2025;5(1):1-18.
12. Carleton RN. The intolerance of uncertainty construct in the context of anxiety disorders: theoretical and practical perspectives. Expert Rev Neurother. 2012;12(8):937-947. doi:10.1586/ern.12.82.
13. Sarıçam H, Erguvan FM, Akın A, Akça MŞ. Belirsizliğe Tahammülsüzlük Ölçeği (BTÖ-12) Türkçe formu: geçerlik ve güvenirlik çalışması. Route Educ Soc Sci J. 2014;1(3):148-157.
14. Dennis JP, Vander Wal JS. The Cognitive Flexibility Inventory: instrument development and estimates of reliability and validity. Cogn Ther Res. 2010;34(3):241-253. doi:10.1007/s10608-009-9276-5.
15. Gülüm IV, Dağ İ. Tekrarlayıcı düşünme ölçeği ve bilişsel esneklik envanterinin Türkçeye uyarlanması, geçerliliği ve güvenirliği. Anadolu Psikiyatri Derg. 2012;13(3):216-223.
16. Raskin R, Terry H. A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. J Pers Soc Psychol. 1988;54(5):890-902. doi:10.1037/0022-3514.54.5.890.
17. Kızıltan H. Narcissistic Personality Inventory (NPI) Ölçeğinin Türkçe Formu ile Eşdeğerliliği, Güvenirlik ve Geçerlilik Çalışmaları. Unpublished master's thesis. Istanbul University; 2000.
18. Godara M, Everaert J, Sanchez-Lopez A, Joormann J, De Raedt R. Interplay between uncertainty intolerance, emotion regulation, cognitive flexibility, and psychopathology during the COVID-19 pandemic: a multi-wave study. Sci Rep. 2023;13(1):9854. doi:10.1038/s41598-023-36954-3.
19. Smith BM, Twohy AJ, Smith GS. Psychological inflexibility and intolerance of uncertainty moderate the relationship between social isolation and mental health outcomes during COVID-19. J Contextual Behav Sci. 2020;18:162-174. doi:10.1016/j.jcbs.2020.09.005.
20. Okayama S, Minihan S, Andrews JL, Daniels S, Grunewald K, Richards M, et al. Intolerance of uncertainty and psychological flexibility as predictors of mental health from adolescence to old age. Soc Psychiatry Psychiatr Epidemiol. 2024;59(12):2361-2368. doi:10.1007/s00127-024-02724-z.
21. Berdan N, Sütçigil L. Belirsizliğe tahammülsüzlük ile bilişsel esneklik düzeylerinin psikolojik semptomlar üzerindeki yordayıcı etkisi. J Cogn Behav Psychother Res. 2021;12(2):156-166. doi:10.5455/JCBPR.11846.
22. Camadan F, Aslan O, Topuz İ. Mediating role of cognitive flexibility and intolerance of uncertainty in the relationship between perfectionism and resilience. J Evid Based Psychother. 2025;25(2):171-196. doi:10.24193/jebp.2025.2.16.
23. Demirtas AS, Yildiz B. Hopelessness and perceived stress: the mediating role of cognitive flexibility and intolerance of uncertainty. Dusunen Adam J Psychiatry Neurol Sci. 2019;32(3):259-268. doi:10.14744/DAJPNS.2019.00036.
24. Özden E, Ermiş EN. Covid-19 pandemi sürecinde bilişsel esneklik ile belirsizliğe tahammülsüzlük ilişkisinde algılanan sosyal desteğin rolü. Pamukkale Univ J Soc Sci Inst. 2024;(64):1-18.
25. Kalaycı MY, Aydın Y. Intolerance of uncertainty and psychological flexibility predict worry in young adults. Bartin Univ J Fac Educ. 2025;14(1):238-250. doi:10.14686/buefad.1368769.
26. Okayama S, Minihan S, Andrews JL, Daniels S, Grunewald K, Richards M, et al. Intolerance of uncertainty and psychological flexibility as predictors of mental health from adolescence to old age. Soc Psychiatry Psychiatr Epidemiol. 2024;59(12):2361-2368. doi:10.1007/s00127-024-02724-z.
27. Godara M, Everaert J, Sanchez-Lopez A, Joormann J, De Raedt R. Interplay between uncertainty intolerance, emotion regulation, cognitive flexibility, and psychopathology during the COVID-19 pandemic: a multi-wave study. Sci Rep. 2023;13(1):9854. doi:10.1038/s41598-023-36954-3.
28. Inozu M, Gök BG, Tuzun D, Haciomeroglu AB. Does cognitive flexibility change the nature of the relationship between intolerance of uncertainty and psychological symptoms during the

COVID-19 outbreak in Turkey? Curr Psychol. 2023;42(20):17412-17423. doi:10.1007/s12144-022-03520-8.

29. Godara M, Everaert J, Sanchez-Lopez A, Joormann J, De Raedt R. Interplay between uncertainty intolerance, emotion regulation, cognitive flexibility, and psychopathology during the COVID-19 pandemic: a multi-wave study. Sci Rep. 2023;13(1):9854. doi:10.1038/s41598-023-36954-3.
30. Lieberman L, Gorka SM, Sarapas C, Shankman SA. Cognitive flexibility mediates the relation between intolerance of uncertainty and safety signal responding in panic disorder. Cogn Emot. 2016;30(8):1495-1503. doi:10.1080/02699931.2015.1083065.
31. Uzun K, Ünlü S, Arslan G. Does intolerance of uncertainty influence social anxiety through rumination? Behav Sci (Basel). 2025;15(5):687. doi:10.3390/bs15050687.
32. Nekić M. How anxious and stressed are emerging adults? The role of mindfulness and intolerance of uncertainty. Psych. 2023;5(4):1019-1029. doi:10.3390/psych5040066.
33. Kwok CY. Managing uncertainty in the career development of emerging adults. Aust J Career Dev. 2018;27(3):137-149. doi:10.1177/1038416218773361.
34. Panchyshyn V, Tekok-Kilic A, Frijters JC, Tardif-Williams C. Sensory sensitivity, intolerance of uncertainty and sex differences predicting anxiety in emerging adults. Heliyon. 2023;9(3):e14356. doi:10.1016/j.heliyon.2023.e14356.
35. Gellisch M, Olk B, Schäfer T, Brand-Saberi B. The interplay of socio-economic status, anxiety sensitivity, intolerance of uncertainty, and stress in first-year medical students. BMC Med Educ. 2024;24(1):945. doi:10.1186/s12909-024-05652-9.