KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 02 January 2025
Revised 21 August 2025
Accepted 25 August 2025
Initial Published 26 August 2025
Final Publication 10 August 2025

Journal of Adolescent and Youth Psychological Studies

Volume 6, Issue 9, pp 1-10

E-ISSN: 2981-2526

Childhood Adversity and Health Anxiety: The Mediating Role of Intolerance of Uncertainty

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A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Lee, S., & Chen, M. (2025). Childhood Adversity and Health Anxiety: The Mediating Role of Intolerance of Uncertainty. *Journal of Adolescent and Youth Psychological Studies, 6*(9), 1-10.
http://dx.doi.org/10.61838/kman.jayps.4504

A B S T R A C T

Objective: This study aimed to examine the relationship between childhood adversity and health anxiety in Taiwanese adolescents and young adults, with intolerance of uncertainty as a mediating variable.

Methods and Materials: A descriptive correlational design was employed with a sample of 412 participants recruited from educational and community centers in Taiwan. The sample size was determined using the Morgan and Krejcie table to ensure adequacy for multivariate analysis. Data were collected using standardized self-report measures: the Childhood Trauma Questionnaire (CTQ) for childhood adversity, the Intolerance of Uncertainty Scale (IUS) for cognitive vulnerability, and the Health Anxiety Inventory (HAI) for health anxiety. Data analysis was conducted using SPSS-27 and AMOS-21. Pearson correlation coefficients were computed to assess bivariate associations, and structural equation modeling (SEM) was applied to evaluate the mediating role of intolerance of uncertainty. Model fit was assessed using χ^2/df, CFI, TLI, and RMSEA indices.

Findings: Pearson correlations revealed significant positive associations between childhood adversity and health anxiety ($r = .42$, $p < .001$), as well as between childhood adversity and intolerance of uncertainty ($r = .47$, $p < .001$). Intolerance of uncertainty was also significantly associated with health anxiety ($r = .51$, $p < .001$). SEM results confirmed that intolerance of uncertainty partially mediated the relationship between childhood adversity and health anxiety. The structural model demonstrated acceptable fit (χ^2/df = 2.11, CFI = .95, TLI = .94, RMSEA = .052). The indirect effect of childhood adversity on health anxiety through intolerance of uncertainty was statistically significant ($\beta = .21$, $p < .01$).

Conclusion: The findings highlight intolerance of uncertainty as a key mechanism linking childhood adversity to health anxiety, underscoring the importance of addressing cognitive vulnerabilities in prevention and intervention strategies for at-risk youth.

Keywords: *childhood adversity; health anxiety; intolerance of uncertainty.*

1. Introduction

Childhood adversity is increasingly recognized as a significant determinant of later psychological functioning, with robust evidence linking early negative experiences to a wide range of mental health outcomes, including health anxiety. The concept of childhood adversity encompasses a spectrum of experiences such as abuse, neglect, household dysfunction, and exposure to violence, all of which can exert enduring impacts on psychological and emotional development. A growing body of literature has confirmed that exposure to childhood adversity significantly predicts higher levels of anxiety and depressive symptoms across the lifespan. For example, Fazal and colleagues demonstrated that young adults in Pakistan with elevated adversity scores reported significantly poorer mental health, including anxiety symptoms (Fazal et al., 2022). Similarly, Berk-Clark and colleagues identified internalizing disorders as key mediators linking adverse childhood experiences (ACEs) to perceived health vulnerabilities, such as medication intolerance (Berk-Clark et al., 2023). This suggests that adversity not only directly increases risk for psychopathology but also shapes maladaptive health beliefs that may evolve into health anxiety.

The link between ACEs and anxiety has been confirmed in both clinical and non-clinical populations. Gehrt et al. reported that patients with severe health anxiety did not necessarily report higher frequencies of ACEs compared to individuals with obsessive–compulsive disorder, though both groups showed elevated histories of adversity relative to general populations (Gehrt et al., 2022). These findings underscore the heterogeneity in how adversity manifests across disorders, while still supporting the notion that adversity contributes significantly to risk. Other studies suggest that childhood adversity influences anxiety severity and chronicity by delaying recovery in psychotherapy, as evidenced in Nowak et al.'s longitudinal investigations (Nowak et al., 2023, 2024). Patients with greater adversity histories experienced slower symptom improvement, emphasizing the need to consider ACEs in treatment planning.

Evidence also supports the predictive validity of childhood adversity for broader psychiatric outcomes. Morales-Muñoz et al. demonstrated that early anxiety and depression, often rooted in adversity, were associated with multiple negative outcomes in young adulthood, including academic underachievement and reduced psychosocial functioning (Morales-Muñoz et al., 2023). Similarly, Xu showed that adversity interacts with maladaptive cognitive processes such as rumination and sleep disturbance to longitudinally predict both depression and anxiety (Xu, 2023). These findings reinforce the idea that adversity does not operate in isolation but combines with cognitive vulnerabilities to shape risk trajectories.

Within this context, intolerance of uncertainty (IU) emerges as a promising mediating mechanism linking adversity to health anxiety. IU refers to a dispositional incapacity to endure the aversive response triggered by ambiguous or unpredictable situations. Numerous studies have identified IU as a central cognitive factor in generalized anxiety disorder and health anxiety, where excessive concern over bodily symptoms is exacerbated by an inability to tolerate not knowing whether those symptoms signify illness. Oltean and Șoflău provided compelling evidence that adversity predicted maladaptive reward processing, which in turn shaped health outcomes during the COVID-19 outbreak (Oltean & Șoflău, 2022). This pathway resonates with IU, as both involve dysregulated responses to ambiguity and impaired adaptive learning in uncertain environments.

The broader literature on ACEs consistently demonstrates their influence on both emotional regulation and uncertainty tolerance. Feiler et al. documented how adverse and benevolent childhood experiences jointly predicted psychopathology symptoms through emotion dysregulation (Feiler et al., 2023). Likewise, McCullen and colleagues found that adversity in American Indian adults predicted increased psychological stress during COVID-19, particularly when maladaptive emotion regulation strategies were used (McCullen et al., 2023). Given that IU is closely linked to deficits in emotion regulation, these studies indirectly support its role as a mediator between adversity and health anxiety.

Cross-cultural findings further highlight the global relevance of this issue. In Indonesia, Azaria and Syakarofath identified significant associations between ACEs and social anxiety in adolescents (Azaria & Syakarofath, 2024). In Oman, Sawafi and colleagues confirmed the prevalence of ACEs and their associations with mental health outcomes in a large community-based study (Sawafi et al., 2024). In China, Li et al. demonstrated that distinct patterns of ACEs were associated with heightened anxiety and depressive symptoms among college students (Li et al., 2023). Similarly, Lian and colleagues confirmed links between adversity and poor mental health in older adults in both Australia and China (Lian et al., 2022; Lian et al., 2023).

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These findings suggest that the adversity–anxiety link is not bound by culture but represents a universal psychological process, although the specific mediators such as IU may vary across populations.

Methodological advances have also contributed to this field. Jacobsen et al. developed and validated the Weighted Index for Childhood Adverse Conditions (WICAC), which allows for more nuanced measurement of adversity severity and impact (Jacobsen et al., 2022). Such tools enhance the precision of studies examining complex pathways, including IU as a mediator. Lei et al. expanded this perspective by identifying psychosocial pathways through which adversity shapes adult health outcomes, including social stress and relationship dysfunction (Lei et al., 2022). These pathways align closely with IU, as unpredictable social environments may reinforce maladaptive intolerance toward uncertainty.

Social factors also play a critical buffering role. Buchanan et al. demonstrated that social support mitigates the long-term burden of cumulative childhood adversity on internalizing disorders in adulthood (Buchanan et al., 2024). Similarly, Patten emphasized that adversity increases vulnerability to mood and anxiety disorders during the COVID-19 pandemic, though contextual resources may shape resilience (Patten, 2024). Cabacungan and colleagues further showed how college students thrived during lockdown by mobilizing adaptive coping resources, suggesting that protective factors can offset adversity's impact (Cabacungan et al., 2022). These findings underscore that while adversity heightens vulnerability, cognitive and social mechanisms jointly determine outcomes such as health anxiety.

Health anxiety itself represents a particularly relevant endpoint in this research context. Defined as excessive worry about one's health and misinterpretation of bodily symptoms as signs of serious illness, health anxiety shares etiological pathways with generalized anxiety but has unique cognitive profiles characterized by IU. Mirhosseini et al. highlighted how adverse childhood experiences interacted with occupational stress to predict health outcomes in healthcare workers during the COVID-19 pandemic (Mirhosseini et al., 2023). These findings exemplify how early adversity interacts with ongoing uncertainty, producing heightened vulnerability to health-related concerns.

In addition, evidence indicates that adversity's effects on anxiety may extend across the lifespan. Ahn et al. reported that lifetime adversity prospectively predicted depression, anxiety, and cognitive impairment in nationally representative samples of older adults (Ahn et al., 2023, 2024). This demonstrates the persistent and cumulative effects of adversity well beyond childhood, further highlighting the importance of identifying mediators such as IU.

Collectively, these studies provide compelling evidence that childhood adversity is a critical predictor of later health anxiety, with IU serving as a key explanatory mechanism. Adversity fosters maladaptive beliefs about unpredictability, erodes emotional regulation capacities, and interacts with contextual stressors to exacerbate health-related fears. While protective factors such as social support may buffer some effects, the persistence of adversity's influence across cultures and lifespans underscores the necessity of targeting IU in both preventive and clinical interventions.

The present study aims to examine the relationship between childhood adversity and health anxiety in Taiwanese adolescents and young adults, with a specific focus on the mediating role of intolerance of uncertainty.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a descriptive correlational design to examine the relationship between childhood adversity, intolerance of uncertainty, and health anxiety among adolescents and young adults. The participants consisted of 412 individuals recruited from various educational and community centers in Taiwan. The sample size was determined based on the Morgan and Krejcie (1970) sample size determination table, ensuring adequacy for correlation and structural equation modeling analyses. Participants were selected through a stratified random sampling approach to ensure representation across gender and age groups. Inclusion criteria required participants to be between 15 and 25 years of age, currently residing in Taiwan, and able to provide informed consent.

2.2. Measures

Health anxiety was measured using the Health Anxiety Inventory (HAI) developed by Salkovskis, Rimes, Warwick, and Clark (2002). The inventory is designed to assess worry and preoccupation with health, fear of illness, and misinterpretation of bodily symptoms. The full version contains 64 items, while the commonly used short form includes 18 items. Responses are rated on a 4-point Likert scale, with higher scores reflecting greater health-related

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anxiety. The HAI includes subscales that distinguish between illness likelihood, perceived consequences of illness, and reassurance-seeking behaviors. Numerous studies have confirmed its strong psychometric properties, with Cronbach's alpha typically exceeding 0.80, and both convergent and discriminant validity have been consistently reported in clinical and non-clinical samples.

Childhood adversity was assessed using the Childhood Trauma Questionnaire (CTQ), developed by Bernstein and colleagues (1994; revised 1997). The CTQ is a widely used self-report measure that retrospectively evaluates adverse childhood experiences across five domains: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. The instrument consists of 28 items scored on a 5-point Likert scale ranging from "never true" to "very often true." Each subscale generates a separate score, and higher scores indicate more severe exposure to childhood trauma. The CTQ has been validated extensively across diverse cultural and clinical contexts, demonstrating high internal consistency (Cronbach's alpha ranging from 0.79 to 0.94 across subscales), excellent test-retest reliability, and strong evidence of construct and criterion validity.

Intolerance of uncertainty was measured with the Intolerance of Uncertainty Scale (IUS) developed by Freeston, Rhéaume, Letarte, Dugas, and Ladouceur (1994). This scale was specifically designed to assess the cognitive, emotional, and behavioral responses individuals have to uncertain situations. The original version includes 27 items rated on a 5-point Likert scale ranging from "not at all characteristic of me" to "entirely characteristic of me." It comprises two major dimensions: (a) prospective anxiety, which reflects desire for predictability and excessive worry, and (b) inhibitory anxiety, which reflects avoidance and difficulty in action under uncertainty. The IUS has been widely validated, with Cronbach's alpha values consistently reported above 0.85 and strong evidence of factorial validity, convergent validity with anxiety measures, and test-retest reliability.

2.3. Data Analysis

Data analysis was conducted using SPSS version 27 and AMOS version 21. First, descriptive statistics including frequencies, percentages, means, and standard deviations were calculated to summarize the demographic and study variables. Pearson correlation coefficients were used to examine the bivariate relationships between the dependent variable (health anxiety) and each independent variable (childhood adversity and intolerance of uncertainty). To further test the hypothesized mediation model, structural equation modeling (SEM) was employed using AMOS-21, which allowed for the assessment of direct and indirect effects among the variables. Goodness-of-fit indices such as CFI, TLI, RMSEA, and χ^2/df were used to evaluate the adequacy of the proposed model.

3. Findings and Results

The demographic characteristics of the participants are presented in Table 1. Out of the 412 participants, 236 (57.3%) were female and 176 (42.7%) were male. The participants' ages ranged from 15 to 25 years, with a mean age of 19.42 years (SD = 2.86). Regarding educational level, 158 participants (38.3%) were enrolled in high school, 201 (48.8%) were undergraduate students, and 53 (12.9%) were postgraduate students. In terms of family income, 102 participants (24.8%) reported a monthly income below NT$40,000, 199 participants (48.3%) reported NT$40,000–79,999, and 111 participants (26.9%) reported NT$80,000 or above.

Table 1

Descriptive Statistics of Study Variables (N = 412)

Variable	M	SD	Min	Max
Childhood Adversity (CTQ)	42.38	11.72	25	108
Intolerance of Uncertainty (IUS)	66.41	14.83	27	108
Health Anxiety (HAI)	24.56	7.34	9	54

The descriptive results in Table 1 indicate moderate levels of childhood adversity (M = 42.38, SD = 11.72), intolerance of uncertainty (M = 66.41, SD = 14.83), and health anxiety (M = 24.56, SD = 7.34). These values suggest that participants generally reported some level of adverse experiences, moderate difficulty tolerating uncertainty, and mild-to-moderate health anxiety.

Prior to conducting Pearson correlation and SEM analyses, assumptions of normality, linearity, homoscedasticity, and absence of multicollinearity were

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examined. Skewness values ranged from –0.74 to 0.83, and kurtosis values ranged from –0.96 to 1.21, indicating approximate univariate normality. The Kolmogorov–Smirnov test was nonsignificant for all main variables ($p > .05$), confirming the assumption of normal distribution. Scatterplots revealed linear relationships between independent variables and the dependent variable. Levene's test for homogeneity of variances was nonsignificant ($p = .27$), supporting the assumption of homoscedasticity. Finally, variance inflation factor (VIF) values ranged from 1.42 to 1.87, well below the threshold of 10, indicating no multicollinearity issues.

Table 2

Pearson Correlations Between Study Variables (N = 412)

Variable	1	2	3
1. Childhood Adversity (CTQ)	—		
2. Intolerance of Uncertainty (IUS)	.47*** ($p < .001$)	—	
3. Health Anxiety (HAI)	.42*** ($p < .001$)	.51*** ($p < .001$)	—

As shown in Table 2, childhood adversity was positively correlated with intolerance of uncertainty ($r = .47$, $p < .001$) and health anxiety ($r = .42$, $p < .001$). Intolerance of uncertainty was also strongly correlated with health anxiety ($r = .51$, $p < .001$). These findings provide initial support for the hypothesized mediation model.

Table 3

Fit Indices for the Structural Equation Model

Fit Index	Value	Recommended Cutoff
χ^2	142.36	—
df	67	—
χ^2/df	2.13	< 3.00
GFI	.94	≥ .90
AGFI	.91	≥ .90
CFI	.95	≥ .95
TLI	.94	≥ .90
RMSEA	.052	≤ .06

Table 3 shows that the structural model demonstrated an adequate fit to the data (χ^2/df = 2.13, CFI = .95, TLI = .94, RMSEA = .052). These values are within recommended thresholds, supporting the robustness of the hypothesized mediation model.

Table 4

Direct, Indirect, and Total Effects in the Structural Model

Path	b	S.E.	β	p
Direct Effects				
Childhood Adversity → Intolerance of Uncertainty	0.35	0.06	.47	< .001
Intolerance of Uncertainty → Health Anxiety	0.28	0.05	.44	< .001
Childhood Adversity → Health Anxiety	0.12	0.04	.18	.002
Indirect Effects				
Childhood Adversity → Intolerance of Uncertainty → Health Anxiety	0.10	0.03	.21	.001
Total Effects				
Childhood Adversity → Health Anxiety (direct + indirect)	0.22	0.05	.39	< .001

Table 4 demonstrates that childhood adversity significantly predicted intolerance of uncertainty ($b = 0.35$, $\beta = .47$, $p < .001$), and intolerance of uncertainty significantly predicted health anxiety ($b = 0.28$, $\beta = .44$, $p < .001$). The direct effect of childhood adversity on health anxiety remained significant ($b = 0.12$, $\beta = .18$, $p = .002$), indicating partial mediation. The indirect effect through

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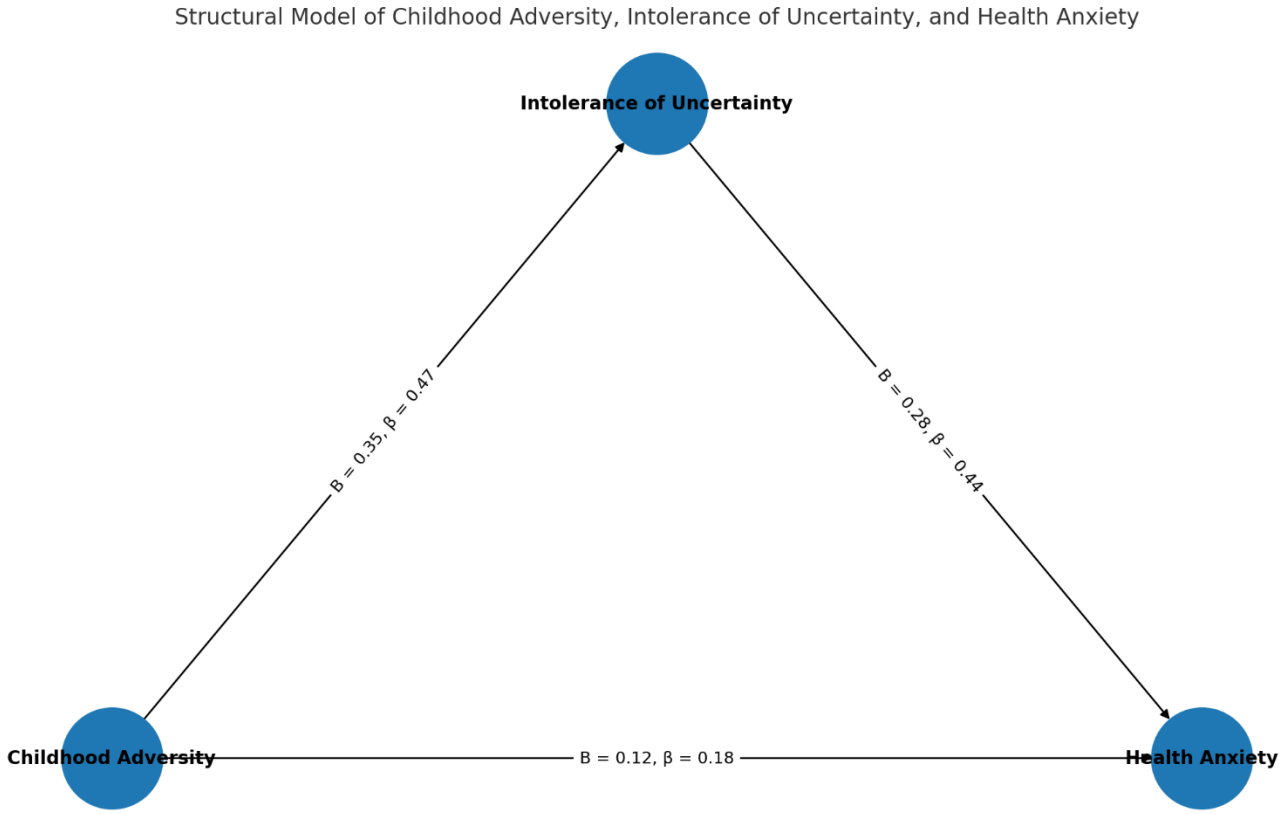
intolerance of uncertainty was also significant (β = .21, p = .001), supporting the mediational hypothesis.

Figure 1

Structural Model of The Study



4. Discussion and Conclusion

The present study sought to investigate the relationship between childhood adversity and health anxiety, with intolerance of uncertainty as a mediating mechanism, in a large sample of Taiwanese adolescents and young adults. Using correlational analyses and structural equation modeling, the findings demonstrated that childhood adversity significantly predicted higher levels of health anxiety, and this relationship was partially mediated by intolerance of uncertainty. These results provide empirical support for the theoretical proposition that early adverse experiences foster enduring cognitive vulnerabilities—particularly difficulties in tolerating ambiguity—that, in turn, heighten susceptibility to health-related anxiety symptoms.

The direct association between childhood adversity and health anxiety observed in this study is consistent with prior research demonstrating the long-term psychological burden of early adverse experiences. Fazal and colleagues found that exposure to adversity during childhood was significantly linked to poorer mental health outcomes in young adults, particularly with respect to anxiety symptoms (Fazal et al., 2022). Similarly, Berk-Clark and colleagues reported that adverse childhood experiences heightened the risk of internalizing disorders, which in turn were associated with maladaptive health perceptions such as medication intolerance (Berk-Clark et al., 2023). These studies align with the current findings by confirming that adversity contributes not only to generalized psychological vulnerability but also to the development of maladaptive health-related cognitions.

The results also corroborate prior findings that adversity exerts a persistent influence across developmental periods. Ahn and colleagues reported that lifetime adversity prospectively predicted anxiety, depression, and cognitive impairment in older adults (Ahn et al., 2023, 2024).

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Similarly, Lian and colleagues demonstrated that childhood adversity was associated with poor mental health outcomes among older populations, regardless of cognitive decline (Lian et al., 2022; Lian et al., 2023). These findings suggest that the link between adversity and anxiety is not bound by developmental stage but instead reflects a lifelong vulnerability trajectory. The current results extend this evidence to a younger Taiwanese cohort, further supporting the universality of these pathways.

A particularly important finding of the present study is the mediating role of intolerance of uncertainty. Individuals with higher levels of childhood adversity reported greater difficulty tolerating ambiguous situations, which in turn contributed to heightened health anxiety. This is in line with theoretical frameworks positing that adversity fosters hypervigilance and mistrust of environmental stability, thereby heightening discomfort with uncertainty. Prior studies have confirmed the relevance of IU in similar pathways. Oltean and Șoflău showed that adversity predicted maladaptive reward learning, which subsequently impacted health outcomes during COVID-19 (Oltean & Șoflău, 2022). Feiler and colleagues likewise demonstrated that adversity predicted psychopathology through emotion dysregulation, another process closely linked to IU (Feiler et al., 2023). The present findings provide additional support for IU as a key cognitive mediator between early adversity and health-related anxiety.

The significance of IU in explaining anxiety-related outcomes has also been confirmed across cultural contexts. Xu highlighted how adversity interacted with rumination and sleep disturbances to predict depression and anxiety in Chinese youth (Xu, 2023), findings that converge with the current study by underscoring the role of cognitive vulnerability in translating adversity into psychopathology. Similarly, Li and colleagues found that patterns of childhood adversity among Chinese college students were strongly associated with elevated anxiety and depressive symptoms (Li et al., 2023). These converging findings suggest that IU, along with related cognitive vulnerabilities, is a cross-culturally relevant mechanism in the adversity–anxiety link.

The present findings align with a substantial body of literature indicating that adversity undermines emotion regulation, fosters maladaptive coping, and promotes heightened sensitivity to uncertainty. McCullen et al. reported that adversity predicted psychological stress during the COVID-19 pandemic among American Indian adults, particularly when maladaptive emotion regulation strategies were employed (McCullen et al., 2023). This resonates with the present findings, as IU can be conceptualized as a maladaptive regulatory response to uncertainty. Likewise, Mirhosseini and colleagues demonstrated that ACEs interacted with COVID-19 stress to predict mental health outcomes among healthcare workers (Mirhosseini et al., 2023). Together, these studies confirm that adversity primes individuals for heightened reactivity in uncertain and stressful environments, thereby explaining elevated health anxiety.

Notably, the current findings support Nowak and colleagues' work showing that adversity predicts slower recovery during psychotherapy for anxiety disorders (Nowak et al., 2023, 2024). This can be explained by IU, as difficulty tolerating ambiguity may impede therapeutic progress by undermining patients' capacity to engage with uncertainty-based interventions such as exposure therapy. By confirming the mediating role of IU, the present study provides a theoretical bridge linking adversity not only to symptom severity but also to treatment response.

These findings are further contextualized by evidence on protective and buffering factors. Buchanan et al. emphasized that social support mitigates the long-term burden of adversity on internalizing disorders (Buchanan et al., 2024), while Patten noted that adversity heightened vulnerability to mood and anxiety disorders during the COVID-19 pandemic (Patten, 2024). Cabacungan et al. similarly highlighted that adaptive coping resources enabled college students to thrive during lockdown despite adversity (Cabacungan et al., 2022). Although the present study did not measure social support, these findings suggest that the mediation pathway identified—adversity through IU to health anxiety—may be moderated by contextual resources that mitigate uncertainty-related distress.

The current study also contributes to the refinement of measurement approaches. Jacobsen and colleagues developed the Weighted Index for Childhood Adverse Conditions (WICAC) to better capture adversity's complexity (Jacobsen et al., 2022). Although this study employed a standardized questionnaire, future research may benefit from incorporating multidimensional indices such as WICAC to further delineate the severity and impact of adversity. Lei et al. also highlighted the psychosocial pathways—such as relationship dysfunction—through which adversity impacts health outcomes (Lei et al., 2022). These findings converge with the current results by emphasizing the necessity of identifying mediators such as IU within complex, multifaceted pathways.

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E-ISSN: 2981-2526

The evidence that adversity is linked with health anxiety specifically is strengthened by studies focusing on related populations. Sawafi and colleagues reported significant associations between ACEs and mental health outcomes in Oman (Sawafi et al., 2024), while Azaria and Syakarofath confirmed that adversity was associated with social anxiety among Indonesian adolescents (Azaria & Syakarofath, 2024). These cross-cultural studies lend further support to the universality of the adversity–anxiety pathway. The current study extends these findings by providing evidence from Taiwan and specifying IU as a cognitive mediator.

Taken together, the findings suggest that childhood adversity sets into motion enduring cognitive vulnerabilities, particularly intolerance of uncertainty, that heighten susceptibility to health anxiety. The results are consistent with global evidence across diverse populations and methodologies, confirming IU as a key explanatory variable. At the same time, they underscore the potential importance of protective factors, cultural variations, and methodological refinements in shaping these relationships.

5. Limitations & Suggestions

Despite its contributions, this study is not without limitations. First, the cross-sectional design precludes definitive causal inferences regarding the directionality of the observed relationships. While the theoretical framework posits that adversity precedes IU and health anxiety, longitudinal data would be necessary to confirm this temporal ordering. Second, all variables were assessed using self-report measures, which may be subject to recall bias, particularly in reporting childhood adversity. Although instruments such as the Childhood Trauma Questionnaire have been validated, retrospective reporting may underestimate or overestimate adversity exposure. Third, the study focused exclusively on a Taiwanese sample of adolescents and young adults, which, while valuable, limits the generalizability of the findings to other cultural contexts and age groups. Fourth, potential moderating factors such as social support, coping resources, and socioeconomic status were not examined, leaving unanswered questions about how these variables may buffer or exacerbate the identified pathways. Finally, the study did not account for potential biological mediators, such as stress reactivity systems or neuroendocrine functioning, which may also play a role in linking adversity to anxiety.

Future research should address these limitations by employing longitudinal designs that can more rigorously establish temporal and causal pathways. Multi-method approaches, combining self-reports with clinical interviews, biological markers, and observational data, would also strengthen validity and reduce the limitations of retrospective recall. Cross-cultural studies are especially warranted, as the adversity–IU–health anxiety pathway may be influenced by cultural norms surrounding uncertainty, health beliefs, and family dynamics. Researchers may also explore potential moderators, such as resilience factors, coping strategies, or levels of perceived social support, to better understand individual differences in vulnerability. The inclusion of biological measures, such as cortisol reactivity or neuroimaging indicators of threat sensitivity, could further illuminate the mechanisms through which adversity translates into heightened IU and health anxiety. Additionally, intervention studies should test whether targeting IU through cognitive-behavioral or acceptance-based therapies can attenuate the impact of childhood adversity on health anxiety.

From a clinical perspective, the findings suggest several important implications. Screening for childhood adversity should be integrated into assessments for health anxiety, as early adverse experiences may predispose individuals to heightened vulnerability. Clinicians should also evaluate intolerance of uncertainty in patients presenting with health-related concerns, as IU may represent a key target for intervention. Cognitive-behavioral techniques aimed at increasing tolerance of ambiguity, such as exposure to uncertainty exercises, could be especially beneficial. Preventive interventions targeting at-risk youth with histories of adversity may help reduce later health anxiety by strengthening resilience and adaptive coping strategies. Furthermore, psychoeducational programs in schools and community settings could raise awareness about the psychological consequences of adversity and promote healthy ways of managing uncertainty.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

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JAYPS
Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526