The Role of Intolerance of Uncertainty and Anxiety Sensitivity in the Relationship between Adverse Childhood Experiences and Adult Quality of Life

Sabine Soltani, B.A. Hons., Michelle J. N. Teale Sapach, M.A., and R. Nicholas Carleton, Ph.D.
Anxiety and Illness Behaviours Laboratory, University of Regina, Saskatchewan

Introduction

- Previous research has shown that adverse childhood experiences (ACE) are associated with increased risk of long-term, adverse health outcomes, including cardiovascular disease, cancer, lung disease, and lifetime psychopathology, such as depression, substance use, and suicidality.
- Recent research has been designed to clarify the precise nature of the relationship between ACE and its sequelae by examining potential underlying contributors.
- Intolerance of uncertainty (IU) is a dispositional characteristic referring to the extent that individuals find uncertainty distressing.
- Anxiety sensitivity (AS) is a dispositional characteristic referring to the level of fear experienced in response to anxiety-related symptoms.
- IU and AS are distinct, albeit related, constructs and are suggested to be underlying, transdiagnostic risk factors for mood and anxiety disorders.
- No study to date has examined whether these underlying, dispositional characteristics may influence the relationship between ACE and subsequent self-reported quality of life.
- Accordingly, the current investigation assessed the relationship between ACE and adult quality of life with IU and AS posited as mediators.

Methods

- Community-based North American individuals (n = 131; 39% men; M_{age} = 21.87, SD = 2.56) completed a set of self-report measures as part of a larger online study.
- Participants completed the following measures:
  - *Adverse Childhood Experiences International Questionnaire (ACE-IQ):* a 31-item measure assessing the presence of adverse experiences from 13 different categories.
  - *Intolerance of Uncertainty Scale-Short Form (IUS-12):* a 12-item measure assessing how an individual responds to uncertainty.
  - *Anxiety Sensitivity Index-3 (ASI-3):* an 18-item measure assessing fear in response to the physical and cognitive symptoms of anxiety.
  - *Quality of Life Scale (QOLS):* a 16-item measure assessing current level of satisfaction with various relationships and activities.
- Correlational analyses were performed between ACE-IQ, QOLS, IUS-12, and ASI-3.
- Two hierarchical linear regression analyses were conducted with QOLS as the dependent variable.
  - Regression 1: The independent variables consisted of ACE-IQ in step 1 and IUS-12 in step 2.
  - Regression 2: The independent variables consisted of ACE-IQ in step 1 and ASI-3 in step 2.
- Hayes' PROCESS program was used to test the potential mediating effect of IUS-12 and ASI-3 on the relationship between ACE-IQ and QOLS.

Results

- Descriptive statistics were as follows:
  - ACE-IQ (M = 5.9; SD = 2.4); IUS-12 (M = 38.8; SD = 12.7); ASI-3 (M = 24.3; SD = 15.4); QOLS (M = 62.6; SD = 15.7)
- Correlational analyses supported theoretically congruent relationships between ACE, quality of life, IU, and AS.
  - ACE-IQ, IUS-12, and ASI-3 were all negatively correlated with QOLS (rs ranging from -.23 to -.30, p < .01).
- Regression analyses suggested that both IUS-12 and ASI-3 accounted for statistically significant variance in QOLS (6% and 5%, respectively) above and beyond the variance accounted for by ACE-IQ (5%; see Tables 1 and 2).
  - Together, ACE-IQ and IUS-12 accounted for 11% of the variance in QOLS (F = 8.62, p < .001).
  - Together, ACE-IQ and ASI-3 accounted for 10% of the variance in QOLS (F = 7.11, p = .011).
- Because IUS-12 and ASI-3 both emerged as statistically significant predictors of QOLS (p < .001 and p = .011, respectively), mediation analyses were run with IUS-12 and ASI-3 as mediators between ACE-IQ and QOLS.
  - IUS-12 emerged as a statistically significant mediator (b = -0.57, 95% CI = [-1.42,-0.14]) in the relationship between ACE-IQ and QOLS (Figure 1).
  - ASI-3 emerged as a statistically significant mediator (b = -0.46, 95% CI = [-1.12,-0.08]) in the relationship between ACE-IQ and QOLS (Figure2).

Discussion

- The current results provide additional evidence for the long-term impact of ACE, as demonstrated by a significant inverse relationship between ACE-IQ and QOLS scores.
- The results are consistent with research positing IU and AS as underlying vulnerability factors and extend current literature by suggesting that both IU and AS mediate the relationship between ACE and adult quality of life.
- Experiencing adversity in childhood may exacerbate dispositional risk factors, which in turn may have a detrimental impact on well-being.
- Preventing ACE may be difficult or even impossible; however, targeting IU and AS reduction may offer one avenue for mitigating the long-term consequences of early childhood adversity.
- The current research suggests the relationship between ACE and quality of life is complex and likely influenced by a range of factors, as evidenced by the substantial amount of variance in QOLS that remained unaccounted for.
- While IU, AS, and ACE appear to play a role in subsequent adult quality of life, further research is warranted to clarify the influence of additional predispositional and situational factors.
- Future research should replicate and extend the current study using larger samples, both prospectively and longitudinally, as well as other potential variables, such as sociodemographics and adult trauma history.

Table 1
Hierarchical Linear Regression: ACE-IQ and IUS-12 Predicting QOLS

Model	Predictor	b	β	t	p	R	R^2	F	p
1						.23	.05	7.71	.006
	ACE-IQ	-1.78	-.23	-2.78	.006				
2						.34	.11	8.62	< .001
	ACE-IQ	-1.22	-.16	-1.87	.064				
	IUS-12	-0.32	-.26	-3.01	.003				

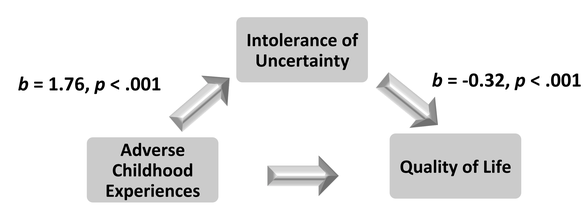
Note: QOLS – Quality of Life Scale; ACE-IQ – Adverse Childhood Experiences International Questionnaire; IUS-12 – Intolerance of Uncertainty Scale-Short Form.

Table 2
Hierarchical Linear Regression: ACE-IQ and ASI-3 Predicting QOLS

Model	Predictor	b	β	t	p	R	R^2	F	p
1						.23	.05	7.26	.008
	ACE-IQ	-1.76	-.23	-2.69	.008				
2						.32	.10	7.11	.011
	ACE-IQ	-1.31	-.17	-1.97	.052				
	ASI-3	-0.23	-.22	-2.58	.011				

Note: QOLS – Quality of Life Scale; ACE-IQ – Adverse Childhood Experiences International Questionnaire; ASI-3 – Anxiety Sensitivity Index-3.

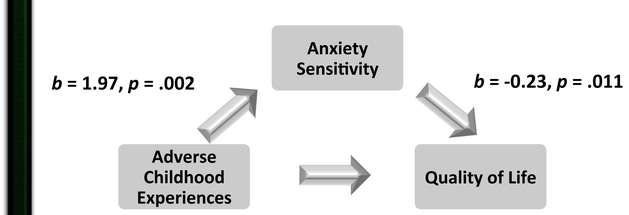
Figure 1
Mediation Analysis with IUS-12 as Mediator



Direct effect, b = -1.21, p = .064
Indirect effect, b = -0.57, 95% CI [-1.42, -0.14]

Note: Mediated regression model with IUS-12 score as a mediating variable between ACE-IQ scores and QOLS scores.

Figure 2
Mediation Analysis with ASI-3 as Mediator



Direct effect, b = -1.31, p = .052
Indirect effect, b = -0.46, 95% CI [-1.12, -0.08]

Note: Mediated regression model with ASI-3 score as a mediating variable between ACE-IQ scores and QOLS scores.

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