PERSONALITY, PATHOLOGY, AND THE MODERATING EFFECT OF PARENTAL LOSS

A thesis presented to the faculty of the Graduate School of Western Carolina University

in partial fulfillment of the requirements for the degree of

Master of Arts in Clinical Psychology

By

Francis O'Brien

Western Carolina University

04/01/2024

Chair: David Solomon, PhD

Department of Psychology

Committee Members: David de Jong, PhD

Cathy Grist, PhD

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

PERSONALITY, PATHOLOGY, AND THE MODERATING EFFECT OF PARENTAL LOSS

Francis O'Brien

Western Carolina University (April, 2024)

Chair: David Solomon, PhD

The association between personality traits and psychopathology is diffuse and well established by an expanding body of current research. High or low levels of personality traits in the Five-Factor model (FFM) of personality consistently correlate with various dysfunctional and pathological presentations. The purpose of this study was to examine the role of adverse childhood experiences (ACEs) in the relationship between personality traits and psychopathology in adults, with a specific focus on parental loss/parental death during childhood. It was predicted that prevalence of ACEs would moderate the relationship between personality traits and their associated pathology, such that higher ACE prevalence would be associated with a stronger correlation between personality and pathology, and that parental loss would further moderate and strengthen the interaction effect of total ACE prevalence. The findings indicate that neuroticism is a predictor of total internalizing dysfunction, and that this relationship is moderated and strengthened by increased prevalence of ACEs. Parental loss was not found to be a significant predictor of dysfunction or to have a moderating effect on ACEs interactions. However, parental loss was found to have a significant interaction with ACEs as a predictor of internalizing dysfunction, such that individuals who experienced parental loss as one of their ACEs actually reported lower internalizing dysfunction than individuals with equal ACE scores who did not report parental loss, suggesting that parental loss is not as predictive of pathological outcomes as other adverse childhood experiences.

INTRODUCTION

Personality and Pathology, Dimensional Structure

The advent, validation, and standardization of McCrae and Costa's (1987) Five Factor Model (FFM) has allowed for personality traits to be profusely cross-referenced against categorical mental disorders for several decades now. This prolific era of research has cultivated widespread acknowledgement of the overlap between personality and psychopathology (Clark, 2005; Bagby & Widiger, 2018). Correlational data has linked these two domains so consistently that an argument can be made to reconceptualize personality disorders as simply patterns of extremities along the spectrums of normal personality traits (Lynam et al., 2011; Mullins-Sweatt et al., 2012; Widiger & Costa, 2012).

Modern research in personality psychology has now begun to shift away from categorical diagnoses, and has increasingly focused on exploring the relationship between personality and more dimensional structures of pathology (Clark et al., 1993; Krueger et al., 2011; Widiger et al., 2019). This has coincided with increasing support for alternative hierarchical and dimensional approaches to psychopathology as a whole, both in clinical research and in practice, as exemplified by Kotov and colleagues' (2017) Hierarchical Taxonomy of Psychopathology (HiTOP) model. This shift has arisen in response to extensive debate in the professional community over the efficacy of traditional, categorical systems of diagnoses, which are rife with excessive comorbidity and within-group heterogeneity (Conway et al., 2021).

As may be expected, research continues to demonstrate personality traits as predictors not only for categorical diagnoses, but for specific dysfunctional thoughts, emotions, and behaviors (Joshanloo, 2024; Lommen et al., 2024). Individuals high in FFM neuroticism, for example, have a significantly increased likelihood of dysfunctional anxious and depressive experiences, while low scores on agreeableness and conscientiousness predict a higher likelihood of externalizing/behavioral dysfunction

(Bagby & Widiger, 2018). Some of this predictive power is due to a certain amount of shared identity between measures of personality traits and dimensional measures of pathology. For example, the Minnesota Multiphasic Personality Inventory-3 (MMPI-3) contains a scale for personality trait Neuroticism/Negative Emotionality (NEGE), which historically correlates with FFM neuroticism; however, the items which comprise an individual's NEGE score also load onto scales for Stress, Worry, and Anxiety-Related Experiences (Ben-Porath & Tellegen, 2020; Egger et al. 2003). Similarly, Tomiatti and colleagues (2012) selected items for their Five Factor Histrionic Inventory (FFHI) based partially on correlation with Costa and McRae's (1987;1992) Revised NEO Personality Inventory (NEO-PI-R). Lastly, the Comprehensive Assessment of Traits relevant to Personality Disorder (CAT-PD), utilized in this study, is constructed partially of items from the International Personality Item Pool (IPIP), some of which comprise Goldberg's (1990) Big Five model of personality (Simms et al., 2011).

The theoretical takeaway from this examination of shared identity is that personality traits are inextricably linked with pathological dysfunction. A researcher or clinician cannot measure an individual's level of anxiety-related experiences without also measuring components of their neuroticism, nor can an individual's behavioral impulsivity be measured without also gleaning some level of their trait conscientiousness. Despite this inherent convergence, normal personality and psychopathology maintain distinct identities –a low level of conscientiousness does not guarantee the presence of pathological impulsivity, it merely helps to predict the likelihood of its development. The question that remains for exploratory research, then, is what accounts for the gap between normal personality differences and pathological dysfunction?

Genetic and Environmental Interaction

Extensive twin research has consistently found personality traits to be both biological and environmental in origin, with heritability accounting for between 40%-60% of personality variance, and the remaining percentages believed to be attributed to environmental factors both within and outside the realm of family influence (Loehlin, 1992; Reimann et al., 1997; Rowe, 1995). It is understood that

approximately half of an individual's personality profile is attributed to a genetic predisposition to interact with their environment in a certain way. Taken in the context of a diathesis-stress model, a person's genetic predisposition (i.e. inherited personality) is an essential component which must interact with necessary stressors in order to result in clinical dysfunction (Meehl, 1962). A critical component of this model is that an etiological factor does not always produce clinical dysfunction. The inherited portion of an individual's personality may be an essential ingredient to the development of psychological dysfunction, but the presence of said personality profile does not guarantee the development of the dysfunction all, or even most, of the time. The catalyst in the extension from personality to pathology, presumably, is stressful experience.

A model similar to diathesis-stress, and theoretically relevant to the personality-pathology link, is Boyce & Ellis' (2005) Biological Sensitivity to Context (BSC). This model stems from consistent findings of individual differences in levels of hormonal and sympathetic nervous system responses to stressful stimuli, positing that certain individuals are predisposed, through both genetic and environmental factors, to stronger stress responses than others experiencing identical stimuli. An individual's "biological sensitivity" to stress is attenuated through genetics and significantly adverse or significantly supportive childhood environments. In this model, being highly reactive to stress is not, in itself, a predictor of pathology. Stress reactivity coupled with a history of childhood adversity, however, is a more consistent formula for predicting pathology in adulthood. Interestingly, children from exceptionally supportive environments may also develop high biological sensitivity to stress, and in adulthood this combination of high reactivity and a supportive childhood environment is a predictor for below average levels of pathology. In support of this model, Somers and colleagues (2017) found that heart rate reactivity to stressful stimuli moderated the relationship between childhood parental divorce/loss/maltreatment and symptoms of depression/decreased positive affect. Specifically, individuals with a significant history of childhood adversity and a higher biological response to stress reported the highest average symptoms of depression and lowest levels of positive affect. Adults with low heart rate reactivity demonstrated the

smallest average differences in outcome between adverse vs non-adverse childhood groups. Lastly, individuals with low history of maltreatment and high stress responsivity reported the lowest levels of depressive symptoms and highest levels of positive affect among the groups.

In summary, there is strong evidence to support the theory that genetic predispositions interact with childhood experiences, influencing the development of both normal-range personality and susceptibility to/protection from pathology in adulthood.

Parental Loss and Other Adverse Childhood Experiences

Adverse childhood experiences (ACEs) include occurrences such as the presence of physical abuse, sexual abuse, emotional maltreatment, neglect, loss of a parent through death or separation, and/or witnessing substance use, domestic violence, criminality or mental health adversities in parents or caregivers prior to age 18 (Felitti et al., 1998). The National Survey of Children's Health (2021) currently estimates that 21.6% of US children will endure one adverse childhood experience before age 18, and that an additional 17.2% will encounter two or more ACEs. Approximately 2.9% of children are estimated to experience the death of a parent during childhood, while 22.7% of children will deal with parental divorce or separation (NSCH, 2021).

A wealth of research surrounding ACEs finds consistent correlation with physical, psychological and behavioral adversities in adulthood, with stronger associations observed in adults reporting multiple ACEs in childhood (Petruccelli et al., 2019). The specific experience of parental death during childhood, while less common than other adverse experiences, may be a significant predictor of increased risk for impaired social development, poor academic performance, and mental health adversity persisting through adolescence and adulthood (Liu et al. 2022; Schmiege et al., 2006; Stikkelbroek et al., 2015). Childhood bereavement studies have found that parental training for surviving parents/caregivers, focused on facilitating stronger family bonds and more supportive home environments, manifests a significant protective effect against risk for pathology in adulthood (Ayers et al., 2014; Sandler et al., 2010).

Parental divorce or separation is historically linked with a wide array of negative outcomes in adolescence and adulthood, however the effect sizes and consistency of these results vary widely, presumably due to the diversity of environments that may precede and follow parental divorce (Amato, 2001; Boccio & Beaver, 2019). Several studies highlight that factors such as socioeconomic status, the timing of separation, and subsequent family structure changes such as remarriage can play a fundamental role in the overall impact of parental divorce (Cavanaugh & Huston, 2008; Singer et al., 2022). For the purposes of this study, parental separation was examined with specific regard to total or near-total loss of contact with a parent/caregiver during childhood. Loss of contact with a parent/caregiver was analyzed akin to the death of a parent, with the theoretical parallels being disruption of parent-child relations, disruption of household stability, and decreases in physical and emotional resources of the remaining parent (Haine, 2003; Ryan et al., 2015; Sandler et al., 2008).

Concurrent with the proliferation of study surrounding ACEs, a large body of work has explored the construct of resilience, described as the phenomenon of positive outcomes despite significant risk factors toward the impairment of adaptation or development (Masten, 2001). These risk factors include, among numerous physical and environmental antecedents, the breadth of adverse childhood experiences described above and in the literature. Factors promoting resilience are similarly abundant, with many existing as opposite ends of a spectrum from risk factors (e.g. low education as a risk, high education as a protective factor). Notably, many models of resilience demonstrate the critical role of moderating factors in the progression from risk to outcome. Resilience research highlights clear evidence for biologically based, inheritable risk/protective factors which interact with childhood adversity en route to resilient or non-resilient outcomes (Southwick et al., 2014). The findings of Lou and colleagues (2018) are particularly salient to the present study; a meta-analysis of resilience factors among children in residential care identified that inclination toward pro-social behavior and emotional stability were strong predictive factors of resilient outcomes, despite significant adversity and parental loss.

The Current Study

The purpose of this study was to examine the role of adverse childhood experiences (ACEs) in the relationship between personality traits and psychopathology in adults, with a specific focus on parental loss/parental death during childhood. Parental loss was the adversity of focus for this study, partially due to a dearth of literature on the subject as it relates to personality. It was predicted that total number of ACEs would moderate and strengthen the relationship between personality traits and their associated pathology, and parental loss during childhood would further moderate and strengthen the interaction effect of total ACE prevalence.

These hypotheses were predicated on supporting literature spanning the fields of personality, psychopathology, childhood adversity and neurobiology, which indicate a cohesive model of biological predisposition and childhood stress interaction, manifesting in adulthood as pathological or resilient outcomes. The literature demonstrates parallel findings of the partial heritability of both personality and biological stress response. Numerous studies have demonstrated the relationship between childhood adversity and pathology, with an entire genre of research dedicated to understanding the resilient population which defies morbid prediction. Finally, concurrent models of diathesis-stress, BSC, and resilience posit that an interaction effect is what drives the predisposition to manifestation of predicted outcome. The intent of this study was to affirm the legitimacy of these models by demonstrating the moderating effect of adverse childhood experiences on the relationship between personality and psychopathology.

METHOD

Participants

An anonymous online survey was distributed through internet forums, social media, and the Sona research participant management program at Western Carolina University (WCU) receiving a total of 463 participant responses. Any individual over the age of 18 and located in the United States was considered eligible to participate in the study. To encourage participation, all participants received their FFM personality trait scores at the end of the survey, as well as a link to general information about the FFM of personality. Undergraduates who were recruited through WCU's Sona program were offered partial course credit as compensation for their participation.

Surveys which were at least 75% complete were included in analyses, however participants who did not answer items relating to parental loss or ACEs were excluded due to the critical nature of the variables in this study. Mean scores for specific scales (i.e. Conscientiousness, or Affective Lability) were computed for regression analyses, with missing items excluded from the scale mean computation. Of the 463 original participants, 42 were excluded for completing less than 30% of the study, 4 were excluded for completing less than 75% and missing entire scales, 16 were excluded for being located outside the United States, and 29 were excluded due to response validity measures. An additional 6 participants were excluded from analyses as statistical outliers, leaving a total of 366 participant surveys from which the study findings are derived. Outliers were identified as participants whose scores in the primary hypothesis tests were above threshold for two of three tests of influence, namely Cook's Distance ($D_i > 4/(n-k-1)$), Mahalanobis Distance ($p < .001$), and regression leverage ($L > (2k+2/n)$). A post-hoc analysis indicates that 366 participants achieved a statistical power of .77 in a linear regression model with up to 14 predictors and a small effect size of $r_{sp} = .02$.

Of the 366 included participants, 105 identified as cisgender men, 243 as cisgender women, 5 identified as transgender men, and 13 identified as non-binary. The age of participants ranged from 18 to

77, with a mean age of 26.35 (SD=14.55) years. Western Carolina University (WCU) students who participated through the Sona research program made up 72.1% of the sample, or 264 participants. The mean age of WCU Sona participants was 18.69 (SD=1.20) years, while the mean age of internet-recruited participants was 46.18 (SD=14.37) years. When controlling for age, Sona participants did not significantly differ from internet-recruited participants in any of the study measurements. The majority of participants, 76.8%, identified as White, 6.3% Hispanic/Latino, 4.4% Black/African-American, 1.9% American Indian/Alaskan Native, 1.1% Asian, 0.3% Native Hawaiian/Pacific Islander, 8.7% Multiracial, and 0.5% Other/unspecified. Participants who reported experiencing the death of a parent during childhood made up 7.9% (N=29) of the study, while participants who reported parental loss through divorce/separation made up 17.5% (N=64) of the study. The total number of participants reporting parental loss through death or permanent separation made up 25.4% (N=93) of the study population. The average number of reported ACEs for all participants was 2.32.

MATERIALS AND PROCEDURE

Demographics

Participants were asked to self-identify age, gender, race/ethnicity, and status of U.S. or non-U.S. location. Demographics questions can be found in Appendix A.

Response Validity

Online survey responses, especially those utilizing undergraduate populations, are vulnerable to participant response invalidity due to carelessness or other factors (Meade & Craig, 2012). In order to maximize data integrity, this study utilized a total of 12 validity items from CAT-PD validity scales as well as items created for this study, with three items each designed to respectively measure social desirability (e.g. “I am never in a bad mood”), nonsensical responses (e.g. “I have never watched a television in my lifetime”), infrequent/unusual responses (“I can change the weather simply by thinking about it”), and response to instructed items (e.g. “please select ‘Very True of Me’ for this item”). Validity

items were dispersed throughout the survey and responses were given on a Likert scale from 1 (*Very Untrue of Me*) to 5 (*Very True of Me*). Participants who missed two or more instructed items were excluded from data analysis. Scores in social desirability, nonsensical, and infrequent responses were computed into a mean validity scale score, and participants with mean validity scores more than two standard deviations above the mean were excluded from the study. The estimated survey length was limited to under 15 minutes completion time, in order to avoid inconsistency related to survey length. Response Validity items can be found in Appendix B.

Five-Factor Personality Traits

Five-factor model (FFM) personality traits were measured with the M5-50 Questionnaire, a survey comprised of 50 IPIP items, which emulates numerous larger FFM parent scales (McCord, 2002). The M5-50 displays strong psychometric integrity in its measurement of broad five-factor traits, with Cronbach's alpha's of .863, .759, .849, .864, and .778 for Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N) and Openness (O), respectively (Socha et al., 2010). Each personality factor was measured with 10 items, with responses given on a Likert scale from 1 (*Very Untrue of Me*) to 5 (*Very True of Me*). Sample items for each of the personality factors are as follows:

E – "I make friends easily."

A – "I believe that others have good intentions."

C – "I am always prepared."

N – "I panic easily."

O – "I have a vivid imagination."

All M5-50 items can be found in Appendix C.

Personality Pathology Traits

Personality pathology traits were measured with the Comprehensive Assessment of Traits Relevant to Personality Disorder (CAT-PD), a 216-item assessment of personality pathology traits in a dimensional and hierarchical structure. Item responses were given on a Likert scale with answers ranging from 1 (*Very*

Untrue of Me) to 5 (*Very True of Me*). All CAT-PD items selected for this study can be found in Appendix E. A total of 46 items were utilized from the scale to measure the following constructs (Simms et al. 2011):

- **Affective Lability**: a tendency to experience strong, rapid and unpredictable shifts in emotion and mood, to have difficulty coping with both minor and major life stressors, and to act impulsively in the context of negative affect. Sample item: "I have frequent mood swings."
- **Anger**: the tendency to experience and express emotions ranging from frustration and irritability to explosive temper and rage
- **Anxiousness**: the tendency to be generally tense, prone to worry, fearful, panicky, and to excessively anticipate or avoid situations or stimuli that are perceived as dangerous. Sample item: "I am nervous or tense most of the time."
- **Cognitive Problems**: a range of mental deficits including memory problems, confusion, disorientation, and illogical/disorganized thoughts. Sample item: "I often space out and lose track of what's going on."
- **Depressiveness**: a tendency to experience feelings of sadness, melancholy, hopelessness, inferiority, shame and guilt, as well as the tendency to hold a generally negative view of oneself, the world and the future. Sample item: "I am sad most of the time."
- **Relationship Insecurity**: an interpersonal style characterized by interpersonal insecurity, fear of abandonment by significant others, jealousy, and the tendency to anxiously expect, readily perceive, and overreact to social rejection or criticism. Sample item: "I am always worried that my partner is going to leave me."
- **Submissiveness**: the yielding of power to others, overaccommodation of others' needs and wishes, exploitation by others, and a lack of self-confidence in decision making, often to the extent that one's own needs are ignored, minimized, or undermined. Sample item: "I let myself be pushed around."

- **Total Internalizing Dysfunction**: overall emotional difficulty. For the purposes of this study, will consist of cumulative scores of Affective Lability, Anger, Anxiousness, Cognitive Problems, Depressiveness, Relationship Insecurity, and Submissiveness.

Adverse Childhood Experiences (ACEs)

Adverse Childhood Experiences (ACEs) were measured with the ACEs Questionnaire, a 10-item questionnaire measuring the occurrence of physical abuse, sexual abuse, emotional maltreatment, neglect, loss of a parent through death or separation, and/or witnessing substance use, domestic violence, criminality or mental health adversities in parents/caregivers prior to age 18 (Felitti et al., 1998). Items include questions such as "Was a household member depressed or mentally ill? Or did a household member attempt suicide?" measured with either "Yes" or "No" responses. ACEs questionnaire items can be found in Appendix F.

Parental Loss and Household Structure

Parental loss and household structure were measured with a selection of dependent response survey items. For example, participants who responded "True" to the item "Before I turned 18, a parent or primary caregiver passed away. [A 'primary caregiver is a person who was largely responsible for meeting your physical and emotional needs as a child.]" were prompted to specify at what age their parent /caregiver passed away. Parental Loss and Household Structure items can be found in Appendix G.

HYPOTHESES

Extant literature provided a foundation of expected correlations between personality traits and specific dimensions of pathology. A factor analysis examining convergence between the CAT-PD and NEO-PI-3, in particular, provided a basis of expectations based upon FFM correlations with CAT-PD construct items (McRae & Costa, 2005; Wright & Simms, 2014). Additional expected relationships are based upon literature examining five-factor models of personality pathology (Kotov et al., 2020; Krueger et al., 2021; Trull, 2012; Watson, et al., 2022; Widiger et al., 2018). All anticipated correlations between FFM personality and internalizing pathology are detailed in Table 1.

Hypothesis I: The expected relationships between FFM personality and Total Internalizing Dysfunction will be moderated by total ACEs prevalence.

Hypothesis II: A history of parental loss during childhood will further moderate and strengthen the interaction effect of total ACEs prevalence on the relationship between FFM personality and Total Internalizing Dysfunction.

Table 1
Expected Correlations Between Pathology and FFM Personality Traits

Pathology Scale	FFM Extraversion	FFM Agreeableness	FFM Conscientiousness	FFM Neuroticism	FFM Openness
Affective Lability		-	-	+	+
Anger		-		+	
Anxiousness				+	
Cognitive Problems			-		
Depressiveness		-			-
Relationship Insecurity			-	+	+
Submissiveness			-	+	
*Tot. Internalizing				+	-

Note: +Positive Correlation -Negative Correlation *Higher order scale

RESULTS

Data collected from the study was analyzed through SPSS and PROCESS Macro (Hayes, 2013; PROCESS, 2023) to examine the moderating effects of ACEs and Parental Loss on the relationship between FFM personality traits and Total Internalizing Dysfunction. Separate regression analyses were run with Neuroticism and Openness as the predictor variable, respectively, while holding age, race/ethnicity, gender, and the four non-predictor personality traits (e.g. Extraversion, Agreeableness, Conscientiousness, Neuroticism/Openness) constant as covariates in each analysis. Total ACE score was entered as a primary moderator in each model, and Parental Loss was entered as a dichotomous secondary moderator. Results were deemed significant at a probability of $p \leq .05$.

Hypothesis 1 predicted that FFM neuroticism and openness would predict Total Internalizing Dysfunction (positively and negatively, respectively), and that these relationships would be moderated and strengthened by increased prevalence of total ACEs. This hypothesis was partially supported. Neuroticism predicted overall internalizing dysfunction as expected, and this relationship was significantly moderated by total ACEs prevalence (see Table 2.1). Increased prevalence of ACEs resulted in a moderating effect which strengthened the correlation between neuroticism and total internalizing dysfunction. In other words, individuals higher in neuroticism were more likely to report higher overall internalizing dysfunction, and high-neuroticism individuals with higher ACE scores were even more likely to report increased internalizing dysfunction. Simple slopes were computed for 1 *SD* above and below the mean ACE score (see Figure 1). Openness was not found to predict internalizing dysfunction (see Table 2.2), which is contrary to the study hypothesis based on existing literature. No moderating effect of ACEs prevalence was observed on the relationship between openness and internalizing dysfunction.

Hypothesis 2 predicted that parental loss would further moderate and strengthen the interaction effect of Total ACEs on the relationship between neuroticism/openness and Total Internalizing

Dysfunction. This hypothesis was not supported. No three-way interaction, or moderated-moderation, effect was observed with the presence/absence of parental loss during childhood. When controlling for demographics, ACEs, and personality traits, no main effect of parental loss was observed in any of the models predicting total internalizing dysfunction or specific pathology scales.

Though not predicted, an interaction effect was observed between Total ACE score and Parental Loss. Internalizing dysfunction was higher in people with higher ACE scores, however those with high ACE scores who also reported parental loss had significantly lower Total Internalizing Dysfunction scores than those who did not experience parental loss. Simple slopes were computed for the parental loss groups (see Figures 2-3).

In the primary hypothesis test models, significant main effects predicting total internalizing dysfunction were also found for age, gender, total ACEs, agreeableness, and conscientiousness. Total internalizing dysfunction was lower in older people, was lower overall for men, was higher with increased ACE scores, and was lower in participants with increased conscientiousness and/or agreeableness scores.

Table 2.1

Moderated Moderation Regression Predicting Total Internalizing Dysfunction from Neuroticism, ACEs, and Parental Loss

						95% CI for *B*		
	B	*SE*	β	*t*	*p*	Lower	Upper	r_{sp}
STEP 1								
Age*	-0.01	0.00	-0.29	10.33	< .001	-0.02	-0.01	-.27
Race/Ethnicity	-0.02	0.01	-0.03	-1.10	.274	-0.04	0.01	-.03
Gender*	0.05	0.03	0.06	2.06	.040	0.00	0.10	.05
Parental Loss	-0.05	0.05	-0.03	-1.01	.311	-0.15	0.05	-.03
Total ACEs*	0.03	0.01	0.1	2.82	.005	0.01	0.04	.07
Extraversion	-0.02	0.02	-0.02	-0.75	.456	-0.07	0.03	-.02
Agreeableness*	-0.08	0.04	-0.06	-2.12	.035	-0.15	-0.01	-.06
Conscientiousness*	-0.21	0.03	-0.19	-6.64	< .001	-0.27	-0.15	-.17
Neuroticism*	0.49	0.03	0.58	16.35	< .001	0.43	0.55	.43
Openness	0.04	0.03	0.04	1.26	.209	-0.02	0.10	.03
STEP 2								
Neuroticism x ACEs*	0.02	0.01	0.29	2.46	.014	0.01	0.04	.06
Neuroticism x Parental Loss	0.04	0.07	0.11	0.62	.534	-0.09	0.18	.02
ACEs x Parental Loss*	-0.05	0.02	-0.18	-2.73	.007	-0.09	-0.02	-.07
STEP 3								
Neuroticism x ACEs x Parental Loss	-0.013	0.02	-0.15	-0.91	.365	-0.04	0.02	-.02

Note. * = $p < .05$

Figure 1

Simple Slopes for Moderating Effect of Total ACEs on Neuroticism Predicting Total Internalizing Dysfunction

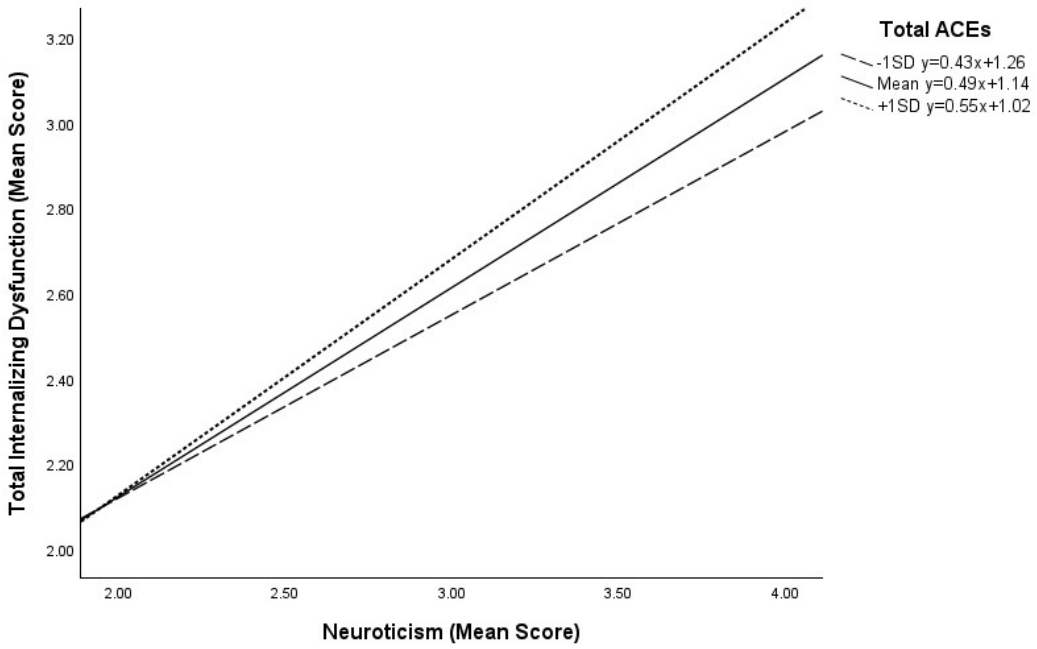

Figure 2

Simple Slopes for Moderating Effect of Parental Loss on Total ACEs Predicting Total Internalizing Dysfunction

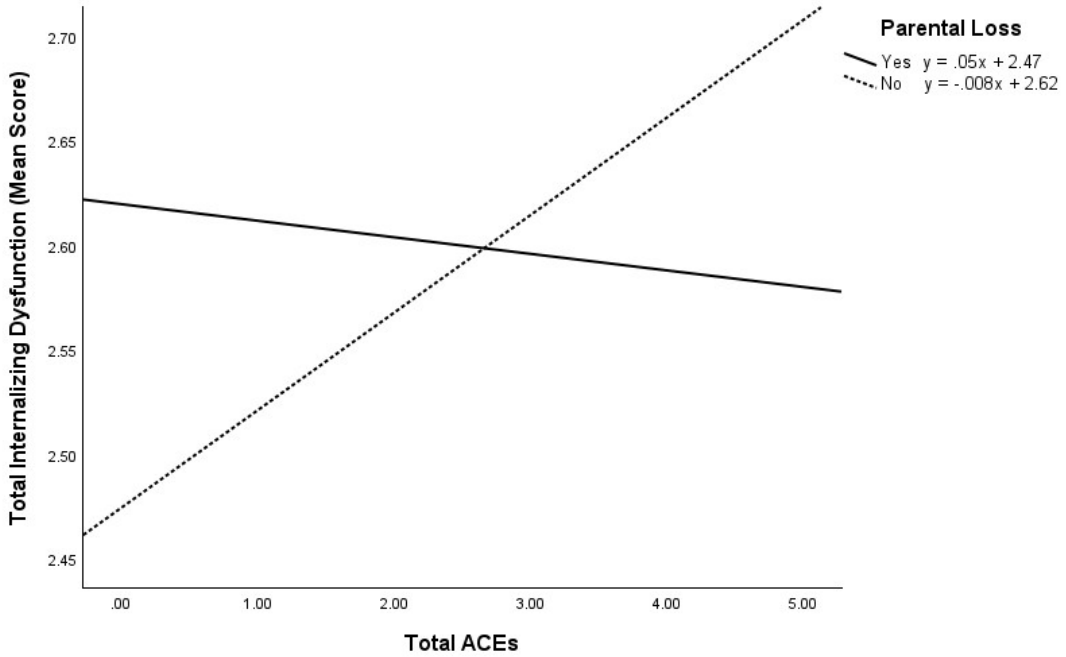

Table 2.2

Moderated Moderation Regression Predicting Total Internalizing Dysfunction from Openness, ACEs, and Parental Loss

						95% CI for *B*		
	B	*SE*	β	*t*	*p*	Lower	Upper	r_{sp}
STEP 1								
Age*	-0.01	0.00	-0.29	10.33	< .001	-0.02	-0.01	-.27
Race/Ethnicity	-0.02	0.01	-0.03	-1.10	.274	-0.04	0.01	-.03
Gender*	0.05	0.03	0.06	2.06	.040	0.00	0.10	.05
Parental Loss	-0.05	0.05	-0.03	-1.01	.311	-0.15	0.05	-.03
Total ACEs*	0.03	0.01	0.10	2.82	.005	0.01	0.04	.07
Extraversion	-0.02	0.02	-0.02	-0.75	.456	-0.07	0.03	-.02
Agreeableness*	-0.08	0.04	-0.06	-2.12	.035	-0.15	-0.01	-.06
Conscientiousness*	-0.21	0.03	-0.19	-6.64	< .001	-0.27	-0.15	-.17
Neuroticism*	0.49	0.03	0.58	16.35	< .001	0.43	0.55	.43
Openness	0.04	0.03	0.04	1.26	.209	-0.02	0.10	.03
STEP 2								
Openness x ACEs	-0.01	0.02	-0.18	-0.72	.474	-0.05	0.02	-.02
Openness x Parental Loss	0.09	0.09	0.24	1.02	.311	-0.09	0.27	.03
ACEs x Parental Loss*	-0.06	0.02	-0.20	-2.95	.003	-0.10	-0.02	-.08
STEP 3								
Openness x ACEs x Parental Loss	0.03	0.03	0.43	0.91	.363	-0.04	0.13	.02

Note. * = $p < .05$

Exploratory analyses for individual scales were conducted to examine the relationship between personality traits and specific pathologies. In order to account for the familywise error rate associated with analyses of dimensional variables and personality traits, Bonferroni corrections were implemented with requirements of $p < .007$ to indicate statistical significance for main effects and $p < .001$ for interactions. Significant main effects of personality traits were found in each of the subscale analyses (see Table 3).

Extraversion was positively predictive of affective lability and anger, and negatively predictive of depressiveness and submissiveness. Agreeableness was negatively predictive of affective lability, anger, and relationship insecurity. Conscientiousness was negatively predictive of affective lability, cognitive problems, depressiveness, relationship insecurity, and submissiveness. Neuroticism was positively predictive of all individual scales, while openness was not significantly predictive of any scales. Age was negatively predictive of affective lability, anxiousness, cognitive problems, and relationship insecurity. The results for age must be considered in the context of a mean study age of 26.35 years. Gender was predictive of anxiousness, with men reporting lower anxiousness than other groups. Total ACEs score was positively predictive of depressiveness.

Moderation and three-way interaction analyses were conducted to observe any moderating effect of ACEs prevalence and/or parental loss on these relationships. The only significant moderation effect observed was the interaction between Neuroticism and Total ACEs when predicting Cognitive Problems, in which increased Total ACEs strengthened the positive correlation between Neuroticism and Cognitive Problems. Simple slopes were computed to illustrate this interaction effect (see Figure 3).

Correlations with FFM personality traits were computed for Total ACE score and Parental Loss to examine the potential shared variance affecting results of regression models (see Table 4).

Table 3

Single-step Regression β Coefficients for Predictors of Personality Pathology Scales

Pathology Scale	E	A	C	N	O	Age	Race	Gender	ACEs	P-Loss
Affect. Lability	*.14	*-.16	*-.10	*.58	-.04	*-.20	-.08	.09	.07	.08
Anger	*.18	*-.24	.05	*.59	-.08	.01	-.04	-.09	.06	.01
Anxiousness	-.07	.04	-.10	*.55	.11	*-.23	-.00	*.11	.04	-.02
Cog. Problems	-.05	-.03	*-.30	*.27	.09	*-.40	.00	.03	.09	.03
Depressiveness	*-.10	-.06	*-.12	*.68	.00	-.03	-.05	.05	*.13	-.07
Rel. Insecurity	.07	*-.14	*-.15	*.42	.02	*-.23	-.09	.04	.10	.02
Submissiveness	*-.13	.08	*-.21	*.28	.04	-.12	.02	.10	.03	-.06

Note. * = $p < .007$

Figure 3

Simple Slopes for Moderating Effect of Total ACEs on Neuroticism Predicting Cognitive Problems

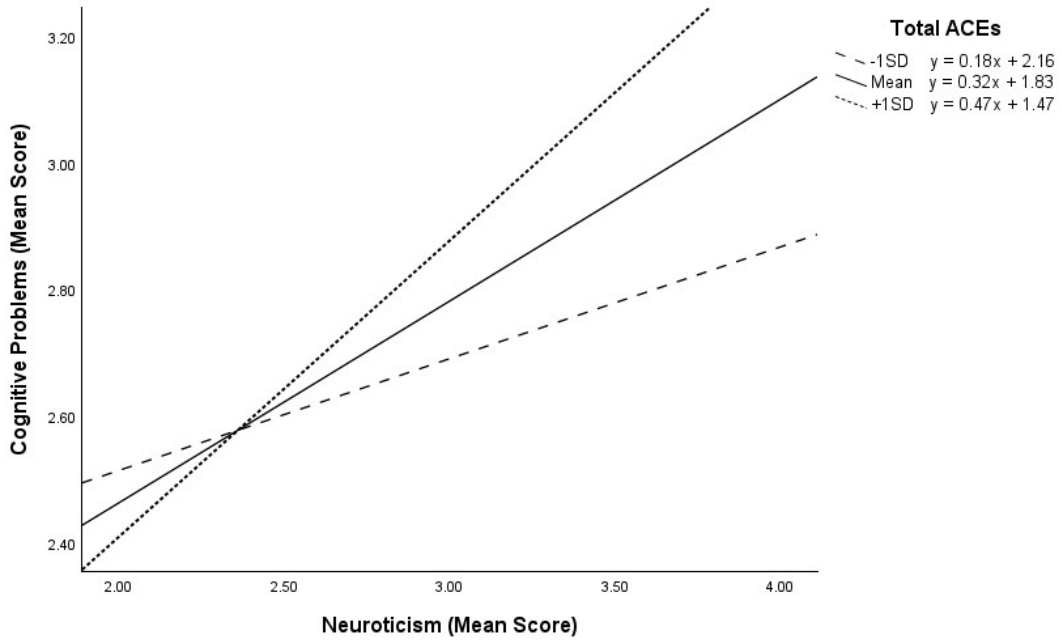

Table 4

Correlation of ACEs and Parental Loss with FFM Personality Traits

	Extraversion		Agreeableness		Conscientiousness		Neuroticism		Openness	
	r	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Total										
ACEs	-.08	.150	-.17	.001	-.14	.007	.35	< .001	.12	.019
Parental										
Loss	-.05	.355	-.09	.073	-.10	.052	.14	.009	.04	.431

Table 5

Correlation Matrix of Predictor Scales and Demographics

Variable	1	2	3	4	5	6	7	8	9	10
1. Extraversion	-									
2. Agreeableness	.13	-								
3. Conscientiousness	.20	.29	-							
4. Neuroticism	-.36	-.44	-.42	-						
5. Openness	.08	.12	.03	.09	-					
6. Age	.07	.23	.17	-.19	.28	-				
7. Race/Eth	.00	.08	-.05	.04	.07	.07	-			
8. Gender	-.09	-.02	-.06	.26	.27	.05	.01	-		
9. Total ACEs	-.08	-.17	-.14	.34	.12	-.09	-.01	.16	-	
10. Parental Loss	-.05	-.09	-.10	.14	.04	-.05	-.02	.07	.57	-

DISCUSSION

As hypothesized, neuroticism positively predicted internalizing dysfunction, and this relationship was moderated and strengthened by increased prevalence of ACEs. Put another way, less emotionally stable individuals are more likely to report pathological levels of internalizing dysfunction, and those less-emotionally-stable individuals are even more likely to report increased internalizing pathology if they experienced significant childhood adversity. This finding aligns with a diathesis-stress model of psychopathology, implying that pathology is not predicted solely by adverse experience or inherent traits, but that an interaction between personality and adversity contributes meaningfully to mental health outcomes. In the framework of Biological Sensitivity to Context, these findings support the theory that more emotionally sensitive individuals are prone to more pronounced impact from the occurrence of childhood adversity. When examined through the lens of resilience, the current study suggests that a low level of neuroticism is a protective factor against the negative impacts of adverse childhood experiences, promoting resilient mental health outcomes in adults who experienced childhood adversity. This is consistent with the findings of Lou et al (2018), in which emotional stability and pro-social behavior were identified as protective factors promoting resilient outcomes following childhood adversity. Children who displayed more emotional stability (lower neuroticism) and higher pro-social behavior (agreeableness, extraversion), were less likely to report negative outcomes in adulthood.

There is a significant correlation between the variables Neuroticism and Total ACEs ($r = .336$; $p < .001$), suggesting the likelihood that experiencing more distressing events during childhood may significantly impact a person's neurotic tendencies. The main effects of neuroticism and ACEs are both predictive of internalizing dysfunction, however the effect sizes differ significantly, with neuroticism ($r_{sp} = .425$) displaying a much larger effect size than ACEs ($r_{sp} = .073$). This observation complements the findings of Qin and colleagues (2024), who reported a mediating role of neuroticism between childhood adversity and depression. The findings of the current study support and expand upon these previous observations by illuminating the compounding effect of adverse childhood experiences. Higher

prevalence of ACEs directly predicts increased likelihood of internalizing dysfunction, moderates and strengthens the likelihood of internalizing dysfunction associated with higher neuroticism, and itself correlates with increased levels of neuroticism.

The lack of observed correlation between openness and internalizing dysfunction, or any of the individual scales, may have several contributing factors. While the individual scales of this study comprise all of the internalizing dysfunction scales within the CAT-PD assessment, this assessment is geared specifically toward personality disorder traits. Other conceptualizations of internalizing dysfunction include such scales as disordered eating, psychosexual dysfunction, obsessive/compulsive difficulties, and mania (Ben-Porath & Tellegen, 2020; Watson et al., 2022). Suicidality was also excluded due to the complexity of measurement with an anonymous study. Correlations between openness and internalizing dysfunction may be influenced by the lack of these scales in the current study.

The findings surrounding parental loss, while not aligned with the hypothesized results, warrant discussion and further investigation. While there was no moderated-moderation effect observed, the presence of parental loss as one of an individual's cumulative ACEs yielded a significant moderating interaction. Participants who experienced parental loss reported lower internalizing dysfunction scores than non-parental-loss participants with the same number of ACEs. One interpretation of these findings would be to infer that parental loss is less critical than other ACEs when predicting internalizing dysfunction in adults. Similar conclusions can be seen in McElroy and Hevey's (2013) study on ACEs and well-being, in which parental loss and physical abuse were the only two ACE categories which did not significantly predict a decrease in reported well-being. Another possible interpretation is that if a parent contributed meaningfully to a child's adversity, the loss of that parent through death or permanent separation may result in more positive adult outcomes despite the assumed negative repercussions associated with parental loss. These possibilities support rationale for examining the independent contribution of specific types of childhood adversity in research studies, rather than solely examining cumulative ACE scores.

An alternative explanation would consider the possibility that parental loss affords a unique opportunity to cultivate resilience in the face of early life adversities. Luecken and colleagues (2000) found that bereaved children who navigated their parental loss via a close, supportive relationship with the surviving parent displayed fewer depressive symptoms and reported stronger social support networks in adulthood than non-bereaved individuals. Given the obvious emotional distress, loss of social resource, and destabilization which would typically accompany the loss of a parent during childhood, it appears to fly in the face of logic to suggest that such an experience could, in the right circumstances, actually be a protective factor against the negative impact of other adversities. There are three key concepts to consider in making such an argument. First, in a non-clinical sample such as the one utilized in this study, resilience is the most common outcome following a potentially traumatic experience (Bonnano, 2005). Second, this study measured the interaction effect of parental loss and total ACEs while controlling for neuroticism, which includes levels of negative self-image (McCrae & John, 1991). Third, bereavement research has identified self-esteem as one of two key contributors to positive outcomes for children who experience parental loss; the other key factor is a positive relationship with the surviving parent/caregiver (Sandler et al., 2007). Taken together, these factors present the possibility that, when holding neuroticism constant, the process of navigating the loss of a parent during childhood may cultivate resilience which is not only adaptive in coping with parental loss, but may also be protective against the negative outcomes of other childhood adversity.

Limitations and Suggestions for Future Research

This study focused on a subset of internalizing psychopathology traits in order to maintain a feasible survey length for an anonymous, voluntary study. Future studies examining the moderating effect of ACEs and/or parental loss may benefit from a more comprehensive assessment of psychopathology which includes scales for externalizing dysfunction, detachment, suicidality, thought disorder, and somatic complaints, many of which are correlated with FFM personality traits in existing literature (Bagby & Widiger, 2018; Clark et al., 2005; Costa & McCrae, 2005; Krueger et al., 2021; Watson et al.,

2022). The current study also attempts to predict adult outcomes based primarily on experiences during childhood and personality traits which are, at least in part, understood to be inherited (Riemann, 1997). The current analyses do not control for a number of factors which may influence levels of internalizing dysfunction either positively or negatively, such as traumatic events in adulthood (i.e. traumatic loss of a parent or family member in adulthood) or therapeutic interventions which may offset the predicted influence of ACEs or parental loss in childhood.

The mean study age of 26.35 (SD=14.55 years), largely owing to the recruitment of university undergraduate student participants, may not be generalizable to a broader population. Over 70% of the participants whose data were analyzed in the current study were 25 years of age or younger. Future studies with a more evenly distributed age range may glean a more accurate representation of the effects of age on predicted outcomes and would also benefit from controlling for other known impacts on predictors of mental health outcomes such as education level and socioeconomic status (Reiss et al., 2019). Aside from age, the study population may be influenced by the nature of the survey recruitment; all Sona undergraduate participants were students from the university psychology program, biasing the study toward any underlying commonalities that may exist in individuals who choose to enroll in the same field of study. Non-Sona participants may have self-selected based on personal interest in personality traits, as the study was promoted with the incentive of receiving one's personality trait results.

Additional limitations include the subjectiveness inherent to self-report measures of pathology and childhood adversity. While the study's brief validity scales are intended to identify significant underreporting and overreporting of behavior and mood, a more accurate measure of personality pathology traits might include a clinical interview and multiple sources of data such as friend/family member reports. Along similar lines,the ACEs measurement utilized in the study is retrospective and, as previously mentioned, contains multiple instances of subjective language which is dependent upon the interpretation of the adult. Lastly, the orientation of this study hypothesized a directional chain of causality beginning with stable personality traits, moderated by adverse childhood experiences, and

ending in symptoms of psychopathology. As discussed below, the relationships between these factors may be more complex in their interrelations, and future studies may benefit from a less directional approach to data analysis.

Conclusion and Implications

The results of the current study illuminate facets of the interconnected nature of personality, adverse childhood experiences, and psychopathology. By demonstrating the interaction of neuroticism and childhood adversity, the findings support the notion that human behavior is most understandable when we take into account both the personality of an individual and the way they have interacted with their environment throughout their lifetime. When coupled with the moderating effect of parental loss, the importance of neuroticism takes on new meaning, and perhaps plays a different role than expected in its prediction of negative mental health outcomes in adulthood.

The negative self-image aspect of neuroticism (e.g. M5-50 item #16 "I dislike myself") is the exact opposite of the positive self-esteem which is found to be protective against negative mental health outcomes following parental loss (Haine et al., 2003; Sandler et al., 2007, 2010). While personality traits are understood to be relatively stable over time, their presentation is partially influenced by environment, learning, and personal strivings, ultimately blending to produce the self-concept (McRae, 2011). Applying this framework to neuroticism, the biological portion of a person's emotional reactivity may be fairly static, yet the self-perception an individual holds may be subject to change. This is supported by the findings of the Family Bereavement Program, in which controlled trials demonstrated that therapeutic intervention specifically focused on building children's self-esteem and connection with their surviving parent/caregiver produced clinically significant outcomes when compared to control groups (Ayers, 2014; Sandler, 2010). The potentially protective effect of navigating parental loss, one interpretation of the

results of this study, hinges on the individual's level of neuroticism, which is a measure of emotional instability and negative self-image.

Following childhood adversity, low neuroticism predicts resilient outcomes, as does high self-esteem and healthy connection with one's remaining parent following parental loss (Haine et al., 2003; Lou et al., 2018). In his critiques of resilience studies, Bonnano (2005, 2021) highlights that predictors of resilient outcomes are largely inconsistent across varying situations, and appear to take a backseat to individuals simply finding a way, by whatever means available, to overcome their adversity and cope with traumatic events. He points out that even the narcissistic/self-centered behavior of "self-enhancers" can exhibit protective effects against potentially traumatic experiences. However, adaptive self-enhancement, in the form of building up self-esteem, is precisely what is taught to bereaved children who display resilient outcomes. This is paralleled in the cognitive challenging of negative self-image which is inherent to many modern therapeutic interventions (Beck, 2021; Linehan, 1993).

As McAdams (1995) posits, personality psychology culminates in the interweaving of traits, experiences, and strivings to produce the inner narrative, the self-perceived life story, which is ever changing. For resilient individuals, this inner narrative is one of coping with and overcoming adversity. For those who display difficulty with trauma or adversity, the inner narrative takes a negative tone, a despairing self-image, depicting a broken person who is overwhelmed by the things that have happened to them. This tone of inner narrative may be conceptualized as akin to aspects of neuroticism, which the current study identifies as a key factor in the relationship between adversity in childhood and psychopathology in adulthood. The clinical implication herein returns to the importance of challenging negative thoughts in modalities such as cognitive-behavioral therapy (Beck, 2021). A therapist who helps a client challenge their automatic negative thoughts and negative core beliefs is, in effect, helping a client re-write their inner story. The elusive, ever shifting predictor of resilient outcomes may not be a particular combination of personality traits or social resources. Perhaps it is the individual's own belief in the capability for healing and joy –a product of the inner narrative, which is always open to change.

References

Amato, P. R. (2001). Children of divorce in the 1990s: An update of the Amato and Keith (1991) meta-analysis. *Journal of Family Psychology*, *15*(3), 355–370. https://doi.org/10.1037/0893-3200.15.3.355

Ayers, T. S., Wolchik, S. A., Sandler, I. N., Twohey, J. L., Weyer, J. L., Padgett-Jones, S., Weiss, L., Cole, E., & Kriege, G. (2014). The Family Bereavement Program: Description of a Theory-based Prevention Program for Parentally-Bereaved Children and Adolescents. *Omega - Journal of Death and Dying*, *68*(4), 293–314. https://doi.org/10.2190/om.68.4.a

Bagby, R. M., & Widiger, T. A. (2018). Five Factor Model personality disorder scales: An introduction to a special section on assessment of maladaptive variants of the five factor model. *Psychological Assessment*, *30*(1), 1–9. https://doi.org/10.1037/pas0000523

Beck, J. S. (2021). *Cognitive behavior therapy: basics and beyond*. http://ci.nii.ac.jp/ncid/BB07559978

Ben-Porath, Y. S., & Tellegen, A. (2020). Minnesota Multiphasic Personality Inventory-3 (MMPI-3): Manual for administration, scoring, and interpretation. *University of Minnesota Press*

Boccio, C. M., & Beaver, K. M. (2019). The Influence of Family Structure on Delinquent Behavior. *Youth Violence and Juvenile Justice*, *17*(1), 88–106. https://doi.org/10.1177/1541204017727836

Bonanno, G. A. (2005). Resilience in the face of potential trauma. *Current Directions in Psychological Science*, *14*(3), 135–138. https://doi.org/10.1111/j.0963-7214.2005.00347.x

Bonanno, G. A. (2021). The resilience paradox. *European Journal of Psychotraumatology*, *12*(1). https://doi.org/10.1080/20008198.2021.1942642

Boyce, W. T., & Ellis, B. J. (2005). Biological sensitivity to context: I. An evolutionary–developmental theory of the origins and functions of stress reactivity. *Development and Psychopathology*, *17*(02). https://doi.org/10.1017/s0954579405050145

Cavanagh, S. E., & Huston, A. C. (2008). The Timing of Family Instability and Children's Social Development. *Journal of Marriage and Family*, *70*(5), 1258–1270. https://doi.org/10.1111/j.1741-3737.2008.00564.x

Clark, L. A. (1993). Personality Disorder Diagnosis: Limitations of the Five-Factor Model. *Psychological Inquiry*. https://doi.org/10.1207/s15327965pli0402_5

Clark, L. A. (2005). Temperament as a Unifying Basis for Personality and Psychopathology. *Journal of Abnormal Psychology*, *114*(4), 505–521. https://doi.org/10.1037/0021-843x.114.4.505

Conway, C. M., Forbes, M. K., & South, S. C. (2021). A Hierarchical Taxonomy of Psychopathology (HiTOP) Primer for Mental Health Researchers. *Clinical Psychological Science*, *10*(2), 236–258. https://doi.org/10.1177/21677026211017834

Costa, P. T., & McCrae, R. R. (1992). The Five-Factor Model of Personality and Its Relevance to Personality Disorders. *Journal of Personality Disorders*, *6*(4), 343–359. https://doi.org/10.1521/pedi.1992.6.4.343

Costa, P. T., Jr., & McCrae, R. R. (2005). A Five-Factor Model Perspective on Personality Disorders. In S. Strack (Ed.), *Handbook of personology and psychopathology* (pp. 257–270). John Wiley & Sons, Inc.

Egger, J. I. M., De Mey, H., Derksen, J., & Van Der Staak, C. P. F. (2003). Cross-cultural replication of the five-factor model and comparison of the NEO-PI-R and MMPI-2 PSY-5 scales in a Dutch psychiatric sample. *Psychological Assessment*, *15*(1), 81–88. https://doi.org/10.1037/1040-3590.15.1.81

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. P., Spitz, A. M., Edwards, V. J., Koss, M. P., & Marks, J. G. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. *American Journal of Preventive Medicine*, *14*(4), 245–258. https://doi.org/10.1016/s0749-3797(98)00017-8

Goldberg, L. R. (1990). An alternative “description of personality”: The Big-Five factor structure. *Journal of Personality and Social Psychology*, *59*(6), 1216–1229. https://doi.org/10.1037/0022-3514.59.6.1216

Haine, R. A., Ayers, T. S., Sandler, I. N., Wolchik, S. A., & Weyer, J. L. (2003). Locus of Control and Self-esteem as Stress-moderators or Stress-mediators in Parentally Bereaved Children. *Death Studies*, *27*(7), 619–640. https://doi.org/10.1080/07481180302894

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. https://ci.nii.ac.jp/ncid/BB1323391X

Joshanloo, M. (2024). Within-person associations between personality traits and loneliness controlling for negative affect. *Personality and Individual Differences*, *223*, 112609. https://doi.org/10.1016/j.paid.2024.112609

Kotov, R., Jonas, K. G., Carpenter, W. T., Dretsch, M. N., Eaton, N. R., Forbes, M. K., Forbush, K. T., Hobbs, K. A., Reininghaus, U., Slade, T., South, S. C., Sunderland, M., Waszczuk, M. A., Widiger, T. A., Wright, A. G. C., Zald, D. H., Krueger, R. F., Watson, D., & Workgroup, H. U. (2020). Validity and utility of Hierarchical Taxonomy of Psychopathology (HiTOP): I. Psychosis superspectrum. *World Psychiatry*, *19*(2), 151–172. https://doi.org/10.1002/wps.20730

Kotov, R., Krueger, R. F., Watson, D. I., Achenbach, T. M., Althoff, R. R., Bagby, R. M., Brown, T. M., Carpenter, W. T., Caspi, A., Clark, L. A., Eaton, N. R., Forbes, M. K., Forbush, K. T., Goldberg, D. E., Hasin, D. S., Hyman, S. E., Ivanova, M. Y., Lynam, D. R., Markon, K. E., . . . Zimmerman, M. (2017). The Hierarchical Taxonomy of Psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology*, *126*(4), 454–477. https://doi.org/10.1037/abn0000258

Krueger, R. F., Eaton, N. R., Clark, L. A., Watson, D., Markon, K. E., Derringer, J., Skodol, A. E., & Livesley, W. J. (2011). Deriving an Empirical Structure of Personality Pathology for DSM-5. *Journal of Personality Disorders*, *25*(2), 170–191. https://doi.org/10.1521/pedi.2011.25.2.170

Linehan, M. M. (1993). *Cognitive-Behavioral treatment of Borderline personality Disorder*. Guilford Press.

Liu, C., Grotta, A., Hiyoshi, A., Berg, L., & Rostila, M. (2022). School Outcomes Among Children Following Death of a Parent. *JAMA Network Open*, *5*(4), e223842. https://doi.org/10.1001/jamanetworkopen.2022.3842

Loehlin, J. C. (1992). Genes and environment in personality development. *Sage Publications*.

Lommen, M., Hoekstra, S. J., Van Den Brink, R., & Lenaert, B. (2024). Fear generalization predicts post-traumatic stress symptoms: a two-year follow-up study in Dutch fire fighters. *Journal of Anxiety Disorders*,https://doi.org/10.1016/j.janxdis.2024.102855

Lou, Y., Taylor, E. N., & Di Folco, S. (2018). Resilience and resilience factors in children in residential care: A systematic review. *Children and Youth Services Review*, *89*, 83–92. https://doi.org/10.1016/j.childyouth.2018.04.010

Luecken, L. J. (2008). Long-term consequences of parental death in childhood: Psychological and physiological manifestations. In *American Psychological Association eBooks* (pp. 397–416). https://doi.org/10.1037/14498-019

Lynam, D. R., Gaughan, E. T., Miller, J. D., Miller, D. J., Mullins-Sweatt, S. N., & Widiger, T. A. (2011). Assessing the basic traits associated with psychopathy: Development and validation of the Elemental Psychopathy Assessment. *Psychological Assessment*, *23*(1), 108–124. https://doi.org/10.1037/a0021146

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227–238. https://doi.org/10.1037/0003-066x.56.3.227

McAdams, D. P. (1995). What do we know when we know a person? Journal of Personality, 63(3), 365–396. https://doi.org/10.1111/j.1467-6494.1995.tb00500.x

McElroy, S. M., & Hevey, D. (2014). Relationship between adverse early experiences, stressors, psychosocial resources and wellbeing. Child Abuse & Neglect, 38(1), 65–75. https://doi.org/10.1016/j.chiabu.2013.07.017

McCord, D. M. (2002). M5-50 Questionnaire [Administration and scoring materials]. Retrieved from http://paws.wcu.edu/mccord/m5-50/

McCrae, R. R., & Costa, P. T. (1987a). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *52*(1), 81–90. https://doi.org/10.1037/0022-3514.52.1.81

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, *17*(3), 437–455. https://doi.org/10.1037/a0028085

Meehl, P. E. (1962). Schizotaxia, schizotypy, schizophrenia. *American Psychologist*, *17*(12), 827–838. https://doi.org/10.1037/h0041029

Mullins-Sweatt, S. N., Edmundson, M., Sauer-Zavala, S., Lynam, D. R., Miller, J. D., & Widiger, T. A. (2012). Five-Factor Measure of Borderline Personality Traits. *Journal of Personality Assessment*, *94*(5), 475–487. https://doi.org/10.1080/00223891.2012.672504

National Survey of Children's Health (NSCH) | *MCHB*. (2023, February 1). https://mchb.hrsa.gov/data/national-surveys

Petruccelli, K., Davis, J. S., & Berman, T. (2019). Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect*, *97*, 104127. https://doi.org/10.1016/j.chiabu.2019.104127

PROCESS macro for SPSS, SAS, and R. (n.d.). The PROCESS Macro for SPSS, SAS, and R. https://www.processmacro.org/index.html

Qin, Q., Jiang, Y., Xian, M., Zhu, Y., Li, H., Li, S., Chen, K., Zhang, C., Wang, X., Bai, H., Zhang, J., & Wang, W. (2024). The effect of childhood trauma on depression in college students: A moderated mediation model. *Journal of Affective Disorders*. https://doi.org/10.1016/j.jad.2024.02.067

Reiss, F., Meyrose, A., Otto, C., Lampert, T., Klasen, F., & Ravens-Sieberer, U. (2019). Socioeconomic status, stressful life situations and mental health problems in children and adolescents: Results of the German BELLA cohort-study. *PLOS ONE*, *14*(3). https://doi.org/10.1371/journal.pone.0213700

Riemann, R., Angleitner, A., & Strelau, J. (1997). Genetic and Environmental Influences on Personality: A Study of Twins Reared Together Using the Self- and Peer Report NEO-FFI Scales. *Journal of Personality*, *65*(3), 449–475. https://doi.org/10.1111/j.1467-6494.1997.tb00324.x

Rowe, D. (1995). The Limits of Family Influence: Genes, Experience, and Behavior. *Contemporary Sociology*, *24*(1), 89. https://doi.org/10.2307/2075126

Ryan, R., Claessens, A., & Markowitz, A. J. (2015). Associations Between Family Structure Change and Child Behavior Problems: The Moderating Effect of Family Income. *Child Development*, *86*(1), 112–127. https://doi.org/10.1111/cdev.12283

Sandler, I. N., Ma, Y., Tein, J., Ayers, T. S., Wolchik, S. A., Kennedy, C. L., & Millsap, R. E. (2010). Long-term effects of the family bereavement program on multiple indicators of grief in parentally bereaved children and adolescents. *Journal of Consulting and Clinical Psychology*, *78*(2), 131–143. https://doi.org/10.1037/a0018393

Sandler, I. N., Wolchik, S. A., & Ayers, T. S. (2007). Resilience Rather Than Recovery: A Contextual Framework on Adaptation Following Bereavement. *Death Studies*, *32*(1), 59–73. https://doi.org/10.1080/07481180701741343

Schmiege, S. J., Khoo, S. T., Sandler, I. N., Ayers, T. S., & Wolchik, S. A. (2006). Symptoms of Internalizing and Externalizing Problems. *American Journal of Preventive Medicine*, *31*(6), 152–160. https://doi.org/10.1016/j.amepre.2006.07.004

Simms, L. J., Goldberg, L. R., Roberts, J. D., Watson, D. I., Welte, J. W., & Rotterman, J. H. (2011). Computerized Adaptive Assessment of Personality Disorder: Introducing the CAT–PD Project.

Journal of Personality Assessment, *93*(4), 380–389. https://doi.org/10.1080/00223891.2011.577475

Singer, J. P., Cummings, C., & Coccaro, E. F. (2022). Parental separation and death during childhood as predictors of adult psychopathology: An examination of racial differences. *Psychological Trauma: Theory, Research, Practice, and Policy*. https://doi.org/10.1037/tra0001291

Socha, A., Cooper, C. B., & McCord, D. M. (2010). Confirmatory factor analysis of the M5-50: An implementation of the International Personality Item Pool item set. *Psychological Assessment*, *22*(1), 43–49. https://doi.org/10.1037/a0017371

Somers, J. A., Ibrahim, M., & Luecken, L. J. (2017). Biological Sensitivity to the Effects of Childhood Family Adversity on Psychological Well-Being in Young Adulthood. *Child Maltreatment*, *22*(3), 236–244. https://doi.org/10.1177/1077559517711041

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*, *5*(1), 25338. https://doi.org/10.3402/ejpt.v5.25338

Stikkelbroek, Y., Bodden, D. H. M., Reitz, E., Vollebergh, W. a. M., & Van Baar, A. L. (2016). Mental health of adolescents before and after the death of a parent or sibling. *European Child & Adolescent Psychiatry*, *25*(1), 49–59. https://doi.org/10.1007/s00787-015-0695-3Tomiatti, M., Gore, W. L., Lynam, D. R., Miller, J. D., & Widiger, T. A. (2012). A five-factor measure of histrionic personality traits. *Advances in Psychology Research*, 113–138.

Trull, T. J. (2012). The Five-Factor Model of Personality Disorder and*DSM-5*. *Journal of Personality*, *80*(6), 1697–1720. https://doi.org/10.1111/j.1467-6494.2012.00771.x

Watson, D. I., Levin-Aspenson, H. F., Waszczuk, M. A., Conway, C. M., Dalgleish, T., Dretsch, M. N., Eaton, N. R., Forbes, M. K., Forbush, K. T., Hobbs, K. A., Michelini, G., Nelson, B. D., Sellbom, M., Slade, T., South, S. C., Sunderland, M., Waldman, I. D., Witthöft, M., Wright, A. G. C., . . . Zinbarg, R. E. (2022). Validity and utility of Hierarchical Taxonomy of Psychopathology (

HiTOP): III . Emotional dysfunction superspectrum. *World Psychiatry*, *21*(1), 26–54. https://doi.org/10.1002/wps.20943

Widiger, T. A., & Costa, P. T. (2012). Integrating Normal and Abnormal Personality Structure: The Five-Factor Model. *Journal of Personality*, *80*(6), 1471–1506. https://doi.org/10.1111/j.1467-6494.2012.00776.x

Widiger, T. A., Sellbom, M., Chmielewski, M., Clark, L. A., DeYoung, C. G., Kotov, R., Krueger, R. F., Lynam, D. R., Miller, J. D., Mullins-Sweatt, S. N., Samuel, D. B., South, S. C., Tackett, J. L., Thomas, K. K., Watson, D. I., & Wright, A. G. C. (2019a). Personality in a Hierarchical Model of Psychopathology. *Clinical Psychological Science*, *7*(1), 77–92. https://doi.org/10.1177/2167702618797105

Widiger, T. A., Sellbom, M., Chmielewski, M., Clark, L. A., DeYoung, C. G., Kotov, R., Krueger, R. F., Lynam, D. R., Miller, J. D., Mullins-Sweatt, S. N., Samuel, D. B., South, S. C., Tackett, J. L., Thomas, K. K., Watson, D. I., & Wright, A. G. C. (2019b). Personality in a Hierarchical Model of Psychopathology. *Clinical Psychological Science*, *7*(1), 77–92. https://doi.org/10.1177/2167702618797105

Wright, A. G. C., & Simms, L. J. (2014). On the structure of personality disorder traits: Conjoint analyses of the CAT-PD, PID-5, and NEO-PI-3 trait models. *Personality Disorders: Theory, Research, and Treatment*, *5*(1), 43–54. https://doi.org/10.1037/per0000037

Appendix A

Demographics Questions

1. Please indicate your age
    a. (slider)

2. Do you live:
    a. In the United States
    b. Outside of the United States

3. Race / Ethnicity (choose all that apply)
    a. American Indian or Alaskan Native
    b. Asian
    c. Black / African-American
    d. Hispanic / Latino
    e. Native Hawaiian / Pacific Islander
    f. White
    g. Other: _____

4. Gender
    a. Man
    b. Woman
    c. Transgender Man
    d. Transgender Woman
    e. Non-Binary
    f. Open Option: _____

Appendix B

Response Validity Items

From CAT-PD Static Form (CAT-PD-SF, v1.1V)

1	2	3	4	5
Very Untrue of Me	Moderately Untrue of Me	Neither True nor Untrue of Me	Moderately True of Me	Very True of Me

Inconsistency (Non-sensical)

1. I have never watched a television in my lifetime.
2. I like listening to music from time to time.*
3. I prefer to avoid traffic jams whenever possible.*

Infrequency (Unusual)

1. I sometimes don't know where I am.
2. I believe that the rules don't apply to me.
3. I can change the weather simply by thinking about it.

Positive Impression Management (Social Desirability)

1. I have sometimes had to tell a lie.*
2. I am never in a bad mood.
3. I have never eaten junk food.

Validity Items Created for This Study

Instructed Reponses

1. Please select "Very true of me" for this answer.
2. Please select "Very untrue of me" for this answer.
3. Please select "Moderately true of me" for this answer.

**Reverse scored items*

Appendix C

Personality Questionnaire Items

Adapted from M5-50

1	2	3	4	5
Very Untrue of Me	Moderately Untrue of Me	Neither True nor Untrue of Me	Moderately True of Me	Very True of Me

1. I have a vivid imagination
2. I believe in the importance of art
3. I seldom feel blue
4. I have a sharp tongue
5. I am not interested in abstract ideas
6. I find it difficult to get down to work
7. I panic easily
8. I tend to vote for liberal political candidates
9. I am not easily bothered by things
10. I make friends easily
11. I often feel blue
12. I get chores done right away
13. I suspect hidden motives in others
14. I rarely get irritated
15. I do not like art
16. I dislike myself
17. I keep in the background
18. I do just enough work to get by
19. I am always prepared

20. I tend to vote for conservative political candidates
21. I feel comfortable with myself
22. I avoid philosophical discussions
23. I waste my time
24. I believe that others have good intentions
25. I am very pleased with myself
26. I have little to say
27. I feel comfortable around other people
28. I am often down in the dumps
29. I do not enjoy going to art museums
30. I have frequent mood swings
31. I don't like to draw attention to myself
32. I insult people
33. I have a good word for everyone
34. I get back at others
35. I carry out my plans
36. I would describe my experiences as somewhat dull
37. I carry the conversation to a higher level
38. I don't see things through
39. I am skilled in handling social situations
40. I respect others
41. I pay attention to details
42. I am the life of the party
43. I enjoy hearing new ideas
44. I accept people as they are
45. I don't talk a lot

46. I cut others to pieces
47. I make plans and stick to them
48. I know how to captivate people
49. I make people feel at ease
50. I shirk my duties

Key:

Reversed Items: 3, 4, 5, 6, 9, 13, 14, 15, 17, 18, 20, 21, 22, 23, 25, 26, 29, 31, 32, 34, 36, 38, 45, 46, 50

Scoring:

Extraversion – 10, 17, 26, 27, 31, 36, 39, 42, 45, 48

Agreeableness – 4, 13, 24, 32, 33, 34, 40, 44, 46, 49

Conscientiousness – 6, 12, 18, 19, 23, 35, 38, 41, 47, 50

Neuroticism – 3, 7, 9, 11, 14, 16, 21, 25, 28, 30

Openness – 1, 2, 5, 8, 15, 20, 22, 29, 37, 43

Appendix D

Personality Pathology Items

From CAT-PD Static Form (CAT-PD-SF, v1.1V)

1	2	3	4	5
Very Untrue of Me	Moderately Untrue of Me	Neither True nor Untrue of Me	Moderately True of Me	Very True of Me

Affective Lability

1. I have frequent mood swings.
2. I lose control over my behavior when I'm emotional.
3. I have unpredictable emotions and moods.
4. I overreact to every little thing in life.
5. I know how to cope*
6. I can remain cool-headed when stressed out.*

Anger

1. I get angry easily
2. I often feel overwhelmed with rage
3. I get irritated easily
4. I have a violent temper
5. I am not easily annoyed
6. I don't let the little things anger me

Anxiousness

1. I feel my anxiety overwhelms me.
2. I am nervous or tense most of the time.
3. I panic easily.
4. I feel that my worry and anxiety is out of control.
5. I am generally a fearful person.
6. I am easily startled.
7. I rarely worry.*

Cognitive Problems

1. I frequently get things mixed up in my head.
2. I often feel like my thoughts make no sense.
3. I often space out and lose track of what's going on.
4. I often have disorganized thoughts.
5. I am easily disoriented.
6. I easily lose my train of thought.
7. I have a good memory for things I've done throughout the day.*
8. I formulate ideas clearly.*

Depressiveness

1. I fend to feel very hopeless.
2. I am sad most of the time.
3. I generally focus on the negative side of things.
4. I dislike myself.
5. I look at the bright side of life.*
6. I rarely feel depressed.*

Relationship Insecurity

1. I am always worried that my partner is going to leave me.
2. I am usually convinced that my friends and romantic partners will betray me.
3. I get jealous easily.
4. I usually believe that my friends will abandon me.
5. I am paralyzed by a fear of rejection.
6. I am secure in my relationships.*
7. I generally trust my partners to be faithful to me.*

Submissiveness

1. I am easily controlled by others in my life.
2. I let others take advantage of me.
3. I let myself be pushed around.
4. I prefer that others make the major decisions in my life.
5. I let myself be directed by others.
6. I need others to help run my life.

**Reverse Scored Items*

Appendix E

Adverse Childhood Experiences Questionnaire

Prior to your 18th birthday:

1. Did a parent or other adult in the household often or very often…

   Swear at you, insult you, put you down, or humiliate you? or

   Act in a way that made you afraid that you might be physically hurt?

◯ Yes ◯ No

2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?

◯ Yes ◯ No

3. Did an adult or person at least 5 years older than you ever…

   Touch or fondle you or have you touch their body in a sexual way? or

   Attempt or actually have oral or anal intercourse with you?

◯ Yes ◯ No

4. Did you often or very often feel that …

   No one in your family loved you or thought you were important or special? or

   Your family didn't look out for each other, feel close to each other, or support each other?

◯ Yes ◯ No

5. Did you often or very often feel that …

You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

◯ Yes ◯ No

6. Was a biological parent ever lost to you through divorce, abandonment, or other reason?

◯ Yes ◯ No

7. Was your mother or stepmother:

Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?

◯ Yes ◯ No

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?

◯ Yes ◯ No

9. Was a household member depressed or mentally ill? or

Did a household member attempt suicide?

◯ Yes ◯ No

10. Did a household member go to prison?

◯ Yes ◯ No

Appendix F

Parental Loss and Household Structure Change Items

1. Before I turned 18, a parent or primary caregiver passed away. [A "primary caregiver" is a person who was largely responsible for meeting your physical and emotional needs as a child.]
   ("True" or "False")
   a. If true – "Please specify at what age a parent or primary caregiver passed away." (slider)

2. Before I turned 18, a parent or primary caregiver was lost to me due to divorce or long-term separation with little to no contact. [A "primary caregiver" is a person who was largely responsible for meeting your physical and emotional needs as a child.]
   ("True" or "False")
   a. If true – "Please specify at what age a parent or primary caregiver was lost to you due to divorce or long-term separation with little to no contact." (slider)

3. I was raised primarily by (select best answer):
   a. My two biological parents
   b. A single parent
   c. Biological and step-parent(s)
   d. Adopted or Foster family
   e. Grandparents, Aunts/Uncles or other relatives
   f. Other: _____

4. Before I turned 18, a step-parent or new adult moved into my home due to marriage/re-marriage/cohabitation with my primary caregiver [A "primary caregiver" is a person who was largely responsible for meeting your physical and emotional needs as a child].

("True" or "False")

a. If true – "Please specify at what age a step-parent or new adult moved into your home due to marriage/re-marriage/cohabitation with your primary caregiver [if more than one, please specify earliest age]." (slider)
b. If true – "Please specify how many times a new step-parent or new adult moved into your home due to marriage/re-marriage/cohabitation with your primary caregiver, prior to your 18th birthday." (slider)