POLYVICTIMIZATION, ATTACHMENT, AND PSYCHOLOGICAL FUNCTIONING: A MODEL OF MODERATION

by

Hanna R. Hatfield

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Thesis Advisor: Dr. Jeff Aspelmeier

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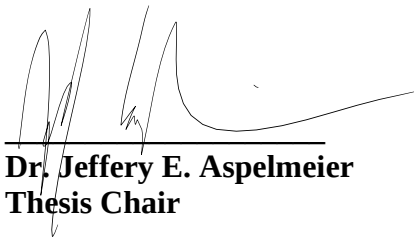
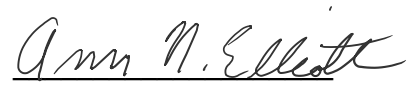
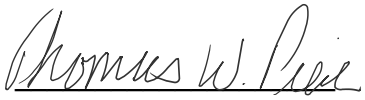


Dr. Jeffery E. Aspelmeier **5/20/2020**
Thesis Chair **Date**



Dr. Ann N. Elliott **5/20/2020**
Committee Member **Date**



Dr. Thomas W. Pierce **5/20/2020**
Committee Member **Date**

Abstract

Polyvictimization is a condition characterized by the accumulation of different individual types of victimizations experienced by one individual over time (Finkelhor et al., 2005). Insecure attachment, both anxious and avoidant, has previously been thought to negatively impact an individual's ability to cope with adversity. Attachment Anxiety in adulthood represents an aversion to abandonment and can elicit hyperactive coping strategies that leave the individual at higher risk for adverse outcomes. Attachment avoidance in adulthood represents an aversion to closeness and a resistance to dependency and can elicit deactivating strategies that also leave the individual at higher risk for adverse outcomes (Brennan, Clark, & Shaver, 1998; Mikulincer & Shaver, 2003; Shaver & Mikulincer 2002). The present study utilized a moderation model to examine the buffering effects of adult attachment security on the association between retrospective reports of childhood polyvictimization experiences and self-reports of current psychological symptom severity. The sample consisted of 216 college women in their first semester. Attachment Anxiety significantly moderated the negative effects of polyvictimization. Participants reporting high polyvictimization and high attachment anxiety or avoidance also reported the highest levels of symptom severity. Among participants reporting high polyvictimization, participants with greater attachment security reported substantially lower levels of psychological symptom severity than their peers reporting greater insecure attachment. It is important to note that attachment security buffers but does not completely abolish the negative effects of polyvictimization.

Keywords: College women, polyvictimization, attachment, psychological symptoms

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Statement of the Problem

The current study investigates the degree to which avoidant and anxious attachment styles moderate psychological outcomes, of childhood polyvictimization among college women. Polyvictimization as a condition is much more common than initially thought, with a study by Finkelhor, Ormrod and Turner (2007) reporting 69% of children studied reported experiencing more than one type of victimization over the course of their childhood and approximately 20% reporting four or more types of victimization. Attachment in this context is conceptualized as a resilience factor that buffers the effects of adversity. Existing literature (Busuito, Huth-Bocks, & Puro, 2014; Cook, Valera, Calebs, & Wilson, 2017; Kokkino, Voulgaridou, Koukoutisis, & Markos, 2016) has investigated the role of attachment as a moderator of the relationship between single types of victimization and negative outcomes but not the role of attachment within polyvictimization. The present study fills an existing gap in the literature by examining whether attachment moderates the relationship between polyvictimization and psychological outcomes.

Chapter 1

Introduction

Childhood polyvictimization/victimization

Prior to the emergence of polyvictimization as a construct, studies of childhood victimization focused on individual types of victimization in isolation (e.g., sexual abuse, physical abuse, neglect; Finkelhor et al., 2007). Such research mainly focused on the isolated impact of independent forms of victimization but neglected to examine the combined impact of these different types (e.g., sexual abuse, maltreatment, physical abuse, verbal abuse). However, the frequency of these experiences alone and together could potentially influence outcomes seen later in life. Subsequent research began to investigate multi-type abuse because, for example, children who experience maltreatment are more susceptible to experiencing more victimizations of both the same and varying types (e.g. Baldry, 2003; Holt, Finkelhor, & Kantor, 2007).

Polyvictimized children, as described by Finkelhor, Ormrod, Turner, and Hamby (2005), are individuals who have experienced multiple different types of victimization across a variety of domains over time as opposed to simply experiencing multiple incidents of the same type of victimization. The Juvenile Victimization Questionnaire developed by Finkelhor, Hamby, Ormrod, and Turner (2005) identifies six domains of victimization that include property crime, physical assault, child maltreatment, peer and sibling victimization, sexual victimization, and witnessing/indirect victimization. The purpose of this measure of victimization was to fill the gaps left by previous measures, as previous victimization research may have overlooked some experience and tends to lack complete victimization profiles as some experiences may have been overlooked (Finkelhor et al., 2007).

Child victimization is thought to be a component of a much larger and much more complex picture that suggests victimization is embedded in the ongoing situational context of a child's life and not just within isolated events (Finkelhor et al., 2007), leading children to experience more varied forms of victimization over the course of their early life than their peers. Such assertions have been supported by data from nationally representative samples indicating that 7% of 2- to 17-year-olds have experienced seven or more different kinds of victimizations and 20% have experienced five or more (Finkelhor, Ormrod, Turner, & Holt, 2009).

This conceptualization of polyvictimization includes victimization experiences that may seem minor or less severe than others (i.e. theft or vandalism of a backpack or notebook vs. attempted or completed kidnapping, for example). However relatively minor victimizations that are seemingly trivial are actually important to the larger picture. Such items are included in victimizations experiences because they can add up over time and potentially contribute to more or subsequent victimizations. For example, if a child's backpack is stolen at school, that child may be at higher risk for experiencing bullying and other peer victimizations in the future. Also, polyvictimization focusses more on the number of domains of one's life in which victimization occurs, than on the particular frequency and severity any particular victimization experience.

In terms of its mechanisms, greater polyvictimization is thought to result in the formation of a greater number of cognitive associations between traumatic memories and specific individuals and environments. Greater prevalence of these association are thought to interfere with normative coping techniques, and, after experiencing numerous victimizations, these altered coping mechanisms become generalized (Finkelhor et al., 2007). Additionally, when victimizations are coming from multiple different sources, children may self-blame more

frequently and they may be more likely to see themselves as deviant and/or disadvantaged (Finkelhor et al., 2007).

Multiple victimizations, or polyvictimizations are thought to be predicted by four pathways (Finkelhor et al., 2009). The first suggests that polyvictimized children are products of particular developmental processes such as familial violence and victimization (either between child and sibling, child and parent, or both), as it can create a predisposition for peer victimization. Secondly, many of these children consistently exhibit behavioral and emotional problems such as a lack of emotional control, unnecessary aggression, disruptiveness, and defiance of authority. Third, problems within the family such as chaos (e.g. lack of structure or rules), a lack of supervision, single parent or restructured households, physical illness and psychiatric illness, and/or drug abuse can lead to neglect and insecure attachment styles that may also leave the child predisposed to multiple forms of victimization. Lastly, living in a dangerous environment (e.g., violent communities, impoverished areas, inner cities, war zones) throughout childhood is thought to serve as a pathway to polyvictimization (Finkelhor et al., 2009).

Children who experience a greater number of victimizations may experience higher levels of trauma symptoms in childhood and beyond (Finkelhor et al., 2005; Finkelhor et al., 2007; Finkelhor et al., 2009). That is, experiencing a greater number of multiple victimizations leaves a child vulnerable to psychological changes, both temporary and persistent. One study found that within 10- to 17-year-olds exhibiting either clinical anxiety or depression, polyvictims accounted for 80% and 86% of those groups, respectively (Finkelhor et al., 2007). Upon including polyvictimization in analyses assessing outcomes of victimization, the predictive power of individual forms of victimization were either eliminated completely or reduced below levels of significance (Finkelhor et al., 2005; Finkelhor et al., 2007).

Adult Retrospective Version of the JVQ. Finkelhor's original Juvenile Victimization Questionnaire (JVQ) (Hamby, Finkelhor, Ormrod, & Turner, 2004) has been modified for use in studies with adult college students (Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009). The adult retrospective version of the JVQ assesses 34 different types of victimizations that an individual may have experienced before the age of 17. Previous literature has made use of the JVQ-Adult Retrospective within a sample of female college students. In one of these studies, 97% of participants indicated experiencing at least one of the 34 victimization types assessed and over 40% indicated experiencing victimizations from five or six of the six total categories (Richmond, Elliott, Pierce, Aspelmeier, & Alexander, 2009). In another, 98% of participants indicated experiencing at least one of the 34 types of victimization assessed and 49.2% indicated experiencing victimizations from five or six of the six total categories (Elliott et al., 2009).

Attachment

Childhood attachment. All species, including humans, demonstrate species-specific patterns of behavior and behavioral systems that are activated and subsequently terminated based on environmental conditions and cues (Ainsworth & Bowlby, 1991; Bowlby, 1958). John Bowlby identified unique behavior patterns such as sucking, clinging, following, crying, cooing, gazing, and smiling in human infants that are usually directed toward the mother. Bowlby classified these behaviors within the "attachment behavioral system" as they are used to elicit caregiver responses that satisfy needs such as closeness/comfort and safety (Bowlby, 1958, 1969/1982). The attachment behavioral system is an evolved system that allows primates to develop behavior devoted to the maintenance of proximity between the child and attachment figure with the purpose of protection from environmental dangers that children are not yet equipped to handle on their own. When activated by feelings of fear or discomfort, the

attachment behavioral system triggers attachment behaviors that potentially increase proximity to the attachment figure and subsequently restore felt security. When security is felt once again, the attachment system deactivates until triggered again. The attachment behavioral system works in concert with other behavioral systems (e.g., feeding, exploration, and social systems) and gives rise to more complex processes. Among infants and toddlers, the attachment and exploration systems form the basis of secure base behavioral dynamic, which is characterized by a pattern of leaving and returning to the attachment figure at varying intervals based on levels of felt security. Exploration in infants promotes the development of mastery of the physical and social world by regulating curiosity and interactions with the environment designed to gather information and relieve uncertainty about unfamiliar situations/environments (Cassidy, 1999; Weisler & McCall, 1976). The exploration system is deactivated when felt security is too low and subjective uncertainty is too high, which then activates the attachment system. Once activated, the infant begins to move toward the attachment figure in search of comfort and security. The child will stay in proximity to the attachment figure until felt security is restored, and subsequently the infant can return to exploration (Cassidy, 1999; Kirkpatrick, 2005).

Ainsworth expanded Bowlby's normative model to identify individual differences in attachment behavior in infants and children that arise in response to differences in maternal/primary caregiver's responsiveness and consistency of responsiveness to the child's needs. The Strange Situation assessment classifies infant attachment styles (Ainsworth, Bell, & Stayton, 1969; Ainsworth, Blehar, Waters, & Wall, 1978). The assessment consists of a series of separation, reunion, and stranger interaction episodes designed to elicit attachment and secure-base behaviors (see Appendix A Table 1 for a complete list of episodes). The child's reactions to

these situations were closely observed by the researchers and coded into one of three attachment pattern categories: A – Anxious Avoidant, B – Secure, C – Anxious-Resistant/Ambivalent.

Secure infants show secure-base behavior (i.e. exploring away from and returning to the mother freely), separation anxiety/protest when mothers leave the room, and mild stranger anxiety, but are soothed and comforted when reunited with their mothers and are able to return to exploring the environment (Ainsworth et al., 1969). Anxious-avoidant infants demonstrate some exploration of their environment, but do not demonstrate contact or interaction with their mother. These infants also show minimal changes in their behavior in response to separation from and reunion with mother or the presence of a stranger. Anxious-Resistant/Ambivalent infants display clear stranger anxiety, show extreme distress in the absence of their mother, and are often inconsolable upon the mother's return. The primary feature of anxious resistant/ambivalent attachment is the vacillation between wanting contact with the caregiver and resisting it.

Maternal responsiveness is hypothesized to have a profound effect on infant attachment style and is characterized by sensitivity to the infants' signals, accurate interpretation of such signals, and appropriate/timely responses to those signals (Ainsworth et al., 1969). Ainsworth, and colleagues (1969) identified common characteristics among mothers in relation to each infant group (A, B, or C). Group A (Anxious-Avoidant) mothers tended to be more rejecting than Group C (Anxious-Resistant/Ambivalent) mothers, but both group A and C mothers tended to show inaccessibility, interference, and a disregard for the infants' signals. Group B (Secure) mothers were the most sensitive and responsive to signals from their infants. Furthermore, these mothers tended to be more accessible, accepting, and non-interfering in comparison (Ainsworth et al., 1969).

Some infants in the original Strange Situation assessment were difficult to classify as they showed signs of both attachment insecurity and security by displaying a "dazed" behavior upon reunion with their attachment figure (Main, Kaplan, & Cassidy, 1985). Main and Solomon (1986) developed a label for a fourth attachment style referred to as disorganized/disoriented attachment. This is characterized by a disorganization of sequential behavioral patterns, displays of both secure and insecure behaviors, unfinished physical movements and facial expressions and confusion or uneasiness about the situation (Main & Solomon, 1990). This classification is common among children with a history of abuse or neglect (Hazan & Shaver, 1994; Main & Solomon, 1990).

Adult attachment. Similar to child attachment, existing literature offers a few different theories in regard to adult attachment. Hazan and Shaver (1987) offer a prototype model for adult pair bonding that involves the interaction of three behavioral systems: (a) caregiving, (b) attachment, and (c) sexual mating. Romantic love as an attachment process involves affectional bonds formed between two adult individuals that are typically reciprocal as each individual provides and receives care and support from the other (Hazan & Shaver, 1994). In this model, caregiving and sexual mating motivate proximity seeking in these relationships in addition to the proximity seeking initiated by the attachment system that is triggered by anxiety and distress. Hazan and Shaver (1994) identified three categories that correspond to Ainsworth's classifications for children: Secure, Avoidant, and Ambivalent.

Bartholomew and Horowitz's (1991) four category model of adult attachment centers around two dimensions: view of self (whether the self is viewed as worthy of another's love and support) and the view of others (whether others are viewed as trustworthy and availability as attachment figures). Secure attachment, a positive view of self and others, typically involves high

coherence and high degree of intimacy, warmth, balance of control, and involvement in romantic relationships. Dismissing attachment, a positive view of self and a negative view of others, typically involves high levels of independence and self-confidence, but avoidance of close relationships and low emotional availability, intimacy, involvement, and reliance on others. Preoccupied attachment, a negative view of self and a positive view of others, can lead to a reliance on the opinions of others for self-worth and acceptance. Finally, fearful attachment, a negative view of self and a negative view of others, leads individuals to automatically assume they will experience rejection and withdraw themselves from situations where they my face rejection (Bartholomew & Horowitz, 1991).

Brennan, Clark, and Shaver's (1998) Experiences in Close Relationships (ECR) scale describes their theory of adult attachment patterns of individuals based on two dimensions (anxiety and avoidance) that roughly correspond to the "self" and "other" dimensions used by Bartholomew and Horowitz (1991). The anxiety dimension reflects an aversion to abandonment. The avoidance dimension reflects an aversion to closeness and a resistance to dependency (Brennan et al., 1998).

Shaver and Mikulincer (2002) offer a model of adult attachment that conceptualizes insecure attachment styles as secondary strategies for managing an attachment figure's lack of availability and responsiveness. Within this model, attachment security represents the primary strategy for dealing with activation of the attachment system (in response to perceived threats). Once the system is activated secure individuals are able to seek proximity to an attachment figure (either in person or as a mental representation), their distress is alleviated, and the attachment system is deactivated. Among insecurely attached individuals, an appraisal of the attachment figure's inaccessibility requires an alternate strategy for coping with perceived threat.

According to Shaver and Mikulincer (2002), the first component of this system evaluates the environment for potentially threatening or distressing events. If a threat is present, the individual is led to the second component, assessment of the availability and responsiveness of the attachment figure (i.e., the secure base). If unavailable, individuals reach the third category of assessment, which is viability of proximity seeking as a coping method. This component leads the individual into deactivation or hyperactivation strategies based on the availability of proximity seeking as an option. Specifically, if further proximity seeking is judged to be ineffective, then deactivation (inhibitory) strategies are used. Alternatively, if additional proximity seeking is judged to potentially elicit care, then hyperactivation (excitatory) strategies are used (Shaver & Mikulincer, 2002).

The hyperactivation strategy is characterized by increased sensitivity to threat; a slowing of recovery from threats; and increased intensity, frequency, and duration of attempts to draw the attachment figure close and is most commonly seen among anxiously attached individuals. The deactivation strategy, in contrast, is characterized by attempts to suppress attention to and awareness of negative emotions and thoughts as well as threats. Additionally, deactivation is characterized as a general avoidance of threatening situations that may include attachment related situations (Shaver & Mikulincer, 2002).

Victimization and Attachment

The influence of attachment avoidance and anxiety on negative psychological outcomes in adulthood has been examined in previous literature and ultimately suggests a relationship between insecure attachment in childhood and greater vulnerability to a wide variety of psychiatric disorders later in life. Some of these outcomes include, but are not limited to, negative affectivity and related disorders, obsessive-compulsive disorder, PTSD, suicidal

ideation, and dissociative disorders (Mikulincer & Shaver, 2016). There is a theoretical relationship between insecure attachment bonds and anxiety and/or depression, where a foundation for anxiety may be created as a result of a child's concerns about attachment figure availability and responsiveness (Brumariu & Kerns, 2010).

Existing research has examined the relationship between childhood victimization and attachment in childhood and adolescence. A history of maltreatment (domestic violence and/or physical/sexual abuse by an adult) in young adolescents has a strong positive association with both avoidant and anxious adolescent attachment in close relationships (Wekerle & Wolfe, 1998). Adolescents who had experienced more maltreatment were more likely to exhibit anxious or avoidant attachment styles than those who experienced less maltreatment. Similarly, in comparison to non-abused children, children who are victims of sexual abuse are far more likely to demonstrate insecure or disorganized attachment to the mother (Ensink, Borelli, Normandin, & Fongay, 2019). There is some evidence that childhood abuse (physical and sexual) and neglect are significantly negatively related to maternal bonds (Watts, 2017). Specifically, children who experience abuse and neglect are more likely to be more insecurely attached to the mother than their non-abused peers.

Research investigating adult retrospective reports of victimization and adult attachment has identified patterns of associations similar to those observed in childhood and adolescence. Adult attachment security shows a negative association with childhood bullying (Beduna & Perrone-McGovern, 2019). Individuals who experienced a greater frequency of bullying during childhood are more likely to report more attachment insecurity in close relationships in adulthood than those who experienced less bullying. Additionally, existing research shows evidence of a positive association between peer victimization experienced during childhood and

attachment insecurity in adulthood (Cosgrove, Nickerson, & Delucia, 2017). Specifically, having experienced more victimizations was positively related to reporting more insecure attachment in adulthood. Most importantly, verbal, relational, and peer victimization are among the victimization variables most strongly associated with poor attachment quality in adulthood. Espeleta, Palasciano-Barton, and Messman-Moore (2017) reported some evidence suggesting that increased severity of child psychological abuse is significantly linked with greater attachment anxiety/avoidance in adult romantic attachment Additionally, increased severity of child psychological abuse predicts an increase in emotion dysregulation which in turn predicts attachment anxiety/avoidance in adulthood.

Currently, there is only one published study examining the relationship between attachment and polyvictimization. Harrelson, Alexander, Marais, and Burkhart (2017) conducted a study among male juvenile sex offenders ordered to treatment following illegal sexual behaviors. Polyvictimization was defined categorically as having reported experiencing more than one of the 34 types of victimization on the Juvenile Victimization Questionnaire-Second Revision (JVQ-R2). Reports of childhood polyvictimization predicted reports of attachment to parents, with a higher number of victimization types associated with less secure attachment to the caregiver in adolescence.

Though no studies to date have tested whether attachment moderates the relationship between polyvictimization and relevant outcomes, studies focusing on individual victimization types find evidence that childhood attachment may buffer the negative effects of childhood victimization experiences. For example, among children between the ages of 9 and 14 with insecure attachment to the mother, higher rates of relational and/or physical victimization are associated with higher rates of depression (Kokkino et al., 2016). In contrast, the relationship

between relational and/or physical victimization and depression is much weaker among children with secure attachment (Kokkino et al., 2016). Specifically, depression is highest among insecure participants with a history of victimization and substantially lower among secure participants with a history of victimization. Similarly, children exhibiting insecure attachment (identified as high Need for Approval) who report experiencing more potentially traumatic events (PTE) are at higher risk for dissociative experiences than are those who exhibit more secure attachment and report the same number of PTEs (Gusic, Cardena, Bengtsson, & Sondergaard, 2016)

In an adult sample, adult attachment has been found to moderate the relationship between retrospectively reported child abuse and adult PTSD symptomatology (Busuito et al., 2014). Among participants reporting greater attachment anxiety or avoidance, child abuse is strongly and positively associated with current PTSD symptomatology. Among more secure participants, the relationship, though positive, is small. Similarly, adult attachment has been found to moderate the relationship between childhood trauma, such as non-familial physical abuse and bullying, and depression in adulthood (Cook et al., 2017). The association between childhood trauma and depression was substantially stronger among insecure participants than among secure participants.

Study Goals/Hypothesis

The present study examines whether adult attachment moderates the relationship between polyvictimization (PV) and psychological functioning. Specifically, the objective is to investigate the degree to which avoidant and anxious attachment moderate the effects of polyvictimization among college women. Based on the previous literature, the current study presents five hypotheses. First, a main effect for PV is expected. Participants reporting a greater number of types of childhood victimization experiences will report more psychological

symptoms than will participants who experience fewer types of victimization. Secondly, a main effect for attachment anxiety is expected. Individuals with high attachment anxiety will report greater psychological dysfunction than will participants with lower attachment anxiety. Third, an interaction between PV and attachment anxiety is predicted. Among participants with high attachment anxiety, PV is expected to be a strong predictor of psychological dysfunction. Among participants with low attachment anxiety, PV is expected to be weakly but still significantly associated with psychological dysfunction. Fourth, based on the finding that avoidant attachment is associated with underreporting psychological symptomatology (Mikulincer & Shaver, 2016), the main effect for attachment avoidance is expected to modest. Individuals with high and low levels of avoidance are not expected to differ with respect to their self-reported psychological dysfunction. Fifth, the interaction between PV and avoidance is expected to be significant. Among individuals reporting high attachment avoidance, the relationship between PV and psychological dysfunction is expected to be significantly stronger than the relationship observed among participants with low avoidance.

Chapter 2

Method

Participants

The present study utilized a sample of 206 college freshman women. The sample reaches adequate power (1-β = .80), as the sample size is greater than 196. The participants' ages ranged between 17 and 24 (*M* = 18.17, *SD* = .76). Within the sample, 62.9% identified as Caucasian, 21.3% African American, 7.3% Multi-Ethnic, 3.4% Hispanic/Latinx, and the remaining 4.5% identified as East/Southeast Asian (1.0%), Middle Eastern (0.5%), Caribbean American (0.5%), Native American (1.0%), or other (1.5%). Relationship status of the participants was evenly distributed with 48.7% reporting single status and 45.7% dating but not cohabitating, 4.1% dating and cohabitating, and 1.5% married. As expected, over half of the participants (61.7%) reported growing up in a suburb, small town, or rural area. Of the other half, 25.0% reported growing up in a small city (population 100k-300k), 9.7% in a large city (population >300k), and 3.6% grew up in a military family. Surprisingly, only 9.7% of the sample reported growing up in a large city with a population greater than 300,000 residents. About half of the sample (49%) reported First Generation College Student status with no parent attending a 4-year institution. The mean high school GPA of the participants was 3.5 based on a 4.0 scale.

Measures

As part of a much larger study, the present study utilized measures of attachment, adult retrospective childhood victimization, and psychological functioning in order to investigate the proposed hypotheses.

Childhood Victimization History. A 34-item retrospective version of Finkelhor et al.'s (2005) Juvenile Victimization Questionnaire (JVQ) was used to measure childhood victimization

and polyvictimization experiences. The JVQ is comprised of 34 individual items pertaining to victimization experiences. Participants responded to each item by indicating how many times they have experienced the situation described (0 to 5 or more times). Sample items include "When you were a child, did anyone hit or attack you without using an object or weapon?" "Not including spanking on your bottom, when you were a child, did a grown-up in your life hit, beat, kick, or physically hurt you in any way?" Each screener item was recoded into dichotomous responses (i.e., 1 = happened 1 or more times; 0 = never happened). Six separate continuous aggregate scores were created by taking the sum of the items included in each aggregate. The aggregates included property crime, physical assault, child maltreatment, peer/sibling victimization, witness/indirect, and sexual assault. The present study created a total polyvictimization score using the screener-sum version of the JVQ (Finkelhor, Hamby, Turner, & Ormrod, 2011). The screener-sum version assesses the number of instances of victimization an individual experienced. Scores on the JVQ are created by counting the number of items endorsed by the participant. If the participant selected the "0" for any given item, it will not be counted in the overall score. A higher score indicates that the individual has experienced more types of victimization (e.g., a score of 20/34 means they have experienced more types of victimizations than someone with a score of 5/34).

Adult Attachment. The Experiences in Close Relationships scale (ECR; Brennan et al., 1998) was used to measure adult attachment. The ECR consists of 36 items that are rated on a 7-point numerical scale of agreement (1 = strongly disagree, 7 = strongly agree). Some example items include "I prefer not to show a partner how I feel deep down," "I worry about being abandoned," and "I am very comfortable being close to romantic partners." The individual's ratings produce scores on two dimensions: attachment avoidance and attachment anxiety. Scores

for each dimension are determined by reverse coding the appropriate items and then taking the average of the corresponding items for each dimension, with high scores reflecting greater anxiety or avoidance, respectively.

Psychological functioning. The Symptom Checklist-90 Revised (SCL-90-R; Derogatis, 1994) was used to examine psychological functioning. The SCL-90-R contains 90 items that describe problems that may sometimes be experienced across nine domains such as Somatization, Depression, and Anxiety. Participants are asked to indicate how much that problem has distressed or bothered them over the last 7 days (including the day of assessment administration) by using a 5-point scale (1 = not at all, 5 = extremely). Some sample items include “Headaches” “Loss of sexual interest or pleasure” “Feeling afraid of being in open places or on the streets” and “Thoughts of ending your life”. A score for Global Severity Index (GSI) is created by taking the average of all ratings, with higher scores indicating more severe psychological symptomatology.

Procedures

The present study is part of a broader study conducted in two parts (Time 1 and Time 2). Participants were recruited to complete Time 1 within the first 5 weeks of the Fall 2019 semester from the Psychology Department participant pool. Participants were asked to sign up for the study through SONA (Sona Systems Ltd., Tallin, Estonia) and were then redirected to the study administered through Qualtrics (Qualtrics Inc., Provo, UT). All participants completed the Qualtrics study on their own time using personal devices. During the last 5 weeks of the semester, participants from Time 1 received an email with an invitation to return to complete Time 2. For the proposed hypotheses, only Time 1 data was utilized. The study took

approximately 45-60 minutes to complete and participants received two SONA credits for completing Time 1 and two additional SONA credits for completing Time 2.

Once participants logged into the survey, they were asked to thoroughly review the informed consent form. If consent was provided, participants were redirected to the survey and were asked to complete self-report measures of the JVQ, ECR, and SCL-90-R. The order of the measures was randomized along with various other measures of resilience (i.e. RSCA, AGRS), self-esteem (i.e. SEQ), locus of control (i.e. PES, MMCS), social support (i.e. SSQ-SF) and previous camp experiences they had in summers throughout their childhood. These measures were split into two separate, randomized blocks, one with the resilience, psychological functioning, and polyvictimization measures, and the other with the remaining measures. The demographic portion of the survey and a camp experiences measure were completed at the end of the survey, independent from the randomized blocks. Debriefing and thanks for the study were conducted following completion of Time 2.

Data Analysis Plan

The preliminary analysis consisted of tests of association between demographic variables and the main variables of interest (e.g. attachment, polyvictimization, and psychological symptomatology) in order to identify potential covariates. If any demographic variables indicated a strong association with the main variables of interest, they were considered covariates and were added in the preliminary step of each Hierarchical Multiple Regression (HMR) analysis.

A unique contribution analysis was conducted using 14 hierarchical multiple regression (HMR) models prior to the moderation analyses. The models were used to obtain the unique contribution of polyvictimization (PV) versus six aggregate scores (Property Crime, Physical Assault, Child Maltreatment, Peer/Sibling Victimization, Sexual Victimization, and

Witness/Indirect Victimization) in predicting psychological dysfunction. First, two models were used for each of the six combinations of polyvictimization and individual aggregate type. In Model 1, each individual aggregate was entered in Step 1. A separate regression analysis was conducted one at a time for each individual aggregate (i.e., one analysis for Property Crime vs PV, one analysis for Physical Assault vs PV, and so on). In the second step, the PV screener sum score was entered into the equation in order to obtain the unique contribution of polyvictimization. In Model 2, the order of the predictors was reversed following the same procedure as the first model. PV was entered in Step 1 and then, each individual aggregate was added to the equation in Step 2. Next, two models were used to obtain the unique contribution of polyvictimization versus all six aggregates when entered together. In the first model, the screener sum polyvictimization scores were entered in Step 1. Next, all six individual aggregate scores were entered in Step 2. In Model 2, the variables were reversed such that the six aggregates were entered in Step 1 and PV was entered in Step 2.

Following the preliminary and unique contribution analyses, moderation analyses were conducted using (HMR) procedures as recommended by Aiken and West (1991). First, polyvictimization (PV) scores for each participant in the data set were centered by subtracting the polyvictimization mean for the whole group from each participant's individual score. Next, the ECR Anxiety and Avoidance scores were centered by subtracting the respective means for the whole group from the respective scores of the individual participants. Two interaction terms were created by multiplying the centered PV score by each of the centered attachment scores, respectively. In all analyses, the SCL-90-R Global Severity Index (GSI) served as the Criterion (outcome) variable.

The first HMR analysis included the centered PV and the ECR Anxiety scores as predictors in the first step of the model. In the second step of the model, the interaction term was entered into the equation. A moderation effect was indicated by a significant R^2 change for step two. If found to be significant, simple slope analyses were conducted (Aiken & West, 1991) by first running a model to obtain a PV by SCL-90-R simple slope for Anxiety scores that were one standard deviation above the mean. To achieve this, Anxiety was re-centered by subtracting the Anxiety standard deviation from the Anxiety-centered scores. The Beta for PV in step 2 after the interaction was entered into the equation is the simple slope for PV x SCL-90-R GSI for participants with high attachment Anxiety. A second model was then run to obtain a PV by SCL-90-R simple slope for Anxiety scores that were one standard deviation below the mean. Anxiety was again re-centered by adding the Anxiety standard deviation to the Anxiety-centered scores. The Beta for PV in step 2 after the interaction was entered into the equation is the simple slope for PV x SCL-90-R GSI for participants with high attachment Anxiety.

The second HMR analysis included PV-centered and Avoidance-centered as predictors in the first step of the model. In the second step of the model, the interaction term was entered into the equation. A moderation effect was indicated by a significant R^2 change for step two. If found to be significant, a simple slope analyses were conducted (Aiken & West, 1991) first by running a model to obtain a PV by SCL-90-R simple slope for avoidance scores that were one standard deviation above the mean. To achieve this, Avoidance was re-centered by subtracting the Avoidance standard deviation from the Avoidance-centered scores. The Beta for PV in step 2 after the interaction was entered into the equation is the simple slope for PV x SCL-90-R GSI for participants with high attachment avoidance. A second model was then run to obtain a PV by SCL-90-R simple slope for Avoidance scores that were one standard deviation below the mean.

Avoidance was again re-centered by adding the Avoidance standard deviation to the Avoidance-centered scores. The Beta for PV in step 2 after the interaction was entered into the equation is the simple slope for PV x SCL-90-R GSI for participants with high attachment avoidance.

Chapter 3

Results

Data Screening

Prior to any analyses, a series of data screening rules were utilized to identify potential problematic response sets within the data. Three rules were created to identify the issues most likely to affect the integrity of the data. The first rule excluded any cases that were missing more than 50% of the data. This rule excluded five total cases from the data set. The second rule excluded cases that were completed in less than 1000 seconds (about 17 minutes) as the survey was estimated to take 45-60 minutes. Six cases were identified by this rule and were subsequently excluded. One of the cases was a repeat from the previous rule. The third and final rule excluded any cases that included three or more measures with a standard deviation of .00 as the absence of variability would indicate that participants utilized a response set and did not read individual items. Such response sets are especially informative when measures utilize items that represent semantic reversals. Four cases were excluded using this rule, one of which was a repeat from a previous rule. In total, the three data screening rules used excluded a total of 13 cases from the data set, producing a final sample size of 206.

Preliminary Analyses

Correlation and frequency analyses were conducted for descriptive purposes. Appendix A Table 2 reports the means and standard deviations for each variable and the correlations between scores for GSI, polyvictimization, the six continuously scored victimization aggregates, and ECR attachment. Cronbach's Alpha values for each scale are presented on the diagonal. GSI and attachment avoidance were exemplary with values for Cronbach's alpha over .9. Attachment anxiety and PV (total) were acceptable within the .8-.9 range. Alphas for property crime,

physical assault, and child maltreatment reached acceptable reliability between .7 and .8. Sexual assault, peer/sibling victimization, and witness/indirect had poor reliability with alpha values under .7. The low reliabilities for sexual assault, peer/sibling victimization, and witness/indirect may not necessarily be cause for concern in the present study as the questionnaire assesses personal experiences that are not expected to be highly correlated rather than a coherent constellation of highly correlated personality traits. A low reliability may be more indicative of the low correlations between less commonly experienced situations rather than poor measurement.

GSI, ECR Anxiety, ECR Avoidance and PV were positively and significantly correlated with one another (r = .30 - .55). GSI and the six continuously scored aggregate categories of PV were moderately, positively correlated with one another (r = .32 - .52). All correlations were significant at the .001 level. GSI was strongly, positively associated with ECR Anxiety and PV, and GSI was moderately positively associated with ECR Avoidance. These associations indicate that individuals reporting higher GSI are also reporting higher PV and higher insecure attachment. ECR Avoidance was strongly associated with ECR Anxiety and moderately associated with PV. ECR Anxiety was positively associated with PV. The associations of PV and GSI with both dimensions of insecure attachment indicate that higher scores for PV are associated with more severe symptomatology.

Table 3 (of Appendix A) reports the frequencies for each of the 34 polyvictimization types, all six aggregates (scored categorically: no exposure vs. 1 or more exposures), and the percentage of participants who endorsed at least one of the 34 types. Out of 206 participants, 92.2% endorsed at least one type of victimization on the JVQ. The most common category of victimization was Peer/Sibling Victimization with 81.1% endorsing at least one type. Physical

assault followed with 79.1%, Property Crime with 75.2%, Witnessing/Indirect with 64.6%, Sexual Victimization with 48.1%, and lastly, Child Maltreatment with 43.7%. The frequencies seen in the present study generally parallel the frequencies seen in prior literature with over 90% endorsing at least one type and Peer/sibling victimization as the most common aggregate (Richmond et al., 2009; Elliott, Faires, Turk, Wagner, Pomeroy, Pierce & Aspelmeier, 2019).

Demographic Analyses

Following the preliminary analyses, a series of One-Way ANOVAs and correlations between demographic variables and the main variables of interest (e.g. attachment, polyvictimization, and psychological symptomatology) were conducted in order to identify potential covariates. The demographic variables assessed include age, high school GPA, ethnicity, relationship status, location of childhood home (rural vs urban), socioeconomic status, and generational status (first generation student vs. continuing generation students). Relationship status was significantly associated with all variables of interest (see Appendix A Table 4). Individuals in a cohabitating relationship (not married) tended to report a higher mean score on GSI and childhood PV compared to all other relationship groups (single, married, and non-cohabitating relationship). Single individuals reported a higher mean score on the Avoidant dimension of the ECR than any of the other relationship groups. The association between single status and high avoidance is expected and can be explained by characteristics of avoidant individuals based on the previous literature. Single and cohabitating individuals reported a higher mean score on the Anxiety dimension, which can also be explained by characteristics described in previous literature as anxious individuals tend to exhibit dependency and an aversion to abandonment (Brennan et al., 1998). Given that the observed pattern of results for relationship status seem more likely to be outcomes of the main variables of interest than causes of any of the

main variables of interest (e.g., avoidant individuals would be far less likely to be in a relationship), relationship status was not considered to be a potential covariate.

Socioeconomic status (SES) was the only other demographic variable that produced significant results within the ANOVA analysis. SES was significantly associated with both GSI and PV (see Appendix A Table 5). These relationships were probed using four dummy coded variables representing four comparisons: (1) $29k/year vs. $30k - $49k; (2) $29k/year vs. $50k - $69k; (3) $29k/year vs. $70k+; (4) $29k/year vs. don't know. All four dummy variables were entered in the first step of a Hierarchical Regression Model with PV entered in the second step. Socioeconomic status accounted for 3.8% of the variability seen in GSI, though the significance was marginal ($p < .10$). Socioeconomic status did not appreciably reduce the effects of PV on GSI (r =.55; spr = .54), and therefore was excluded from further analyses. Aside from relationship status and socioeconomic status, no other demographic variable was significantly associated with the main variables of interest. As neither of the significantly associated demographics appreciably reduces the effect of polyvictimization on psychological functioning, no covariates were included in further analyses.

Unique Contributions

Hierarchical regression analyses compared the unique contributions of polyvictimization and each of the six individual aggregates (See Appendix A Table 6). Two models were used for each of the six combinations of PV and individual aggregate type. In Model 1, each individual aggregate was entered in Step 1. A separate regression analysis was conducted one at a time for each individual aggregate score. When added first, percentages of variability accounted for by the individual aggregates alone range between 10% and 27%. The percentages of variability accounted-for by the individual aggregate scores indicate how much of the differences in

severity scores can be explained by a single victimization type. In Step 2, the PV screener sum score was entered to obtain the unique contribution of PV over and above the contribution of the individual aggregate. Polyvictimization added an additional 5-21% of variability accounted-for in GSI over and above the contributions of the aggregates alone. The unique contribution indicates that PV captures aspects of symptom severity that the individual aggregate scores do not.

In Model 2, the order of the predictors was reversed (see Appendix A Table 6). Polyvictimization was added in Step 1 of the model and accounted for 30% of the variability in GSI. In Step 2 of the model, each individual aggregate was added to the equation and accounted for additional amount of variability ranging from .1% to 1.3%. Peer/Sibling Assault accounted for a significant additional amount of variability (1.3%), and Physical Assault accounted for a marginally significant portion of additional variability (1%). The remaining four aggregates did not reach significance, which means that they do not uniquely contribute to the equation when polyvictimization is entered first. In both models, the combined relative contribution of each aggregate and polyvictimization ranged between 30% and 32% of variability in GSI accounted for. The results from the preliminary analyses highlight four main points in the relationship between PV and GSI. First, the simple association between PV and GSI is far greater than the simple association of any individual aggregate victimization type. Second, adding PV into the regression model reduces the unique contribution of each individual aggregate to the prediction of symptom severity. Third, polyvictimization continues to make a strong contribution to the prediction of symptom severity even after the individual aggregates are included in the regression model. Lastly, the unique contribution of PV is consistently larger than the unique contribution of any individual aggregate type.

A second set of regression models compared the unique contributions of polyvictimization and all six aggregates together to the prediction of psychological dysfunction. Two models were utilized to obtain the contributions. As seen in Appendix A Table 7, in Model 1, polyvictimization was entered in Step 1. When added first, PV accounted for 30% of the variability in GSI. In Step 2, all six aggregates were added together in the same block. The aggregates cumulatively accounted for an additional 5% of the variability over and above the contribution of PV. In Model 2 (see Appendix A Table 8), the order of the variables was reversed. All six aggregates were entered in the same block in Step 1 and accounted for 34% of the variability in GSI. Polyvictimization was added to the equation in Step 2 and added an additional 1%, though it was not significant. When aggregate types of victimization were entered second, they contributed significantly to the prediction of symptom severity beyond variability already accounted-for by polyvictimization. Comparatively, polyvictimization does not significantly strengthen the predictive power for GSI when added into the equation second.

Moderation Analyses

Moderation analyses were conducted using hierarchical multiple regression models to test whether attachment impacted the effects of PV on GSI. GSI was the outcome for all regression models. In Model 1, the moderating effect of attachment anxiety was tested by entering the centered scores for anxiety and PV in Step 1 and the corresponding interaction term in Step 2 (see Appendix A Table 9). In Step 1, PV and Anxiety accounted for a significant amount (40%) of the variability in GSI. Polyvictims and highly anxious individuals reported more severe symptomatology than non-polyvictims and less anxious individuals, respectively. The interaction term in Step 2 accounted for a significant portion (1.6%) of the variability in GSI. A significant change in R^2 for the Anxiety x PV interaction term in the second step indicated the presence of a

moderation effect on the relationship between PV and GSI (see Appendix A Table 9). The results from the Model 1 of the moderation analysis were consistent with hypotheses 2 and 3.

In Model 2, the moderating effect of attachment avoidance were tested by entering the centered scores for avoidance and PV in Step 1, and the corresponding interaction term in Step 2. In Step 1, PV and avoidance accounted for a significant amount (31.4%) of the variability in GSI. Polyvictims reported significantly higher psychological symptom severity scores than did non-polyvictims. Avoidantly attached individuals reported somewhat higher symptom severity than less avoidantly attached individuals. The interaction term in Step 2 accounted for .7% of the variability and was not significant. The non-significant change in R^2 for the Avoidance x PV interaction term in the second step indicates that the strength of the relationship between PV and GSI does not change significantly as a function of scores for attachment avoidance (see Appendix A Table 9).

Simple Slope Analyses

A simple slope analysis for each interaction was conducted following Aiken and West (1991; see Appendix A for Table 9, Figure 1, and Figure 2). The first set of HMR analyses obtained the simple slopes for attachment Anxiety and PV on GSI. There was a strong positive association between PV and symptomatology among participants with greater attachment anxiety, which indicates that anxious participants who experienced greater PV reported more severe psychological symptoms than highly anxious participants who experience less PV. Comparatively, the association between PV and symptomatology observed among individuals with greater attachment security, though positive was substantially weaker than that observed among participants with greater attachment anxiety. Figure 1 also shows that, among participants experiencing greater polyvictimization, anxiously attached individuals report greater symptom

severity than individuals who are more securely attached. Among participants experiencing less polyvictimization, anxiously attached individuals report greater severity of psychological symptomatology compared to those who are more securely attached, but the level is far below the level of severity reported by highly anxious and highly victimized participants. The pattern of results is consistent with the patterns predicted in Hypothesis 2 and 3 attachment security buffers the effect of PV on GSI, where attachment security diminishes, but does not eliminate, the negative effect of polyvictimization on psychological symptom severity.

The second set of HMR analyses followed the same procedures mentioned previously, substituting attachment anxiety with attachment avoidance (see Appendix A for Table 9 and Figure 2). There was a strong positive association between PV and symptomatology among participants with greater attachment avoidance, indicating that participants who experienced greater PV reported more severe psychological symptoms than highly avoidant participants who experienced less PV. Comparatively, the association between PV and symptomatology among individuals with greater attachment security was weaker (though not significantly) than the association observed among participants with greater avoidance. When polyvictimization is high, individuals scoring higher on avoidance report greater symptom severity than individuals who are more securely attached. When polyvictimization is low, the difference between psychological symptom severity between high and low avoidance groups was not significant. Although the moderating effect of attachment avoidance on the relationship between PV and GSI was not significant, the patterns seen in the simple slopes are consistent with a buffering model and with Hypotheses 4 and 5 Polyvictimization as a predictor for symptom severity was much stronger when avoidance was high.

Chapter 4

Discussion

The present study examined whether attachment may moderate the relationship between polyvictimization (PV) and psychological functioning (GSI). Specifically, the objective was to investigate the extent to which avoidant and anxious attachment styles moderated the effects of polyvictimization among college women. Four of the five proposed hypotheses were supported. Consistent with Hypothesis 1, participants who reported more polyvictimization reported more severe psychological symptoms than those who reported less victimization. Consistent with Hypothesis 2 and 4 regarding attachment insecurity, individuals with high attachment anxiety and high avoidance reported significantly greater psychological dysfunction than those with greater attachment security, though the relationship between avoidance and psychological function was not as strong. As predicted by Hypothesis 3, attachment anxiety significantly moderated the relationship between polyvictimization and psychological functioning. Polyvictimization was a stronger predictor of psychological function among individuals with high anxiety than among individual with lower attachment anxiety.

Contrary to Hypothesis 5, here was no significant interaction between polyvictimization and attachment avoidance which did not support the hypothesis. However, the pattern of results was consistent with a buffering model. Among individuals with higher avoidance, the relationship between PV and psychological functioning was stronger (though not significantly) than the relations observed among participants with low avoidance. Individuals high in avoidance exhibit a tendency to underreport psychological symptoms (Brumariu, 2015; Cooper, Shaver, & Collins, 1998; Kobak & Sceery, 1988) which may have contributed to the absence of a significant interaction between polyvictimization and attachment avoidance.

The relationship between polyvictimization and psychological dysfunction was consistent with the previous literature in that the simple association between childhood polyvictimization and severity of psychological symptoms is far stronger than the association of any individual aggregate victimization type (e.g., sexual assault) and psychological functioning (Elliott et al., 2019; Finkelhor et al., 2005; Richmond et. al., 2009). Also, polyvictimization accounted for a significant amount of variability in symptom severity beyond what was accounted for by isolated victimization types. Polyvictimization continued to make substantial contributions to the prediction of psychological dysfunction even after the effects of individual aggregates had been controlled for. Furthermore, the unique contribution of PV to the prediction of psychological symptoms was consistently greater than the contribution of any individual aggregate. The pattern of unique contributions by polyvictimization over and above individual victimization types has been observed consistently in prior research with children (Finkelhor et al., 2005) and with college students (e.g., Elliott et al., 2019; Richmond et al., 2009).

Furthermore, prior literature has suggested a significant positive relationship between childhood peer victimization and psychological abuse and attachment insecurity in adulthood, (Cosgrove et al., 2017; Espeleta et al., 2017). The pattern indicates that a higher prevalence of victimization of various forms during childhood is associated with adult reports of insecure attachment. The present study reflects this pattern. Similarly, existing literature indicates a positive relationship between attachment insecurity and psychological dysfunction or emotional dysregulation (e.g. Busuito et al., 2014; Cook et al., 2017; Espeleta et al., 2017). Both attachment dimensions in the present study indicated moderately strong associations with psychological dysfunction, therefore aligning with existing patterns.

The present study offers evidence that low attachment anxiety may buffer the negative effects of polyvictimization on psychological functioning. The finding is consistent with prior research on single or multi-type victimization, attachment patterns, and depression in adolescence (Kokkino et al., 2016). Specifically, among participants with high relational and physical victimization, individuals with high attachment anxiety reported significantly higher rates of depression than did more secure individuals. Additionally, the pattern that more secure attachment may buffer, but not eliminate, the negative effects (i.e., depression) of relational and physical victimization (Kokkino et al., 2016) is consistent with that observed in the present study.

The non-significant interaction between polyvictimization and attachment avoidance is consistent with similar findings reported in the literature. In a study assessing the buffering effects on the relationship between childhood sexual abuse and trauma symptoms, dismissing attachment did not produce a significant association with trauma symptoms (Aspelmeier, Elliott, & Smith, 2007). This may reflect the pattern of underreporting of symptoms among individuals exhibiting avoidant attachment that other researchers have reported (e.g., Kobak & Sceery, 1988). In contrast, one study found a significant interaction between attachment avoidance and single/multi-type victimization in the prediction of posttraumatic stress disorder (Busuito et al., 2014). However, the pattern reported differs from the pattern found in the present study. Highly avoidant individuals reported significantly more severe symptomatology than low avoidant individuals, suggesting that low avoidance may serve as a buffer for posttraumatic stress (Busuito et al., 2014). Furthermore, among individuals with high avoidance, the difference in symptom severity between those with low childhood trauma and high childhood trauma was small.

Limitations

The present study is limited in a number of ways. The present study utilized a convenience sample of female college freshmen from a mid-sized university in the Appalachian region. The sample was predominately Caucasian women between the ages of 17-22 and may not capture the experiences of males or individuals of other racial backgrounds and age groups. Additionally, the majority of the sample reported growing up in a suburb, small city, or rural area which again may limit the generalizability of the findings to individuals who grew up in large cities or urban areas. The present study was one of the first to investigate the moderating effects of attachment on the relationship between PV and psychological functioning, so the ability to compare results with prior studies is limited. However, the positive relationship between PV and psychological functioning is consistent with previous findings. Individuals who report higher polyvictimization are at greater risk for experiencing more severe psychological symptoms compared to minimally victimized individuals and non-polyvictims.

Given the correlational design, causal inferences cannot be made regarding the directionality among the variables. Assumptions can be made in regard to the relationships among variables, but temporal sequences cannot be established. There is a potential for third variable influences within the data and variables of interest; however, that is beyond the scope of this paper. All measures utilized in the study were previously validated and demonstrated high reliability within the sample which helps to address any internal consistency concerns within the present sample.

Self-report data generally produce issues with social desirability in which participants will respond in a way they feel is more acceptable. The present research is not immune to these effects. Data may present evidence of self-presentation effects and self-deceptive positivity

especially in measures of psychological functioning and retrospective reports of victimization. Specifically, individuals may respond in ways that fit their ideal self (i.e. over/underreporting symptoms or misreporting symptoms). In order to reduce these effects, it was made clear to the participants that their data would be kept confidential and that personal identifiers would be kept separately from the data. Additionally, the study potentially suffers from common method variance that may inflate correlations, as self-reports taken from the same respondents tend to be correlated. Unmotivated participants can also become a problem as they may be more inclined to adopt response sets. During the analysis phase, this was addressed with a series of rigorous screener rules implemented to identify potentially problematic response sets. Some of the issues may be limitations attributed to the online survey research design.

Future Directions

This study provides evidence for the moderating role of attachment on the relationship between polyvictimization and psychological functioning. Attachment security helps to predict the differences seen in the range of severity of negative outcomes among polyvictims. Previous literature has examined the role of attachment as a moderator of the relationship between single types of victimization (i.e., sexual abuse and child maltreatment) and negative outcomes, but not the role of attachment in polyvictimization. Polyvictimization, compared to single-type victimization, captures a greater portion of the negative outcomes seen among individuals regardless of attachment style, so testing the role of insecure attachment was an important step toward understanding the wide array of negative outcomes experienced by individuals with similar victimization patterns. Future research should utilize a larger and more diverse sample to better represent the experiences of a broader population. Additionally, it may be beneficial to employ the use of other measures of psychological functioning or more subscales of the SCL-90-

R, as the GSI alone may not represent all facets of distress. Furthermore, it would be valuable to investigate underlying mechanisms through which attachment exerts an influence on the relationship between victimization and related outcomes. For example, given that attachment security is the most common type of attachment classification, it is not clear whether attachment security prevents the negative effects of abuse, or whether insecurity exacerbates the negative outcomes associated with victimization. It may even be that both attachment security and attachment insecurity impact victimization outcomes through separate and potentially competing mechanisms. Reactions to stressful situations vary between individuals depending on secure vs insecure attachment. Secure individuals are likely to have more successful coping mechanisms as opposed to insecure individuals who are likely to employ hyperactivating or deactivating strategies (Shaver & Mikulincer, 2002). Individuals who utilize the hyperactivating strategy may be at higher risk for increased distress, depression, and anxiety. Alternatively, individuals who utilize the deactivating strategy may be a higher risk for avoidance related posttraumatic symptoms, loneliness and estrangement, and sleep disturbances (Mikulincer & Shaver, 2003).

The present study sheds light on one possible explanation for the individual differences in outcomes associated with childhood polyvictimization. Individuals with more secure attachment patterns appeared to cope with childhood polyvictimization experiences better than individual with less secure attachment. Attachment in this capacity can be considered a resilience-related asset. Evaluating this moderation relationship is the first step toward understanding how individuals deal with adversity differently and may subsequently influence treatments for those with severe psychological symptoms. Treatments for an individual's symptoms may need to be altered based on a patient's attachment behavior, as successful interventions for secure individuals may not be effective for anxious or avoidant individuals. Additionally, interventions

for anxiously attached individuals may not be successful for avoidantly attached individuals, so modifications would need to be made where necessary.

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Appendix A

Tables and Figures

Table 1

Strange Situation Episodes

Episode 1	The mother, baby, and experimenter (Less than 1 minute).
Episode 2	The mother and baby alone.
Episode 3	A stranger joins the mother and the infant.
Episode 4	The mother leaves the baby and stranger alone.
Episode 5	The mother returns and the stranger leaves.
Episode 6	The mother leaves and the infant is left completely alone.
Episode 7	The stranger returns.
Episode 8	Mother returns and the stranger leaves.

Table 2

Zero Order Correlations and Descriptive Data for Psychological Functioning, Insecure Attachment, and Continuous Aggregates

	1	2	3	4	5	6	7	8	9	10
1. GSI	**.98**									
2. ECR Avoidance	.30***	**.94**								
3. ECR Anxiety	.51***	.50***	**.89**							
4. PV	.55***	.32***	.38***	**.89**						
5. Property Crime	.32***	.25***	.29***	.69***	**.76**					
6. Phys. Assault	.44***	.25***	.29***	.88***	.55***	**.75**				
7. Child Maltx	.40***	.35***	.26***	.75***	.41***	.66***	**.72**			
8. Sexual Assault	.40***	.18**	.30***	.70***	.37***	.53***	.40***	**.69**		
9. Peer/Sib. Vict	.52***	.29***	.43***	.83***	.64***	.76***	.52***	.56***	**.63**	
10. Witness/Indirect	.45***	.26***	.24***	.75***	.35***	.58***	.55***	.37***	.46***	**.65**
Mean	.82	2.97	3.93	8.27	1.52	2.32	.83	.97	1.97	1.59
SD	.63	1.17	1.05	6.17	1.13	2.08	1.14	1.27	1.41	1.77
n	206	202	202	206	206	206	206	206	206	206

Note. **= $p \leq .01$, ***= $p \leq .001$. Degrees of freedom range between 200 and 204.
Cronbach's Alpha appear on the diagonal.
GSI = Global Severity Index

Table 3

Frequency Table for the 34 Types of Childhood Victimization on the JVQ

Victimization Type	Female *N* = 206
34 types of child victimization (endorsed at least one type)	190 (92.2%)
Property Crime (endorsed at least one type)	155 (75.2%)
Robbery	95 (46.1%)
Theft (steal something from you)	114 (55.3%)
Vandalism (break or ruin something of yours)	104 (50.5%)
Physical Assault (endorsed at least one type)	163 (79.1%)
Assault with a weapon	59 (28.6%)
Assault without a weapon	88 (42.7%)
Attempted assault	48 (23.3%)
Kidnap, attempted or completed	22 (10.7%)
Bias attack	21 (10.2%)
Physical abuse (not spanking)	41 (19.9%)
Assault by group or gang of peers[a]	9 (4.4%)
Peer or sibling assault	130 (63.1%)
Assault to private parts[a]	24 (11.7%)
Dating violence	35 (17.0%)
Child Maltreatment (endorsed at least one type)	90 (43.7%)
Physical abuse (not spanking)	41 (19.9%)
Psychological or emotional abuse	75 (36.4%)
Neglect	17 (8.3%)
Custodial interference or family abduction	38 (18.4%)
Peer/Sibling Victimization (endorsed at least one type)	167 (81.1%)
Assault by group or gang of peers[a]	9 (4.4%)
Peer or sibling assault	130 (63.1%)
Assault to private parts[a]	24 (11.7%)
Bullying	103 (50.0%)
Teasing, emotional bullying	105 (51.0%)
Dating violence	35 (17.0%)
Witnessing/Indirect Victimization (endorsed at least one type)	133 (64.6%)
Witness domestic violence	39 (18.9%)
Witness physical abuse	22 (10.7%)
Witness assault with a weapon	42 (20.4%)
Witness assault without a weapon	87 (42.2%)
Household theft	50 (24.3%)
Someone close murdered	29 (14.1%)
Witness murder	9 (4.4%)
Exposure to shooting, bombs, riots	41 (19.9%)
Exposure to war	8 (3.9%)
Sexual Victimization (endorsed at least one type)	99 (48.1%)
Sexual assault, known adult	15 (7.3%)
Sexual assault, unknown adult	5 (2.4%)
Sexual assault, with peer	43 (20.9%)
Rape, attempted or completed	50 (24.3%)
Flashing or sexual exposure	38 (18.4%)
Sexual harassment	49 (23.8%)

Note. a. Same item represented in more than one victimization category.

Table 4

Associations between Main Variables and Relationship Status

Main Variables	Relationship Status				F (df)	η^2
	Single (n=96)	Dating (not cohabitating) (n=90)	Dating (cohabitating) (n=8)	Married (n=3)		
PV	8.34_{a} (5.81)	7.66_{a} (6.12)	16.0_{b} (8.72)	7.0_{a} (5.57)	4.66^{**} (3,196)	.068
Anxiety	4.21_{b} (.93)	3.55_{a} (1.06)	4.55_{b} (.80)	4.03_{ab} (1.62)	7.75^{***} (3,196)	.108
Avoidance	3.62_{c} (1.02)	2.27_{a} (.89)	3.0_{bc} (1.26)	2.09_{ab} (.89)	30.92^{***} (3,196)	.325
GSI	$.85_{a}$ (.68)	$.76_{a}$ (.50)	1.34_{b} (.77)	$.99_{ab}$ (.90)	$2.32^{\dagger}$ (3,196)	.035

Note. $^{*} = p \leq .05$, $^{**} = p \leq .01$, $^{***} = p \leq .001$.
Standard deviations appear in parentheses below means.
Means within rows with differing subscript are significantly different at the $p \leq .05$ level using Fisher's LSD post hoc tests.

Table 5

Associations between Main Variables and Socioeconomic Status

Main Variables	Socioeconomic Status					F (df)	η^2
	> \$29k/year (n=21)	\$30k-\$49k/year (n=23)	\$50k-\$69k/year (n=35)	\$70k+ (n=59)	Don't know (n=59)		
PV	12.57_{b} (7.81)	10.26_{a} (5.66)	7.49_{b} (5.72)	7.19_{ab} (5.39)	7.68_{b} (6.35)	4.02^{**} (4,196)	.077
Anxiety	4.35_{a} (1.0)	3.99 (1.17)	4.01 (.98)	3.83 (1.10)	3.77_{a} (1.0)	1.37 (4,196)	.028
Avoidance	3.47_{ab} (1.13)	3.26 (1.05)	2.89 (1.18)	2.80_{a} (1.18)	2.85_{b} (1.17)	1.83 (4,196)	.037
GSI	1.16_{abc} (.79)	$.70_{a}$ (.54)	.95 (.74)	$.75_{b}$ (.53)	$.75_{c}$ (.55)	2.69^{*} (4,196)	.053

Note. $^{*} = p \leq .05$, $^{**} = p \leq .01$, $^{***} = p \leq .001$.
Standard deviations appear in parentheses below means.
Means within rows with differing subscript are significantly different at the $p \leq .05$ level using Fisher's LSD post hoc tests.

Table 6

Hierarchical regression analyses examining the relative contributions of polyvictimization and the Continuous JVQ aggregates to the prediction of Global Severity Index

	Criterion Variable: Global Severity Index				
	Model 1		Model 2		
Aggregate Predictor	Step 1: Aggregate R^2	Step 2: Add PV R^2 Change	Step 1: PV R^2	Step 2: Add Aggregate R^2 Change	Total Variance R^2 [a]
Property Crime	.10***	.21***	.30***	.007	.31***
Phys. Assault	.19***	.12***	.30***	.010†	.31***
Child Maltrmt.	.16***	.14***	.30***	.000	.30***
Sexual Assault	.16***	.14***	.30***	.001	.30***
Peer/Sib. Vict.	.27***	.05***	.30***	.013*	.32***
Witness/Indirect	.20***	.11***	.30***	.003	.31***

a. The proportions of variability accounted for in Steps 1 and 2 of each set of hierarchical regression analyses should sum to the value reported in the total variance column. Minor differences from this expected pattern in the table are because of the rounding of values to two decimal places.

Note. †= $p \leq .10$, *= $p \leq .05$, **= $p \leq .01$, ***= $p \leq .001$.

Table 7

Incremental Contribution of JVQ continuous Aggregates to the Prediction of Severity of Psychological Distress, over Contributions made by Polyvictimization, Model 1

Model 1					Correlations	
Variables	$R^2\Delta$	(*df*)	β	*t*	Zero Order	Semipartial
Criterion = GSI						
Step 1	.30***	(1, 204)				
PV			.55	9.41***	.55	.55
Step 2	.05*	(7, 198)				
PV			.80	1.31	.55	.08
Property Crime			-.21	-1.48	.32	-.09
Physical Assault			-.33	-1.74†	.44	-.10
Child Maltx			-.02	-0.17	.40	-.01
Peer Sibling Vic.			.29	2.10*	.52	.12
Sexual Vic.			-.06	-.39	.40	0.02
Witness/Indirect Vic.			.01	.05	.45	.09

Note. †= $p \leq .10$, *= $p \leq .05$, **= $p \leq .01$, ***= $p \leq .001$.
GSI = Global Severity Index of the Symptoms Check List-90 Revised

Table 8

Incremental Contribution of Polyvictimization to the Prediction of Severity of Psychological Distress, over Contributions made by JVQ continuous Aggregates, Model 2

Model 2					Correlations	
Variables	$R^2\Delta$	(*df*)	β	*t*	Zero Order	Semipartial
Criterion = GSI						
Step 1	.34***	(6, 199)				
Property Crime			-.05	-.69	.32	-.04
Physical Assault			-.12	-1.17	.44	-.07
Child Maltx			.11	1.30	.40	.08
Peer Sibling Vic.			.41	4.04***	.52	.23
Sexual Vic.			.12	1.73†	.40	.10
Witness/Indirect Vic.			.25	3.34***	.45	.19
Step 2	.01	(7, 198)				
Property Crime			-.21	-1.48	.32	-.09
Physical Assault			-.33	-1.74†	.44	-.10
Child Maltx			-.02	-.17	.40	-.01
Peer Sibling Vic.			.29	2.10*	.52	.12
Sexual Vic.			-.06	-.39	.40	-.02
Witness/Indirect Vic.			.01	.05	.45	.00
PV			.80	1.31	.55	.08

Note. †= $p \leq .10$, *= $p \leq .05$, **= $p \leq .01$, ***= $p \leq .001$.
GSI = Global Severity Index of the Symptoms Check List-90 Revised

Table 9

Tests of the Interaction between Polyvictimization (PV) and Attachment in Predicting Psychological Functioning (GSI)

			Attachment Variable [a]		Polyvictimization [a]	
	$R^2\Delta$	β	1 SD Above	1 SD Bellow	1 SD Above	1 SD Bellow
Model 1						
Step 1			High Anx.	Low Anx.	High PV	Low PV
	.40***					
PV		.41***				
ECR-Anxiety		.35***				
Step 2	.02*		.52***	.26**	.39***	.25***
PV		.39***				
ECR-Anxiety		.38***				
Interaction		.13*				
Model 2						
Step 1			High Avd.	Low Avd.	High PV	Low PV
	.31***					
PV		.50***				
ECR-Avoidance		.14*				
Step 2	.01		.58***	.41**	.22***	.05
PV		.49***				
ECR-Avoidance		.13*				
Interaction		.08				

Note. † = $p \leq .10$, * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$. df $R^2\Delta$ Step 1 = 1, 199, df $R^2\Delta$ Step 2 = 1, 198.
Avd. = Avoidance, Anx. = Anxiety
[a] Coefficients for simple slopes represented with standardized regression coefficients.

Figure 1

Interaction of Polyvictimization and Attachment Anxiety

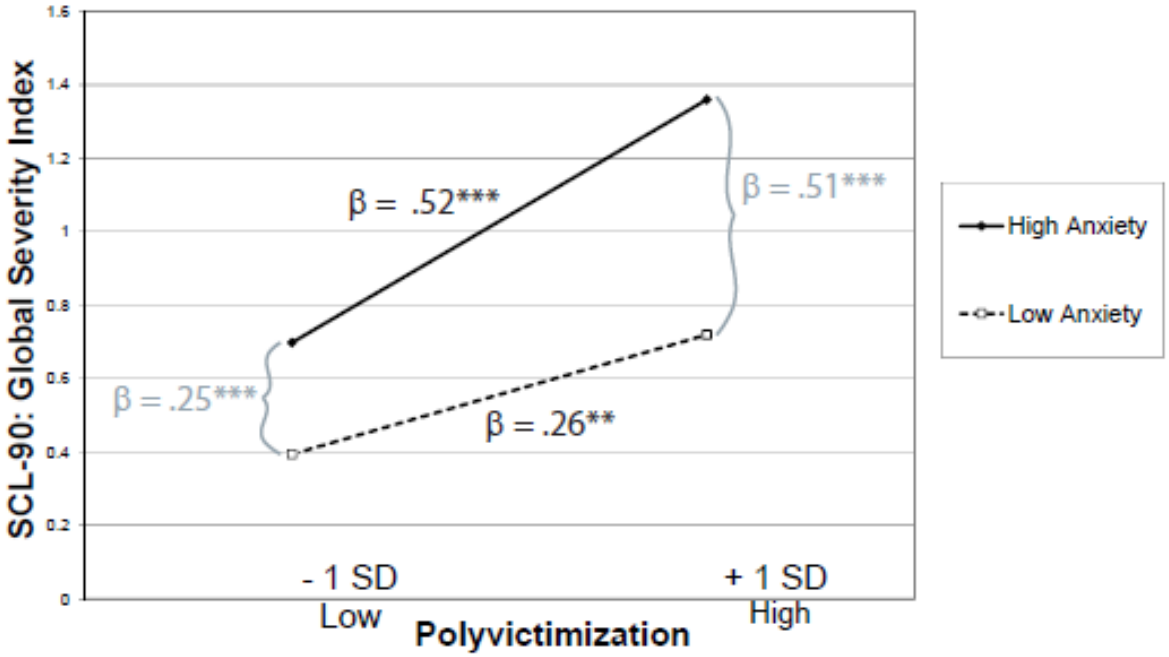
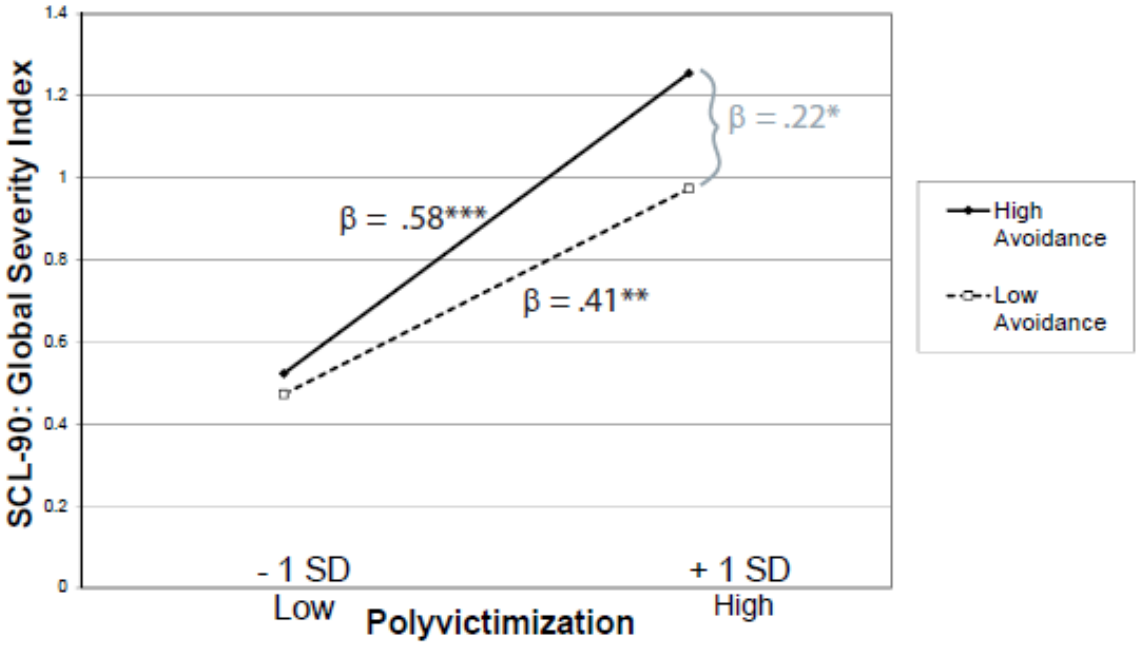


Figure 2

Interaction of Polyvictimization and Attachment Avoidance



Appendix B

Informed Consent

Title of Research: College Student Resilience Project

Researcher(s): Jeff Aspelmeier

We ask you to be in a research study designed to investigate whether certain kinds of personality characteristics influence young women's ability to successfully adjust to their first semester of college. Specifically, we are interested in the group of characteristics related to resilience and coping. This study will be conducted in two parts. The first part takes place today. The second part will take place at the end of the semester when you will be invited to complete another online survey that includes a set of questionnaires similar to what you will complete today. If you decide to be in the study, you will be asked to complete a series of questionnaires that measure common personality characteristics, your overall psychological well-being, your beliefs about your academic performance, your experiences with childhood victimization, your experiences with outdoor camps, your adjustment to the demands of college, and general questions about your personal background. You will also be asked to give the researcher permission to contact the University Registrar and obtain your final Fall cumulative GPA and the number of credit hours you are registered for in the spring semester after the close of the schedule adjustment period (after the first week of classes). To obtain this information, we will ask you to provide us with your name, a code name that you generate, and your student ID number through an external survey link separate from the main survey. This information will be kept separate from the other data we collect. Once we obtain the GPA and spring registration information from the registrar's office, they will be paired with your code name and we will destroy any record connecting your name and ID number with the GPA and registration

information in our possession. At no point will your name or student ID ever be connected with any of the other data we will collect from you. Approximately 500 freshmen women are being recruited for this study.

This study has no more risk than you may find in daily life.

You will receive 4 credits in SONA for completing both parts of this study. You will get 2 credits for completing part 1 of the study, and if you complete second part of the study (which will also be online), you will earn 2 more credits.

There are no direct benefits to you for being in the study.

You can choose not to be in this study. If you decide to be in this study, you may choose not to answer certain questions or not to be in certain parts of this study.

There are no costs to you for being in this study.

If you decide to be in this study, what you tell us will be kept private unless required by law to tell. If we present or publish the results of this study, your name will not be linked in any way to what we present.

If at any time you want to stop being in this study, you may stop being in the study without penalty or loss of benefits by contacting Dr. Jeff Aspelmeier, Box 6946, Department of Psychology, Radford University, Radford, VA 24142. jaspelme@radford.edu, (540) 831-5520.

If you have questions now about this study, please contact the researcher listed below before agreeing to participate in this study.

If you have any questions later, you may talk with Dr. Jeff Aspelmeier, Box 6946, Department of Psychology, Radford University, Radford, VA 24142. jaspelme@radford.edu, (540) 831-5520.

If this study raised some issues that you would like to discuss with a professional, you may contact the Student Counseling Services, located in the lower level of Tyler Hall. (540) 831-5226

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Orion Rogers, Interim Dean, College of Graduate Studies and Research, Radford University, jorogers@radford.edu, 1-540-831-5958.

It is your choice whether or not to be in this study. What you choose will not affect any current or future relationship with Radford University.

If you would like to take part in this study, please click the yes button at the bottom of this screen indicating you agreement for participation. This will direct you to our survey. If you decide not this study, please click the no button. This will direct you to back to the SONA homepage

Please print off a copy of this page for your records before proceeding.
This will serve as your proof of participating in the study in the event you have questions about obtaining your SONA credits.

Appendix C

Debriefing and Thanks

The College Student Resilience Project

Thank you for participating in our study. As a reminder, this project investigated whether certain kinds of personality characteristics influence young women's ability to successfully adjust to their first semester of college. Specifically, we were interested the group of characteristics related to resilience and coping. We have tested this by measuring characteristics like self-esteem, self-efficacy, social support, and relationship quality once that start of the semester and then again at the end and used those factors to predict emotional well-being across the course of the semester. We expected that women with resilient personalities would be good at coping with the demands of their first semester of college.

If you have any questions, concerns, complaints about your participation or if you would like to hear more about the results when the study is complete, you may contact Dr. Jeff Aspelmeier, Box 6946, Department of Psychology, Radford University, Radford, VA 24142. jaspelme@radford.edu, (540) 831-5520.

In the event that you feel psychologically distressed by participation in this study, we encourage you to call Student Counseling Services at Radford University and make an appointment. Their telephone number is (540) 831-5226. It is located on the lower level of Tyler Hall. Alternatively, you can call the CONNECT hotline which is not affiliated with Radford University (1-800-284-8898).

If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Orion Rogers, Interim Dean, College of Graduate Studies and Research, Radford University, jorogers@radford.edu, 1-540-831-5958.

Again, thank you for your participation.

Please print this page for your records.

Appendix D

Demographic Measures

The following questions ask for some background information, which can help us understand individual differences. If there are any questions you are not comfortable answering, then you may leave them blank.

1. Is this your first semester of college? Meaning you have never attended college before, not even community college.

    Yes, this is my first semester of college

    No, I have attended college before

2. What is your current age (in years)?
3. What is your ethnicity?

    Caucasian/European American/White

    African American

    East-/Southeast-Asian American

    Pacific-Islander American

    South-Asian American (e.g., from India, Pakistan, Burma, Nepal, etc.)

    Middle-Eastern/North-African American

    Hispanic, Latino/a, Chicano/a American

    Caribbean American

    American Indian/Native American

    Multi-Ethnic

        You selected Multi-Ethnic as your ethnicity. Please list your ethnic identities.

Other

You selected Other as your ethnicity. Please describe your ethnic status.

4. Please indicate your current relationship status:

   Single

   Dating but not cohabitating (living together)

   Dating and cohabitating (living together)

   Married

   Separated

   Divorced

   Widowed

5. Please indicate the educational status of your mother:

   Did not complete High School

   Completed High School

   Attended a 2 year College (community college) but did not graduate

   Completed a 2 year College Degree (Associate's Degree)

   Attended a 4 year College but did not graduate

   Completed a 4 year Graduate Degree (Bachelor's Degree)

   Earned a Post Graduate Degree (e.g., master's or doctoral degree)

   I do not know

6. Please indicate the educational status of your father:

   Did not complete High School

   Completed High School

Attended a 2 year College (community college) but did not graduate

Completed a 2 year College Degree (Associate's Degree)

Attended a 4 year College but did not graduate

Completed a 4 year Graduate Degree (Bachelor's Degree)

Earned a Post Graduate Degree (e.g., master's or doctoral degree)

I do not know

7. Please indicate the highest educational status attained by any of your older siblings:

Did not complete High School

Completed High School

Attended a 2 year College (community college) but did not graduate

Completed a 2 year College Degree (Associate's Degree)

Attended a 4 year College but did not graduate

Completed a 4 year Graduate Degree (Bachelor's Degree)

Earned a Post Graduate Degree (e.g., master's or doctoral degree)

I do not know

I don't have older siblings

8. Which best describes the type of place you lived while growing up?

A large city (population over 300,000)

A small city (population about 100,000 to 300,000)

A suburb, small town, or rural area

Military

9. While growing up, what was your highest household income?

a. Less than 29,000/year

b. 30,000-49,000/year

c. 50,000-69,000/year

d. 70,000 or more/year

Don't know

10. What was your High School GPA?

11. What do you think your GPA will be at the end of your first semester of college?

12. Using the scale that follows, rate how difficult you think your classes will be this semester?

1. Very Easy 2. 3. 4. 5. 6. 7. 8. 9. Very Hard

13. Using the scale that follows, rate how difficult you think it will be to adjust to the social environment of college?

1. Very Easy 2. 3. 4. 5. 6. 7. 8. 9. Very Hard