Resilience-Related Assets Moderate the Effects of Childhood Polyvictimization on Substance Use

by

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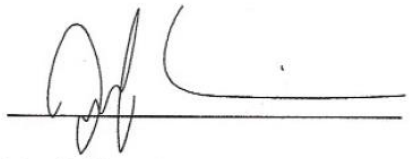

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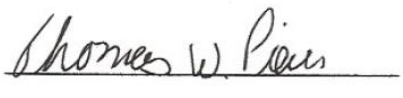

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Abstract

This study examined the relationship between retrospective reports of childhood victimization, resilience, and substance use among a sample of college men and women. Specifically, this study focused on the role of childhood polyvictimization as a predictor of substance use outcomes and the role of resilience as a moderator, buffering the negative effects of polyvictimization. Polyvictims are individuals who have experienced multiple types of victimizations in their past (Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Finkelhor, Ormrod, Turner, & Hamby, 2005). Previous work has demonstrated that retrospective reports of childhood polyvictimization predict psychological well-being, trauma symptoms, and college adjustment (Elliott et al., 2019; Richmond, Elliott, Pierce, Aspelmeier, & Alexander, 2009). However, no study to date has investigated the role of polyvictimization in predicting substance use in late adolescence/early adulthood. Further, no studies have investigated the role of resilience as a moderator of the relationship between polyvictimization and relevant outcomes, specifically, substance use. Moderation analyses revealed resilience did not significantly moderate the effect of polyvictimization on substance use, though the interaction between emotional reactivity and polyvictimization was marginally significant. However, the pattern of results observed for sense of mastery and emotional reactivity are consistent with buffering models wherein polyvictims who possess those resilience-related assets seemed to have reduced substance use. Overall, the present study provides implications for clinicians when considering clients who have been victimized in the past.

Keywords: Substance Use, Polyvictimization, Resilience, Psychological Well-being

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Chapter 1 – Statement of the Problem

The present study investigates polyvictimization, resilience, and substance use. Specifically, the study assesses whether polyvictimization predicts substance use and whether resilience-related assets serve as a buffer for the effects of polyvictimization among a sample of college men and women. Typical college-age students are at risk for developing a mental health disorder, including substance use disorder; and childhood victimization could potentially contribute to the current understanding of the prevalence of mental health disorders (Elliott et al., 2019). A reported 10% of adolescents (12-17 years of age) in the United States engage in illicit drug use (Davis et al., 2019). In addition to this, 1.1 million adolescents meet the diagnostic criteria for substance use disorder (Davis et al., 2019).

To date, there has been no research that examines the relationship between polyvictimization and substance use. Nor have any known studies assessed whether personal factors related to resilient responses to risk exposure, adversity, or trauma buffer the negative outcomes associated with polyvictimization. Lastly, there are no known studies that test whether resilience-related personal assets moderate the relationship between polyvictimization and substance use, where such assets buffer the negative effects of these outcomes. The present study potentially expands current understanding of the function of childhood polyvictimization in the progression of mental health symptomatology—specifically, substance use, in late adolescence/early adulthood. Investigating this area of research could potentially help clinicians and other mental health professionals working with young late adolescent and young adult populations develop more effective screening procedures and identify more appropriate interventions and treatment plans for individuals who may have increased risk for developing mental health disorders (Elliott et al., 2019).

Chapter 2 – Introduction

Polyvictimization

Children are the most victimized population as a result of factors such as inexperience, dependency, reduced self-control, and engagement in risky activities (Finkelhor, 2011). Nearly 70% of individuals under the age of 18 have experienced one or more types of victimizations within the past year, and nearly 80% have experienced one or more types of victimization within their lifetime (Finkelhor, Ormrod, & Turner, 2009). Additionally, 22% of individuals under the age of 18 have experienced four or more victimizations from separate events in the past year (Finkelhor, Ormrod, Turner, & Hamby, 2005). Victimization often occurs in the presence of other lifetime adversities (Turner, Finkelhor, & Ormrod, 2006). Some individuals in particular are more likely to be victimized. For example, minority groups, individuals who have lower socioeconomic status, and individuals with parents who have a lower education level are more likely to be victimized, compared to other individuals (Turner et al., 2006).

It is clear that education plays an important role in victimization and subsequent outcomes. Larson and colleagues (2019) reported that adolescents who have been victimized are at an increased risk of lower academic performance compared to non-victimized peers. Further, lower parental education level may put an individual at a disadvantage from the beginning, affecting occupation, income, and living situations. Consequently, individuals with a lower parental education level are more likely to become victimized, which may result in lower academic achievement, making it extremely difficult to escape the recurring condition of victimization (Larson et al., 2019).

A large portion of the victimization literature discusses the effects of specific, individual types of victimization as isolated events, such as sexual abuse, physical abuse, emotional abuse,

exposure to community violence, and witnessing domestic violence (Finkelhor, Ormrod, & Turner, 2007). However, because of the focus on individual types of victimization, this literature may not completely capture one's victimization experiences (Finkelhor et al., 2007). Studies that examine only individual types of victimization may overemphasize their contribution to negative outcomes because these studies do not account for the potential comorbidity of other victimization experiences (Finkelhor et al., 2007; Turner et al., 2006). As a result, studies of individual victimization types have tended to neglect broader categories of victimization (Finkelhor et al., 2007).

Polyvictimization can be defined as an individual's exposure to multiple types of victimization (Finkelhor et al., 2007). Polyvictimization specifically focuses on victimization experiences that fall into the six broad categories of sexual assault, physical assault, property crime, maltreatment, peer/sibling victimization, and witnessing or experiencing indirect victimization. Polyvictims may experience any combination of these various types of offenses and multiple victimization types can be experienced across multiple events or can be experienced within a single event. For example, a polyvictim may have experienced sexual assault, physical assault, and robbery in separate events or they could be the result of a single event. Finkelhor and colleagues (2007) conceptualized polyvictimization as a condition rather than an event. This conceptualization reflects the fact the individuals who experience one type of victimization are more likely to be exposed to different types of victimization experiences in their lifetime (Elliott et al., 2009; Turner et al., 2006). Further, polyvictims are more likely to be polyvictimized again in the future and to have an increased frequency of victimization over time (Davis et al., 2019; Finkelhor et al., 2007; Turner et al., 2006). There are several advantages of studying polyvictimization as opposed to specific, single events of victimization. Studying only one type

of victimization is likely to restrict and inaccurately represent findings. Examining singular victimization events may also overestimate the effects of a specific victimization type because it is not accounting for other forms of victimization (Davis et al., 2019). Further, studying single victimization types may underestimate the association between victimization and its psychological and behavioral outcomes (Davis et al., 2019).

The present study utilizes the Juvenile Victimization Questionnaire (JVQ) to assess self-report experiences of childhood and adolescent victimization (Hamby, Finkelhor, Ormrod, & Turner, 2004). The JVQ is a 34-item victimization measure that assesses childhood and adolescent victimization experiences that fall into the following six broad aggregate categories: Property Crime, Physical Assault, Sexual Assault, Maltreatment and Neglect, Peer/Sibling Victimization, and Indirect/Witnessing Victimization of others. There are two main methods of scoring for the JVQ: the Separate Incident Version and the Screener Sum Version (Finkelhor, Ormrod, Turner, & Hamby, 2005). In the Separate Incident Version of the JVQ, only the most severe type of victimization in a given incident is included in the total number of types of victimization experiences (Finkelhor et al., 2005). In contrast, the Screener Sum Version of the JVQ counts each type of victimization regardless of whether they occurred in single or multiple incidents (Finkelhor et al., 2005). For example, if two types of victimization occurred from one single event, both are counted when scoring.

Although different types of polyvictimization may occur together, polyvictimization accounts for a unique portion of variance in outcomes, above and beyond individual types of victimization (Turner et al., 2006). Further, polyvictimization has been found to be a much stronger predictor of outcomes than individual types of victimization (Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Elliott et al., 2019; Richmond, Elliott, Pierce, Aspelmeier, &

Alexander, 2009). Polyvictimization represents the accumulated effects of multiple types of victimization experiences over time, which can lead to equal or greater psychopathology in individuals compared to separate events (Elliott et al., 2009; Elliott et al., 2019; Richmond et al., 2009). Additionally, polyvictimization accounts for types of victimization that are not typically included in the victimization literature, including high frequency low severity events (such as having a backpack stolen), but still make a meaningful contribution to the combined negative impact victimization experiences can exert (Elliott et al., 2009; Elliott et al., 2019; Richmond et al., 2009). Further, it has been found that polyvictimization is predictive of college adjustment, particularly the presence of interpersonal and family problems (Elliott et al., 2009).

The literature on mental health outcomes of polyvictimization has recognized that experiencing multiple victimizations in one's lifetime can lead to negative outcomes (Turner et al., 2006). There are clear implications that polyvictimization can result in an increased risk of developing psychiatric disorders among children and adults (Turner et al., 2006). College-age individuals are already at risk for developing mental health symptomatology, and experiences of victimization during one's childhood can exacerbate the risk of negative psychological outcomes (Elliott et al., 2009; Elliott et al., 2019; Richmond et al., 2009). Negative impacts on mental and physical health are only some of the negative outcomes attributed to experiencing trauma associated with polyvictimization. Polyvictims also tend to experience a much higher level of lifetime adversity and distress, compared to individuals who have experienced a repeated, single type of victimization (Finkelhor, Turner, Hamby, & Ormrod, 2011).

Elliott and colleagues (2019) discussed the importance of screening for accounts of retrospective childhood polyvictimization experiences in a sample of college men and women. Childhood polyvictimization experiences are tremendously influential in one's current

psychopathology and academic performance, and students who have experienced sexual assault or multiple forms of abuse as children are at a higher risk for dropping out of college (Duncan, 2000; Elliott et al., 2009; Elliott et al., 2019). Specifically, increased experiences of polyvictimization have been associated with higher levels of anxiety, depression, and substance use, including clinically significant symptomatology and diagnosable disorders such as eating disorders (Elliott et al., 2009; Elliott et al., 2019; Finkelhor et al., 2006; Larson et al., 2019; Richmond et al., 2009; Turner et al., 2006). One study in particular found that a) adolescents who had a history of childhood polyvictimization experiences were twice as likely to meet the diagnostic criteria for major depressive disorders, b) had 3 times greater risk of developing posttraumatic stress disorder, and c) had 3-5 times greater risk of developing a substance use disorder compared to adolescent peers who had a history of childhood trauma but were not considered polyvictims (Ford, Elhai, Connor, & Frueh, 2010). It was also found that polyvictims were 5-8 times more likely to have co-morbid psychological disorders compared to non-polyvictims (Ford et al., 2010). In addition to increased risks for developing symptoms of psychopathology, Larson and colleagues (2019) reported that adolescents who have been victimized are also at an increased risk for lower academic performance compared to nonvictimized peers. Additional consequences of victimization include emotional problems such as hostility and interpersonal sensitivity (Elliott et al., 2009; Elliott et al., 2019; Richmond et al., 2009).

Common gender differences exist among college-age, childhood retrospective polyvictimization experiences, including the amount and type of victimization experiences, and their subsequent outcomes. For instance, females are significantly more likely to report sexual victimization compared to males, who are more likely to report property crime (Elliott et al.,

2019). Additionally, males are more likely to experience various types of individual physical assault, whereas females are more likely to experience rape or attempted rape (Elliott et al., 2019).

Resilience

Although popular use of the term varies, resilience researchers conceptualize resilience as a process rather than a fixed trait (like grit or toughness; Tusaie & Dyer, 2004). As a process, resilience occurs when individuals who have been exposed to one or multiple types of risk, trauma, or adversity possess protective factors that prevent negative risk-related outcomes from occurring, allowing individuals to maintain positive functioning (Tusaie & Dyer, 2004). Thus, resilience can be defined as the operation of an adaptational system comprised of a combination of characteristics and resources that allow an individual to recover, cope, and function in the face of stress and adversities. As a result, the individual does not experience the expected negative outcomes associated with risk (Masten, 2001; Tusaie & Dyer, 2004; Zimmerman & Fergus, 2005). Risk includes all types of victimization and non-victimization adversities such as low socioeconomic status, exposure to delinquent peer groups, and substance use (Masten, 2001). Despite this risk, individuals who possess resilient characteristics and resources are more likely to achieve healthier development, including improved health and overall well-being than peers who are faced with the same risks and do not possess these qualities (Windle, 2011). Individuals are not considered resilient if they have not demonstrated exposure to significant risk regardless of whether they possess the protective factors associated with reducing negative outcomes of risk exposure (Masten, 2001; Zimmerman & Fergus, 2005).

Protective factors associated with resilient responses are aspects of an individual that serve to mitigate the negative outcomes of adversity and lead to the experience of positive

outcomes (Tusaie & Dyer, 2004). Protective factors associated with resilience include personal assets and environmental resources. Assets are positive factors that are characteristics of the individual, which include, but are not limited to, competence, self-efficacy, stability and control, sense of belonging, and coping skills (Windle, 2011). Environmental resources, however, are positive factors that are external to the induvial, such as various forms of social support, adult mentoring, family cohesion, economic factors, and community organizations (Windle, 2011). Though possessing greater resilience-related factors can return an individual to a normal state of functioning after exposure to traumatic events and adversities (a resilience process), possessing these factors is also associated with increased positive outcomes, regardless of the level of risk an individual is faced with. (Tusaie & Dyer, 2004; Windle, 2011).

Substance Use

In the present study, substance use refers to active use of alcohol and/or drugs in ways other than prescribed and that are not considered clinically significant. Substance use as defined in the present study is not equivalent to substance use disorders, which are characterized as alcohol and/or drug use that are associated with clinically significant symptomatology, including persistent use despite efforts to stop (American Psychiatric Association, 2013). However, it is important to note that substance use, especially among adolescents and young adults, can lead to an eventual diagnosis of a substance use disorder (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). Among adolescents in the United States, 10% of individuals aged 12 to 17 report illicit drug use (Davis et al., 2019). College campuses have high prevalence of substance use, which is most common among young adults and prominently features excessive alcohol consumption, use of marijuana, and a recent increase in prescriptions and over-the-counter drug abuse (Abbott, Lamphere, & McGrath, 2019; SAMHSA, 2019). Palmer and

colleagues (2012) found that among a sample of 262 college students, 63% reported abusing at least one substance in the past month. In a sample of college students aged 18 to 22, 53% reported current alcohol use, 34.8% reported excessive binge drinking, and 23.6% reported illicit drug use (SAMHSA, 2019).

Substance use among adolescents and young adults is predicted by a multitude of factors including social environment and a culture of alcohol use (such as social pressure from on-campus organizations, like Greek communities) that have existed on college campuses for years (SAMHSA, 2019). College freshmen may be more susceptible to peer influence than other classmates, as they are undergoing a stressful transition and adapting to new perceived norms of substance use on campus (SAMHSA, 2019). Additionally, multiple studies have found that adversities during childhood and adolescence, such as poverty, family history of substance dependence, early exposure to substances, life stressors, and low access to care are predictive of substance use (Garcia, Bursac, & Derefinko, 2020; Meier et al., 2016). History of parental substance use, in particular, puts an individual at significant risk for substance use in adolescence (Fergus & Zimmerman, 2005). Further, Garcia and colleagues (2020) found that when accounting for cumulative risk among community college student participants, increases in reported types of risk experienced (life stressors, academic stressors, peer or family substance use, lack of social support, and low access to medical care) result in an increased likelihood of substance use at some point later in life. Experiencing victimization increases an individual's risk for developing a substance use disorder in their lifetime, compared to individuals who have no history of victimization (Davis et al., 2019). Polyvictims in particular are 3-5 times more likely to be at risk of developing a substance use disorder and are more likely to engage in high-risk drinking behaviors during adolescence and early adulthood, compared to their peers who have

fewer and less varied forms of traumatic experiences (Davis et al., 2019). Additionally, Scheier, Botvin, Griffin, and Diaz (1999a) found that among adolescents, factors related to resilience such as self-control, substance use refusal skills, and academic achievement are negatively associated with alcohol use and a lack of these factors may increase an individual's risk for alcohol use. Specifically, adolescents who possessed high self-control, substance use refusal skills, and academic achievement also reported less alcohol use (Scheier et al., 1999a).

Substance use among college students can increase the likelihood of many negative lifetime outcomes. Palmer and colleagues (2012) found that among college students who reported lifetime use of an illicit drug, 69% reported consequences that had occurred within the past year. Negative outcomes of substance use can include poor academic performance, increased severity of mental health symptomatology, increased risk of experiencing victimization, and even death (Abbott et al., 2019; Hingson, Heeren, Winter, & Wechsler, 2001; Palmer et al., 2012; SAMHSA, 2019). In college, students who engage in substance use may have a) a more difficult time maintaining good academic standing, a) a higher risk for dropping out (Palmer et al., 2012; SAMHSA, 2019), and c) reduced engagement in new academic opportunities (Forster et al., 2019) compared to their abstaining peers. Depending on the severity of substance use, students are at risk for disciplinary action from their respective universities along with potential legal consequences that may result from substance use-related behaviors such as fighting, driving under the influence, or under-age alcohol use (SAMHSA, 2019).

It is well established that substance use is associated with mental health, and substance use disorders often co-occur with other mental health disorders, particularly depression and anxiety (American Psychiatric Association, 2013; SAMHSA, 2019). A significant prevalence of mental health disorders already exists among full-time college students (SAMHSA, 2019), and

the maladaptive use of alcohol and drugs by individuals with mental health issues could intensify pre-existing symptomatology.

Some research has investigated potential factors that may mitigate the effects of risk factors associated in increased substance use, especially among adolescents (e.g., Fergus & Zimmerman, 2005). Some of these factors are similar or related to assets and resources investigated within resilience research. For example, positive life outcomes and internal locus of control have been found to mitigate the effects of negative life events on alcohol use (Scheier, Botvin, & Miller, 1999b). Scheier et al. (1999b) found that positive life outcomes (i.e., positive family relations, positive affect, and perceived peer support) are inversely associated with alcohol use wherein individuals who report increased positive life outcomes also tend to report decreased alcohol use among adolescents. Conversely, a positive association was found between negative life outcomes and alcohol use, wherein individuals who report increased negative life outcomes (i.e., negative affect and social anxiety) tend to report increased alcohol use (Scheier et al., 1999b). Further, it was found that positive life outcomes serve as protective factors against the effects of negative life events (perceived stress from disruptive life events such as loss of a family member or failing an exam) on alcohol use in adolescents. However, it should be noted that this buffering effect was only observed among individuals who were at low risk for negative life events, and a buffering effect was not observed for individuals who were at high risk for negative life events (Scheier et al., 1999b). Similarly, internal health locus of control (greater self-efficacy for health-related matters) buffered the effects of negative life events on alcohol use but only for individuals who were at low risk of negative life events.

Academic achievement has consistently been shown to serve as a protective buffer against substance use (Fergus & Zimmerman, 2005). Specifically, findings suggest that school

experiences influence substance use, wherein academic achievement protects individuals from low academic motivation, which is associated with substance use (Bryant & Zimmerman, 2002). Further, findings suggest that assets such as positive and negative affect are related to substance use where the possession of positive affect is negatively associated with substance use, and conversely, negative affect is negatively associated with substance use (Wills, Sandy, Shinar, & Yaegar, 1999). Specifically, individuals experiencing negative affect tend to have increased substance use and individuals who have positive affect tend to report decreased substance use (Wills et al., 1999). Additionally, positive affect has been found to serve as a buffer against substance use where individuals who have positive affect displayed reduced substance use over time, particularly among adolescents who are emotionally distressed (Wills et al., 1999).

The Present Study

Previous research has focused primarily on the outcomes of polyvictimization, such as mental health symptomatology but has not explored the potential moderating effect of resilience on the ability of polyvictimization to predict substance. In the present study, the main variables of interest are polyvictimization, resilience, and substance use. Polyvictimization, the predictor variable, is operationally defined as participants' retrospective self-reports of childhood and adolescent victimization experiences prior to the age of 17. Resilience, the moderator variable, is operationally defined as participants' self-reported levels of personal assets predictive of resilient responding to risk, adversity, or trauma, including personal competence, interpersonal connectedness, and emotional regulation strategies. Substance use, the outcome variable, is operationally defined as participants' cumulative self-reports of current alcohol and drug use, and behaviors associated with the use of these substances. Supplemental variables to be examined for exploratory purposes include psychological functioning and attachment.

The current study investigated the potential of resilience-related factors to moderate the effect of polyvictimization on substance use. Specifically, it was expected that there would be a main effect of polyvictimization on substance use. Individuals who have higher experiences of polyvictimization were expected to have significantly higher self-reports of substance use than individuals who had lower experiences of polyvictimization. Additionally, it was predicted that there would be a main effect of resilience on substance use. Specifically, individuals with low resilience would have higher scores on a self-reported measure of substance use than individuals with high resilience. Lastly, it was expected that there would be an interaction between polyvictimization and resilience. Among people with low resilience, it was expected that higher scores for polyvictimization would be associated with higher substance use than lower polyvictimization. Likewise, among individuals with high resilience, substance use was expected to be relatively low for both polyvictims and non-polyvictims.

Chapter 3 – Method

Participants

A total of 252 participants were recruited online from the Psychology Department's participant pool at Radford University, administered through SONA research participation management systems (SONA Systems, Inc., Tallin, Estonia). Based on exclusion criteria listed below, 32 cases were not included in the analyses, leaving 214 remaining cases included in the analyses. Participants received two credits in SONA as compensation for their participation in the study. This sample size exceeds the sample size required to achieve a desired value power .80 for a test detecting a moderately-sized effect using a critical alpha level of .05 and an η^2 partial of .04.

Sample characteristics revealed that participants' ages averaged around 18 years (M = 19.41, SD = 1.94), ranging from age 17 and older. It was expected that the number of female participants would slightly outweigh male participants in this sample based on recent data collection. Indeed, there 151 female and 62 male participants were recruited for this sample. Additionally, European Americans accounted for 64.4% of the sample, African Americans accounted for 19.4% of the sample, Multi-Ethnic accounted for 2.8% of the sample, Hispanic/Latino American accounted for 7.9% of the sample, East/Southeast Asian American accounted for 1.9% of the sample, and Middle Eastern/North African accounted for 0.5% of the sample.

Data were screened based on the following exclusion criteria: amount of time elapsed while participants completed the study, amount of the survey that had been completed, and variance screening. Data from participants whose time to completion was less than 540 seconds were excluded from analyses. Additionally, participants must have completed at least 75% of the

survey for their data to be included in the analyses. Lastly, to ensure participants provided accurate responses to the measures, data from participants who had little to no variability on two or more scales were subjected to visual inspection responses and excluded from the analyses.

Measures

Juvenile Victimization Questionnaire – Adult Retrospective. A measure of victimization experiences was obtained using the Juvenile Victimization Questionnaire – Adult Retrospective (Hamby et al., 2004; see Appendix A). The JVQ is a 34-item measure reflecting childhood and adolescent victimization experiences that fall into six broad categories (Property Crime, Physical Assault, Sexual Assault, Maltreatment and Neglect, Peer/Sibling Victimization, and Indirect/Witnessing Victimization of others). Examples of items on the JVQ include "Sometimes groups of kids or gangs attack people. When you were a child, did a group of kids or a gang hit, jump, or attack you?" and "When you were a child, did any kid, even a brother or sister, hit you? Somewhere like: at home, at school, out playing, in a store, or anywhere else?" The response format of the JVQ is a 6-point numerical scale of frequency (0 = 0 times, 5 = 5 or more times). Responses from the JVQ were scored by computing a sum of the number of items for which a respondent answered 1 or above. A high score on the JVQ indicates higher instances of polyvictimization. Likewise, a low score on the JVQ is indicative of low rates of polyvictimization.

Resiliency Scales for Children and Adolescents. Factors associated with resilient responding were assessed using the Resiliency Scales for Children and Adolescents (RSCA; Prince-Embry, 2007; see Appendix B). The RSCA is a 64-item measure that provides a total resilience score as well as three subscale scores (Sense of Mastery, Sense of Relatedness, and Sense of Emotional Reactivity). The Sense of Mastery subscale measures optimism, self-

efficacy, and adaptability. Higher scores on the Sense of Mastery subscale reflect high positive attitudes about the world and one's life, problem-solving attitudes and strategies, and the ability to receive criticism and learn from mistakes (Prince-Embry, 2007). High scores on the Sense of Relatedness subscale reflect high tolerance, support when dealing with adversity, comfort when dealing with discomfort and anxiety, and the ability to perceive others as reliable and accepting, as well as the ability to be authentic in relationships (Prince-Embry, 2007). Lastly, the Emotional Reactivity subscale measures sensitivity, recovery, and impairment. High sores on the Emotional Reactivity subscale reflect longer amounts of time to recover from emotional disturbances, low ability to maintain an emotional balance when aroused such as "losing control," and more easily and intensely getting upset from arousing situations (Prince-Embry, 2007). Examples of the items on the RSCA include "I can adjust when plans change" and "I can get past problems in my way." The RSCA uses a 5-point numerical rating scale of frequency (0 = Never, 4 = Almost Always). Responses from the RSCA were scored by computing an average for each subscale.

Michigan Alcoholism Screening Test. Two measures were used to assess substance use: the Michigan Alcoholism Screening Test (MAST; Selzer, 1971; see Appendix C) and the Drug Abuse Screening Tool (DAST; Skinner, 1982; see Appendix D). The MAST is a 25-item measure that screens for lifetime alcohol-related problems. Examples of the items on the MAST include "Have you ever awakened in the morning after some drinking the night before and found that you could not remember a part of the evening?" and "Do your friends, significant other, a parent, or other near relative ever worry or complain about your drinking?" The MAST uses a dichotomous response scale (1 = Yes, 0 = No). Responses from the MAST are scored by computing a sum. Higher scores on the MAST indicate higher levels of alcohol abuse and an increased risk of a potential diagnosis of an alcohol use disorder.

Drug Abuse Screening Tool. The DAST is a 28-item measure that screens for lifetime drug abuse-related problems (Skinner, 1982). Examples of the items on the DAST include "Do your friends, significant other, or relatives know or suspect you abuse drugs?" and "Has drug abuse ever created problems between you and your friends, significant other, or parents?" Similarly, the DAST also uses a dichotomous response scale (1 = Yes, 0 = No). Responses from the DAST were scored by computing a sum. Higher scores on the DAST indicate higher levels of drug abuse and an increased risk of a potential diagnosis of a substance use disorder. Scores from the MAST and DAST were combined to compute a single score reflecting substance use.

Experiences in Close Relationships Scale. In addition to these measures that assess the main variables of interest, participants were asked to complete two supplemental measures to be used for exploratory analyses. The first is the Experiences in Close Relationships Scale (ECR Brennan, Clark, & Shaver, 1998; see Appendix E). The ECR is a 36-item measure of attachment in close relationships, which consists of anxiety and avoidance subscales. Examples of the items on the ECR include "I often wish that my partner's feelings for me were as strong as my feelings for him/her" and "I want to get close to my partner, but I keep pulling back." The ECR uses a 7-point numerical rating scale of agreement (1 = Strongly Disagree, 7 = Strongly Agree). Responses from the ECR were scored by computing an average for each subscale, where higher scores reflect greater anxiety and avoidance, respectively.

Symptoms Checklist-90-Revised. Lastly, participants were asked to complete the Symptoms Checklist-90-Revised (SCL90-R; Derogotis, 1994; see Appendix F). The SCL-90-R is a 90-item questionnaire that provides global indicators of psychological well-being as well as indicators for specific psychological domains (e.g., anxiety, depression, psychoticism). Examples of the items on the SCL-90-R include "Having to repeat the same actions such as touching,

counting, or washing" and "Sleep that is restless or disturbed." The SCL-90-R uses a 5-point numerical rating scale of frequency (0 = Not at All, 4 = Extremely). Responses from the SCL-90-R were scored by computing an average global severity index, where higher scores reflect greater severity of psychological symptomatology.

Procedure

Procedures for the present study were approved by the Institutional Review Board of Radford University. Two hundred fifty-two participants were recruited from the psychology department participant pool administered through SONA, an online research participation management system (SONA Systems, Inc., Tallin, Estonia). Participants logged into SONA and registered to participate in the survey. SONA displayed a recruiting script to participants as well as the researchers' contact information and a link to the online study. The study was anonymous and no identifying information was collected from participants. The study was administered online through Qualtrics (Qualtrics Inc., Provo, UT).

Once participants were directed to the Qualtrics webpage, they completed the online informed consent (see Appendix H). If students consented to the study, they completed the following aforementioned measures: (1) Juvenile Victimization Questionnaire – Adult Retrospective (Hamby et al., 2004), (2) Resiliency Scales for Children and Adolescents (Prince-Embry, 2007), (3) Experiences in Close Relationships (Brennan et al., 1998), (4) Symptoms Checklist-90-Revised (Derogotis, 1994), (5) Michigan Alcoholism Screening Test (Selzer, 1971), and (6) Drug Abuse Screening Tool (Skinner, 1982). If participants did not consent to participate, they were directed to the end of the study. The order of these measures was randomized across participants using nested randomization to control for order effects. The first block that participants entered is informed consent. If participants did not consent to the study,

they were sent to an end of the study debriefing and a message thanking them for their participation. If participants consented to the study, however, they were randomly directed to one of three nested randomizers. If participants were directed to the first nested randomizer, they began either the JVQ or the SCL-90-R in a random order. Once participants completed the JVQ and the SCL-90-R, they were then directed to one of the two remaining randomizers. If participants were directed to the second nested randomizer, they received the ECR and the RSCA in a random order. If participants were directed to the third nested randomizer, they received the MAST and DAST in a random order. Lastly, all participants who consented to the study were directed to the demographic questionnaire (see Appendix G).

After participants had completed all measures, participants were thanked for their participation and given a debriefing (see Appendix I) detailing the goals and purposes of the study and contact information for questions or follow-up. Participants were encouraged to print the debriefing page and informed consent for their records. Lastly, because this study included sensitive questions about a history of victimization, substance use, and mental health issues, participants were provided with contact information for support services should they have any health or emotional concerns by their participation in order to minimize any potential risk. This information was included in both the consent and debriefing form.

Data Analysis Plan

Main demographic analyses were conducted in order to identify potential covariates and discover any demographic variables that were contributing to any associations found between the main variables of interest. In addition to this, a series of zero-order correlations was obtained among the predictor (PV), moderator (resilience subscales), and outcome (substance use scales) variables. Hierarchical multiple-regression analyses were conducted in several steps to examine

the unique contribution of polyvictimization and victimization aggregates to the prediction of substance use. In the first analysis, individual victimization aggregates were entered in the first step, and then PV was entered in the second step to identify the unique contribution of PV above and beyond individual types of victimization. In the second analysis, the order of entry was reversed to evaluate the unique contribution of individual types of victimization above and beyond PV.

Following procedures outlined by Aiken and West (1992), a series of hierarchical multiple regression analyses were also conducted to test the moderating effect of resilience on the relationship between PV and substance use. First, polyvictimization scores and resilience were centered by subtracting the mean of the respective scales from each response. Second, PV and resilience scales interaction terms were created from the product of the centered PV and respective resilience scales. In the first step of each model, the centered polyvictimization and resilience scale was entered. In the second step of each model, the interaction terms were entered into a regression equation. Moderation was indicated by the presence of a significant R^2 change in the second step.

For significant tests of moderation, simple slope analyses were conducted in the model to view the effect of polyvictimization on substance use when resilience is one standard deviation above the mean and when resilience is one standard deviation below the mean. Similarly, simple slope analyses were run to test the effect of resilience scores on substance use when PV is one standard deviation above the mean and when PV is one standard deviation below the mean.

Chapter 4 – Results

Preliminary Analyses

A series of correlations were conducted for descriptive analyses. Table 1 (see Appendix J) displays all associations between sense of mastery, sense of relatedness, emotional reactivity, substance use, retrospective childhood polyvictimization, and individual victimization aggregates. Reliability for each scale is reported along the diagonal. All major scales, including the RSCA, the JVQ, and substance use demonstrated exemplary reliability (Cronbach's $\alpha > .90$), based on criteria set forth by Robinson, Shaver, and Wrightsman (1991). Continuous aggregates from the JVQ displaying exemplary reliability include Physical Assault, Child Maltreatment, and Sexual Assault types, which had Cronbach's Alphas ranging between .80 and .81. The remaining aggregates, Property Crime, Peer/Sibling, and Witnessing/Indirect, demonstrated extensive reliability with Cronbach's Alphas ranging from .70 to .73.

All of the correlations between major scales (Resilience, PV, and substance use) were significant. The sense of mastery subscale and the sense of relatedness subscale of the RSCA were strongly, positively associated with each other. The emotional reactivity subscale of the RSCA was negatively associated with the sense of mastery and sense of relatedness subscales of the RSCA. Additionally, there was a small, negative association between sense of mastery and substance use. Individuals who exhibit a high sense of mastery tend to display lower ratings of substance use compared to peers. Likewise, there was a small, negative association between sense of relatedness and substance use, which denotes that individuals with an increased sense of relatedness report decreased substance use. Of the associations between resilience and substance use, emotional reactivity and substance use displayed the strongest association. Although it was modestly associated, emotional reactivity was positively associated with substance use, which

reflects that individuals who have an increased level of emotional reactivity also report increased substance use.

Resilience and polyvictimization were significantly associated with each other. sense of mastery and sense of relatedness were moderately, negatively associated with polyvictimization. Individuals with increased polyvictimization experiences had decreased sense of mastery and sense of relatedness. In contrast, emotional reactivity and polyvictimization were modestly, positively associated with each other. Individuals who had increased polyvictimization experiences tended to have increased emotional reactivity.

Lastly, there was a strong, significant association between substance use and polyvictimization. substance use was positively associated with polyvictimization and all of the individual victimization aggregates. Therefore, individuals who had increased experiences of polyvictimization also reported increased substance use. Overall, polyvictimization seems to be more strongly correlated with substance use outcomes than the individual victimization aggregates.

For descriptive purposes, Table 2 from Appendix J depicts the frequencies for the 34 types of childhood victimization on the JVQ. Out of 216 participants, 88% of individuals reported experiencing at least one type of childhood victimization in their lifetime and 12% reported no victimization experiences. The most frequently reported victimization type was Property Crime (73.6%), followed by Physical Assault and Peer/Sibling Victimization (69.9%), Witnessing/Indirect (52.8%), Child Maltreatment (43.5%), and Sexual Victimization (37.5%).

Demographic Analyses

A series of correlations, ANOVAs, and t-tests were conducted to determine whether any demographic variables were potential covariates associated with the main variables of interest

(polyvictimization, resilience, and substance use). The following demographic variables were included in these analyses: age, gender, ethnicity, relationship status, educational generation status, residential area, socioeconomic status, high school grade point average, therapy/counseling history in the last 12 months, and mental health prescription medication history in the past 6 months. Of those demographic variables, age, counseling/therapy history, and prescription medication history were all significantly associated with the main variables of interest. Age was significantly correlated with polyvictimization, $r(211) = .17$, $p = .012$. Older participants tended to report more polyvictimization experiences. Additionally, age was significantly correlated with substance use, $r(211) = .27$, $p < .001$. Older participants tended to report more substance use compared to younger participants. Given that the legal age for alcohol consumption is 21 years of age, it is possible that this could provide an explanation for the relationship seen between age and substance use in this sample.

An independent samples t-test was conducted to examine the relationship between counseling/therapy history and the main variables of interest. Counseling/therapy history was significantly associated with polyvictimization and substance use. Specifically, individuals who reported receiving counseling/therapy in the past 12 months also reported increased levels of polyvictimization experiences on average ($M = 10.75$, $SD = 8.44$) compared to individuals who had not received counseling/therapy in the past 12 months ($M = 6.97$, $SD = 6.20$); $t(212) = 3.62$, $p < .001$, $d = .55$. Similarly, individuals who reported receiving counseling/therapy in the past 12 months reported increased substance use on average ($M = 10.04$, $SD = 8.89$) compared to individuals who did not receive counseling in the past 12 months ($M = 6.58$, $SD = 4.31$); $t(212) = 3.82$, $p < .001$, $d = .58$.

Lastly, independent samples t-tests was conducted to examine the relationship between mental health medication history and the main variables of interest. Medication history was significantly associated with sense of mastery. Specifically, individuals who reported taking prescribed mental health medications in the last 6 months tended to score lower on sense of mastery (M = 2.51, SD = .47) compared to individuals who did not take any prescribed mental health medications in the last 6 months (M = 2.72, SD = .60); $t(211) = -2.44$, $p = .016$, $d = -.37$. Additionally, medication history was also significantly associated with emotional reactivity. Specifically, individuals who reported taking mental health medications in the past 6 months tended to score higher on emotional reactivity on average (M = 1.68, SD = .54) compared to individuals who did not take mental health medications in the past 6 months (M = 1.44, SD = .66); $t(210) = 2.48$, $p = .014$, $d = 0.38$. Likewise, medication history was also marginally significantly associated with substance use. Specifically, individuals who reported taking mental health medications in the past 6 months tended to report increased substance use (M = 8.77, SD = 7.05) compared to individuals who did not take mental health medications in the past 6 months (M = 7.08, SD = 5.71); $t(212) = 1.83$, $p = .068$, $d = 0.28$.

Because they were consistently associated with the main variables of interest, the demographic variables age, counseling/therapy history, and medication history were included as covariates in moderation analyses in order to rule out the potential possibility of alternative explanations for observed relationships between the main variables of interest.

Unique Contributions

Multiple hierarchical regression models were run to analyze the unique contribution of polyvictimization and each of the individual aggregate categories of victimization experiences to the prediction of substance use (see Table 3 from Appendix J). Two hierarchical multiple

regression (HMR) models were run separately for each of the six individual aggregate scores (Property Crime, Physical Assault, Child Maltreatment, Peer/Sibling Victimization, Witnessing/Indirect Victimization, and Sexual Victimization), resulting in a total of 12 HMR analyses. In model 1 of each set of analyses, the individual aggregate was entered in the first step, followed by the polyvictimization screener sum score entered in the second step. Overall, the proportion of variance accounted for by each individual aggregate ranged between 5% and 20%. Next, when the polyvictimization screener sum score was added to the model in step 2, polyvictimization accounted for an additional proportion of variance, ranging between 4% and 15% over and above each individual aggregate. These values indicate that polyvictimization accounts for a meaningful portion of the variance in substance use that is not accounted for by individual aggregates.

In the second model of the analysis, the order was reversed wherein polyvictimization was entered in step 1 followed by each individual aggregate. In step 1, polyvictimization accounts for 20% of the variance in the prediction of substance use. In step 2, individual aggregates accounted for an added proportion of variance ranging between .3% and 3% over and above what polyvictimization is able to capture in the prediction of substance use. Sexual Assault contributed significantly to an additional 3% of variance over and above what polyvictimization was able to capture in the prediction of substance use. Peer/Sibling Victimization accounted for an additional 2% of variance that polyvictimization failed to capture independently. However, the remaining aggregates (Property Crime, Physical Assault, Child Maltreatment, and Witnessing/Indirect) did not account for a significant proportion of variance above polyvictimization. As a group, the polyvictimization screener sum score and each

individual aggregate accounts for a proportion of variance in substance use ranging between 20% and 24%.

In summary, the simple association between polyvictimization and substance use is greater in comparison to the simple association of any individual aggregates on the prediction of substance use. Further, when polyvictimization is added to the model in addition to the individual aggregates, it reduces the contribution that any individual aggregate makes on its own. Moreover, polyvictimization continues to make a unique contribution to the prediction of substance use over and above what any individual aggregate is able to capture. Lastly, the unique contribution of polyvictimization is consistently stronger than the unique contribution of any individual aggregate.

Moderation Analyses

A series of HMR analyses were conducted to test the moderating effects of resilience on the relationship between polyvictimization and substance use (Aiken & West, 1992). Each HMR model consisted of three steps. In the first step, covariates identified in the demographic analyses (age, counseling/therapy history, and medication history) were entered as predictors. Age was centered by subtracting the mean age from individual values for each participant. Counseling/therapy history and medication history were contrast coded, where 1 = individuals who reported receiving counseling/therapy in the past 12 months and medication in the past 6 months, and -1 = those who did not receive counseling/therapy in the past 12 months and medication in the past 6 months. In the second step of each HMR model, PV (centered) and the respective resilience subscale (centered) were entered as predictors. In the final step, the respective interaction term —the product of PV (centered) and the respective resilience subscale (centered) — was entered. Moderation (a significant interaction) was indicated when the R^2

change in step 3 was statistically significant. For any significant interaction effects, subsequent simple slope analyses were planned following procedures outlined in Aiken and West (1992).

Table 4 in Appendix J reports the results from the test of the interaction between polyvictimization and resilience in the prediction of substance use. In each model, the covariates age, counseling/therapy history, and medication history are entered in the first step. The overall R^2 change within step 1 and individual predictor Betas for each covariate within step 1 reflect the same values across all three of the HMR moderation analyses conducted, so they are only reported once in Table 4 of Appendix J. As a group, the covariates accounted for 13% of the variance in substance use. Age and counseling/therapy history significantly, positively predict substance use. Specifically, older participants report increased substance use compared to younger participants. Also, individuals who have report receiving counseling/therapy in the past 12 months tended to report increased substance use compared to individuals who had no counseling in the last 12 months. It should be noted that the moderation analyses were also run without including the covariates. Including the covariates in the model slightly reduced associations between polyvictimization and substance use and the resilience subscales and substance use in steps 2 and 3 of each model, compared to the models where the covariates are not included. With one exception, the interaction terms were unaffected by including the covariates; the exception being that the interaction between polyvictimization and emotional reactivity went from being non-significant to being marginally significant when the covariates were included.

With respect to the first model testing whether sense of mastery moderated the relationship between polyvictimization and substance use, the main effect for polyvictimization was significant. Consistent with the hypotheses, there was a strong, positive association between

polyvictimization and substance use in step 2 of the model, which indicated that participants reporting more polyvictimization tended to report more substance use. Contrary to the study's hypotheses, the main effect for sense of mastery was not significant. Also contrary to the study's hypotheses, the R^2 change for step 3 of the model was not significant, and therefore the interaction between polyvictimization and sense of mastery was not significant.

A similar pattern was observed within the HMR testing whether sense of relatedness moderated the relationship between polyvictimization and substance use. Again, consistent with the hypotheses, the main effect of polyvictimization was significant, and a strong positive association with substance use was observed. Contrary to the hypotheses, the main effect for sense of relatedness was not significant. Also contrary to the hypotheses, the R^2 change for step 3 of the model was not significant, and therefore the interaction between polyvictimization and sense of relatedness was not significant.

Finally, within the HMR testing whether emotional reactivity moderated the relationship between polyvictimization and substance use, the overall pattern was slightly different. Again, consistent with the hypotheses, the main effect of polyvictimization was significant, and a strong positive association with substance use was observed. Contrary to the hypotheses, the main effect for emotional reactivity was not significant. Somewhat consistent with the hypotheses, the R^2 change for step 3 of the model was marginally significant ($p = .056$), suggesting that emotional reactivity may moderate the relationship between polyvictimization and substance use, however, the effect size was quite small.

Although formal tests of moderation were not significant, given that one was marginally significant, simple slope analyses were conducted to probe each of the three interaction effects tested for exploratory purposes. These analyses are reported in Table 4 of Appendix J and in

Figures 1-3 of Appendix K. In Figure 1 of Appendix K, the interaction between emotional reactivity and polyvictimization predicting substance use can be observed. Although the interaction was only marginally significant, the overall pattern was consistent with a buffering model. There was a strong, positive association (a large effect size) between polyvictimization and substance use when emotional reactivity was high. Specifically, individuals who scored higher on emotional reactivity tend to have increased polyvictimization and substance use. In contrast, there was only a moderate association (a medium effect size) between polyvictimization and substance use when emotional reactivity was low. Though the difference is only marginally significant, the relationship between polyvictimization and substance use appears to be substantially smaller among participants who have lower emotional reactivity (greater resilience), compared to participants with greater emotional reactivity. Essentially, individuals who score low on emotional reactivity appear to suffer less (in terms of substance use) from polyvictimization than their peers.

In Figure 2 of Appendix K, the interaction between sense of mastery and polyvictimization when predicting substance use can be observed. The interaction was not significant, but the overall pattern was again consistent with a buffering model. There was a strong, positive association (approaching a large effect size) between polyvictimization and substance use when sense of mastery was low. In contrast, the association between polyvictimization and substance use was only moderate in size when sense of mastery was high. Although the difference was not significant, the relationship between polyvictimization and substance use appears to be substantially smaller among participants who have a greater sense of mastery (greater resilience), when compared to their peers.

In Figure 3 of Appendix K, the interaction between polyvictimization, substance use, and sense of relatedness was not significant. Unlike emotional reactivity and sense of mastery, the overall pattern for sense of relatedness was not consistent with a buffering model. There was a strong, positive association (approaching a large effect size) between polyvictimization and substance use when sense of relatedness was low. The association between polyvictimization and substance use was only moderate in size (medium effect size) when sense of relatedness was high. Although the relationship between polyvictimization and substance use appears to be substantially smaller among participants who have a greater sense of relatedness (greater resilience), the pattern is not one of buffering. Rather, it looks as though relatedness has its greatest effect when victimization is low rather than when it is high, and when victimization is low greater relatedness may actually be associated with slightly higher substance use. When victimization was high, sense of relatedness appears to provide very little protection against negative outcomes (in terms of substance use).

Chapter 5 – Discussion

The current study investigated the potential of resilience-related factors to moderate the effect of polyvictimization on substance use. First, it was expected that individuals who have experienced more types of victimization (polyvictims) would have significantly higher self-reports of substance use than individuals who had fewer experiences of polyvictimization. In the present sample, polyvictimization was consistently, strongly associated with substance use. Specifically, individuals who experienced more victimization in their childhood also tended to report increased substance use. These findings are consistent with prior research. Greater substance use has been found among middle school and high school students who have been victimized (e.g., Larson et al., 2019) as well as college students (e.g., Palmer et al., 2012), and adolescents who have a history of childhood polyvictimization are at an increased risk for developing a substance use disorder in their lifetime (Ford et al., 2010). The present study also provides further support that exposure to more types of victimization in childhood increases the likelihood of substance use in late adolescence and early adulthood (Elliott et al., 2009; Elliott et al., 2019).

Second, it was predicted that individuals with low resilience (less competence/confidence, poor relationships, and less control over emotions) would have higher self-reports of substance use than individuals with high resilience. Simple associations between the resilience-related factors and substance use were significant. Individuals who were more in control of their emotions tended to report less substance use compared to their emotionally reactive peers. Individuals who felt more competent, confident, and optimistic, and who have positive relationships, feel supported and trusted in their relationships, and manage relationship conflict tended to report less substance use compared to peers who lack confidence and find

relationships difficult and unsupportive. Emotional reactivity was more strongly associated with substance use than were sense of mastery and relatedness. These findings are consistent with existing literature that identifies the negative association between possession of resilience-related assets and substance use (Bryant & Zimmerman, 2002; Bryant et al., 2003; Fergus & Zimmerman, 2005; Wills et al., 1999). However, it should be noted that, within the present study, when the effects of polyvictimization are partialed from the analyses, the association between the resilience-related factors and substance use were not significant.

Lastly, it was expected that there would be an interaction between polyvictimization and resilience when predicting substance use. Among people with low resilience, it was expected that higher polyvictimization would be more strongly, positively associated with substance use than among individuals with high resilience. Based on the present sample, resilience did not significantly moderate the effects of polyvictimization on substance use. However, there was a marginally significant interaction observed with emotional reactivity between polyvictimization and substance use that is consistent with a pattern of buffering. It seems that overall, low emotional reactivity may serve as a buffer against the effects of childhood polyvictimization on substance use. Particularly, polyvictims who are able to maintain emotional stability and recover from the negative emotions they experience (low emotional reactivity) reported lower substance use compared to polyvictims who are more emotionally reactive. It appears that there is a substantive reduction in substance use for polyvictims who have low emotional reactivity (See Figure 1) and high sense of mastery (See Figure 2) and a similar pattern exists for both. Based on the findings, it seems that the effect could be significant in a clinically meaningful way. Further, the amount of reduction in substance use for low emotional reactivity when polyvictimization is high, is nearly equivalent with the amount of reduction in substance use when individuals

possess a high sense of mastery and increased polyvictimization experiences, which could have come clinical implications. It could be that individuals who are more emotionally reactive may maladaptively cope with emotional disturbances and instability by using substances, which is consistent with what is known about the co-occurrence of substance use disorders and other mental health symptomatology (American Psychiatric Association, 2013). Similarly, although sense of mastery did not significantly moderate the relationship between polyvictimization and substance use, the results were consistent with a pattern of buffering. Specifically, polyvictims who possessed internal characteristics such as optimism, self-efficacy, and adaptability had decreased substance use compared to polyvictims who did not possess these assets. These results provide some support for the prediction that resilience would moderate the association between polyvictimization and substance use. Lastly, sense of relatedness did not significantly moderate the effect of polyvictimization on substance use, nor were the results consistent with a buffering model. Interestingly, sense of relatedness appeared to act more like a risk factor for substance use when victimization experiences are low. That is, for this particular sample, non-polyvictims who had a higher sense of relatedness (e.g., high tolerance, support when dealing with adversity, comfort when dealing with anxiety) reported slightly increased substance use. It could be that having an increased sense of relatedness among college students also means that these individuals have a larger network of peers with whom they can engage in substance use behavior. Again, although findings were not significant, a pattern of buffering may exist for the personal assets of mastery and emotional reactivity, which is consistent with previous studies that provide some evidence that variables that are conceptually similar to resilient-related factors such as positive life outcomes (Scheier et al., 1999b), positive affect (Wills et al., 1999), or self-control and substance use refusal skills (Scheier et al., 1999a) may serve as protection for

individuals at risk for substance use (Scheier et al., 1999a). The present study contributes to this literature by showing that actual resilience-related personal assets may serve as a buffer against childhood victimization experiences on substance use.

In the present study, 88% of participants had experienced at least one type of childhood victimization in their lifetime. With respect to the reported rates of polyvictimization, the findings of the present study are consistent with previous literature. Within child and adolescent samples, nearly 80% of children report having experienced one or more types of victimization within their lifetime and 70% of individuals have reported one or more types of victimization within the past year (Finkelhor et al., 2009). Other studies focusing on male and female college students' retrospective reports of childhood victimization have found a slightly higher frequency of experiencing one type of victimization (90-92%; Elliott et al., 2019), and a similar study sampling all females found that 98% of individuals experienced at least one type of childhood victimization (Elliott et al., 2009). Overall, findings from the present study were slightly lower than what has been reported from previous studies and reasons for these discrepancies are unclear at this time.

In terms of the strengths and limitations, the strengths of the present study include the reliability of the measures used to assess the main variables of interest. All scales demonstrated extensive to exemplary reliability. Each major scale demonstrated exemplary reliability and aggregates of the JVQ demonstrated extensive reliability. Because the present study is a correlational design, causal inferences cannot be drawn from the current findings, and the direction of observed relationships is unknown. Additionally, it is possible that observed associations between the main variables of interest could have been caused by other unmeasured variables. Limitations of the study also lie in the extent to which the results are generalizable.

Because the present study used a non-random/convenience sample from Radford University, it is not clear whether these data are representative of other students at Radford University or students from different universities. Again, because this study sampled college students, it is also unclear whether these results would generalize to peers in late adolescence/early adulthood who are not enrolled in college or to individuals in older age groups. Lastly, the present study is a relatively high functioning, non-clinical sample, which may not accurately represent what may be occurring in clinical populations. Additionally, although the MAST and the DAST have been used in prior research, these scales are largely used in clinical settings which may have had an effect on participant responding. For instance, several of the items on the MAST and DAST ask about negative lifetime outcomes of substance use (i.e., DUI/DWI experiences and impact of substance use on relationships and jobs), which may not be relevant to many students who participated in the present study. For example, the mean age of the present sample was 18, which means that most students may have just recently received a driver's license or may not have a license yet, and therefore items regarding a DUI/DWI would not apply to these individuals because they have had limited driving experience. Similarly, with respect to items regarding substance use outcomes on relationships and jobs, most students have limited experiences in serious relationships and most students are traditional and may not have worked a full-time job yet, lacking experience in the workplace. Additionally, college campuses have a relatively high prevalence of alcohol consumption and unique drinking norms (SAMHSA, 2019). The MAST and DAST do not include items that capture drinking behaviors that would be uniquely relevant to college students. Further, the language used in the DAST asks directly about drug "abuse." Given how common drug use such as cannabis is on college campuses, individuals may not report what they perceive as recreational drug use as drug "abuse." Additionally, because alcohol

consumption and drug use are common on college campuses, college students may report a much higher prevalence of substance use than their peers within a similar age group who are not enrolled in college. As a result of these factors, it is suggested that a more age- and sample-appropriate screener tool be used in assessing substance use among late adolescents/emerging adults enrolled in college.

Overall, the current findings expand on what is known about the frequency of childhood victimization experiences and its subsequent association to negative life outcomes; specifically, substance use in late adolescence and early adulthood. Additionally, although tests of moderation were not significant for resilience, they are consistent with existing buffering models of resilience on substance use (Scheier et al., 1999a; Scheier et al., 1999b; Wills et al., 1999), although prior research is limited.

Even though these findings may not be representative of a clinical population, they may have clinical implications for behavioral health professionals who desire more appropriate and focused treatment interventions. The current findings, in conjunction with previous literature, indicate that behavioral health professionals should be aware that the prevalence of victimization is high among college-aged individuals, and individuals who disclose that they have been victimized, are likely to have experienced additional types of victimization. Interventions such as trauma informed care (Elliott et al., 2019) would provide the most appropriate and focused level of care for clients who have been victimized. College counselors in particular should be vigilant of these findings because a large portion of college-age students have endorsed experiencing at least one type of victimization in their lifetime (Elliott et al., 2019). The present findings also suggest that experiencing different types of victimization, including relatively high frequency and low severity types, may be a better indicator that an individual is at risk for substance abuse

than the severity and frequency of any one kind of victimization. Additionally, behavioral health professionals may want to consider administering a screener tool to assess an individual's complete victimization history to capture the client's full victimization profile, which can assist the therapist in developing a substance use prevention strategy. Lastly, clinicians should be aware of the findings that suggest resilience may serve as a buffering mechanism for polyvictimization on substance use. Clinicians may want to consider resilience-based interventions for polyvictims, which focus on developing assets and resources, who have been exposed to risk (negative life events), such as victimization experiences (Zimmerman & Fergus, 2005).

Future research may consider using scales specifically designed to assess non-clinically significant substance use and related behaviors for research purposes that are specifically focused on late adolescents/early adults. Additionally, because the present study only focused on resilience-related personal assets, future research should examine the moderating effect of resilience-related assets and environmental resources which are protective factors that are external to the individual that may protect individuals from substance use such as density and size of social support networks, parental support, community resources, and adult mentoring (Fergus & Zimmerman, 2005; Tusaie & Dyer, 2004; Windle, 2001). Environmental resources all contribute to the development of children and adolescents (Zimmerman & Fergus, 2005), and the possession of these resources may mitigate the effects of polyvictimization on substance use by way of resilient responding. It is suggested that the moderating effects of resilience on the relationship between polyvictimization on substance use in clinical populations with different age groups should be examined in the future to investigate how those findings may differ from late adolescent/early adulthood college students. Additionally, research with a clinical population

may provide clinicians with better insight on focused treatment interventions. It may also be helpful to investigate other psychological outcomes such as depression and anxiety within a polyvictimization and resilience buffering model.

The present study provides further evidence for what is understood about the moderating role of resilience in buffering the negative effects of polyvictimization on substance use. Because singular victimization experiences and polyvictimization tends to occur so frequently, it is evident that the present study provides information to better understand this human condition that affects a large portion of individuals around the world. The present study begins to give us insight into how resilience-related assets can contribute to more positive life outcomes, regardless of victimization type, and how awareness of this can improve treatment interventions and, subsequently, make improvements in one's mental health.

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Appendix A

Juvenile Victimization Questionnaire – Adult Retrospective

Directions: These are questions about some things that might have happened during your childhood. Your "CHILDHOOD" begins when you are born and continues through age 17. It might help to take a minute and think about the different schools you attended, different places you might have lived, or different people who took care of you during your childhood. Try your best to think about your ENTIRE CHILDHOOD as you answer these questions.

1. When you were a child, did anyone use force to take something away from you that you were carrying or wearing?

- ○ 1 time
- ○ 2 times
- ○ 3 times
- ○ 4 times
- ○ 5 times
- ○ No

2. When you were a child, did anyone steal something from you and never give it back? Things like a backpack, money, watch, clothing, bike, stereo, or anything else?

3. When you were a child, did anyone break or ruin any of your things on purpose?

4. Sometimes people are attacked **WITH** sticks, rocks, guns, knives, or other things that would hurt. When you were a child, did anyone hit or attack you on purpose **WITH** an object or weapon? Somewhere like: at home, at school, at a store, in a car, on the street, or anywhere else?

5. When you were a child, did anyone hit or attack you **WITHOUT** using an object or weapon?

6. When you were a child, did someone start to attack you, but for some reason, it didn't happen? For example, someone helped you or you got away?

7. When you were a child, did anyone try to kidnap you?

8. When you were a child, were you hit or attacked because of your skin color, religion, or where your family comes from? Because of a physical problem you have? Or because someone said you are gay?

Directions: Next, we ask about grown-ups WHO TOOK CARE OF YOU when you were a child (AGE 0 to 17). This means parents, babysitters, adults who lived with you, or others who watched you.

9. 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?

10. When you were a child, did you get scared or feel really bad because grown-ups in your life called you names, said mean things to you, or said they didn't want you?

11. When someone is neglected, it means that grown-ups in their life didn't take care of them the way they should. They might not get them enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. When you were a child, did you get neglected?

12. Sometimes a family fights over where a child should live. When you were a child, did a parent take, keep, or hide you to stop you from being with another parent?

13. Sometimes groups of kids or gangs attack people. When you were a child, did a group of kids or a gang hit, jump, or attack you?

14. When you were a child, did any kid, even a brother or sister, hit you? Somewhere like: at home, at school, out playing, in a store, or anywhere else?

15. When you were a child, did any kids try to hurt your private parts on purpose by hitting or kicking you there?

16. When you were a child, did any kids, even a brother or sister, pick on you by chasing you, or grabbing your hair or clothes, or by making you do something you didn't want to do?

17. When you were a child, did you get scared or feel really bad because kids were calling you names, saying mean things to you, or saying they didn't want you around?

18. When you were a child, did a boyfriend or girlfriend or anyone you went on a date with slap or hit you?

19. When you were a child, did a **GROWN-UP YOU KNOW** touch your private parts when you didn't want it or make you touch their private parts? Or did a **GROWN-UP YOU KNOW** force you to have sex?

20. When you were a child, did a GROWN-UP YOU DID NOT KNOW touch your private parts when you didn't want it, make you touch their private parts or force you to have sex?

21. Now think about kids your age, like from school, a boyfriend or girlfriend, or even a brother or sister. When you were a child, did another child or teen make you do sexual things?

22. When you were a child, did anyone TRY to force you to have sex, that is sexual intercourse of any kind, even if it didn't happen?

23. When you were a child, did anyone make you look at their private parts by using force or surprise, or by "flashing" you?

24. When you were a child, did anyone hurt your feelings by saying or writing something sexual about you or your body?

25. When you were a child, did you do sexual things with anyone 18 or older, even things you both wanted?

Directions: Sometimes these things don't happen to you but you see them happen to other people.

26. When you were a child, did you SEE one of your parents get hit by another parent, or their boyfriend or girlfriend? How about slapped, punched, or beat up?

27. When you were a child, did you SEE your parent hit, beat, kick, or physically hurt your brothers or sisters, not including a spanking on the bottom?

28. When you were a child, in real life, did you SEE anyone get attacked on purpose WITH a stick, rock, gun, knife, or other thing that would hurt? Somewhere like: at home, at school, at a store, in a car, on the street, or anywhere else?

29. When you were a child, in real life, did you SEE anyone get attacked or hit on purpose WITHOUT using a stick, rock, gun, knife, or something that would hurt?

30. When you were a child, did anyone steal something from your house that belonged to your family or someone you lived with? Things like a TV, stereo, car, or anything else?

31. When you were a child, was anyone close to you murdered, like a friend, neighbor, or someone in your family?

32. When you were a child, did you SEE someone murdered in real life? This means not on TV, video games, or in the movies?

33. When you were a child, were you in any place in real life where you could see or hear people being shot, bombs going off, or street riots?

34. When you were a child, were you in the middle of a war where you could hear real fighting with guns or bombs?

35. PRIOR to age 17, were you ever physically abused?
o No (0)
o Yes (1)

36. PRIOR to age 17, were you ever emotionally or verbally or psychologically abused?

37. PRIOR to age 17, were you ever physically or emotionally neglected?

38. PRIOR to age 17, were you ever sexually abused?

39. PRIOR to age 17, were you ever stalked?

40. AFTER the age of 17, have you ever been sexually abused?

Appendix B

Resiliency Scales for Children and Adolescents

Directions: Here is a list of things that happen to people and that people think, feel, or do. Read each sentence carefully, and circle the one answer (Never, Rarely, Sometimes, Often, or Almost Always) that tells about you best. THERE ARE NO RIGHT OR WRONG ANSWERS.

1. Life is fair.[M]
- o Never (0)
- o Rarely (1)
- o Sometimes (2)
- o Often (3)
- o Almost Always (4)

2. I can make good things happen. [M]

3. I can get the things I need. [M]

4. I can control what happens to me. [M]

5. I do things well. [M]

6. I am good at fixing things. [M]

7. I am good at figuring things out. [M]

8. I make good decisions. [M]

9. I can adjust when plans change. [M]

10. I can get past problems in my way. [M]

11. If I have a problem, I can solve it. [M]

12. If I try hard, it makes a difference. [M]

13. If at first I don't succeed, I will keep on trying. [M]

14. I can think of more than one way to solve a problem. [M]

15. I can learn from my mistakes. [M]

16. I can ask for help when I need to. [M]

17. I can let others help me when I need to. [M]

18. Good things will happen to me. [M]

19. My life will be happy. [M]

20. No matter what happens, things will be all right. [M]

21. I can meet new people easily.[R]

22. I can make friends easily. [R]

23. People like me. [R]

24. I feel calm with people. [R]

25. I have a good friend. [R]

26. I like people. [R]

27. I spend time with my friends. [R]

28. Other people treat me well. [R]

29. I can trust others. [R]

30. I can let others see my real feelings. [R]

31. I can calmly tell others that I don't agree with them. [R]

32. I can make up with friends after a fight. [R]

33. I can forgive my parent(s) if they upset me. [R]

34. If people let me down, I can forgive them. [R]

35. I can depend on people to treat me fairly. [R]

36. I can depend on those closest to me to do the right thing. [R]

37. I can calmly tell a friend if he or she does something that hurts me. [R]

38. If something bad happens, I can ask my friends for help. [R]

39. If something bad happens, I can ask my parent(s) for help. [R]

40. There are people who will help me if something bad happens. [R]

41. If I get upset or angry, there is someone I can talk to. [R]

42. There are people who love and care about me. [R]

43. People know who I really am. [R]

44. People accept me for who I really am.[E]

45. It is easy for me to get upset. [E]

46. People say that I am easy to upset. [E]

47. I strike back when someone upsets me. [E]

48. I get very upset when things don't go my way. [E]

49. I get very upset when people don't like me. [E]

50. I can get so upset that I can't stand how I feel. [E]

51. I get so upset that I lose control. [E]

52. When I get upset, I don't think clearly. [E]

53. When I get upset, I react without thinking. [E]

54. When I get upset, I stay upset for about one hour. [E]

55. When I get upset, I stay upset for several hours. [E]

56. When I get upset, I stay upset for the whole day. [E]

57. When I get upset, I stay upset for several days. [E]

58. When I am upset, I make mistakes. [E]

59. When I am upset, I do the wrong thing. [E]

60. When I am upset, I get into trouble. [E]

61. When I am upset, I do things that I later feel bad about. [E]

62. When I am upset, I hurt myself. [E]

63. When I am upset, I hurt someone. [E]

64. When I am upset, I get mixed-up. [E]

Note. * Indicates that the item is reverse scored.
[M] = Indicates items in the Sense of Mastery Subscale
[R] = Indicates items in the Sense of Relatedness Subscale
[E] = Indicates items in the Emotional Reactivity Subscale

Appendix C

Michigan Alcoholism Screening Test

Directions: Consider the past year (12 months) and carefully read each statement. Then decide whether your answer is YES or NO and check the appropriate space. Please be sure to answer every question.

0. Do you enjoy drinking now and then?
o Yes (1)
o No (0)

1. Do you feel you are a normal drinker? ("normal" - drink as much or less than most other people)

2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening?

3. Do your friends, significant other, a parent, or other near relative ever worry or complain about your drinking?

4. Can you stop drinking without a struggle after one or two drinks?

5. Do you ever feel guilty about your drinking?

6. Do friends or relatives think you are a normal drinker?

7. Are you able to stop drinking when you want to?

8. Have you ever attended a meeting of Alcoholics Anonymous (AA)?

9. Have you gotten into physical fights when drinking?

10. Has your drinking ever created problems between you and your friend, significant other, a parent, or other relative?

11. Has your significant other (or other family members) ever gone to anyone for help about your drinking?

12. Have you ever lost friends because of your drinking?

13. Have you ever gotten into trouble at work or school because of drinking?

14. Have you ever lost a job because of drinking?

15. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?

16. Do you drink before noon fairly often?

17. Have you ever been told you have liver trouble? Cirrhosis?

18. After heavy drinking have you ever had Delirium Tremens (D.T.s) or severe shaking, or heard voices, or seen things that are really not there?

19. Have you ever gone to anyone for help about your drinking?

20. Have you ever been in a hospital because of drinking?

21. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem that resulted in hospitalization?

22. Have you ever been seen at a psychiatric or mental health clinic or gone to any doctor, social worker, or clergyman for help with any emotional problem, where drinking was a part of the problem?

23. Have you ever been arrested for drunk driving, driving while intoxicated, or driving under the influence of alcoholic beverages?
o Yes (1)
o No (0)

If YES, how many times have you been arrested for drunk driving, driving while intoxicated, or driving under the influence of alcoholic beverages?
o One Time (1)
o Two Times (2)
o Three Times (3)
o Four Times (4)
o Five Times (5)

24. Have you ever been arrested, or taken into custody even for a few hours, because of other drunk behavior?
o Yes (1)
o No (0)

If YES, how many times have you been arrested, or taken into custody even for a few hours, because of other drunk behavior?
o One Time (1)
o Two Times (2)
o Three Times (3)
o Four Times (4)
o Five Times (5)

Appendix D

Drug Abuse Screening Tool

Directions: The following questions concern information about your involvement with drugs. Drug abuse refers to (1) the use of prescribed or "over-the-counter" drugs in excess of the directions, and (2) any non-medical use of prescription, over-the-counter, or illegal drugs (but not caffeine, nicotine, or alcohol). Consider the past year (12 months) and carefully read each statement. Then decide whether your answer is YES or NO and check the appropriate space. Please be sure to answer every question.

1. Have you used drugs other than those required for medical reasons?
o Yes (1)
o No (0)

2. Have you abused prescription drugs?

3. Do you abuse more than one drug at a time?

4. Can you get through the week without using drugs (other than those required for medical reasons)?*

5. Are you always able to stop using drugs when you want to?*

6. Do you abuse drugs on a continuous basis?

7. Do you try to limit your drug use to certain situations?*

8. Have you had "blackouts" or "flashbacks" as a result of drug use?

9. Do you ever feel bad about your drug use?

10. Do your friends, significant others, or parents ever complain about your involvement with drugs?

11. Do your friends, significant other, or relatives know or suspect you abuse drugs?

12. Has drug abuse ever created problems between you and your friends, significant other, or parents?

13. Has any family member ever sought help for problems related to your drug use?

14. Have you ever lost friends because of your use of drugs?

15. Have you ever neglected your family or missed work because of your use of drugs?

16. Have you ever been in trouble at work because of drug abuse?

17. Have you ever lost a job because of drug abuse?

18. Have you ever gotten into fights when under the influence of drugs?

19. Have you ever been arrested because of unusual behavior while under the influence of drugs?

20. Have you ever been arrested for driving while under the influence of drugs?

21. Have you engaged in illegal activities in order to obtain drugs?

22. Have you ever been arrested for possession of illegal drugs?

23. Have you ever experienced withdrawal symptoms as a result of heavy drug intake?

24. Have you had medical problems as a result of your drug use? (e.g., memory loss, hepatitis, convulsions, bleeding, etc.)?

25. Have you ever gone to anyone for help for a drug problem?

26. Have you ever been in a hospital for medical problems related to your drug use?

27. Have you ever been involved in a treatment program specifically related to drug use?

28. Have you been treated as an outpatient for problems related to drug abuse?

Note. * Indicates that the item is reverse scored.

Appendix E

Experiences in Close Relationships

Directions: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it.

1. I prefer not to show a partner how I feel deep down.
- o Strongly disagree (1)
- o Disagree (2)
- o Somewhat disagree (3)
- o Neither agree nor disagree (4)
- o Somewhat agree (5)
- o Agree (6)
- o Strongly agree (7)

2. I worry about being abandoned.

3. I am very comfortable being close to romantic partners.*

4. I worry a lot about my relationships.

5. Just when my partner starts to get close to me I find myself pulling away.

6. I worry that romantic partners won't care about me as much as I care about them.

7. I get uncomfortable when a romantic partner wants to be very close.

8. I worry a fair amount about losing my partner.

9. I don't feel comfortable opening up to romantic partners.

10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.

11. I want to get close to my partner, but I keep pulling back.

12. I often want to merge completely with romantic partners, and this sometimes scares them away.

13. I am nervous when partners get too close to me.

14. I worry about being alone.

15. I feel comfortable sharing my private thoughts and feelings with my partner.*

16. My desire to be very close sometimes scares people away.

17. I try to avoid getting too close to my partner.

18. I need a lot of reassurance that I am loved by my partner.

19. I find it relatively easy to get close to my partner.*

20. Sometimes I feel that I force my partners to show more feeling, more commitment.

21. I find it difficult to allow myself to depend on romantic partners.

22. I do not often worry about being abandoned.

23. I prefer not to be too close to romantic partners.

24. If I can't get my partner to show interest in me, I get upset or angry.

25. I tell my partner just about everything.*

26. I find that my partner(s) don't want to get as close as I would like.

27. I usually discuss my problems and concerns with my partner.*

28. When I am not involved in a relationship, I feel somewhat anxious and insecure.

29. I feel comfortable depending on romantic partners.*

30. I get frustrated when my partner is not around as much as I would like.

31. I don't mind asking romantic partners for comfort, advice, or help.*

32. I get frustrated if romantic partners are not available when I need them.

33. It helps to turn to my romantic partner in times of need.*

34. When romantic partners disapprove of me, I feel really bad about myself.

35. I turn to my partner for many things, including comfort and reassurance.*

36. I resent it when my partner spends time away from me.

Note. * Indicates that the item is reverse scored.

Appendix F

Symptoms Checklist-90-Revised

Directions: The SCL-90-R test consists of a list of problems people sometimes have. Read each one carefully and choose the response that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY.

1. Headaches
- o Not at all (0)
- o A little bit (1)
- o Moderately (2)
- o Quite a bit (3)
- o Extremely (4)

2. Nervousness or shakiness inside

3. Repeated unpleasant thoughts that won't leave your mind

4. Faintness or dizziness

5. Loss of sexual interest or pleasure

6. Feeling critical of others

7. The idea that someone else can control your thoughts

8. Feeling others are to blame for most of your troubles

9. Trouble remembering things

10. Worried about sloppiness or carelessness

11. Feeling easily annoyed or irritated

12. Pains in heart or chest

13. Feeling afraid in open spaces or on the streets

14. Feeling low in energy or slowed down

15. Thoughts of ending your life

16. Hearing voices that other people do not hear

17. Trembling

18. Feeling that most people cannot be trusted

19. Poor appetite

20. Crying easily

21. Feeling shy or uneasy with the opposite sex

22. Feelings of being trapped or caught

23. Suddenly scared for no reason

24. Temper outbursts that you could not control

25. Feeling afraid to go out of your house alone

26. Blaming yourself for things

27. Pains in lower back

28. Feeling blocked in getting things done

29. Feeling lonely

30. Feeling blue

31. Worrying too much about things

32. Feeling no interest in things

33. Feeling fearful

34. Your feelings being easily hurt

35. Other people being aware of your private thoughts

36. Feeling others do not understand you or are unsympathetic

37. Feeling that people are unfriendly or dislike you

38. Having to do things very slowly to insure correctness

39. Heart pounding or racing

40. Nausea or upset stomach

41. Feeling inferior to others

42. Soreness of your muscles

43. Feeling that you are watched or talked about by others

44. Trouble falling asleep

45. Having to check and double-check what you do

46. Difficulty making decisions

47. Feeling afraid to travel on buses, subways, or trains

48. Trouble getting your breath

49. Hot or cold spells

50. Having to avoid certain things, places, or activities because they frighten you

51. Your mind going blank

52. Numbness or tingling in parts of your body

53. A lump in your throat

54. Feeling hopeless about the future

55. Trouble concentrating

56. Feeling weak in parts of your body

57. Feeling tense or keyed up

58. Heavy feelings in your arms or legs

59. Thoughts of death or dying

60. Overeating

61. Feeling uneasy when people are watching or talking about you

62. Having thoughts that are not your own

63. Having urges to beat, injure, or harm someone

64. Awakening in the early morning

65. Having to repeat the same actions such as touching, counting, or washing

66. Sleep that is restless or disturbed

67. Having urges to break or smash things

68. Having ideas or beliefs that others do not share

69. Feeling very self-conscious with others

70. Feeling uneasy in crowds, such as shopping or at a movie

71. Feeling everything is an effort

72. Spells of terror or panic

73. Feeling uncomfortable about eating or drinking in public

74. Getting into frequent arguments

75. Feeling nervous when you are left alone

76. Others not giving you proper credit for your achievements

77. Feeling lonely even when you are with people

78. Feeling so restless you couldn't sit still

79. Feelings of worthlessness

80. The feeling that something bad is going to happen to you

81. Shouting or throwing things

82. Feeling afraid you will faint in public

83. Feeling that people will take advantage of you if you let them

84. Having thoughts about sex that bother you a lot

85. The idea that you should be punished for your sins

86. Thoughts and images of a frightening nature

87. The idea that something serious is wrong with your body

88. Never feeling close to another person

89. Feelings of guilt

90. The idea that something is wrong with your mind

Appendix G

Demographics

Directions: 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. What is your current age (in years)?

_____

2. What is your gender?
- o Male (1)
- o Female (2)
- o Other (3)

You indicated other for your gender, how to you prefer to identify with respect to gender?

_____

3. What is your ethnicity?
- o Caucasian/European American/White (1)
- o African American (2)
- o East-/Southeast-Asian American (3)
- o Pacific-Islander American (4)
- o South-Asian American (e.g., from India, Pakistan, Burma, Nepal, etc.) (5)
- o Middle-Eastern/North-African American (6)
- o Hispanic, Latino/a, Chicano/a American (7)
- o Caribbean American (8)
- o American Indian/Native American (9)
- o Multi-Ethnic (10)
- o Other (11)

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

_____

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

_____

4. Please indicate your current relationship status:
- o Single (1)
- o Dating but not cohabitating (living together) (2)
- o Dating and cohabitating (living together) (3)
- o Married (4)
- o Separated (5)
- o Divorced (6)
- o Widowed (7)

5. Please indicate the educational status of your mother:
- o Did not complete High School (1)
- o Completed High School (2)
- o Attended a 2 year College (community college) but did not graduate (3)
- o Completed a 2 year College Degree (Associate's Degree) (4)
- o Attended a 4 year College but did not graduate (5)
- o Completed a 4 year Graduate Degree (Bachelor's Degree) (6)
- o Earned a Post Graduate Degree (e.g., master's or doctoral degree) (7)
- o I do not know (8)

6. Please indicate the educational status of your father:
- o Did not complete High School (1)
- o Completed High School (2)
- o Attended a 2 year College (community college) but did not graduate (3)
- o Completed a 2 year College Degree (Associate's Degree) (4)
- o Attended a 4 year College but did not graduate (5)
- o Completed a 4 year Graduate Degree (Bachelor's Degree) (6)
- o Earned a Post Graduate Degree (e.g., master's or doctoral degree) (7)
- o I do not know (8)

7. Please indicate the highest educational status attained by any of your older siblings:
- o Did not complete High School (1)
- o Completed High School (2)
- o Attended a 2 year College (community college) but did not graduate (3)
- o Completed a 2 year College Degree (Associate's Degree) (4)
- o Attended a 4 year College but did not graduate (5)
- o Completed a 4 year Graduate Degree (Bachelor's Degree) (6)
- o Earned a Post Graduate Degree (e.g., master's or doctoral degree) (7)
- o I do not know (8)
- o I don't have older siblings (9)

8. Which best describes the type of place you lived while growing up?
- o A large city (population over 300,000) (1)
- o A small city (population about 100,000 to 300,000) (2)
- o A suburb, small town, or rural area (3)
- o Military (4)

9. While growing up, what was your highest household income?
- o a. Less than 29,000/year (1)
- o b. 30,000-49,000/year (2)
- o c. 50,000-69,000/year (3)
- o d. 70,000 or more/year (4)
- o Don't know (5)

10. What was your High School GPA?

_____

11. Have you received therapy/counseling in the past 12 months?
o Yes (1)
o No (2)

12. Have you taken any medication for mental health reasons in the past 6 months?
o Yes (1)
o No (2)

Appendix H

Consent Form

College of Humanities and Behavioral Sciences Department of Psychology

Title of Research: College Student Victimization Resilience

Researcher(s): Jeff Aspelmeier and Kelsey Frank

We ask you to be in a research study designed to investigate whether certain kinds of experiences influence substance use behaviors. Specifically, we are interested in victimization experiences that occur during one's childhood and adolescence and how that is related to substance use and coping. Additionally, we are interested in finding characteristics that can help limit the negative effects of being victimized in childhood and adolescent. If you decide to be in the study, you will be asked to complete a series of questionnaires that measure the following:
-Your lifetime alcohol-related problems;
-Your lifetime drug-related problems;
-Your overall personality characterizes;
-Your experiences in close relationships;
-Your overall psychological well-being;
-Your counseling history;
-Your mental health medication history;
-Your negative childhood experiences, including abuse, victimization, and other potentially traumatic events;
-And general questions about your personal background.

Approximately 250-300 students, age 17 or older, are being recruited for this study.

This study will be asking about illegal behaviors, including the use of alcohol by minors and use of and illegal drugs. Though unlikely this could put a person at risk for legal consequences. To limit this risk, all the information you provide will be anonymous so that it cannot be liked to you and you are free to choose not to answer any questions about drugs or alcohol. The rest of this study has no more risk than you may find in daily life. However, answering questions about your past activities, especially your experiences with past violence, abuse, mental health issues, or substance use, may create more stress or anxiety than usual. If at any time it becomes too much, please do not hesitate to stop filling out the survey or to skip the question. Please also let us know so that we can assist you.

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 in (540)821-5226. 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).

This study will take approximately 30-40 minutes to complete and you will receive 2 credits in

SONA for completing this study.

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 and your responses will be completely anonymous and no IP addresses will be collected. 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.

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, Institutional Officer of Research, Dean of Artis College of Science and Technology, 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 your agreement for participation. This will direct you to our survey. If you decide not to be in 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 class project in the event you have questions about obtaining your SONA credits.

- ○ Yes, I have read the Informed Consent form and I would like to participate in this study.
- ○ No, I would not like to participate in this study at this time.

Appendix I

Debriefing and Thanks

College Student Victimization and Resilience Project

Thank you for participating in our study. As a reminder, this project investigated whether certain kinds of experiences influence substance use behaviors. Specifically, we are interested in victimization experiences that occur during one's childhood and adolescence and how that is related to substance use. Additionally, we are interested in understanding how certain personality characteristics can protect people from negative childhood experiences. Previous studies have shown that negative childhood experience is related to substance abuse and mental health issues in later life for some people, but not necessarily everyone. In this study we wanted to learn more about the personal characteristics of people who had negative childhood experience but didn't experience the negative consequences.

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 J

Tables

Table 1

Zero Order Correlations and Descriptive Data for Resilience, Substance Use, Polyvictimization, and Continuous Aggregates

	1	2	3	4	5	6	7	8	9	10	11
1. Mastery	**.92**										
2. Relatedness	.71***	**.93**									
3. Emot. React.	-.35***	-.23***	**.91**								
4. Substance Use	-.15*	-.14*	.24*	**.90**							
5. Polyvictimization	-.23***	-.35***	.21**	.45***	**.92**						
6. Property Crime	-.26***	-.26***	.23***	.23***	.65***	**.78**					
7. Physical Assault	-.20**	-.35***	.18**	.38***	.91***	.57***	**.81**				
8. Child Maltrtmt	-.22***	-.35***	.10	.40***	.75***	.38***	.70***	**.81**			
9. Peer/Sib	-.12	-.27***	.19**	.30***	.83***	.50***	.83***	.59***	**.73**		
10. Sexual Assault	-.15*	-.19**	.23***	.43***	.70***	.30***	.53***	.34***	.52***	**.80**	
11. Witness/Indirect	-.12	-.20**	.10	.32***	.79***	.38***	.60***	.52***	.53***	.47***	**.78**
Mean	2.66	1.51	8.13	7.54	1.60	2.40	0.96	1.06	1.84	0.95	1.58
SD	0.04	0.04	0.04	6.14	0.48	0.08	0.17	0.09	0.12	0.10	0.13
n	215	214	214	216	216	216	216	216	216	216	216

Note. *= $p \leq .05$, **= $p \leq .01$, ***= $p \leq .001$. Degrees of freedom range between 214 and 212.
Cronbach's Alpha appear on the diagonal.
Emot. React. = Emotional Reactivity
Child Maltrtmt. = Child Maltreatment
Peer/Sib = Peer/Sibling
Witness/Indirect = Witnessing/Indirect

Table 2

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

Victimization Type	*N* = 216
34 types of child victimization (endorsed at least one type)	190 (88%)
Property Crime (endorsed at least one type)	159 (73.6%)
Robbery	102 (47.2%)
Theft (steal something from you)	123 (56.9%)
Vandalism (break or ruin something of yours)	117 (54.2%)
Physical Assault (endorsed at least one type)	151 (69.9%)
Assault with a weapon	76 (35.2%)
Assault without a weapon	87 (40.3%)
Attempted assault	47 (21.8%)
Kidnap, attempted or completed	22 (10.2%)
Bias attack	21 (9.7%)
Physical abuse (not spanking)[a]	53 (24.5%)
Assault by group or gang of peers[a]	26 (12%)
Peer or sibling assault[a]	115 (53.2%)
Assault to private parts[a]	32 (14.8%)
Dating violence[a]	35 (16.2%)
Child Maltreatment (endorsed at least one type)	94 (43.5%)
Physical abuse (not spanking)[a]	53 (24.5%)
Psychological or emotional abuse	73 (34.3%)
Neglect	39 (18.1%)
Custodial interference or family abduction	47 (21.8%)
Peer/Sibling Victimization (endorsed at least one type)	151 (69.9%)
Assault by group or gang of peers[a]	26 (12%)
Peer or sibling assault[a]	115 (53.2%)
Assault to private parts[a]	32 (14.8%)
Bullying	94 (43.5%)
Teasing, emotional bullying	96 (44.4%)
Dating violence[a]	35 (16.2%)
Witnessing/Indirect Victimization (endorsed at least one type)	114 (52.8%)
Witness domestic violence	43 (19.9%)
Witness physical abuse	23 (10.6%)
Witness assault with a weapon	45 (20.8%)
Witness assault without a weapon	78 (36.1%)
Household theft	49 (22.7%)
Someone close murdered	32 (14.8%)
Witness murder	8 (4.2%)
Exposure to shooting, bombs, riots	38 (17.6%)
Exposure to war	3 (1.4%)
Sexual Victimization (endorsed at least one type)	81 (37.5%)
Sexual assault, known adult	18 (8.3%)
Sexual assault, unknown adult	17 (7.9%)
Sexual assault, with peer	46 (21.3%)
Rape, attempted or completed	40 (18.5%)
Flashing or sexual exposure	43 (19.9%)
Sexual harassment	43 (19.9%)

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

Table 3

Hierarchical regression analyses examining the relative contributions of polyvictimization and the continuous JVQ aggregates to the prediction of Substance Use

	Criterion Variable: Substance Use				
	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	.05**	.15***	.20***	.01	.21***
Phys. Assault	.14***	.06***	.20***	.003	.20***
Child Maltrmt.	.16***	.05***	.20***	.01	.21***
Sexual Assault	.20***	.04**	.20***	.03*	.24**
Peer/Sib. Vict.	.10***	.12***	.20***	.02*	.22***
Witness/Indirect	.10***	.10***	.20***	.003	.20***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.
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.

Table 4

Tests of the Interaction between Polyvictimization (PV) and Resilience in Predicting Substance Use

	$R^2\Delta$	β	Resilience Variable [a]		Polyvictimization [a]	
			1 SD Above	1 SD Bellow	1 SD Above	1 SD Bellow
			High Mast.	Low Mast.	High PV	Low PV
Step 1	.13***					
Age		.27***				
Counseling Hist.		.26***				
Medication Hist.		-.02				
Step 2	.14***					
PV		.37***				
Mastery		-.06				
Step 3	.01		.24*	.44***	-.19†	.02
PV		.34***				
Mastery		-.08				
Interaction		-.10				
Step 2	.13***		High Rel.	Low Rel.	High PV	Low PV
PV		.39***				
Relatedness		.03				
Step 3	.002		.32***	.43***	-.03	.07
PV		.37***				
Relatedness		.02				
Interaction		-.05				
Step 2	.21***		High E.R.	Low E.R.	High PV	Low PV
PV		.36***				
Emot. React.		.10				
Step 3	.01†		.47***	.23*	.23*	-.01
PV		.35***				
Emot. React.		.11†				
Interaction		.11†				

Note. † = $p \leq .10$, * = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$. *df* $R^2\Delta$ Step 1 = 2, 211, *df* $R^2\Delta$ Step 2 = 1, 210.
Hist. = History
Mast. = Mastery
Rel. = Relatedness
Emot. React. (E.R.) = Emotional Reactivity
[a] Coefficients for simple slopes represented with standardized regression coefficients.

Appendix K – Figures

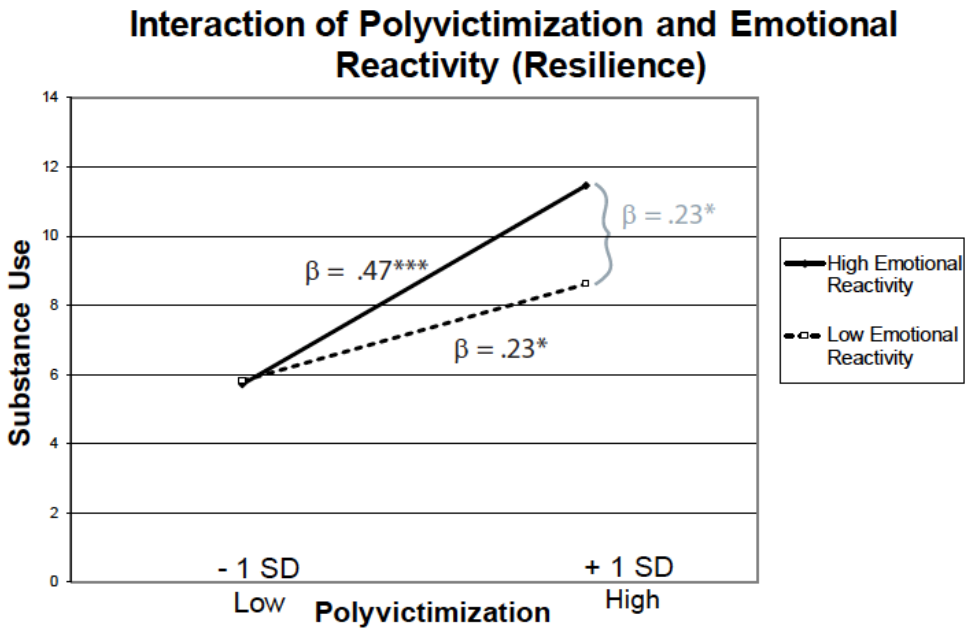

Figure 1. Simple slopes of Polyvictimization predicting substance use for 1 *SD* below the mean of Emotional Reactivity and 1 *SD* above the mean for Emotional Reactivity.

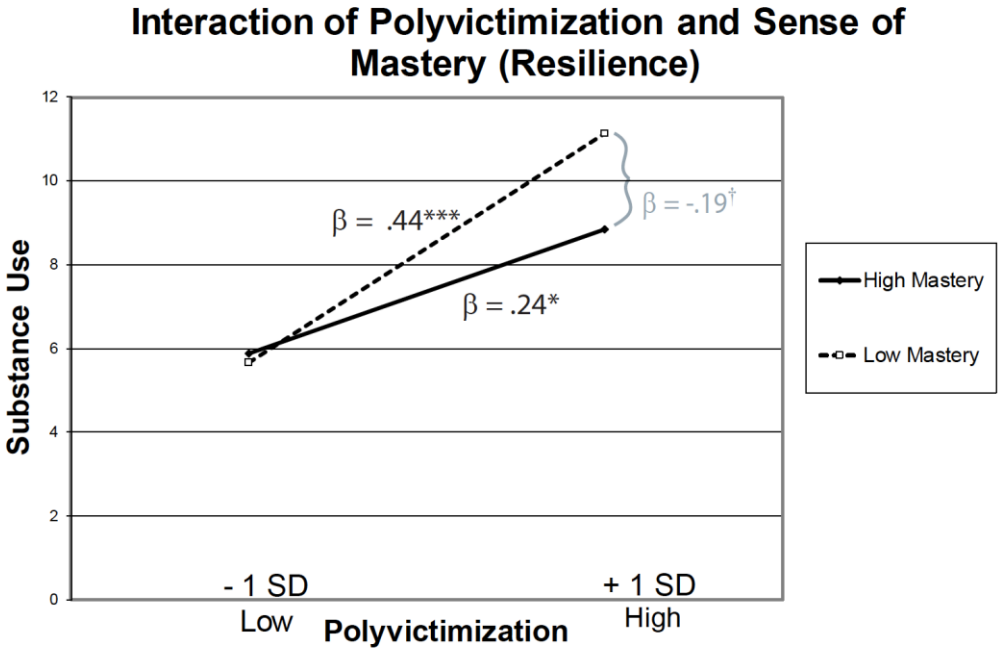

Figure 2. Simple slopes of Polyvictimization predicting substance use for 1 *SD* below the mean of Sense of Mastery and 1 *SD* above the mean for Sense of Mastery.

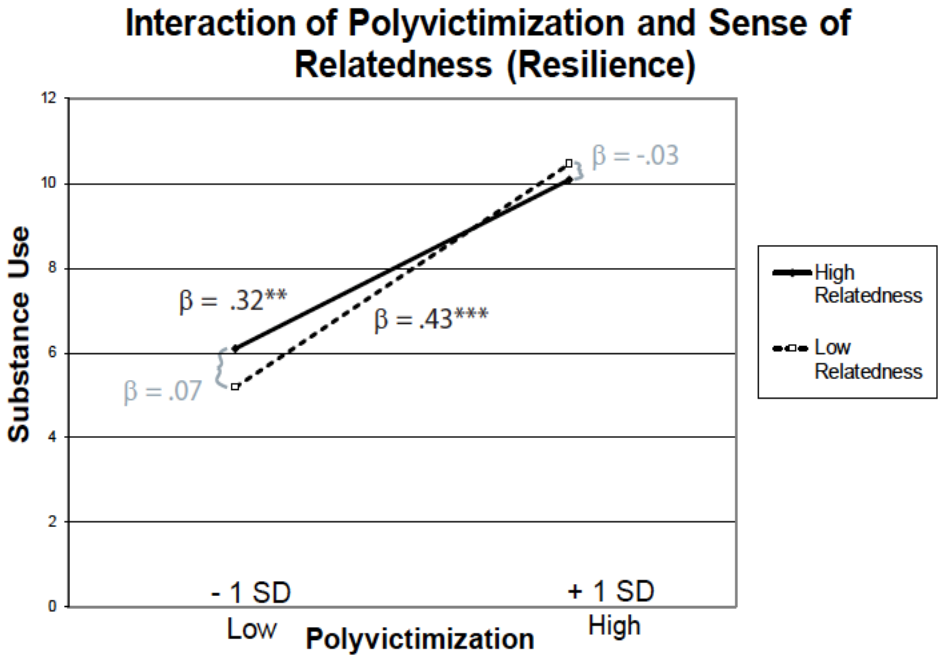

Figure 3. Simple slopes of Polyvictimization predicting substance use for 1 *SD* below the mean of Sense of Relatedness and 1 *SD* above the mean for Sense of Relatedness.