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Understanding Resilience: Investigating the Relationship between Risk Factors, Resilience, and Psychological Well-Being

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UNDERSTANDING RESILIENCE: INVESTIGATING THE RELATIONSHIP BETWEEN RISK FACTORS, RESILIENCE, AND PSYCHOLOGICAL WELL-BEING

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ABSTRACT

Numerous studies have indicated that adversity serves as a primary antecedent in the development of psychological resilience, however, adversity can have negative effects on psychological well-being. The current study focused on contributing to present literature by further investigating the roles of protective factors and adverse childhood experiences (ACEs) on resilience development, as well as the relationship between risk factors, resilience, and psychological well-being in adulthood. It was hypothesized that ACEs would predict the development of resilience when protective factors were high. It was also hypothesized that resilience positively influences the relationship between risk factors and psychological well-being by negating the direct negative effect of risk factors on psychological well-being. Participants in the study included adults between 25- and 71-years-old in the U.S. recruited through Amazon Mechanical Turk (MTurk). The survey included questions addressing demographic information, adverse childhood experiences, resilience, protective factors, perceived stress, and psychological well-being. A moderation and mediation analysis were used to analyze the hypotheses. The moderation hypothesis was not supported as no significant interaction was found between ACEs and protective factors in predicting resilience, however, the vital role of protective factors in developing resilience was found. A partial mediation was found between risk factors and psychological well-being. The results suggest that resilience plays a small role in negating the negative effects caused by risk factors.

Keywords: Resilience, ACEs, Protective Factors, Risk Factors, Psychological Well-Being, Moderation, Mediation

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INTRODUCTION

Life is a journey that can bring unexpected hardship. It would be ideal if individuals could anticipate and be prepared to prevent such hardship from occurring. However, life is full of uncertainties and it is not probable to avoid all the curveballs. In response, it is more reasonable and beneficial to adapt to a changed environment and effectively overcome adversities. This quick, healthy adaptation and overcoming of adversity is often exhibited through psychological resilience. There are individuals in our lives who we can immediately identify as resilient - individuals who despite their circumstances continually display psychological strength to overcome their adversity. For some individuals, this resiliency appears to be innate like a personality trait, whereas for others, resilience becomes a positive outcome of hardship.

Throughout literature, it is consistently suggested that adversity plays a significant role in the development of resilience. However, a posing question is why individuals who experienced similar adversity display different levels of resilience. Though the answer to this question is complex, in an attempt to understand the construct of resilience, the proposed study will examine 1) the function of protective and risk factors in predicting resilience, 2) the role of adverse childhood experiences on resilience found during adulthood, and 3) the mediation effect of resilience on psychological well-being. To gain a better understanding of how these variables interact, the relevant literature regarding the effects of ACEs in adulthood will be discussed as well as the definition and conceptualization of resilience including protective and risk factors and how resilience is related to psychological well-being.

The Long-term Effect of Adverse Childhood Experiences (ACEs)

Adverse childhood experiences can be defined as traumatic events that occur during the first 18 years of one's life such as psychological, physical and sexual abuse, exposure to

substance abuse, a household member with mental illness, witnessing domestic violence in the home, and a household member being incarcerated (Felitti et al., 1998). Unfortunately, the adverse experiences during childhood are common and well documented. In a widely cited seminal study that initiated the research interest in psychological, physical, and psychosocial effects of adverse childhood experiences, it was found that 67 percent of 17,000 participants experienced at least 1 ACE and 25 percent had experienced 2 or more ACEs (Fellitti et al., 1998). In a more recent study, data collected from 214,157 participants in the United States shows that 61.55 percent experience at least 1 ACE and 24.64 percent experience 3 or more ACEs. Emotional abuse was found to be the most prevalent ACE, followed by parental separation/divorce, and then household substance abuse (Merrick, Ford, Ports, & Guinn, 2018). These results suggest that the prevalence of ACEs have unfortunately remained consistent in the past 20 years.

Past studies suggest that not only the type of adverse events but also the frequency of a dose of the experience is related to the risk for developing physical, psychological, and/or psychosocial health issues in adulthood. For example, individuals who experience at least 4 ACEs compared to those who report none are shown to be twice as likely to smoke cigarettes, 7 times more likely to have alcohol use disorder, and 1200 percent more likely to attempt suicide. In more extreme cases, individuals who experienced 6 ACEs or more are at risk of health issues and maladaptive behaviors that shorten their lives by 20 years (Felitti et al., 1998). The number of ACEs has a significant long-term effect on adult health risk behaviors such as smoking, severe obesity, alcoholism, depression, heart disease, cancer, liver disease, and suicide attempts. More recently, it has been found ACEs have shown to affect one's adulthood by significantly

increasing the risk of delinquency and crime and the perpetration of childhood maltreatment (Klika & Herrenkohl, 2013).

With more studies conducted about ACEs, there have been many attempts to delineate the boundaries of adverse events. In the original ACE study, ACEs included only the following: psychological, physical and sexual abuse, exposure to substance abuse, a household member with mental illness, witnessing domestic violence in the home, and a household member being incarcerated (Felitti et al., 1998). Recent studies have expanded the categories of ACEs to include experiences such as living in poverty, neighborhood violence or living in an unsafe neighborhood, experiencing racism, bullying, and peer rejection, living in foster care, losing a sibling or parent to an accident or illness, and parents having marital/relationship conflict such as consistent arguing and divorce (Cronholm et al., 2015; Finkelhor, Shattuck, Turner, & Hamby, 2013; Moore & Ramirez, 2015). With the expansion of ACE categories, a broader direct and indirect impact of ACEs are documented regarding social-emotional development in addition to behavioral and psychological concerns. For example, research shows adults who lived in unstable housing or low-income/low-quality housing during childhood are at an increased risk of lower emotional and behavioral functioning, and those whose parents divorced during their childhood are more likely to experience long lasting depression (Moore & Ramirez, 2015). Research also shows that both peer rejection and witnessing community violence during childhood increase the likelihood of the development of an array of mental health disorders (Finkelhor et al., 2013).

Beyond the physical and psychological effects of ACEs, lifetime opportunities are also at stake for these individuals. Individuals with more ACEs have a greater risk of not completing high school and further experiencing unemployment and poverty. Specifically, compared to

individuals who reported no ACEs, individuals with 3 ACEs are 1.53 times not likely to graduate high school and 2.4 times more likely to be unemployed, and those with 4 or more ACEs were 2.34 times as likely not to graduate high school, 2.3 times more likely to not be employed, and 1.6 times to be considered living in poverty (Metzler, Merrick, Klevens, Ports, & Ford, 2017).

Some studies further suggest ACEs influence personality development as it is formed by biological and environmental factors. Some individuals who have experienced any level of childhood trauma are more likely to show higher levels of anxiety and worry while other individuals may show higher levels of openness to new experiences compared to individuals who have not experienced childhood trauma. Furthermore, childhood trauma survivors are more likely to exhibit negative traits such as tension, nervousness, irritability, insecurity, and emotionality (Allen & Lauterbach, 2007). On the other hand, trauma survivors are more likely to show positive traits such as curiosity, creativity, open-mindedness, and cleverness. These contradicting findings demonstrate that some developed personality characteristics can serve as a more positive outcome from experiencing adverse events during childhood. An example of an additional positive outcome from experiencing adversity during childhood is the development of psychological resilience.

To introduce and build an understanding of resilience, a number of components regarding resilience will be discussed: how resilience differs from positive emotions and optimism; conceptualization of resilience which involves the antecedents of resilience, and the characteristics found in individuals who are considered resilient.

Resilience

There is a developing field of research of the neurobiology of resilience. This focus in understanding resilience reviews the effects that neurochemical factors and brain structure and

function have on the development of resilience. High levels of neuropeptide Y, a peptide that influences the function of the hippocampus and may serve as an anxiolytic, has been discovered to serve as a biological marker for resilience in individuals recovering from stress and combat veterans who display characteristics of resilience (Elliott, Sahakian, & Charney, 2008). In addition, neuroimaging has revealed that significant modulation of responses to aversive or anxiogenic stimuli may be linked to alternative functioning in the amygdala and medial prefrontal cortex in resilient individuals (Elliott et al., 2008). The growing field of neuroscience in understanding resilience has revealed that there are biological factors that influence resilience development. For this study, the psychological and environmental factors related to the development of resilience will be reviewed.

Resilience derives from the Latin word *resiliens*, which means to rebound or recoil (Garcia-Dia, DiNapoli, Garcia-Ona, Jakubowski, & O'Flaherty, 2013). However, psychological resilience is much more complex than what is implied by *resiliens*. Resilience is defined as a measure of stress-coping ability that includes personal qualities that allow individuals to grow and even thrive in the face of adversity (Connor, 2006). This concept reflects an individual's ability to maintain a stable equilibrium of healthy psychological and physical functioning as well as the capacity for generative experiences and positive emotions despite adversity (Bonnano, 2004; Garcia-Dia et al., 2013). Per this definition, it is suggested that positive emotions play a role in resilience, thus, it is important to distinguish the differences and relationships between them.

Differences between Resilience, Optimism, and Positive Emotions

Resilience is considered a positive psychological trait, but it is a more dynamic construct than positive traits such as optimism and positive emotions. Optimism and positive emotions are

characteristics of resilience that have been studied extensively because positive emotions are considered a key psychological resource in facing and surviving adversity. Most resilient individuals have high positive emotionality and use positive emotions to achieve effective coping through humor, creative exploration, and optimistic thinking (Fredrickson et al., 2003).

Per the American Psychological Association dictionary, optimism is defined as "the attitude that good things will happen" and people who are optimistic "anticipate positive outcomes, whether serendipitously or through perseverance and effort, and are confident in attaining desired goals" (APA Dictionary of Psychology, 2020). Positive emotions serve as markers of optimal well-being that involve emotions such as joy, interest, contentment, pride, and love. These emotions are said to "share the ability to broaden people's momentary thought-action repertoires and build their enduring personality resources, ranging from physical and intellectual resources to social and psychological resources" (Fredrickson, 2001). Positive emotions have shown to alter one's modes of thinking such as broadening attention and thinking in a process called cognitive broadening. This process of cognitive broadening helps to expand and improve the way people cope during crises. The continued practice of positive emotions can become habitual which develops a style of broad-minded coping that can become a durable and personal psychological resource in the face of adversity. This development of broad-minded coping from positive emotions is considered to be a component of resilience (Fredrickson, Tugade, Waugh, & Larkin, 2003).

The use of positive emotions has shown to have additional effects on individuals. These effects include flexibility in thinking and problem solving, counteracting the physiological effects of negative emotions, facilitating adaptive coping, building enduring social resources, and increasing well-being. (Ong, Bergeman, Bisconti, & Wallace, 2006). Although positive emotions

and optimism are included as identifiable characteristics of resilience, they cannot serve as stand-alone identifiers when evaluating resilience. Individuals can be naturally optimistic but may not display the other primary characteristics of resilience. In fact, research has found that general positivity is considered more vital for individuals who have lower levels of psychological resilience. Positive emotions and optimism play a role in the coping strategies seen among resilient individuals; however, resilience is a multidimensional concept that entails the ability of effectively using psychological and environmental resources to overcome adversity.

Definition and Conceptualization of Resilience

Resilience has been defined in two differing points of views across literature: 1) resilience is fixed or stable versus 2) resilience is a dynamic, developmental process (Lee, Nam, Kim, Kim, Lee, & Lee, 2013). The argument of resilience as a fixed and stable trait is supported by the personality theory. In this perspective, resilience is treated as a personality trait involved in negotiating, managing, and adapting to significant events of trauma or stress. However, this initial view of resilience has been argued and becomes unfavorable because it fails to address the notion of adaptation as a role in shaping an individual's ability to bounce back from adversity (Lee et al., 2013). Thus, the second point of view of resilience as a dynamic, developmental process has become more favorable and more strongly supported in recent years.

In the growth model perspective, individuals may emerge stronger and develop new capacities after experiencing adversity. Research has shown that resilience displayed during one point in psychological development predicts a higher likelihood of the individual displaying resilience at a later point in development (Gillespie, Chaboyer, & Wallis, 2007; Klika & Herrenkohl, 2013). Some literature also considers resilience as innate energy or a motivating life force within an individual that can be developed. In this context, resilience is described as a

complex interaction between innate strength and outer support, such that resilience serves as an accessible internal resource that enables a positive stress response that can be enhanced by external resources. This further illustrates how resilience is not a fixed trait and instead a dynamic process in development because it is influenced and dependent on various factors. Research has identified and termed these factors as protective factors and risk factors. (Grafton, Gillespie, & Henderson, 2010).

Protective factors are a component of resilience that alter the response to adverse events so that the potential negative outcomes of the adverse event can be decreased or even avoided. Essentially, protective factors help optimize resilience, especially when such factors are strengthened (Zolkoski & Bullock, 2012). Self-regulation is thought to be one of the most vital protective factors, but other protective factors include internal factors such as easy-going temperament, confidence to overcome obstacles, having positive self-esteem, making use of opportunities and resources, and viewing hardships as learning experiences. Protective factors also include pursuing positive external actions in life such as having a mentor, pursuing educational opportunities, and participating in extracurricular activities (Zolkoski & Bullock, 2012).

In earlier conceptualizations of resilience, protective factors were primarily considered to be individual traits and behaviors such as intelligence, positive temperament, and personal agency. However, the importance of the social environment as a protective factor in resilience, especially during childhood, has been discovered in recent studies. For example, a supportive and/or safe neighborhood, non-family adult support, safe school, T.V. and media restriction, parents' knowledge of friends, activity participation, and religion may serve as protective factors that can lead to building resilience (Klika & Herrenkohl, 2013; Moore & Ramirez, 2015).

In contrast to protective factors, there are circumstances and influences called risk factors that negatively affect resilience and promote the probability of poor outcomes because of adversity. Some of the most commonly discussed risk factors include but are not limited to: gender, race, history of medical issues, poor academic skills and achievement, low IQ, low levels of self-determination, emotional problems, stressful life events, low socioeconomic status, history of child maltreatment, and poor peer relationships (Murray, 2003). The presence and absence of risk and protective factors strongly influence the development of resilience and the potential effects of adverse events while one practices resilience, however, there are additional variables mentioned in literature that are influential in the development of resilience, some of which are required in order for an individual to be considered resilient.

Antecedents of Resilience

The concept of resilience is further understood by its antecedents, that is what influences its development. Antecedents of resilience include multiple pathways that lead to the development of resilience (Bonnano, 2004). Such pathways include hardiness, self-enhancement, repressive coping, and positive emotion. Hardiness is defined as a personality trait that consists of three dimensions: 1) commitment to finding a meaningful purpose in life; 2) belief that one can influence one's surrounding and outcome of events; and 3) belief that one can learn and grow from positive and negative experiences (Bonnano, 2004). Self-enhancement is related to high self-esteem, and repressive coping refers to one's ability to avoid unpleasant thoughts, emotions, and memories. Those who practice repressive coping operate primarily on emotional dissociation and use positive emotions and laughter to help reduce levels of distress (Bonanno, 2004). These pathways are parallel with identifiable characteristics of individuals who are

resilient and illustrate the complexity of resilience such that multiple components are at play in order to develop resilience. These characteristics of resilience will be discussed shortly.

Another approach to understanding antecedents of resilience is the context of the adverse event that elicited the response of psychological resilience. There are repeated indications throughout literature that state an antecedent or requirement for the development of resilience is the presence of a traumatic event, and that the event must be interpreted as psychologically and/or physically traumatic both cognitively and socially. In addition, for the event to influence resilience development, the individual must view the event realistically rather than with false optimism (Bonanno, 2004; Gillespie et al., 2007; Garcia-Dia et al., 2013). The duration in which resilience is developed following an adverse experience and the types of adverse experiences should also be considered when evaluating resilience (Seery, 2011).

As mentioned previously, there are protective factors and risk factors that contribute and influence the development of resilience, so it can be inferred that such factors can also be considered antecedents. However, it should be understood that the primary antecedent in resilience considered throughout a majority of literature is that individuals must have faced an event that caused them stress in which they had to adapt in order to overcome the stressful event.

Characteristics of Individuals with Resilience

Beyond the definition and conceptualization of resilience, there is a diverse set of criteria used to judge resilience; these criteria include characteristics such as positive behavior, presence of other desirable behaviors, happiness/life satisfaction, or the absence of undesirable behaviors (Masten, Cutuli, Heber, & Reed, 2009). The core characteristics and attributes of resilience vary among scholars; however, the common theme is the ability to rebound to normal functioning after experiencing an adverse event, and this common ability is judged by an array of

characteristics. These characteristics include adapting to change, determination and tenacity, social support and interpersonal connectedness, self-efficacy, strong self-esteem, calm and innovative, non-dogmatic thinking, action-oriented when problem-solving, and optimism with a positive perspective specifically towards one's life (Connor, 2006; Everly, McCormack, & Strouse, 2012; Garcia-Dia et al., 2013). Also, resilient individuals oftentimes view stress as having a strengthening effect and view obstacles as an opportunity for self-growth (Connor, 2006).

The Effect of ACEs in Developing Resilience

Observations of Vietnam War veterans and children who experienced trauma suggest that it may be possible for adverse life events to contribute to future benefits by increasing the propensity for resilience (Seery, 2011). Research shows individuals with some prior lifetime adversity were less negatively affected by a recent, new adverse experience than individuals who experienced no lifetime adversity or high lifetime adversity. This indicates experience to low-to-moderate levels of adversity may function as a vaccine that later prepares individuals to develop resilience based on toughness, control, belief in the ability to cope successfully and healthily, and having an effective support system. The same research showed that a history of some adversity is associated with better mental health and well-being and less distress and disruption when an individual faces stress (Seery, 2011). This finding suggests that prior exposure to adversity helps alleviate the effects of a current stressor because resilience was developed in response to the previous adverse event.

There is a plethora of literature and research that discusses the development of resilience in children who experienced adverse events. However, research about the long-term effect of ACEs on development of resilience in adulthood is scarce. One longitudinal study found that 40

percent of non-maltreated participants met resilience criteria, compared to 15 percent of those that were maltreated during childhood despite them appearing to function well on individual outcomes (Mersky & Topitzes, 2010). Furthermore, a prevalence of resilience in adults who experienced no ACEs (56.5 percent) was higher when compared to adults who had experienced ACEs (43.5 percent) (McGloin & Widom, 2001). Among these individuals, 24 percent of those who experienced ACEs demonstrated continuous resilience during adolescence and adulthood, whereas only 6 percent were considered resilient in adulthood only and 24 percent to be resilient during adolescence only (Widom, Dumont, & Czaja, 2007). Furthermore, the presence of resilience has been found in 29 percent of African American women who experienced sexual abuse during their childhood (Banayard, Williams & Seigel, 2002). In a follow up study 7 years later, it was found that 16 percent of these women showed an increase in resilience and approximately 76 percent demonstrated stability in resiliency (Banyard & Williams, 2007).

The findings of these studies reveal that the occurrence of ACEs influences the development of resilience. Although ACEs serve primarily as risk factors, many individuals who experienced childhood adversity were identified as resilient in their adulthood. Furthermore, these studies illustrated the dynamic nature of resilience, such that there may be a lapse in time to develop resilience after an adverse event (Banyard & Williams, 2007; Widom et al., 2007) Lastly, it is important to note that each of these studies assessed resilience differently. Some measured resilience based on achievement (i.e. graduating high school, attending college, and income) while others measured resilience based on behavior and characteristics, such as absence of drug and alcohol use and high self-esteem. These differences in measuring and identifying resilience further emphasizes that this is an area of growth in research.

Resilience and Psychological Well-Being

Specific characteristics of resilience such as hardiness, self-efficacy, and positive perspective of life have led researchers to investigate the influential role of resilience on psychological well-being. Well-being is a broad concept that reviews one's cognitive and affective values of life. This review includes the experience of high levels of pleasant emotions, low levels of negative emotions, and high life satisfaction. Well-being serves as an important factor in helping individuals define meaning and purpose in their life and developing optimism (Diener, Lucas, & Oishi, 2005). Psychological well-being was once studied as a unidimensional concept, but Ryff introduced a universally accepted model of psychological well-being that includes six domains that more accurately encompasses the definition and concept of well-being (1989). This multidimensional approach of studying well-being analyzes the following six domains: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 1989).

Studies have shown highly resilient individuals demonstrate a more positive outlook on life and this significantly correlates with increased life satisfaction and psychological well-being (Abaolshamat, Alsiyud, Al-Sayed, Alreddadi, Faqiehi, & Alehmadi, 2018; Liu et al., 2012; Mehta, Grover, Didonato & Kirkhar, 2018). Also, highly resilient individuals are more likely to meet the challenges in their lives effectively, as well as flexibly adapt to their stress. This enables such individuals to experience greater life satisfaction and increased psychological well-being (Liu, Wang, & Li, 2012). The cause of this increase in psychological well-being is suggested to be more strongly influenced by other specific characteristics of resilience such as optimism, increased positive affect, and positive self-image (Mehta et al., 2018). This suggests that specific

characteristics related to resilience can help enhance psychological well-being, despite experiences of stress and hardship.

CURRENT STUDY

The purpose of this study was to gain a better understanding of the influential role of protective and risk factors in the development of resilience and to examine the role of resilience during adulthood as a mediator between the negative effects of risk factors on psychological well-being. This study contributes to present literature by further investigating the roles of protective and risk factors on resilience development, as well as the relationship between adversity, resilience, and well-being in adulthood.

Model 1: Moderating Role of Protective Factors in Development of Resilience

In an attempt to review some of the variables influencing resilience development, the proposed study examined the dynamic nature of resilience by considering two primary variables that affect the development of resilience, protective and risk factors. An individual's protective factors help decrease the negative effects caused by stress and adverse events which in turn increases the probability of developing resilience. In contrast, an individual's risk factors challenge this development. For this study, adverse childhood experiences (ACEs) was comprehensively reviewed as the primary risk factor because of the documented negative effects ACEs have in adulthood and because adversity is considered as a primary antecedent in the development of resilience.

Model 1 was used to study the relationship between protective factors, ACEs, and resilience in adulthood. Based on the relationship of these variables described in literature, it was hypothesized that ACEs will predict the development of resilience when protective factors are high. On the other hand, when protective factors are low, the negative effects from childhood

adversity may be too much to later develop resilience during adulthood, thus protective factors are expected to function as a moderating factor (*Figure 1).*

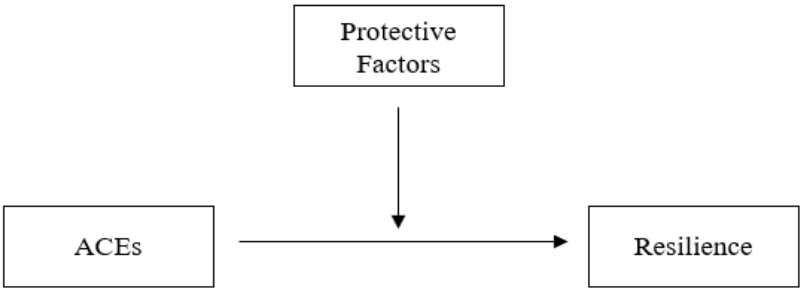

Figure 1. Illustration of the hypothesized relationship between ACEs and psychological resilience that is moderated by the presence of protective factors.

Model 2: Mediating Role of Resilience on the Effects of ACEs in Adulthood

The mediating role of resilience between risk factors and psychological well-being in adulthood was examined in model 2. Recent evidence suggests that persons with numerous ACEs and positive interpersonal traits are less likely to experience the negative physical and psychosocial effects associated with ACEs. These traits are similar to the protective factors discussed with resilience. It has been discovered that high levels of resiliency circumvent or alleviate the negative impacts of ACEs see in adulthood (Ross et al., 2020). Furthermore, it is suggested that resilience serves as a mitigating factor that buffers the experience from adversity by helping reduce the impact of trauma, negative change reactions stemming from trauma, and increase opportunities for recovery (Traub & Boynton-Jarrett, 2017). It was hypothesized that the relationship between risk factors and psychological well-being will be mediated by resilience, such that resilience protects individuals from severe ACEs and current high stress so that they can maintain psychological well-being (*Figure* 2).

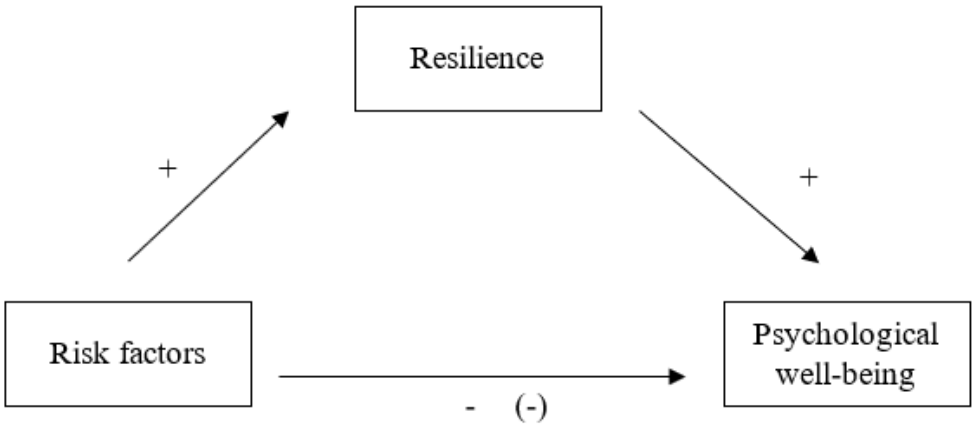

Figure 2. Illustration of the hypothesized relationship between risk factors and psychological well-being mediated by resilience.

METHODS

Participants

The study recruited 291 participants. The sample of participants included 105 females (36.1%), 183 males (62.9%) and 3 unspecified (1%). The age of participants ranged from 25-71 years old with average being 37.5 years of age (*SD* = 10.31). A majority of participants self-identified their ethnicity as White/Caucasian (64.6%) followed by 18.2% identified as African American, 11.3% as Hispanic/Latino/Spanish, 4.1% as Asian, 1% as American Indian/Alaskan Native, and 0.7% who preferred not to specify their ethnicity. 62.2 percent of the sample reported having a bachelor's degree as their highest level of education followed by 25.1% having a master's degree. One percent reported having an applied or professional doctorate degree, 3.8% with an associate degree, 4.8% with some college experience, 0.7% with vocational training, and 2.1% with a high school diploma/GED as their highest level of education.

The majority of participants (49.5%) reported an annual income classified as average middle class ($50,000 - $114,999 per year) followed by 26.1% with an income of working class

($25,000 - $49,999 per year). 11.3% of participants reported an income of lower class (less than $25,000 per year) and 11.7% reported earning an income in the upper middle class ($115,000 - $249,999 per year). Lastly, 0.3% reported earning more than $250,000 per year.

Due to the recent events of COVID-19, participants were inquired about their current employment status and if they had experienced a decrease in income due to the COVID-19 pandemic. A majority of the participants reported being employed (95.9%) at the time of the study while 2.4% reported being unemployed, and 0.3% reported being retired. A total of 215 participants (73.9%) reported experiencing a decrease in income due to COVID-19 and 70 participants (24.1%) reported that they did not experience a decrease in income.

The sample was selected from the United States of America population using random sampling through the service Amazon Mechanical Turk (MTurk). The only restriction placed was that participants must be 18 years or older and currently living in the United States. All APA ethical guidelines were followed in gaining consent, providing a debriefing, and keeping the responses of all participants anonymous.

Materials for Moderation Model (Model 1)

ACE - International Questionnaire (ACE-IQ) (World Health Organization [WHO], 2018)

The ACE-IQ was used to assess category and frequency of ACEs before the age of 18. For the purpose of this study, the questionnaire was slightly modified to include 31 items related to relationships with parents/guardians, family environment, 10 original ACEs categories, peer violence, community violence, and collective violence. Some items can be answered with “yes” or “no” such as “Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs?” Other questions assess the frequency of the event with answers varying from “many times,” “a few times.” “once,” and “never.” For example, “Did you

see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted, or humiliated?"

The ACE-IQ is an extended and modified version of the original ACE questionnaire that was used in 1995. This extended version was created so ACEs can be measured in all countries (WHO, 2018). The ACE-IQ extended the 10 categories of ACEs by adding three categories that assess violence at a micro-social level (i.e. bullying), violence in the microgroup (i.e. gang-related), and violence at the public level (i.e. war). The ACE-IQ also assesses the frequency of the trauma, unlike the original ACE questionnaire. This questionnaire has been recognized as an effective tool for studying the prevalence of ACEs created by the World Health Organization. The psychometric properties of the questionnaire have been dictated by an "ethno-cultural, social, economic norms in different countries" in which the ACE-IQ has been confirmed to have good content validity, reliable internal consistency, and satisfactory test-retest reliability (Katan, 2019). To see the full scale, please see Appendix A.

Scale of Protective Factors (Ponce-Garcia, Madewell, & Kennison, 2015)

The Scale of Protective Factors (SPF) was developed to assess two primary categories of protective factors (social-interpersonal and cognitive-individual) that assist in the development of resilience. Both categories include two subcategories. Social-interpersonal explores social support and social skills whereas cognitive-individual explores planning behavior and goal efficacy. The SPF is a 24-item scale in which participants respond to statements using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Example items of the SPF include "My friends/family are supportive of one another" and "I am confident in my ability to make good decisions/choices" (Ponce-Garcia et al., 2015). To see full scale, refer to Appendix B.

An analysis of SPF found that it has good concurrent validity such that it is significantly related to the Connor-Davidson Resilience Scale (CD-RISC) (α = 0.96). This is important because the SPF is designed to measure the protective factors of resilience that will be further assessed in this study using the CD-RISC. The overall internal consistency reliability is 0.94. The subscales' internal consistency reliabilities are social support (0.93), social skills (0.89), prioritizing/planning behavior (0.90), and goal efficacy (0.83) (Ponce-Garcia et al., 2015).

The Connor-Davidson Resilience Scale (CD-RISC)

The Connor-Davidson Resilience Scale was constructed by Connor, M.D. and Davidson, M.D. in response to a need for a well-validated measure of resilience that is a brief self-rated assessment to quantify resilience based on the characteristics identified in literature (2003). The CD-RISC consists of 25 items on 5-point Likert scale responses. These responses are as follows: not true at all (0), rarely true (1), sometimes true (2) often true, (3), and true nearly all of the time (4). The sum of the score is the numeric representation of an individual's resilience in which a higher score reflects greater resilience (Connor & Davidson, 2003). Example items of CD-RISC include "I am able to adapt when changes occur" and "In time of stress, I know where to find help." To see full scale, see Appendix C.

Numerous studies have examined the psychometric properties of the CD-RISC. It is documented that the CD-RISC has better psychometric properties compared to other resilience scales and is widely accepted and utilized (Salisu & Hashim, 2017). During the development of the CD-RISC, Connor and Davidson assessed the reliability and validity of the scale. Cronbach's α was used to measure internal consistency, which was reported as 0.89 for the full scale. The test-retest reliability assessment showed high levels of agreement with an interclass correlation

coefficient of 0.87. The scale further exhibits validity relative to other measures of stress and hardiness (Connor & Davidson, 2003).

Materials for the Mediation Model (Model 2)

In addition to the ACE-IQ and the CD-RISC, the Perceived Stress Scale and Ryff Scales of Psychological Well-Being were used to test the mediation model in model 2 of this study.

Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983)

The Perceived Stress Scale (PSS) is a widely used tool to measure the degree in which individuals perceive situations in their lives as stressful. The original PSS was 14-items but was shortened to 10-items in 1988 (Cohen). The original study with PSS showed an acceptable range of test-retest reliability, as well as concurrent and predictive validity (Cohen et al., 1983). The 10-item PSS has been found to have superior psychometric properties across numerous studies with internal consistency Cronbach's alpha values and test-retest reliability values greater than 0.70 (e.g., see Lee 2012).

The PSS 10-item scale requires participants to respond to statements using a 5-point Likert scale (0 = never; 4 = very often). Example items of the PSS include "In the last month, how often have you been angered because of things that were outside of your control?" and "In the last month, how often have you felt that things were going your way?" To see the full scale, refer to Appendix D.

Ryff Scales of Psychological Well-Being (RSPWB)

The 42-item RSPWB was developed by psychologist Carol D. Ryff to measure the six domains of well-being (1989): self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. This scale has been used in national studies in which the psychometric properties of the scale were found to be strong, specifically in

construct validity and inter-factor correlations (Abbott, Ploubidis, Huppert, Kuh, Wadsworth, & Croudace, 2006).

The 42-item RSPWB has 7 items for each of the 6 domains of well-being in which participants respond to statements using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Example items include "I am not afraid to voice my opinions even when they are in opposition to the opinions of most people" and "I have been able to build a home and lifestyle for myself that is much to my liking." To see the full scale, see Appendix E.

Procedure

Participants were recruited online using Amazon's MTurk. The participants were asked to read and electronically sign a consent form prior to the survey questionnaire. After consent, the participants completed a survey that included demographic questions and the questions from the following scales: ACE-IQ, SPF, PSS, RSPWB, and CD-RISC. The questions were in randomized order to reduce potential order effects. Once the survey was completed, participants were presented with a debriefing form that included more information about the study and national resources in case psychological distress was experienced during the study. The data collected was directly transferred from MTurk to SPSS for statistical analysis.

RESULTS

Hypothesis testing was accomplished through the use of SPSS Version 26 software. The data were screened using the explore function of SPSS to assess for missing data and outliers, and to examine skewness and kurtosis. Data that appeared to be missing at random were filled in with mean values. Examination of the boxplots indicated no outliers. The histograms indicated that the distribution shape for the variables of interest may be normally distributed, however, the distributions were further assessed by examining the values for kurtosis and skewness. Skewness

and kurtosis values were within acceptable range for all variables in the study which indicates normal distribution.

Model 1 Hypothesis Testing

A moderation analysis was performed to assess the hypothesized relationship between ACEs (X1) and psychological resilience (Y) that is moderated by the presence of protective factors (Z; moderator). It was hypothesized that ACEs predict the development of resilience when protective factors are high. To reduce any possible issues of multicollinearity, ACEs and protective factors were standardized, and an interaction term using these standardized variables was created. A hierarchical regression analysis was performed to evaluate whether the interaction of ACEs and protective factors was predictive of psychological resilience. ACEs and protective factors were entered in the first stage of the model and the interaction term was entered in stage two of the model. Overall, the regression model was significant [F (3, 287) = 295.87, $p < 0.001$; $R = 0.87$; $R^2 = 0.75$]. The regression model further showed that protective factors are statistically significant in predicting resilience, [$t(287) = 29.55$, $p < 0.001$, $\beta = 0.87$], but ACEs did not predict resilience, [$t(287) = -0.05$, $p = 0.96$, $\beta = -0.002$]. Together, ACEs and protective factors accounted for approximately 75% of the variance in psychological resilience. However, the interaction of ACEs and protective factors was not significant indicating that moderation did not occur [$t(287) = -0.89$, $p = 0.37$, $\beta = -0.3$].

Model 2 Hypothesis Testing

A mediation analysis was conducted to examine the hypothesized relationship between risk factors and psychological well-being where resilience serves as a mediator. It was hypothesized that resilience positively influences the relationship between risk factors and

psychological well-being by negating the direct negative effect of risk factors on psychological well-being.

First, the relationship between risk factors and psychological well-being was assessed. The zero order Pearson *r* between risk factors and psychological well-being was statistically significant $r(289) = -0.67$, $p < 0.001$. The relationship between risk factors and psychological well-being was negative, such that increases in risk factors were related to decreases in psychological well-being. Resilience was related to psychological well-being, $r(289) = 0.43$, $p < 0.001$; increases in resilience were related to increases in psychological well-being. To further examine the relationship between risk factors, resilience, and psychological well-being, a partial correlation was performed. When controlling for resilience, the partial *r* was significant, $r(288) = -0.68$, $p < 0.001$.

A mediation analysis was conducted to examine a model of risk factors predicting psychological well-being with resilience as a mediator. Results suggest that resilience served as a significant mediator in the model [F (2, 288) = 180.64, $p < 0.001$]. The findings show that risk factors negatively predicted psychological well-being.

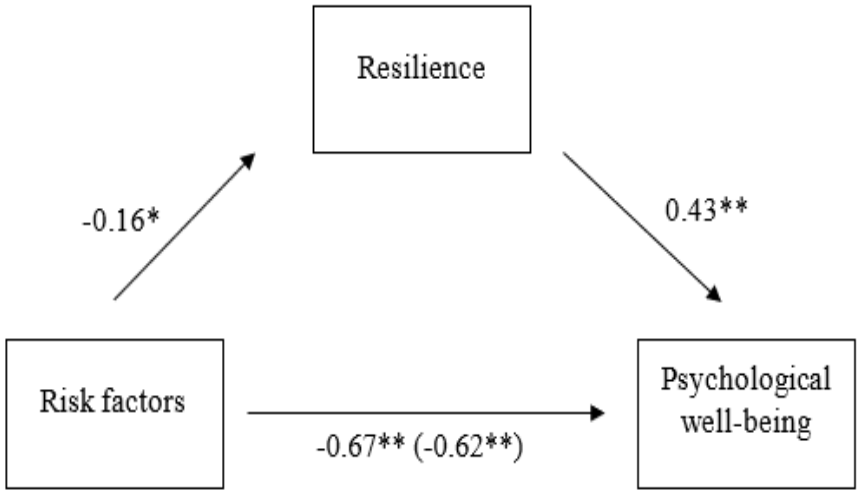

Figure 3. Standardized regression coefficients (β) for the relationship between risk factors and psychological well-being as mediated by resilience. The standardized regression coefficient (β) between risk factors and psychological well-being, controlling for resilience, is in parentheses. *$p < 0.05$; **$p < 0.01$

DISCUSSION

Previous research has shown the comprehensive effects ACEs have on psychological well-being, the role of a person's protective and risk factors on development of resilience, and the positive relationship between psychological well-being and resilience. The purpose of this study was to investigate these variables in such a way that new information regarding the relationship between ACEs, resilience, and psychological well-being in adulthood could be added to existing literature to assist in forming a greater understanding of psychological resilience.

Moderation Model

The moderation model of this study investigated the influence of ACEs and protective factors on the development of resilience. It was hypothesized that protective factors would serve as a moderating variable in the relationship between ACEs and psychological resilience,

specifically when there are high levels of protective factors. The results of the statistical analysis did not support the hypothesis because an interaction between protective factors and ACEs in predicting resilience was not significant. This nonsignificant interaction could be due to the strong main effect that protective factors have on predicting resilience and the absence of ACEs predicting resilience. Thus, the 75 percent variance predicted by protective factors and ACEs on resilience is predominantly explained by the presence of protective factors.

Resilience literature discusses the importance of adversity serving as a primary antecedent in developing resilience, however, the results found in this study show that a greater antecedent of resilience is protective factors. Protective factors ameliorate the negative effects of adversity and assist in optimizing the development of resilience by reducing the possibility of negative outcomes caused by adversity. The role of protective factors in mediating the relationship between ACEs and well-being has been observed in previous studies and it was found that protective factors partially mediate the negative effects of ACEs on well-being in children (Moore & Ramirez, 2015). Protective factors play a similar role in psychological resilience, such that protective factors negate the negative effects of adversity while optimizing resilience. The results of this study demonstrate the vital role that protective factors have in resilience development and this role may be greater than the adversity in predicting resilience development.

Mediation Model

The mediation model of this study investigated the relationship between risk factors and psychological well-being whereas resilience serves as a mediator. It was hypothesized that resilience positively influences the relationship between risk factors and psychological well-being by negating the direct negative effect of risk factors on psychological well-being. The

results of the statistical analysis partially supported the hypothesis which indicates that resilience may serve a role in decreasing the negative effects that risk factors have on psychological well-being.

This study included adverse childhood experiences and current perceived stress as the defined risk factors. Throughout literature, adversity is described as an antecedent to resilience development, thus it was hypothesized that risk factors would be positively correlated with resilience, however, this study found a small negative correlation between risk factors and resilience. When further analyzed, it is found that only perceived stress has a significant negative correlation with resilience whereas ACEs is not significantly correlated with resilience. This finding suggests that perceived stress holds the greatest weight of risk factors being negatively correlated with resilience. Although not hypothesized, it was additionally found that perceived stress and ACEs are significantly positively correlated, and age is positively correlated with resilience. Both of these findings could be explained by the dynamic nature of resilience.

The relationships found with perceived stress could suggest that an individual's current stress and life events may play a greater role in current resilience development. Such inclination also relates to the dynamic nature of resilience. As discussed, individuals who experienced a low to moderate adversity are more likely to exhibit resilience later in their adulthood during another stressful event, thus the onset of resilience development may not follow immediately after an adverse event (Banyard & Williams, 2007; Widom et al., 2007). Current stressful events allow individuals an opportunity to exhibit resilience, however, the results of this study challenge this phenomenon because of the positive relationship between ACEs and perceived stress as well as the negative relationship between risk factors and resilience.

The results of this study pose a question of whether psychological resilience can be situation specific. For instance, participants in the study have not had to previously experience the stress related to the sudden changes caused by the COVID-19 pandemic, thus, they may not be as psychologically resilient to the negative effects of such adversity than they are to adverse events they have previously experienced. The occurrence of the COVID-19 pandemic may have challenged the integrity of some individual's psychological resilience and may explain why perceived stress is playing a significant role in the mediation model of this study.

Limitations

The research conducted includes a few limitations that need to be considered. First, the sample of participants collected through MTurk may not serve as the most accurate representation of the general population, especially during COVID-19. Individuals who may have experienced greater stress due to COVID-19 may not have had access to the technology to participate in the study. Furthermore, it was expected that measuring perceived stress during the pandemic could limit the generalizability of these findings, however, the event of the pandemic also provided an opportunity to measure and observe the role that resilience plays during stressful situations. An additional limitation in this study is that perceived stress and ACEs were equally weighted when calculating risk factors. This may not be an accurate representation of the true roles these variables play in an individual's life, especially when considering the nature and frequency of ACEs and the variability of current life events between individuals. In addition, there are additional risk factors that could be considered to expand this research. Such risk factors could include socioeconomic status and more comprehensive examination of current life stressors including but not limited to health, family dynamic, and occupation related stressors.

Conclusions and Implications

The role that resilience has in partially mediating the relationship between risk factors and psychological well-being is consistent with literature and further supports the important role that protective factors have in resilience development that was found in the moderation model of this study. The results implicate that adversity is not directly related to the development of resilience without the presence of protective factors. This finding provides insight on why individuals who face similar adversity experience different levels of psychological well-being and this may result for the differing levels of protective factors individuals have and how this strongly influenced development of resilience. Within clinical psychology, this can become especially important as psychologists work with trauma victims because the absence or presence of past and current protective factors can help better understand the individual's capacity of developing resilience, healing, and handling future stressors. This study contributed to current literature about the instrumental role that protective factors play in the development of resilience and future studies can be dedicated to increase our understanding about the dynamic nature of resilience and investigate domain specific resilience.

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Appendix A

Adverse Childhood Experiences - International Questionnaire (ACE-IQ)

Please answer the following questions about your first 18 years of life. These questions are designed to collect information from adults about the events they may/may not have experienced during the first 18 years of life. Please answer honestly. If at any time you feel uncomfortable in answering a question, you may select "Refuse to answer."

Relationship with Parents/Guardians
When you were growing up, during the first 18 years of your life…

1. Did your parents/guardians understand your problems and worries?
    a. Always
    b. Most of the time
    c. Sometimes
    d. Rarely
    e. Never
    f. Refuse to answer
2. Did your parents/guardians really know what you were doing with your free time when you were not at school or work?
    a. Always
    b. Most of the time
    c. Sometimes
    d. Rarely
    e. Never
    f. Refuse to answer
3. How often did your parents/guardians not give you enough food even when they could easily have done so?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
4. Were your parents/guardians too drunk or intoxicated by drugs to take care of you?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
5. How often did your parents/guardians not send you to school even when it was available?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

Family Environment

When you were growing up, during the first 18 years of your life…

1. Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs?
    a. Yes
    b. No
    c. Refuse to answer
2. Did you live with a household member who was depressed, mentally ill, or suicidal?
    a. Yes
    b. No
    c. Refuse to answer
3. Did you live with a household member who was ever sent to jail or prison?
    a. Yes
    b. No
    c. Refuse to answer
4. Were your parents ever separated or divorced?
    a. Yes
    b. No
    c. Not applicable
    d. Refuse to answer
5. Did your mother, father, or guardian die?
    a. Yes
    b. No
    c. Don't know/Not sure
    d. Refuse to answer

These next questions are about things you may actually have heard or seen IN YOUR HOME. These are things that may have been done to another household member but not necessarily to you.

When you were growing up, during the first 18 years of your life…

6. Did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted or humiliated?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
7. Did you see or hear a parent or household member in your home being slapped, kicked, punched, or beaten up?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

8. Did you see or hear a parent or household member in your home being hit or cut with an object such as a stick (or cane), bottle, club, knife, whip, etc?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

These next questions are about certain things YOU may have experienced.

When you were growing up, during the first 18 years of your life…

1. Did a parent, guardian, or other household member yell, scream or swear at you, insult or humiliate you?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
2. Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
3. Did a parent, guardian, or other household member spank, slap, kick, punch, or beat you up?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
4. Did a parent, guardian or other household member hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip, etc?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
5. Did someone touch or fondle you in a sexual way when you did not want them to?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

6. Did someone make you touch their body in a sexual way when you did not want them to?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
7. Did someone attempt oral, anal, or vaginal intercourse with you when you did not want them to?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
8. Did someone actually have oral, anal, or vaginal intercourse with you when you did not want them to?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

Peer Violence

The next questions are about being bullied when you were growing up. Bullying is when a young person or group of young people say or do bad and unpleasant things to another young person. It is also bullying when a young person is teased a lot in an unpleasant way or when a young person is left out of things on purpose. It is not bullying when two young people of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.

When you were growing up, during the first 18 years of your life…

1. How often were you bullied?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
2. How were you bullied most often?
    a. Not applicable (answered "never" above)
    b. I was hit, kicked, pushed, shoved around, or locked indoors
    c. I was made fun of because of my race, nationality or color
    d. I was made fun of because of my religion
    e. I was made fun of with sexual jokes, comments, or gestures
    f. I was left out of activities on purpose or completely ignored
    g. I was made fun of because of how my body or face looked
    h. I was bullied in some other way
    i. Refuse to answer

This next question is about physical fights. A physical fight occurs when two young people of about the same strength or power choose to fight each other.

When you were growing up, during the first 18 years of your life…

1. How often were you in a physical fight?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

Witnessing Community Violence

These next questions are about how often, when you were a child, you may have seen or heard certain things in your neighborhood or community (not in your home or on TV, movies, or the radio).

When you were growing up, during the first 18 years of your life…

1. Did you see or hear someone being beaten up in real life?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
2. Did you see or hear someone being stabbed or shot in real life?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
3. Did you see or hear someone being threatened with a knife or gun in real life?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

Exposure to War/Collective Violence

These questions are about whether you did or did not experience any of the following events when you were a child. These events are all to do with collective violence, including wars, terrorism, political or ethnic conflicts, genocide, repression, disappearances, torture and organized violent crimes such as banditry and gang warfare.

When you were growing up, during the first 18 years of your life…

1. Were you forced to go and live in another place due to any of these events?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
2. Did you experience the deliberate destruction of your home due to any of these events?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
3. Were you beaten up by soldiers, police, militia, or gangs?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer
4. Was a family member or friend killed or beaten up by soldiers, police, militia, or gangs?
    a. Many times
    b. A few times
    c. Once
    d. Never
    e. Refuse to answer

Appendix B

Scale of Protective Factors (SPF)

Please use the following scale to indicate the degree of your agreement or disagreement with each of the following statements below. Record the numerical value associated with your answer in the space next to each statement.

1 = strongly disagree
2 = disagree
3 = neither agree nor disagree
4 = agree
5 = strongly agree

My friends/family….
_____ 1. keep me up to speed on important events.
_____ 2. see things the same way.
_____ 3. are seen as united.
_____ 4. are supportive of one another.
_____ 5. are optimistic.
_____ 6. spend free time together.
I am good at...
_____ 7. socializing with new people.
_____ 8. interacting with others.
_____ 9. making new friends.
_____ 10. being with other people.
_____ 11. working with others as part of a team
_____ 12. starting new conversations.
When working on something, I…
_____ 13. can see the order in which to do things.
_____ 14. plan things out.
_____ 15. organize my time well.
_____ 16. set priorities before I start.
_____ 17. do better if I set a goal.
_____ 18. make a list of things to do in order of importance.
I am confident in my ability to…
_____ 19. achieve goals.
_____ 20. think out and plan.
_____ 21. make good decisions/choices.
_____ 22. think on my feet.
_____ 23. succeed.
_____ 24. solve problems.

Appendix C

Connor-Davidson Resilience Scale (CD-RISC)

Please use the following scale to indicate the degree of your agreement or disagreement with each of the following statements below. Record the numerical value associated with your answer in the space next to each statement.

0 = not true at all
1 = rarely true
2 = sometimes true
3 = often true
4 = true nearly all of the time

_____ 1. I am able to adapt to change.
_____ 2. I have close and secure relationships.
_____ 3. I believe sometimes fate or God can help.
_____ 4. I can deal with whatever comes my way.
_____ 5. My past success gives me confidence for new challenges.
_____ 6. I see the humorous side of things.
_____ 7. Coping with stress strengthens me.
_____ 8. I tend to bounce back after illness or hardship.
_____ 9. I believe things happen for a reason.
_____ 10. I give my best effort no matter what.
_____ 11. I can achieve my goals.
_____ 12. When things look hopeless, I don't give up.
_____ 13. I know where to run for help.
_____ 14. Under pressure, I can focus and think clearly.
_____ 15. I prefer to take the lead in problem solving.
_____ 16. I am not easily discouraged by failure.
_____ 17. I think of myself as a strong person.
_____ 18. I make unpopular or difficult decisions.
_____ 19. I can handle unpleasant feelings.
_____ 20. I have to act on a hunch.
_____ 21. I have a strong sense of purpose.
_____ 22. I am in control of my life.
_____ 23. I like challenges.
_____ 24. I work to attain my goals.
_____ 25. I have pride in my achievements.

Appendix D

Perceived Stress Scale (PSS)

Please use the following scale to indicate the degree of your agreement or disagreement with each of the following statements below. Record the numerical value associated with your answer in the space next to each statement.

0 = never
1 = almost never
2 = sometimes
3 = fairly often
4 = very often

_____ 1. In the last month, how often have you been upset because of something that happened unexpectedly?
_____ 2. In the last month, how often have you felt that you were unable to control the important things in your life?
_____ 3. In the last month, how often have you felt nervous and "stressed"?
_____ 4. In the last month, how often have you felt confident about your ability to handle your personal problems?
_____ 5. In the last month, how often have you felt that things were going your way?
_____ 6. In the last month, how often have you found that you could not cope with all the things that you had to do?
_____ 7. In the last month, how often have you been able to control irritations in your life?
_____ 8. In the last month, how often have you felt that you were on top of things?
_____ 9. In the last month, how often have you been angered because of the things that were outside of your control?
_____ 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Appendix E

Ryff 42-item Psychological Well-being Scale (RPWBS)

Please use the following scale to indicate the degree of your agreement or disagreement with each of the following statements below. Record the numerical value associated with your answer in the space next to each statement.

1 = strongly disagree
2 = disagree
3 = neither agree nor disagree
4 = agree
5 = strongly agree

_____ 1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
_____ 2. For me, life has been a continuous process of learning, changing, and growth.
_____ 3. In general, I feel I am in charge of the situation in which I live.
_____ 4. People would describe me as a giving person, willing to share my time with others.
_____ 5. I am not interested in activities that will expand my horizons.
_____ 6. I enjoy making plans for the future and working to make them a reality.
_____ 7. Most people see me as loving and affectionate.
_____ 8. In many ways, I feel disappointed about my achievements in life.
_____ 9. I live life one day at a time and don't really think about the future.
_____ 10. I tend to worry about what other people think of me.
_____ 11. When I look at the story of my life, I am pleased with how things have turned out.
_____ 12. I have difficulty arranging my life in a way that is satisfying to me.
_____ 13. My decisions are not usually influenced by what everyone else is doing.
_____ 14. I gave up trying to make big improvements or changes in my life a long time ago.
_____ 15. The demands of everyday life often get me down.
_____ 16. I have not experienced many warm and trusting relationships with others.
_____ 17. I think it is important to have new experiences that challenge how you think about yourself and the world.
_____ 18. Maintaining close relationships has been difficult and frustrating for me.
_____ 19. My attitude about myself is probably not as positive as most people feel about themselves.
_____ 20. I have a sense of direction and purpose in life.
_____ 21. I judge myself by what I think is important, not by the values of what others think is important.
_____ 22. In general, I feel confident and positive about myself.
_____ 23. I have been able to build a living environment and lifestyle for myself that is much to my liking.
_____ 24. I tend to be influenced by people with strong opinions.
_____ 25. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.
_____ 26. I do not fit in very well with the people and the community around me.

_____ 27. I know that I can trust my friends, and they know they can trust me.
_____ 28. When I think about it, I haven't really improved much as a person over the years.
_____ 29. Some people wander aimlessly through life, but I am not one of them.
_____ 30. I often feel lonely because I have few close friends with whom to share my concerns.
_____ 31. When I compare myself to friends and acquaintances, it makes me feel good about who I am.
_____ 32. I don't have a good sense of what it is I'm trying to accomplish in life.
_____ 33. I sometimes feel as if I've done all there is to do in life.
_____ 34. I feel like many of the people I know have gotten more out of life than I have.
_____ 35. I have confidence in my opinions, even if they are contrary to the general consensus.
_____ 36. I am quite good at managing the many responsibilities of my daily life.
_____ 37. I have the sense that I have developed a lot as a person over time.
_____ 38. I enjoy personal and mutual conversations with family members and friends.
_____ 39. My daily activities often seem trivial and unimportant to me.
_____ 40. I like most parts of my personality.
_____ 41. It's difficult for me to voice my own opinions on controversial matters.
_____ 42. I often feel overwhelmed by my responsibilities.

Appendix F

Demographic Questions

1. What is your age? _____
2. What is your sex?
    a. Male
    b. Female
    c. Intersex
3. What is the highest level of education you have completed?
    a. Primary school (K – 8th grade)
    b. Some high school
    c. High school diploma or equivalent
    d. Vocational training
    e. Some college
    f. Associate's degree (e.g. AA, AE, AFA, AS, ASN)
    g. Bachelor's degree (e.g. BA, BBA, BDA, BS)
    h. Master's degree (e.g. MA, MBA, MFA, MS, MSW)
    i. Specialist degree (e.g. EdS)
    j. Applied or professional doctorate degree (e.g. MD, DDC, DO, DDS, JD, PharmD)
    k. Doctorate degree (e.g. EdD, PhD)
4. What is your race/ethnicity?
    a. American Indian/Alaskan Native
    b. Asian
    c. African American
    d. Hispanic/Latino/Spanish
    e. Middle Eastern/North African
    f. Native Hawaiian/Other Pacific Islander
    g. White/Caucasian
    h. Other, please specify: _____
    i. Prefer not to answer
5. Which social class group do you identify with based on annual income?
    a. Lower class (less than $25,000)
    b. Working class ($25,000 - $49,999)
    c. Average middle class ($50,000 – $114,999)
    d. Upper middle class ($115,000 – $249,999)
    e. Upper class ($250,000 or more)
6. What is your current employment status?
    a. Unemployed
    b. Employed
    c. Retired
7. Have you experienced any decrease in income due to COVID-19?
    a. Yes
    b. No

Appendix G

Recruitment Script

Role of Protective and Risk Factors in the Development of Resilience and the Mediating Relationship of Resilience between Adverse Childhood Experiences and Psychological Well-Being

This is a study conducted by Paulyna Schulz and April Park (Fort Hays State University, Hays, KS). This study is investigating the relationship between adverse childhood experiences, resilience, and psychological well-being. This study will ask you to answer questions about yourself, including your resilience, psychological well-being, and adverse childhood experiences. The study should take approximately 15-20 minutes to complete. Please know that you are not obligated to participate. If you decide to participate, you will be able to skip any questions that makes you uncomfortable. For participating in the entire study, you will be compensated $0.50. If you chose to participate, please continue to read the informed consent.

Thank you!

Paulyna Schulz
Principal Investigator
Department of Psychology
pmalcorn@mail.fhsu.edu

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Hays, KS 67601
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Appendix H

Informed Consent Form

NAME OF THE STUDY

Role of Protective and Risk Factors in the Development of Resilience and the Mediating Relationship of Resilience between Adverse Childhood Experiences and Psychological Well-Being

INTRODUCTION

The Department of Psychology at Fort Hays State University supports the practice of protection for human subjects participating in research. **You are being asked to participate in a research study. It is your choice whether or not to participate.** The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to electronically sign this form and not participate in this study. You should be aware that even if you agree to participate, you are free to withdraw at any time.

PURPOSE OF THE STUDY

You are invited to join a research study. In this study, we are investigating the relationship between adverse childhood experiences, resilience, and psychological well-being.

PROCEDURES

If you choose to participate, you will be asked to electronically sign this consent form by clicking on the "continue" button. You will be asked to answer questions related to resilience, adverse childhood experiences, protective factors, stress, and psychological well-being. There are no right or wrong answers in this study, so please answer honestly. **If you decide to participate in this research study, you will be asked to electronically sign this consent form. The length of time of your participation in this study is 15-20 minutes.** Approximately 300 participants will be in this study.

RISKS

We do not anticipate more than minimal risk with this study, and we do not expect you to experience more risk than what you might normally encounter in everyday life. However, if you feel distressed or uncomfortable by any of the questions you may choose not to answer and/or discontinue your participation. Participating in this study is completely voluntary and deciding to withdraw from the study will not impact your academic standing. If you feel uncomfortable while completing this study, please contact the researchers listed below.

BENEFITS

Participants will gain insight on their resilience and psychological well-being. Participants in this study will receive a minimal, $0.50, monetary compensation after completing the study. Others may benefit in the future from the information we gather in this study.

PARTICIPANT CONFIDENTIALITY (HOW WILL PRIVACY BE PROTECTED)
We will be taking the following steps to keep information about you confidential, and to prevent it from unauthorized disclosure: the principal investigator will be the only individual that has access to the original data in this study. She will store this data on a storage device (password protected laptop) that only she has access to. In addition, the principal investigator will only share such data with her faculty advisor, when necessary. If published or presented, then the data will be given in aggregate form. Your name will not be associated in any publication or presentation with the information collected about you or with the research findings from this study.

OTHER IMPORTANT ITEMS YOU SHOULD KNOW

- **Withdrawal from the study:** You may choose to stop your participation in this study at any time. Your decision to stop your participation will have no effect on your academic standing. You may also skip any questions that you do not feel comfortable.
- **Funding:** There is no outside funding for this research project.

REFUSAL TO SIGN CONSENT AND AUTHORIZATION
You are not required to electronically sign this Consent and Authorization form and you may refuse to do so without any penalty. However, if you refuse to sign electronically, you cannot participate in this study.

CANCELLING THIS CONSENT AND AUTHORIZATION
You may withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use and disclose further information collected about you, in writing, at any time, by sending your written request to: Dr. April Park, Department of Psychology, 600 Park St. Hays, KS 67601.

If you cancel permission to use your information, the researchers will stop collecting additional information about you. However, the research team may use and disclose information that was gathered before they received your cancellation, as described above.

QUESTIONS ABOUT PARTICIPATION
Questions about procedures should be directed to the researchers listed at the end of this consent form.

PARTICIPANT CERTIFICATION:
I have read this Consent and Authorization form. I understand that if I have questions about my rights as a research participant, I may call (785) 628-4349, write the Office of Scholarship and Sponsored Projects (OSSP), Fort Hays State University, 600 Park St., Hays, Kansas 67601, or email irb@fhsu.edu.

I agree to take part in this study as a research participant. By checking this button, you are indicating that you have read and understood this document and that you agree to proceed with the study.

RESEARCHER CONTACT INFORMATION:

Paulyna Schulz
Principal Investigator
Department of Psychology
pmalcorn@mail.fhsu.edu

Dr. April Park
Co-PI
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600 Park St.
Fort Hays State University
Hays, KS 67601
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Appendix I

Debriefing Form

Thank you for participating in this study. This study was focused on exploring the relationship between adverse childhood experiences, resilience, and psychological well-being.

This type of research is important because research suggests that adversity is required for one to development resilience, however, a posing question is why individuals who experienced similar adversity display different levels of resilience. The information gathered in this study will be used to investigate this question so that the development of resilience can be better understood.

If the questions included in this study may have caused you psychological distress, please contact one of the national hotlines listed below or contact your local mental health agency. If you are unsure of the resources available near you, use this search engine (https://findtreatment.samhsa.gov/locator) to find resources using your zip code.

If you have any questions or concerns about this study, then please contact the principal investigator, Paulyna Schulz (pmalcorn@mail.fhsu.edu) and Dr. April Park (j_park7@fhsu.edu), If you have general questions about research, please contact the director of the Office of Scholarship and Sponsored Projects, Leslie Paige (lpaige@fhsu.edu). Finally, if you felt distressed and/or uncomfortable at any time while completing this study, please contact Dr. Park.

National Hotlines:

Substance Abuse and Mental Health Services Administration (SAMHSA) – 1-800-662-4357

National Suicide Prevention Lifeline, 800-273-8255

Rape, Sexual Assault, Abuse, and Incest National Network (RAINN) 800-656-HOPE

National Domestic Violence Hotline, 800-799-7233

Appendix J

IRB Approval Letter

FORT HAYS STATE UNIVERSITY

Forward thinking. World ready.

OFFICE OF SCHOLARSHIP AND SPONSORED PROJECTS

DATE:	July 20, 2020
TO:	Paulyna Schulz
FROM:	Fort Hays State University IRB
STUDY TITLE:	[1616339-1] Risk Factors, Protective Factors, and Resilience Development
IRB REFERENCE #:	20-0079
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
DECISION DATE:	July 20, 2020
EXPIRATION DATE:	July 19, 2020
REVIEW TYPE:	Full Committee Review

Thank you for your submission of New Project materials for this research study. Fort Hays State University IRB has APPROVED your submission (please see the recommendation below for one modification to your project materials). This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission. Please note that the FHSU IRB recommends adding the resource information shared on the debriefing form to the informed consent. This submission has received Full Committee Review based on the applicable federal regulation. Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form unless documentation of consent has been waived by the IRB. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document. The IRB-

approved consent document must be used. Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure. All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed. Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office. Please note that all research records must be retained for a minimum of three years.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure. If you have any questions, please contact Leslie Paige at IRB@fhsu.edu. Please include your project title and reference number in all correspondence with this committee.

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Thesis: Understanding Resilience: Investigating the Relationship between Risk Factors, Resilience, and Psychological Well-Being

Author: Paulyna Schulz

Signature: 

Date: December 3, 2020