ADVERSE CHILDHOOD EXPERIENCE AND LONELINESS AMONG YOUNG

ADULTS: EXPLORING THE ROLES OF ATTACHMENT STYLE AND

RESILIENCE

by

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DEDICATION PAGE

I would like to dedicate this work to the youth at Maples Adolescent Treatment Centre, Crossroads Care Program, who have inspired me to learn more, dream big, and also helped me realize that happiness comes in many different forms.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Objective: The health risks associated with adverse childhood experiences (ACEs) among different age groups in adults has been widely studied in recent years. Adults with ACEs are more likely to develop mental health concerns including feelings of loneliness; however, there has been limited research focusing on young adults. The purpose of this study was to better understand the relationship between ACEs and loneliness by examining insecure attachment patterns (anxious and avoidant) as potential mediators. The study also investigated whether positive traits such as resilience buffered the association between ACEs and loneliness through insecure attachment.

Method: Young adults aged 18 to 30 ($N = 203$) from the community provided self-ratings of ACEs, two dimensions of adult attachment, resilience, and loneliness. Parallel mediation and moderated mediation analyses were conducted.

Results: Anxious attachment style in adults were statistically significant, mediating the relationship between ACEs and loneliness; however, avoidant attachment style was non-significant. Furthermore, resilience was a significant moderator of the mediated relationship associated with ACEs and anxious attachment patterns.

Conclusion: Individuals with more ACEs experienced greater loneliness as young adults, which was explained by anxious attachment patterns in adult close relationships. Interestingly, this pathway depends on the individual's level of resilience or their attitude towards adversity. Young adults with lower resilience were more likely to have an anxious attachment style after having suffered ACEs and thus were more likely to experience loneliness. The findings suggest the possibility that intervention and policy directed towards enhancing resilience among youth who experience childhood adversity may play a role in reducing loneliness.

LIST OF ABBREVIATIONS USED

ACEs: Adverse Childhood Experiences

BRS: The Brief Resilience Scale

ECR-S: Experiences in Close Relationship Scale-Short Form

Three-Item UCLA LS: Three-Item Revised UCLA Loneliness Scale

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CHAPTER 1: INTRODUCTION

Adverse experiences in childhood, such as physical and sexual abuse, domestic violence, and exposure to parental incarceration, have been found to have long-lasting effects on individuals into adulthood and later in life (Herzog & Schmahl, 2018; Herbers et al., 2014). Researchers have looked into how adverse childhood experiences (ACEs) make individuals more vulnerable to physical health concerns, such as higher risk of chronic disease, constant fatigue, higher rates of heart failure, chronic pain, and sleeping difficulties (Hughes et al., 2017). Moreover, ACEs are linked to individuals having emotional and mental health problems, such as anxiety (Green et al., 2010), depression (Poole, Dobson, & Pusch, 2018), post-traumatic stress disorder (PTSD) (Lu et al., 2008), and feelings of loneliness (Merrick et al., 2017). Additionally, research has found that women are more likely to exhibit psychological distress such as depression, anxiety and other mental illnesses associated with greater ACEs than men (Almuneef et al., 2017). Interestingly, there have been contradictory findings in studies looking at loneliness using the UCLA Loneliness Scale (UCLA-LS). Russell, Peplau, and Cutrona (1980) found that there are no gender differences in loneliness, whereas Weiss (1973) indicated that women are more likely to feel lonely compared to male (cited in Borys & Perlman, 1985). Therefore, for the purpose of the current study, gender was controlled for the analyses.

One potential outcome of ACEs that is particularly concerning is loneliness among young adults. Loneliness has been defined in the literature as the degree to which

a person feels emotionally isolated from others, with that isolation stemming from either the individual's needs being unmet or due to the individual having experienced unpleasant emotions related to the quality or quantity of their social relationships (Ge et al., 2017; Cacioppo, 2008). Loneliness affects individuals across all age groups and has been found to have a direct impact on individuals' quality of life and health (Malcolm et al., 2019; Musich et al., 2015). Current studies show that loneliness is significantly linked with higher negative mental health effects such as anxiety, depression, and overall mental health in the individual over time (Richardson, Elliott & Roberts, 2017). Importantly, individuals of any age who experience loneliness have a decreased quality of life compared to individuals who have strong social relationships with others (Musich et al., 2015). Of particular interest to the current research is a study which found that secure attachment style was linked with lower reporting of emotional loneliness and social loneliness among university students (DiTommaso et al., 2003). Further, multiple researchers have found that attachment style could contribute to loneliness (Diehl et al., 2018; Cacioppo, 2008).

In research, young adults have often been grouped with either adolescents or with the rest of the adult population. However, it is important to study young adults during this critical period due to the potential for the profound implications of adverse childhood experiences on emerging adults' future outcomes (e.g., physical and mental health and well-being) as they transition into society, taking on different roles, careers, building

2

social networks and relationships, starting families, and preparing for their futures (Kealy, Ben-David & Cox, 2020).

At this time, there is a gap of knowledge concerning the connections between ACEs, attachment style, and loneliness specifically among young adults. Given the strong association between ACEs and loneliness on the negative effects of mental wellbeing and physical health (Wong, Dirghangi & Hart, 2018), it is particularly important to study mental health issues in young adulthood in order to create a deeper understanding of what contributes to loneliness, individual characteristics that impact loneliness, and how the current research might help health professionals shape prevention and intervention strategies during a critical stage in development to improve outcomes for affected young adults later in life (Malcolm et al., 2019). Furthermore, it is also important to establish whether specific processes such as resilience can buffer against the effects of ACEs in the pathway through attachment to loneliness. Although current literature has found links between ACEs and attachment insecurity (Lin et al., 2020), attachment anxiety and loneliness (Wei et al., 2005), and ACEs and loneliness (Diehl et al, 2018; Beutel at al., 2017), less is understood about how ACEs, insecure attachment, and loneliness are related, as well as how resilience may buffer the effects of ACEs and prevent the development of loneliness through attachment style among young adults.

It is well-established that adverse childhood experiences (ACEs) have been linked with multiple life-long physical and psychosocial problems in children and adults (Merrick et al., 2017); however, there is limited research unpacking how adversity in

3

childhood can indirectly affect loneliness through insecure attachment styles among young adults, and exploring the moderating role of resilience.

Importantly, in Western society, mental health services and providers have largely implemented a bio-medical framework approach, which emphasizes medical diagnoses, individual responsibility for recovery, and clinicians hold the power to determine the diagnoses and administer treatment while providing limited and restricted clinical care with little collaboration, often ignoring service users' voice and experiences (Brown, Johnstone & Ross, 2020). According to Brown, Johnston and Ross (2020), mental health services should focus on a bio-psycho-social model, which values collective responsibility (e.g., social support), collaboration (e.g., each client brings their own expert knowledge and works collectively with the clinician), recognizing relational aspect (e.g., understanding the unit of treatment; oftentimes, individuals are embedded in different relationships in the environment), using a critical clinical focus (e.g., deconstructing social power structures), and person in environment (e.g., mental health is influenced by social, economic, and physical aspect). It is pertinent to keep in mind the barriers and inequalities service users are faced with, as well as to utilize a bio-psycho-social approach rooted in social justice in order to promote social factors contributing to positive health outcomes, both in prevention and intervention.

The purpose of the current study was firstly to examine the mediation of ACEs and loneliness by attachment insecurity, and secondly, to better understand the potential moderating role of resilience on this mediated pathway. By better understanding the

mediated and moderated link, the most appropriate practices, interventions, and policies can be developed to meet the needs of those who have experienced adversity and trauma.

1.1 LITERATURE REVIEW

1.1.1 Impacts of ACEs on Self-Identity and Behaviour Formation

One important way of developing an identity is through independent exploration of one's environment. If the child was not given a safe environment to explore and instead they experienced maltreatment and were exposed to adversity and trauma growing up, their self-identification processes will be significantly impacted (Krayer et al., 2015). Identity formation during young adulthood is vital, as it "provides cohesion and continuity to one's self-definition" (Ben-David & Kealy, 2020, p.69), which consists of different dimensions of self, such as goals, values, self-esteem, taking on different roles (e.g., social and interpersonal), and forming behaviours (Vignoles, Schwartz, & Luyckx, 2011, as cited in Ben-David & Kealy, 2020). Therefore, developing a positive and stable sense of identity is significant in the exploration of goal setting, holding values and beliefs, as well as adaptations to change in the future (Ben-David & Kealy, 2020). However, individuals with ACEs are more likely to develop shame as they are more vulnerable to social evaluation. Due to fear of evaluation, an individual may develop an unstable identity and frequently question their decisions (Cruz, 2013). Therefore, young adults become self-protective and are afraid to associate with others and less likely to explore to find their identity. Furthermore, ACE was associated to lower optimism and

being more pessimistic among young adults; however, secured attachment style buffered the impact of ACEs and lower optimism, possibly by reducing the level of experienced stressed (Korkeila et al., 2004). According to numerous researchers, children with adverse childhood experiences tend to grow up faster including their bodies and brain being developed quicker and tend to live at the present moment (Belsky et al., 1991; Ellis et al., 2009; Nettle, 2010; Quinlan, 2007), resulting in addictive behaviours among young adults (Foster et al., 2017). These behaviors serve as coping strategies to deal with personal stress and anxiety. Therefore, individuals with ACEs may exhibit internalizing (i.e. anxiety and depression) and externalizing (i.e. substance use disorders, aggression and delinquency) pathology (Sharma & Sacco, 2015). Furthermore, Ehring & Quack (2010) explains that such internalizing and externalizing symptoms arise from disruption of self-regulation skills and a lack of secure attachment development, with low social support, and a lack of such skills learned results in maladaptive strategies due to environmental occurrences to cope with life stressors. Interestingly, researchers have found that ACEs has been associated with the development of a negative cognitive attributional style through the internalization of negative situations (attributional style) which enhances one's negative cognitive style (Gibb et al., 2001; Rekart et al., 2007). This negativize way of thinking further develops into feeling hopeless later in later life.

1.1.2   Insecure Attachment (Anxious and Avoidant)

The attachment theory conceptual framework was developed by Bowlby (1982, 1969, 1940) and is used to study interpersonal relationships and individual levels of

psychological processes. Bowlby (1982) stated that children are born with behavioural attachment systems that motivate them to seek or maintain closeness to an attachment figure—usually a primary caregiver (Bowlby, 2008). The theory explains a reliable caregiver's role and the possible negative effects on the child's psychological development when a child loses reliable attachment in their environment. Therefore, attachment systems were developed in humans as a means to survive childhood by protecting them in times of distress, anxiety, or fear (Simpson, 2017). Research studies have identified the individual's attachment styles and attachment-system functioning as being important components in their ability to develop deep and meaningful relationships with others (Mohammadi, Samavi & Ghazavi, 2016; Cacioppo, 2008; Mikulincer and Shaver, 2007). The attachment system also serves emotion regulation functions, in that when a secure person is close to an attachment figure, they can feel safer, calmer, stronger and secure (Simpson, 2017). On the other hand, insecure people do not experience the same degree of benefit, and prolonged separation or loss of the attachment figure creates distress (Simpson, 2017). Attachment styles essentially reflect internal working models of one's self in relation to others and the environment, such as their caregiving environment (Simpson, 2017; Bowlby, 1982; Bowlby 1969). However, environmental factors may inhibit an individual from developing a strong attachment with the primary caregiver, despite humans' natural tendencies to seek proximity for a sense of protection (Cassidy, Jones & Shaver, 2013). This experience ultimately leads to insecure attachments (Simpson, 2017).

Numerous studies have concluded that there are two types of attachment insecurity that can impact individuals: anxious and avoidant (Mikulincer & Shaver, 2019; Mikulincer, Elliot & Reis, 2003; Shaver, & Pereg, 2003; Simpson, 1990). Attachment avoidance takes place when the individual is uncomfortable with the close proximity of others as a result of failed relationships, especially with their primary caregiver—for example, separation from the caregiver, inconsistent care, or maltreatment by the primary caregiver. Therefore, the individual is unable to develop emotional intimacy in adulthood (Cassidy, Jones & Shaver, 2013; Wei, Russell, Mallinckrodt & Vogel, 2007). An important component of attachment avoidance is that the individual will have positive, if fragile, views of themselves. At the same time, they are unable to be dependent on their romantic partners, and they are less likely to self-disclose, which prevents them from developing a deep level of intimacy with their partners (Wei, Russell, Mallinckrodt & Vogel, 2007). Individuals who have developed attachment avoidance require high levels of autonomy, control, and independence in their relationships (Simpson, 2017).

Attachment anxiety, on the other hand, is when the individual fears they will be abandoned or unappreciated by their romantic partners (Simpson, 2017). Attachment anxiety has been referred to as "the negative models of the self," and "reflects the degree to which an individual attempts to minimize distance from others due to fear of rejection or worries regarding the availability and responsiveness of others" (Read et al., 2018, p. 3). Fear of rejection can lead individuals to feeling isolated and lonely if their feelings towards others are not returned. Fear of rejection can emanate from being abandoned or

unloved as a child; a person may have adversely experienced rejection (particularly from their caregiver) that haunts them for life. Individuals who have experienced adversity in their childhood may lack positive self-esteem due to fear of social evaluation and fear of rejection. These fears may result in the individual acting in ways that drive their partners away, rather than strengthening the attachment (Simpson, 2017). Therefore, in the present study, it is important to examine the role insecure attachment patterns (anxious and avoidant) play in young adults concerning loneliness as insecure attachment patterns may hinder the development of a healthy adult relationship and consequently, have a negative effect on their mental health.

1.1.3   Loneliness in Young Adults

Individuals of any age who experience loneliness have a decreased quality of life compared to individuals who have strong social relationships with others (Musich et al., 2015).

Researchers have identified two types of loneliness: emotional loneliness and social loneliness (Russell et al., 1984). Emotional loneliness occurs when the individual lacks in close emotional attachments with other people, while social loneliness refers to the lack of a social network with shared common interests and activities (Russell et al., 1984). Both types of loneliness can lead to individuals having decreased social competence (DiTommaso et al., 2003), decreased rational competence, higher degrees of passive behaviour, lower levels of honesty, and lower levels of progress and compatibility with others (Pakdaman et al., 2016). In addition, Cacioppo et al. (2000) have examined how

9

young adults can feel lonely despite being around others or in close relationships. Therefore, helping people connect with others is only part of the solution and helping them experience others as being more connected is also an important aspect to consider.

Research studies have shown that loneliness is a significant occurrence among people in their early to late twenties or young adulthood (Von Soest et al., 2020); in fact, recent research shows that young adults under 30 years old may experience a greater impact of loneliness than the elderly (Beam & Kim, 2020). As such, it is necessary to examine how loneliness relates to the other psychological phenomena of interest such as attachment styles and resilience in this population.

1.1.4   Resilience as a Moderator

Research by Rutter (2012) describes resilience as continuity. For example, depending on the circumstances of the risk factor(s) in their environment, as well as the resources available to them, patterns of resilience in individuals will change over time (Rutter, 2012). Building on the interactive human and environmental viewpoints, Ungar (2013) identified an evolutionary understanding of resilience with mutual human and environmental relationships where individuals navigate and negotiate substantive psychological, emotional, and physical environmental capital as well as incorporating social and cultural aspects. The tendency for resilience may begin with genetics and neurobiology, but environmental factors are heavily influential. Personal variables, such as self-efficiency, maturity, and coping, as well as social and group variables such as

families, mentors, and group capital, affect resilience ability (Fergus & Zimmerman, 2005; Southwick, Vythilingam, & Charney, 2005).

Resilience in the face of adversity can be understood as a mechanism that mediates stress or trauma response (Sarrionandia et al., 2018). Thus, the two variables are linked: how much a trauma or hardship affects an individual depends on how resilient that individual is (Cho & Kang, 2017). A person's capacity to react adaptively to physiological, psychological, or social difficulties in the community is the most significant aspect to overcome adversity (Cho & Kang, 2017). Resilience can protect against the development of insecure attachment patterns because of the individual's ability to detect and survive an internal or external threat and have the capacity to reorganize after a threat; they have a solid sense of self-knowledge and self-worth to detect and manage insecure attachment (Weise, 2019). Individuals who have low self-knowledge and self-esteem are unlikely to realize they are suffering from insecure attachment. On the contrary, a person with high emotional knowledge will detect these threats. In order for a person to survive the insecure attachment, they need to possess optimism, self-efficacy, empowerment, and perceived social support (Weise, 2019). One should feel that they can overcome a threat, not by themselves but through empowerment. They also need to be optimistic that they can overcome the threat. Moreover, they need an assurance that their social network is there to help them overcome through social support. After resolving the threat, resilience is vital in reorganizing. In the process of reorganizing, self-esteem and quality of life are essential.

Self-esteem determines whether or not a person is worth reorganizing (Weise, 2019). If there is communal and a positive environmental social support to around them, they are more likely to regroup and move through the adverse experience.

The loss of a close emotional attachment to other people induces intimate solitude or loneliness, while losses in one's social network induce relational solitude (Maes et al., 2017). Friends and intimate relationships are a more personal level of relations for young people, while family and community represent a different qualitative experience (Child & Lawton, 2019). The disparity between emotional and social isolation indicates that loneliness happens in multiple forms depending on which different areas of the person's needs are fulfilled. For instance, an adolescent may feel fulfilled with their peer relationships, but lonely with parents and relatives. The reverse is true as well. Isolation cannot therefore be minimized by substituting of one kind of contact with another.

Attachment theory stresses that early childhood relationships are related to the way individuals perceive themselves, others, and the way they organize intimate relationships (Cederbaum et al., 2020). A study of the relationship between attachment and loneliness among young adults confirmed the relation between these two variables and shows that those who have a secure attachment feel less lonely than those who do not have a secure attachment style (Helm et al., 2020).

Apart from attachment styles, resilience may also be an important consideration when looking at loneliness among young adults. Research has shown that high resilience levels allow people to use thoughts and optimism to leave unwanted interactions and

return to the ideal state (Afifi, 2018). It is well-established that a secure attachment style is associated with resilience in later life, possibly by way of encouraging self-care and self-efficacy habits in the growing persons (Bender & Ingram, 2018). However, there is little empirical research that has examined whether resilience has a conditioning effect on the relationship between ACEs and attachment.

Given the significance of resilience throughout the lifespan, it is reasonable to expect that it also impacts whether young adults develop loneliness. For example, people who have ACEs, yet are high in resilience, may not develop insure attachment patterns in close relationships, while those low in resilience may develop insure attachment patterns in close relationships, which, in turn, may make them more susceptible to loneliness.

1.2 OVERVIEW OF THE PRESENT STUDY

There are two main research questions that are addressed in this current study. First, does insecure (anxious and avoidant) attachment in adults mediate the relationship between adverse childhood experiences and loneliness among young adults? And, if insecure (anxious and avoidant) attachment mediates this association, which dimension has the stronger effect? Second, if insecure (anxious and avoidant) attachment mediates the adverse childhood experiences and loneliness relationship among young adults, do attitudes and behaviours consistent with resilience moderate this mediated relationship? The present study hypothesizes that insecure attachment will mediate the association

between ACEs and loneliness in emerging adulthood. Additionally, resilience will

moderate the mediated relationship between ACEs and insecure attachment.

1.3 THEORETICAL FRAMEWORK

There are two important theoretical frameworks that guide this research and

provide rationale for this study: attachment theory and patterns of relatedness (i.e.,

feelings of closeness and connectedness with others). For the current study, these two

theories were used to develop a conceptual foundation to support the research questions.

1.3.1   Attachment Theory

Psychoanalyst John Bowlby (1940) developed the Attachment Hypothesis stating

that based on findings of young children's actions removed from their parents, "child's

attachment beheaviour is activated especially by pain, fatigue, and anything frightening"

(Bowlby, 2005, p.3). According to Bowlby (2005), the child must be able to connect with

their caregiver and evoke a caregiver's response from them to survive. This "affectional

connection" with the caregiver provides the infant with a "safe haven" that returns during

difficult times and a secure foundation for the discovery of the universe (Lai & Carr,

2018). When children communicate with caregivers, they establish an interior model of

their work compared to others through infancy and childhood. This model allows

children to anticipate and appreciate others' reactions, understand the feelings involved

with emotional interactions, and, ultimately, is a central feature of personality growth.

A stable relationship style evolves if caregivers are attentive to a child's needs. Securely connected children can operate independently and connect with others to have a healthy identity, an ability to withstand anxiety, and the ability connect with others to develop social relationship (Lai & Carr, 2018) In comparison, individuals with insecure attachment may react with fear, excessive emotional reactions, or avoidance features in response to stress, including the repression or disappearance of negative feelings. These attachment habits have a significant influence not only on the growth of infants, but later into the adults' personalities and relationships, including intimate interactions.

Children who are exposed to personal or family adversity at a young age, such as childhood abuse, adverse circumstances, or domestic violence, are likely to develop an insecure attachment style. Rooted in the fear of trusting the other in a relationship, these children avoid relationships all their life and fear intimacy (Henschel et al., 2020). Due to overvaluation of self-reliance and autonomy, such children may grow up to be emotionally distant, causing serious problems in establishing long-term relationships in adult life (Henschel et al., 2020).

Among adults, perceived dangers and threats activate the attachment system. When an individual is threatened, they seek the proximity of protection from their partners. When people find these attachments that they can rely on for protection and support, they have a secure attachment (Shaver & Mikulincer 2002). On the other hand, when attachment figures are unavailable, individuals develop an insecure attachment model. The behavioural system of attachment maintains emotional stability and helps

form a positive image and positive attitudes towards partners (Shaver & Mikulincer 2002). The behavioural system of attachment further facilitates a relaxed and confident engagement, broadening personal skills and actualizing their potential skills.

1.3.2   Patterns of Relatedness

Relatedness and connectedness provide an additional framework from which to examine the flow of effects between ACEs and loneliness. This framework was developed by Lee and Robbins (1995), drawing on Kohut's (1984) psychoanalytic self-psychology theory. In the current research, relatedness is regarded as a feeling of being close to or belonging and valued by, another individual, therefore developing a sense of social connectedness. Hence, the definition of connectedness is "an expression of the interdependent self in which the self and other are interconnected and mutually dependent on each other" (Lee, Draper & Lee, 2001, p.310). Early caregiver-child relationships are understood to have a bearing on later interpersonal relatedness among adolescents and young adults. Further, social connectedness was found to be associated with anxiety and low self-esteem (Lee & Robbins, 1998, as cited in Lee, Draper & Lee, 2001)

Connectedness is understood to be the reciprocal of relatedness. When young individuals have a history of childhood relatedness and are able to enter new relationships during young adulthood with similar degrees of relatedness, they reciprocate the support, belongingness and closeness to the other in the relationship just as they receive it from the other (Karcher, 2004). This reciprocal response is called connectedness (Lee & Robbins, 1995). This sense of social connectedness develops early in life and continues

16

as the person grows and enters adulthood. During adulthood, the accumulation of early

life experiences is concretized into a consistent and stable sense of self, leading to a level

of connectedness that does not usually vary as the young adult navigates further

relationships in life (Lee & Robbins, 1998).

1.3.3   Combination of Attachment Style and Patterns of Relatedness

The theoretical link between attachment and patterns of relatedness is apparent

since belongingness, closeness, relatedness and connectedness are seen as stemming from

the same childhood relationships that play a role in creating an attachment style. Lee,

Draper, and Lee (2001) explain, for example, that "parent-child attachments provide an

initial sense of security and likeness with others" (p. 310) that later form the foundation

for interpersonal connectedness. Kohut's original theory (1984) incorporates the

theoretical connection between insecure attachment and connectedness. In his

speculation, because children often imitate the behaviour of their elders growing up, or at

least are deeply influenced by it, they learn poor connectedness patterns from childhood.

Growing up, individuals with low connectedness tend to rely on dysfunctional

interpersonal behaviours that are typically a result of insecure or avoidant attachment

styles (Kohut, 1984; Lee, Draper & Lee, 2001). For example, for individuals with high

connectedness, "adolescents and adults … identify shared interests and talents (e.g.,

reading, sports) as well as develop appropriate interpersonal skills (e.g., sociability,

intimacy, assertiveness) to attract and maintain relationships" (Lee, Draper & Lee, 2001,

p.311). Conversely, for those with low connectedness, "they instead rely on more

dysfunctional interpersonal [behaviours] characteristic of people with insecure attachment styles (e.g., avoidant and hard to be sociable, intimate, assertive" (Lee, Draper & Lee, 2001, p.311).

It has also been theorized that personal attachment style influences the communication, transmission, and evocation of emotions in the "other" in the relationship (Randall & Butler, 2013). Specifically, individuals with higher levels of avoidant attachment fail to evoke any reciprocal positive coupling emotions in romantic relationships (Butner et al., 2007). Thus, attachment style regulates the emotions people feel in interpersonal relationships (Shaver & Hazen, 1993), and can also affect what emotions are engendered in the other partner while in the relationship (Schoebi, 2008).

At the theoretical level, therefore, it seems useful to consider both attachment style and pattern of relatedness when examining the chain of influence from ACEs through resilience to loneliness among young people. Combining the attachment style and interpersonal relatedness theory allows us to explore how the attachment bond developed as a child continues to affect and influence romantic relationships into adulthood.

CHAPTER 2: METHODS

2.3 PARTICIPANTS

The present study is based on a previous database collected to examine various

aspects of both social and psychological wellbeing conducted by Dr. David Kealy and his

team at the University of British Columbia, approved by the UBC Research Ethics Board.

The full study examined a community sample ($N = 250$), age 18 to 80 years old. In the

present study, we focused on young adult participants ($N = 203$), age 18 to 30, recruited

from the community in Western Canada. Advertisements were distributed in local print

media; recruiting posters were put up around the university campus, in local cafes, local

libraries, and on community bulletin boards; and online advertisements were placed on

select websites. Each participant received a $30 honorarium upon completion of an in-

person session. All participants were screened for age (18 or older), capacity to provide

informed consent, and fluency in English.

The present study sample consisted primarily of females ($n = 151$) with a mean

age of 22.27 ($SD = 3.32$). Participants primarily identified as White ($n = 90$) and Asian ($n = 78$). The community sample was chosen to include a diverse community population. In

the present study, young adults were selected to focus on the influence of ACEs on

loneliness in emerging adulthood (age 18 to 30). See Table 1 for a full demographic

characteristic profile of the participants.

2.2 PROCEDURES

The research team was responsible for administering a series of questionnaires, data collection, and data entry. As the first step, all participants were invited to provide consent. They were then seated in a quiet room, given the instructions, and left to complete the questionnaires on their own. Eligible participants completed a series of questionnaires and surveys which took about 1.5 to 2 hours. Participants were paid the incentive once they handed in the completed questionnaires. The study was approved by the Dalhousie University Research Ethics Board for the purpose of secondary analysis.

2.3 MEASURES

Self-report psychometric measures were used to obtain scores on the variables of interest to the current study. The measures are listed and briefly described below.

2.3.1   Demographic Information

The demographic questionnaire collected the following information: age, gender, ethnicity, sexual orientation, current relationship status, highest level of education completed, current employment status, and annual household income.

2.3.2   Adverse Childhood Experiences (ACEs)

ACEs were measured via the 10-item Adverse Childhood Experiences scale developed to measure the adversity one experienced in childhood, that is, before the age of 18 (Dong et al., 2004; Dube et al., 2003; Felitti et al., 1998). The scale taps five different types of childhood abuse: physical abuse, sexual abuse, verbal abuse, physical

20

neglect, emotional neglect, as well as alcoholic parent, mother who was a victim of domestic violence, imprisoned family member, a family member diagnosed with mental illness, and absent parent. Each type of adversity counts as one score. The ACE score is the total number of adverse experiences out of 10 (did not occur = "0"; occurred = "1"). While acknowledging that there are several other degrees and variations of adversity not covered in this original scale, such as bullying and racism, the ACE score is meant as a guideline to warn of any possibly serious health consequences following from childhood trauma. In the original study, these ten traumatic events were chosen for being the most common ones being mentioned by 300 members of Kaiser services (Felitti et al., 1998). Previous studies' findings showed good to excellent test-retest reliability (Dube et al., 2003). Since then, ACEs have been tested across a number of different populations (Mersky & Janczewki, 2018).

2.3.3   Experiences of Close Relationship (Anxious and Avoidant)

The Experiences of Close Relationship Scale (ECR-S) was originally developed by Brennan, Clark, and Shaver (1998) across six studies. The measure tapped adult attachment based on the three types of infant-caregiver attachment styles: anxious, secure, and avoidant (Brennan, Clark & Shaver, 1998). Wei et al. (2007) shortened the form to a twelve-item self-report questionnaire after performing various measures of reliability and validity to the original version to assess adult attachment style. Factor analysis confirmed the contribution of two major factors to the final score of the shortened version. These factors were interpreted as Anxiety and Avoidance and showed

similar validity to the original same-named factors in the bigger scale (Wei et al., 2007). The responses to each item are recorded in Likert-type format using a seven-point scale. The scores are labeled from lowest to highest as the following: "strongly disagree" (1-point) to "strongly agree" (7-points). According to Wei et al. (2007), the lower score refers to securely attached. The items 2, 4, 6, 8 (reverse), 10, 12 make up the sum score for anxiety attachment in adults; therefore, higher scores on these items demonstrates anxiety attachment dimensions. Items 1 (reverse), 3, 5 (reverse), 7, 9 (reverse), and 11 make up the sum score for avoidant attachment in adults. Again, a higher score on these items refers to participants having avoidant attachment dimensions.

The ECR-S demonstrates excellent internal consistency and test-reliability for subscales of adult attachment anxiety and avoidance (Wei et al., 2007). Coefficient alpha in the present sample was 0.76 for the ECR-S overall, .74 for anxiety attachment, and 0.74 for avoidance attachment.

2.3.4   The Brief Resilience Scale

The Brief Resilience Scale (BRS) was developed by Smith et al. (2008) to assess the ability to bounce back from stress. Although as a concept, resilience had been gaining research focus for many decades, the pre-existing measures of resilience focused less on the characteristics of resilience itself, and more on the resources or other factors that make someone more or less resilient. Smith et al.'s (2008) scale consists of six items carefully written to reflect the key features of the definitions of resilience found in the literature. Three items are positively worded (i.e. *"I tend to bounce back quickly after*

hard times"), and the other three are negatively worded (i.e. *"I have a hard time making*

it through stressful events") to control response sets. The instructions ask the respondents

to rate their agreement to each statement using a five-point Likert type scale ranging from

1 ("strongly agree") to 5 ("strongly disagree"). To score, add up the numbers for all six

times (range: 6-30) and divide the total sum by the number of questions answered.

Subsequent research has shown that the BRS is an effective tool for gauging the

resilience levels of an individual (Kyriazos et al., 2018). The scale shows high validity

and reliability when measured using different statistical tests and performs well when

applied in research on various populations and scenarios (Kyriazos et al., 2018).

2.3.5   Three-item UCLA Loneliness Scale

Hughes et al. (2004) developed the short scale for loneliness to address the

problem of using long questionnaires in telephonic surveys. They adapted their three-item

version from the expanded, standard version, the Revised-UCLA Loneliness Scale (R-

UCLA; Russel, Peplau & Cutrona, 1980). With twenty-items and a self-report format,

this original version was not suitable for telephonic surveys. To derive the short version,

Hughes et al. (2004) conducted factor analysis on self-report data from the original scale.

Of the three factors found, they selected the three items with highest loadings on the

loneliness factor. The three-item UCLA Loneliness scale consists of the following three

items: "*How often do you feel that you lack companionship?," "How often do you feel left*

out?," and "*How often do you feel isolated from others*?" Each item is responded to on a

three-point Likert-type scale ranging from 1 ("hardly ever") to 3 ("often"), with the

summed total ranging from 3-9. Scores are divided, with scores 3-5 meaning "not lonely," and 6 and up indicating "lonely." The measure showed similar patterns of association as the twenty-item version as well demonstrated good internal consistency reliability for the three-item in a telephone sample (Hughes et al., 2004). The higher sum total reflects a greater degree of loneliness.

2.4 DATA ANALYSIS PLAN

The current study investigates the influence of insecure attachment patterns (anxious and avoidant) as parallel mediators of the association between ACEs and loneliness in young adults. Gender was controlled for in all models, as women tend to report higher emotional distress (Matud, 2004). Further, the research team tested if resilience moderates the effect of ACE on insecure attachment patterns (anxious and avoidant). Our hypotheses are divided into: first, a parallel mediation model, and second, a moderated mediation model.

Both the parallel mediation model (Model 4) and moderated mediation model (Model 7) were run using Andrew Hayes' (2012) ordinary least squares (OLS) regression with the PROCESS macro version 3.5 in SPSS version 26.0. The parallel mediation model tests whether each insecure attachment (anxious and avoidant) style accounts for the relationship between ACEs and loneliness, and tests the relative strength of each as a mediator as shown in Figure 1. Moreover, the moderated mediation model implies that a resilience (moderator), may reduce the impact of ACEs on insecure attachment patterns

in mediating the relationship between ACEs and loneliness. In other words, resilience is moderating the first pathway of the mediation as shown in Figure 2.

The sampling distribution of moderated mediated effects was calculated by using Hayes' method bootstrapping (10,000 samples) to approach a normality. To regard 95% confidence intervals to be scientifically significant, the upper and lower 95% confidence intervals do not contain zero.

CHAPTER 3: RESULTS

3.1 PRELIMINARY ANALYSES

The dataset was reviewed thoroughly for missing responses. One participant was omitted from the analysis as they had over 50% missing data. The statistical assumptions were completed by checking the linearity and homoscedasticity assumption among each variable and we conducted 6 additional regressions (i.e., ACEs predicting each mediator [anxious and avoidant]; each mediator predicting loneliness; ACEs and two mediators predicting loneliness), looked at Loess curve looking at the relationship between each variable to check for outliers. The skewness and kurtosis of each variable were reviewed using descriptive statistics and visual histogram. The moderate non-normality was found for the ACEs score by using the mediation bootstrapping method (Preacher & Hayes, 2004), which does not assume data are normally distributed and as a result, the analysis was not affected. The other variables were within the range between -0.5 and 0.5. Table 2 represents the correlation between the main variables of interest such as ACEs, BRS, ECR-S anxious attachment subscale, ECR-S avoidant attachment subscale, and loneliness scores. Loneliness was significantly correlated with all four variables.

In terms of the number of ACEs total score, approximately, 40.4% ($n = 82$) of the total study sample reported zero on ACEs. Approximately, 23.2% ($n = 47$) reported having one ACE. Approximately 36.4% ($n = 38$) reported having two or more on ACEs.

The most frequent adverse childhood experience was on parental separation/divorce as seen in Table 1.

3.2 PARALLEL MEDIATION MODEL

First, we tested if insecure attachment patterns (anxious and avoidant) mediated the association between ACEs and loneliness among young adults. Results from the parallel mediation model (see Fig. 1; Table 3) supported our first hypothesis, insecure attachment patterns mediated the associated between both ACEs and loneliness ($b = .192$, 95% CI [.091, .309]). However, when examined the relative mediating effect of the two types of insecure attachment patterns (anxious and avoidant), only the anxious attachment pattern was a significant mediator in the association between ACEs and loneliness ($b = .165$, 95% CI [.082, .264]).

Further, those who reported more ACEs were likely to report anxious attachment patterns in adult relationship ($a_1 = 1.606$, $p < .001$) and anxious attachment patterns were subsequently related to more loneliness among young adults ($b_1 = .103$, $p < .001$). In contrast, the indirect effects through avoidant attachment pattern was not different than zero ($b = .026$, 95% CI [-.015, .081]). Moreover, the direct effect of ACEs on loneliness controlling for insecure attachment patterns was not statistically significant.

3.3 MODERATED MEDIATION MODEL

To examine the second hypothesis, we used the moderated mediation model to test the relative indirect a pathway effects of ACE and resilience on the mediator, anxious

27

attachment pattern (avoidant attachment pattern was discarded for the moderated

mediation model) (See Fig 2; Table 4). As illustrated in Figure 2, the interaction between

ACEs and resilience was significantly related to anxious attachment pattern (b = -1.165, p

< .001). Second, the results indicated a significant direct effect of anxious attachment

pattern to loneliness (path b) and a non-significant direct effect of ACEs to loneliness.

Finally, to test the indirect effect of ACEs on loneliness, through attachment anxiety, at

different levels of resilience, the bootstrap confidant interval indicating the index of

moderated mediation when resilience was low was significant (b = .238, standard effort

(SE) = .048 and 95% CI [.150, .338]) (zero not included in the 95% CI). The same was

found for resilience at the mean (b = .135, (SE) = .038 and 95% CI [.065, .214]) (zero not

included in the 95% CI), whereas when resilience was high (1 *SD* above the mean), the

association between ACEs and loneliness via attachment anxiety was non-significant. The

mediating affect of attachment anxiety was thus strongest among young adults who

reported relatively low resilience.

CHAPTER 4: DISCUSSION

The current study aimed to uncover the association between ACEs and loneliness via insecure attachment styles (e.g. anxious, avoidant), and to further understand whether resilience moderates this mediated associations in the context of emerging adult. We found partial support for our hypotheses in the present study. Our first finding was that the mediating effects of anxious attachment pattern on the association between ACEs and loneliness among young adults was significant, but not for avoidant attachment pattern. This finding supports the argument that people who have experienced numerous adverse events in their childhood are more likely to develop anxious attachment patterns in adulthood with their intimate partner and are thus more inclined to feel loneliness in return. This finding aligns with previous studies that showed positive association between childhood adversity and anxious attachment patterns (Boyda, McFeeters, & Shevlin, 2015) and, subsequently, the relationship between anxious attachment patterns and loneliness (Hazan & Shaver, 1987). One possible explanation for this relative importance is that people who have developed an anxious attachment are more likely to overemphasize unsatisfied needs, which, in turn, increases psychological distress related to the absence of intimacy and emotional connection, or attachment (Hazan & Shaver, 1987). Moreover, based on previous findings, attachment patterns developed in childhood, such as one's behaviour and emotional connectedness with their caregiver, continues to be consistent and stable across different adult relationships (Fraley &

Shaver, 2000). This supports the ideas presented through attachment theory of how individuals with anxious attachment patterns may fear rejection and be apprehensive of potential loss in relationships due to their internal working model of self, and are therefore less capable of regulating their negative emotions. As a result, individuals with anxious attachment patterns are less likely to cope with relationship stressors and adapt to changes, which may explain the propensity for loneliness. However, we did not find a significant association between avoidant attachment patterns in adulthood with intimate partners and likeliness to feel loneliness as we had anticipated. Based on the literature, one could interpret these results as meaning individuals with avoidant attachment patterns are more likely to demonstrate dismissive traits, distrust others, possess a positive view of self-identity, not accept emotional support from others, and have high self-esteem deriving from their high accomplishments, consequently leading avoidant people to defensively deny a need for close relationships, and use defensive strategies to limit closeness and intimacy with their partners under threat or stress conditions (Brennan & Bosson, 1998). Avoidant individuals may end romantic relationships after observing signs of threats to avoid their related vulnerabilities. If the threats have already occurred, they tend to use remedying measures to suppress threats and expressions of distress (Shaver & Mikulincer, 2002). Interestingly, in a study by Fraley and Shaver (1997) looking at adult attachment patterns, they found that when participants with dismissing-avoidant traits were asked to share about the loss of a loved one and then told to supress their emotions and thought processes, these individuals were capable of deactivating their

30

physical responses triggered by distressful thinking, as well as supress their negative feelings. As a result, compared to individuals with anxious attachment, those with avoidant attachment are capable of using defensive strategies as adaptive and functional ways of coping with their inner feelings. According to Lee et al. (2001), individuals who express low degrees of connectedness are more likely to feel distance from others and portray dysfunctional interpersonal behaviours similar to avoidant attachment patterns (e.g., difficulty with intimacy and sociable) (Hazen & Shaver, 1987).

It is important to note that the direct effect between ACEs and loneliness was not statistically significant, which suggests that these associations can be explained exclusively in regards to indirect effects through insecure attachment—anxious attachment pattern. Further, there was a significant total effect between ACEs and loneliness, which aligned with existing research examining the effect of ACEs on psychological and psychosocial health concerns including loneliness (Boyda, McFeeters, Shevlin, 2015; Herzog & Schmahl, 2018). Additionally, participants who experienced ACEs in their childhood were more likely to experience loneliness and were more inclined to develop anxious attachment styles as adults. Gender had been controlled in these mediation analyses, indicating that the mediating effect of anxious attachment on the link between ACEs and loneliness held, regardless of participants' gender.

Interestingly, when resilience was added as a moderating variable on these inter-relationships, the mediating effect was moderated. At high resilience, the mediating effect was non-significant. On the other hand, at moderate and low resilience, the mediating

31

effect was significant. ACEs and anxious attachment patterns were moderated when resilience was high. Thus, as people had lower resilience, they were more likely to experience anxious attachment patterns and experienced correspondingly higher loneliness. This finding implies that being more resilient reduced the mediating effect of anxious attachment patterns on the link between adverse childhood experiences and loneliness. Conversely, being less resilient made participants with anxious attachment patterns in adulthood more susceptible to loneliness when they reported ACEs.

Furthermore, at high level of resilience, the mediating effect of attachment anxiety was non-significant. Those with higher resilience who suffered more ACEs were protected from developing anxious attachment patterns and consequent loneliness. At the highest levels of resilience, it is possible that this strength may have already created a buffer from anxious attachment styles and thus from loneliness, regardless of ACEs. There have been many researchers who have shed light on how resilience plays a role in the lasting effects of ACEs (Ross et al., 2020; Bellis et al., 2018; Leitch, 2017).

According to Raffael Kalisch et al., (2015), focusing on resilience as opposed to pathophysiological (i.e. illness, disorders) offers a paradigm shift in research, which can help develop treatment and prevention strategies. Ungar and Liebenberg (2019) define resilience from a social-ecological framework and state that it is essential for young adults to have the capability to search for resources along with the necessary support system available in their environment whether it is provided by the families, communities or governments. Further emphasizing that researchers cannot solely put the focus on

individuals themselves but also account for different environmental factors surrounding young people such as social, cultural, psychological and physical resources available for access is important in enhancing one's well-being. A possible explanation could be that young adults with higher ACEs had to navigate and seek resources like psychological, social, spiritual and physical needs in their surrounding environment (i.e., in community, congregation, school); in return, they negotiated the process collectively with supportive facilitators to successfully find a way to wellbeing (Ungar, 2002). This supports the findings that engaging in community-based missions helps build resilience at both individual and family levels (Beer, 2020). Therefore, through the process, resilience factors as a buffer against developing anxious attachment style in adulthood with their romantic partners, as resilience paves the way for mental well-being through security factors in the individual as well as in community, to remove barriers to success, the capacity to prepare and seek help, mange stressors (Harms et al., 2018) and having better quality of life (Lu et al., 2017), mental well-being and life satisfaction (Aldridge et al., 2019), positive psychosocial outcomes (Brody, Miller & Chen, 2016) due to their capability to be proactive with the necessary resources available.

The social-ecological framework also aligns with the bio-psycho-social model, where more emphasis is given to promote the clients and their inter-relationship within the physical environment, such as families, close relationships, as well as the community one belongs in and associates with. For example, when working with individuals experiencing loneliness with histories of adversity and insecure attachment patterns, it is

33

imperative to build trust by being an active listener and incorporating resilience-building practices through different means, such as participating in community advocacy, increase access to resources, acknowledging group diversity (e.g., cultural, spiritual, individual), and ensuring that social policy development is available in community-based services with culturally-relevant approaches to healing and care (Brown, Johnstone & Ross, 2020). Under neoliberalism, health care services oftentimes harm and stigmatize the service users' as the ones responsible for their own well-being, while limiting services, care and resources for service users to navigate on their own. In addition, clinicians can do further damage under neoliberalism through re-traumatization, triggering distrust, inequality and instability in negotiating for care. Therefore, when providing care, clinicians should focus on the external factors that contribute to loneliness instead of focusing on internal attributes, and collaborate with individuals to hear their perspectives on their own stories.

Our finding aligns with previous findings looking at young adults among Danish sample, where results indicated that all dimensions of resiliency were negatively related to loneliness, meaning that high levels of resilience indicated a low likelihood of feeling lonely (Jakobsen et al., 2020). As discussed previously, young adults may experience greater negative consequences of loneliness compared to other age groups (Achterbergh et al., 2020; Beam & Kim, 2020; Von Soest et al., 2020) resulting in poor psychological wellbeing (Achterbergh et al., 2020, Cacioppo & Cacioppo, 2018) and physical health-related outcomes (Mersky, Janczewski & Topitzes, 2017; Hughes et al., 2017; Leigh-

Hunt et al., 2017) that could have a greater public health concern. As described in the

original CDC-Kaiser ACE study (Felitti et al., 1998), ACEs is highly related to the effect

of family functioning. Therefore, ACEs and lack of secure parent-child attachment

growing up, as well as lack of family and social support in their environment are

contributing factors that hinder adjustment to their new roles as they transition into

adulthood becoming independent. This finding applies to when individuals are away from

home, starting college, partaking in work or career placement, starting their own family

and taking more responsibilities. Therefore, as individuals are evolving to form new

social networks, interacting with peers from different age groups, those who experience

loneliness are likely to gain more stress from these social interaction (Cacioppo &

Hawkley, 2009). In the aforementioned study, lonely peoples' brain images revealed that

people who are lonely are less rewarded when it comes to social interactions and more

likely to experience distress than healthy controls. Conversely, Rafaeli and Achdut

(2020) recently reported that social capital (such as trust in social and community

relationship) acted as a buffer between current adversity and loneliness among young

adults. The authors labeled the buffering role of social capital as resilience. In another

study, Sahin & Serin (2017) found that seeking psychological help successfully mediate

the link between loneliness and insecure attachment styles among young adults. These

researchers interpreted the propensity to seek out help in context of social-ecological

framework.

One way to address the feelings of loneliness among emerging adults is to use resilience-building exercises in therapeutic intervention (i.e. trauma-informed practice) by helping young adults with ACEs to build strength and challenge negative unreasonable thoughts and providing quality services by building a supportive rapport. Additionally, using culturally appropriate interventions that enhance motivation and engagement in learning as well as developing positive experiences can lead to positive emotion regulation.

4.1 PRACTICAL IMPLICATIONS

These findings have implications for clinical therapy and treatment approaches for adult survivors of childhood adversity or trauma and stressors. The findings also suggest new avenues for future research. As health care providers (social workers, counsellors, psychologists, psychiatrists, etc.) are aware of the impact of adversity or trauma and stressors on young adulthood, it is essential to approach care from the perspective of a trauma-informed perspective to establish a support system that helps to better "[understand] the nature of clients' histories of trauma" (Kealy & Lee, 2018, p.292). In clinical settings, incorporating empathy, sensitivity to client's adversity, building a strong rapport where trust has been established, and mitigating the potential re-traumatization can help to create a safe environment for clients to process their emotions that may have been compromised after exposure to adversity (Kealy & Lee, 2018). Creating a trusting therapeutic relationship can enhance the individual's engagement and ability to evaluate

and collaborate regarding their potential risk for difficulties in building interpersonal relationships and experiences of loneliness. It is necessary to validate the individual's strength and skills in order to empower them in the development of interpersonal skills. Moreover, for developing an integrated approach to assessing for, and targeting, attachment anxiety when working with emerging adults who suffered ACEs and want to address or prevent loneliness. An integrated approach might mean incorporating attachment-focused therapies along with interventions that seek to modify internal working models, providing a safe environment where individuals feel emotional and physically safe, and providing clear expectations of what proposed therapy entails. Importantly, assessing for and working to enhance resilience as a means of addressing attachment patterns in the aftermath of ACEs is a significant factor. Incorporating resiliency could have practical implications such as having an earlier intervention embedded in the pre-school system or primary-level education to help leverage the positive benefits of resilience later in life. Ungar (2015) explains resilience from the social ecological perspective and identifies those who adapt and cope well to adversity are distinguishable in two processes: first, navigate (e.g. motivation and personal power), and second, negotiate resources available for the child and youth integrating their diverse background. In order to build resilience for those with insecure attachment who experienced adversity in childhood, policy makers need to implement culturally, socially, and emotionally relevant interventions, facilitated efficiently by responding to one's changes, building connections, creating structure, and seeking out a social support

network, as well as allocating resources to communities in need, modifying policies to include cultural aspects, economically in need families and available accessible resources (Ungar, 2014). Hence, further research should focus on examining how resilience moderates the effect of ACEs on insecure attachment in a longitudinal study, perhaps through multimethod reporting and collecting data such as self-report data, preliminary assessment and interviews to interpret social and ecological implications in young adulthood, and using methods that assess relational interaction in real time to provide a deeper understanding of the relationship. This method highlights the importance in clinical practice of exploring feelings of loneliness in adult victims of childhood adversity or trauma, while bearing in mind the future psychological consequences of loneliness, depression, suicidal ideation, and social dysfunction.

Another important aspect to social intervention is the growing trend of social-prescribing. Research conducted in the United Kingdom (Foster et al., 2020) found that when people were referred to a social-prescribing service, their loneliness score in comparison to pre- and post-support showed a reduction in self-reported ratings of loneliness. Another important social implication is the negative impact of social media on loneliness and overall mental health among young adults with high anxious attachment style. Interestingly, research has found that loneliness is what drives an individual to use social media (Nowland et al., 2018, Shaw & Grant, 2002). Perhaps lonely young adults may use new avenues such as social media to support themselves in interacting with others differently through social media. For instance, some researchers have found that

social media usage reduces the feeling of loneliness and depression, while using social media increases one's self-esteem and further decreases depression and researchers have discussed this as possibly having control over their interaction of people they forge strong, and meaningful relationships with through social media, possibly protecting and preventing against risks of mental health issues (Caplan et al., 2009; Shaw & Gant, 2002). Though it is important to address loneliness for individuals with ACEs where attachment has been negatively impacted, service providers may encounter challenges in their efforts to connect with the individuals as a result of their attachment patterns. Although early signs of neglect, adversity or trauma can affect a person's ability to develop healthy attachments, it is possible for health professionals such as social workers, counsellors and educators to play an important role in educating emerging adults to help them assess their own thought patterns and behaviour actions to take initiative in building healthy relationships. Additionally, using common-interest and humour to establish and build rapport with individuals with adversity and stress could potentially help to remedy adverse effects on health (Colom et al., 2011). Individuals who experienced ACEs and have developed insecure attachment may benefit from using an online social support system, as it allows online users to have the ability to retain control of their social interactions (Oldmeadow et al., 2013), leading them to feel more secure and more able to develop positive views of social support and reduce feelings of loneliness (Benoit & DiTommaso, 2020).

Further, studies now recognize that we need to focus on subtypes of loneliness and explore their interaction with childhood psychological trauma and its influence on adult health outcomes (Hyland, 2016). Recent research has highlighted the imperative that practitioners must develop resilience and psychological flexibility among patients, especially sufferers of childhood maltreatment. Resilience not only positively affects an adult survivor of childhood adversity or traumatic experiences in terms of attachment styles, it also affects their general social skills and their cognitive process, attitudes, and symptoms (MacPhee, Lunkenheimer & Riggs, 2015; Levine, 2003). Therefore, when implementing policy, it is imperative to incorporate resilience-building in youth intervention strategies, such as educational programs and working backwards to find ways to build resilience so that interventions can be made before more serious problems arise. It is important to help the client trace—using examples and parallels in their own real life—the flow between resiliency resources, adversity, and loneliness (or even social relationships) (Baugh et al., 2019).

4.2 LIMITATIONS AND FUTURE DIRECTIONS

The greatest limitations of the current research remains the convenience sampling of the target population. Despite being a community sample, the data in the current study represents only a small subset of the larger population; hence, this can lead to under representation of certain groups or over representation within the sample. Conversely, convenience sampling is beneficial as it is easy and quick to collect data. The current

research does not examine what comprises resilience; therefore, it does not explain where the resilience-promoting cognitive processes originate from. Because of this, it would be important for future research to address where the resilience cognitive processes derived from, whether it is the interaction with individual's environment or adaptation process. Further, the current research was a cross-sectional study, which means that all the variables were measured at the same point in time. In such a scenario, it is not possible to attribute a causal relationship to all the intercorrelations and mediation and moderation effects discovered. As well, due to the nature of ACEs score, this design also confounds the effect of backwards recall, memory, and reporting on the pure memory of a negative experience as it happens. In order to delineate the chain of influence better, it is advisable to repeat the study using a longitudinal design, whereby researchers can follow the participants and collect data at different times of their life to allow for an assumed causal relation to take place.

Another limitation in the present study was not examining the subtypes of loneliness, such as social (i.e., social integration) and emotional (i.e., close attachments). Future research should focus on the subtypes of loneliness, and examine whether the moderating and mediating influences obtained in this study hold for different subtypes. Another avenue of future research is to attempt to discover the chain of mechanisms by which resilience provides a buffer from loneliness despite having high ACEs. Of particular interest would be the cognitive and attitudinal correlates of resilience, which may directly or indirectly relate to the social climate of a patient's life, as findings from

41

such a line of research would be even more concretely of help to clinical practitioners. Enlarging the sample size and broadening the selection strategy of the sampling process will also increase the generalizability of the findings.

Although our findings showed no gender differences within the analyses of parallel mediation model and moderated mediation model, over 70% of the participants identified as female; replicating the study with a larger sample could potentially show differences in results if there was equal representation of each gender. One could also account for "toxic masculinity," where males could be less likely to participate in the study as they may be more likely to suppress their emotions and conform to more traditional male gender roles.

CHAPTER 5: CONCLUSION

Our findings highlight the imperative of the association between adverse childhood experiences and loneliness among young adults. Findings imply that anxious attachment patterns with romantic partners in adulthood play a mediating effect that contributes to a greater likelihood of developing feelings of loneliness. Moreover, findings suggest that resilience plays a significant role in protecting young people who experienced adversity from developing anxious attachment patterns that would in turn contribute to loneliness. Therefore, future research could potentially investigate where resilience has manifested to better understand the pattern and process. Additionally, inputting educational intervention strategies such as incorporating resilience in early education, and prioritizing the connection of youth in marginalized communities with tools such as online support systems in order to enhance resilience to ultimately improve the clients' overall mental health and wellbeing.

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Table 1

Summary of demographic characteristics of the sample.

Characteristics	*n* (%)
Age Mean(SD)	22.24(3.27)
18 - 21	105 (51.7%)
22 - 25	60 (29.6%)
26 - 30	38 (18.7%)
Gender	
Female	151 (74.4%)
Male	50 (24.6%)
Other	2 (1.0%)
Race or ethnicity	
Caucasian or White	90 (44.3%)
Asian	78 (38.4%)
Biracial	19 (9.4%)
Other	16 (7.9%)
Highest level of education	
Less than high school	2 (1.0%)
High school or equivalent	68 (33.5%)
Some college, technical/trade qualification	66 (32.5%)
Undergraduate degree	56 (27.6%)
Graduate degree	11 (5.4%)
Personal annual income	
Less than $20,000	159 (79.5%)
$20, 000 to 49,999	36 (18.0%)
$50,000 to $100,000 or more	5 (2.5%)
Current employment status	
Full time employment	27 (13.4%)
Part time employment	84 (41.6%)
Unemployed	89 (44.0%)
Disabled, not able to work	2 (1.0%)
Relationship status	
Single	83 (41.1%)
Dating or Committed relationship	112 (55.4%)
Married	7 (3.5%)
Sexual Orientation	
Heterosexual	173 (85.2%)
LGBTQ2	30 (14.8%)
Adverse Childhood Experiences (ACEs)	
0	82 (40.4%)
1	47 (23.2%)
2 or more	74 (36.4%)

SD, standard deviation

Table 2

Descriptive statistics and correlations among the
primary variables.

	M	SD	1	2	3	4
1. Total score of Adverse Childhood Experiences	1.27	1.47	-			
2. Brief resilience scale	3.23	0.81	-0.173*	-	-	-
3. ECR-S anxious attachment	22.69	6.90	0.342**	-.380**	-	-
4. ECR-S avoidant attachment	16.30	7.17	0.087	-0.076	0.118	-
5. Loneliness Scale	5.37	1.83	.225**	-0.436**	.440**	.284**

Note. *Correlation is significant at the 0.05 level (2-tail).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 3

Unstandardized coefficients for insecure attachment patterns (M) mediating the association of adverse childhood experiences (IV) with loneliness (DV).

Mediators (M)	Effect of IV on M (a)	Effect of M on DV (b)	Direct effect (c')	Indirect effect (a x b)	Indirect effect (95% CI)	Total effect (c)
Total effect			0.093	0.192	**[.906, .309]**	.284**
Anxious attachment	1.606***	0.103***		0.165	**[.082, .264]**	
Avoidant attachment	0.447	0.059		0.026	[-.015, .081]	

Note. Bolded confidence intervals do not include a 0, indicating a significant effect. All analyses controlled for gender.

CI, confidence interval

*$P < 0.05$.

**$P < 0.01$.

***$P < 0.001$.

Table 4

Conditional indirect effects of adverse childhood experiences (IV) moderated by resilience (W) on loneliness (DV) through anxious attachment pattern (M).

Indirect effect	Resilience (W)	Effect	Beta BootSE	BootLLCI	BootULCI
	-1 SD	0.238	0.048	**0.150**	**0.338**
ACE moderated by resilience to anxious attachment to loneliness	Mean	0.135	0.038	**0.065**	**0.214**
	+1 SD	0.032	0.050	-.070	0.125

Note. Bolded confidence intervals do not include a 0, indicating a significant indirect effects. All analyses controlled for gender.
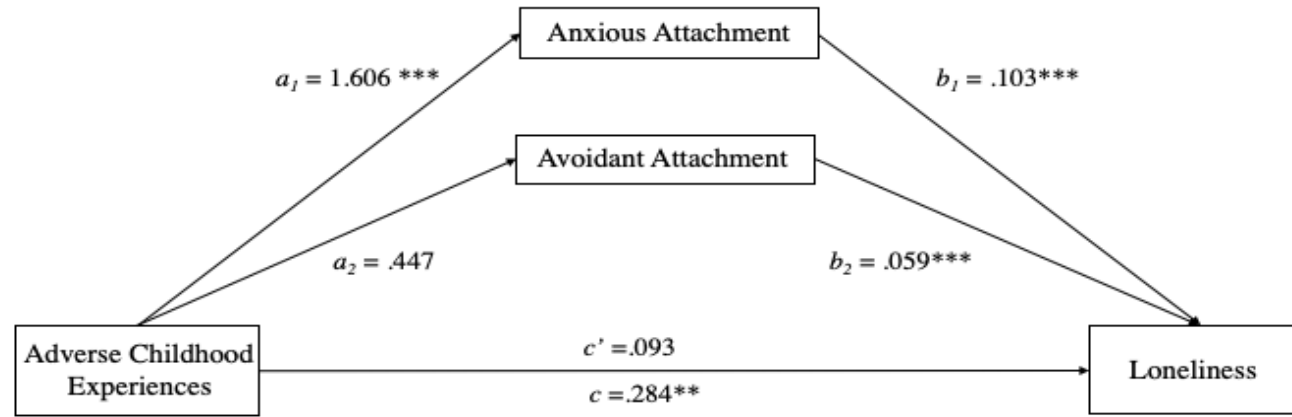
Figure 1: Parallel mediation model (unstandardized path coefficients) for insecure attachment patterns mediating the association of adverse childhood experiences and loneliness while controlling for gender. *p < .05, ** p < .01, ***p < .001.
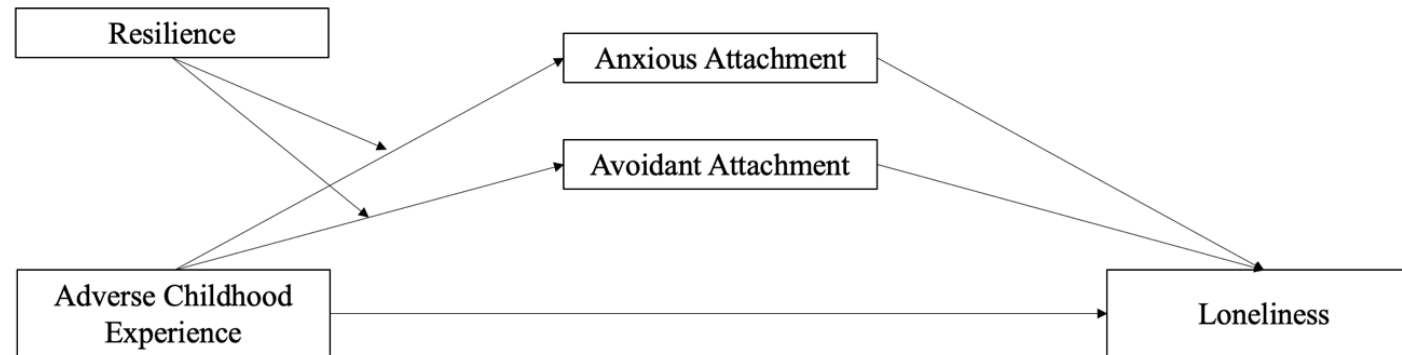

Figure 2: Moderated mediation model for adverse childhood experiences moderated by resilience to anxious and avoidant attachment pattern to loneliness.