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Examining How Individual Approaches to Learning Support Mentorship Relationships and Greater Well-Being for At-Risk College Students

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By

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We certify that we have read this document and approve it as adequate in scope and quality for the degree of Master of Psychology.

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Abstract

A large body of research suggest positive educational contexts may buffer against negative effects of childhood trauma for some individuals (Bessey, 2017). However, to date, only a small body of research has examined the characteristics of students' approaches to learning that may interact with mentorship experiences in higher education and support greater well-being for this population (Mak, 2012). Studies suggest mentorship relationships in higher education are critical for the well-being of at-risk students, as they provide greatly needed social support and guidance (Al Makhamreh & Stockley, 2019). Literature also indicates that generative force characteristics of students may support mentorship experiences (Bronfenbrenner & Morris, 2006; Mak, 2012). The present study examines individual approaches to learning for those who have experienced at least three adverse childhood experiences and who have completed at least two years of higher education. The role mentorship plays in strengthening the relationship between curiosity, hope, and growth mindset of at-risk college students and their well-being was explored. A total of fifty participants between 20 and 29-years-old completed the Growth Mindset Scale, the Five-Dimensional Curiosity Scale, the Hope Scale, the Patient Health Questionnaire-9 Depressive Assessment, and The Mentorship Effectiveness Scale. Results were examined using multiple regression. Findings corroborate studies highlighting how greater levels of force characteristics (i.e., curiosity) are correlated with lower levels of depression and stronger mentorship experiences. However, results indicate that mentorship did not moderate the relationship between these force characteristics and lower levels of depressive symptoms.

CHAPTER 1: INTRODUCTION

An array of studies has shown that adverse childhood experiences (ACEs), which include physical abuse and emotional neglect, have been linked to a decreased quality of life, including mental health challenges, alcoholism, allostasis, and early mortality (Luecken and Gress, 2010; Morrow and Villodas, 2018). These events, which occur in both the child's family ecology and community, are likely to cause harm and distress, frequently affecting an individual's physical and psychological development (Kalmakis & Chandler, 2014; Van der Kolk et al., 2005). The cumulative risk model (CR), which assesses the effect of concurrent risk factors, has shown that cumulative risk is predictive of a higher frequency of negative developmental outcomes in people, including disruptions in typical neural development and academic challenges (McLaughlin et al., 2014). Numerous individuals who experience moderate to high rates of ACEs early in life have been found to struggle in school settings, both academically and socially (Bessey, 2017). Many of these students experience difficulties with learning, attention, and peer relationships. According to Briere's self-trauma model, a child who suffers from abuse is likely to experience a disruption in their development, particularly to the attachment system and to their cognition (Briere, 1996).

While students with low levels or no adverse childhood experiences may also struggle academically and socially, a dosage effect has been found between adverse childhood experiences and poor grades and drop out (Blodgett & Lanigan, 2018; Banyard & Cantor, 2004). However, research suggests that for a subset of individuals who experience moderate to high rates of ACEs, school can be a refuge and a place where they encounter badly needed sources of social support, specifically from a mentoring relationship (Bessey & Carlos, 2017; Crisp & Cruz, 2009). These students have been shown to thrive in school settings (Bessey, 2017). For these

individuals, despite often requiring on-going mental health support and other assistance, the academic environment has been shown to be promising in supporting them to achieve developmental competence (Hines et al., 2005). While research has demonstrated a relationship between mentorship and greater well-being for this population (Bessey, 2017), little is known about the individual differences in approaching learning and how these differences may influence the quality of the mentorship relationship, and subsequently, student well-being for those with histories of traumatic childhoods.

CHAPTER 2: LITERATURE REVIEW

Bioecological Model of Human Development

To understand the experiences of college students with moderate to high levels of adverse childhood experiences and the common challenges they face, I first outline the systems they are situated in and their active roles within these networks, using the bioecological model of human development created by Urie Bronfenbrenner as an overarching theoretical framework. Using this model with particular focus on student-mentor interactions, I embed other key theories that are important for understanding the experiences of students with moderate to high levels of adverse childhood experiences, giving focus to earlier relationships. These theories include 1) attachment theory, 2) the convoy model, and 3) alloparenting.

The bioecological model is a theoretical framework for the scientific study of human development across time that is concerned with continuity and change in the biopsychological characteristics of individuals, at the individual and group level (Bronfenbrenner & Morris, 2006). The model consists of four important elements within the systems, which are the person, process, context, and time (PPCT) (Krebs & Davies, 2009). Human development is said to occur through reciprocal interactions that become progressively more complex between the human being and the persons, objects, and symbols in the present environment (Bronfenbrenner & Morris, 2006). In order for an interaction to be successful, it must occur with frequency over a period of time (Bronfenbrenner & Morris, 2006). The interaction of these four elements is not independent, but rather, interdependent.

According to the bioecological model, proximal processes are “the primary engines of development” (Bronfenbrenner & Morris, 2006, p. 798). Proximal processes are reciprocal

interactions between a human being and the persons, objects, and symbols around them (Bronfenbrenner & Morris, 2006). For development to occur, an individual must participate in an activity and for it to be fruitful, the activity must be on-going, such as an interaction between a parent and child, teacher and student, or mentor and mentee (Bronfenbrenner & Morris, 2006). While responses to a child may be influenced by the child's gender, maturity, copying skills, temperament, disability, and illness, research suggests that particular characteristics of the individual person may set proximal processes in movement (Bronfenbrenner & Morris, 2006). Specifically, particular behavioral dispositions of the individual have been found to facilitate continual engagement between a person and the persons, objects, and symbols around them. These include generative characteristics rather than developmentally disruptive ones, such as flexibility, curiosity, and hope (Bronfenbrenner & Morris, 2006; Lisberg & Woods, 2018).

Attachment Theory

Whether the characteristics expressed by the child are disruptive or generative in nature, however, the end goal for the child and many adults with histories of childhood trauma, is to form a secure attachment and build an internal working model of security (Bowlby, 1982). While our ecological conditions have evolved, infants carry within them an instinct to maintain contact with their primary caregiver(s), due to our evolutionary past (Belsky, 2005). Previously, infants were at high risk of early mortality because they were unable to maintain thermoregulation, could fall in a fire, or wander from their homes and be eaten by a predator (Belsky, 2005). Infants who were able to sustain the attention from a caregiver were more likely to survive and thrive, and therefore, this evolutionary internal drive continues to be present within us today (Belsky, 2005).

Beginning at birth, children seek support from an attachment figure (Bowlby, 1982). Even in the womb, fetuses who can hear prefer their mother's voices (Hughes, 2012). Following birth, the mother's responses to the child supports the distressed infant in balancing its negative emotions (Bowlby, 1982). Typically, an attachment is formed with the mother and other primary caregivers, following several engagements and exchanges. An attachment orientation is then formed in which children have a mental network of what to anticipate (Hughes, 2004). From these experiences, children form internal working models of attachment, in which the self, close relationships, and important interactions are included (Gillarth et al., 2008). These models are often referred to throughout an individual's life, serving as a lens in which we make sense of experiences (Gillarth et al., 2008). Research suggests that children raised by supportive and present parents are likely to construct a self that feels worthy and able to cope; whereas children raised by parents who are non-responsive, threaten abandonment, or abandon the child, will most likely construct a belief that the self is not good enough or worthy of love (Bowlby, 1969). For example, a study found in a study of doctoral students with high levels of adverse childhood experiences, one student was reported saying:

> Hearing compliments about myself are physically uncomfortable. I can't cope with them so for somebody to say, 'You've done a good job,' …That kind of stuff makes me physically uncomfortable to hear. I've been conditioned, I think, to be comfortable hearing negative rhetoric about me if that makes sense. (Bessey, 2017, pg. 33)

Whereas the former persons are likely to develop healthy interpersonal relationships, the latter have been found to frequently engage in poor attachment behaviors that resemble their parents (Ricks, 1985). However, this is not the case for all individuals. For some who have experienced maltreatment, supplementary figures may provide additional support and serve as models (Horan

& Widom, 2015). Some of these additional supports may be friends, while others may be family members, teachers, foster parents, professors, and therapists. While studies have shown that maltreated children have greater difficulty maintaining social relationships, when achieved, they may serve as a protective factor between maltreatment and poor mental health outcomes in adulthood (Sperry & Widom, 2013). Studies suggest that these alternative figures may alter one's pathway, contribute positively to one's convoy of important relationships, and buffer the negative effects of severe trauma or stress (Sperry & Widom, 2013).

Linked Lives and Convoy Model

The convoy model was proposed by Antonucci et al. (2004) as a way to describe and visually represent those people who are emotionally close and significant to a person. Convoys both shape and protect an individual, providing them advice and support, as well as sharing important knowledge and examples of triumphs and challenges (Antonucci et al., 2004). The model separates three levels of closeness, theoretically and empirically, with the innermost circle representing the greatest level of closeness, or as Bowlby denoted—our attachment relations. Kahn and Antonucci (1980) describe the members in this circle as, "so close and important to you that it is hard to imagine life without them." The middle and outer circles are the individuals that are important to you, but less important than the innermost circle with the outer most circle being the least close, but still important. When a convoy relationship is positive, particularly convoys in the innermost circle, the convoy will likely support an individual in learning, growing, and maturing (Antonucci et al., 2004). When the relationship is not optimal, however, it can undermine one's aspirations and lead them down a less desirable path (Antonucci et al., 2004). For college students with histories of childhood trauma, negative convoys, particularly those in the innermost circle, are likely to be common. For example, in a study of resilient

doctoral students in California with high levels of adverse childhood experiences, negative convoy experiences were numerous, with a student quoted saying in reference to his father:

> I remember my dad telling me that at the end of the school year that I was no longer going to be allowed to live there and I would not ever see my brother again, and he told me all the whole typical spiel of what a loser I was, so that night I ran away, because I had goals, and dammit, I was going to make them happen (Bessey, 2017, pg. 32).

Another participant described how their innermost circle was non-existent and so they looked for models to emulate stating:

> Since I don't have a mom or a dad, I look at male role models, and I look at people that I inspire to be like. I try to read books like them so I can see how they think like so I can partake in some of these philosophies and maybe try to be that type of man, rather than the being the man that I was brought up to be. (Bessey, 2017, pg. 32)

Bailey, a doctoral student with eight adverse childhood experiences described hearing being spoken to very differently at school than the way she was spoken to at home, stating:

> I think navigating through college; it's more than just getting an education. It's being able to validate that I'm capable. Honestly. I think it's just so I don't have to hear the gibberish that's in my head, the narrative that my mother used to say about, 'You're a lazy ass,' or 'You're worthless,' or, 'You can't do anything or blah blah blah.' (Bessey, 2017, pg. 31)

While studies have highlighted the importance of positive convoys, little research has explored what these convoys look like for adults with traumatic childhood upbringings.

Alloparenting

When we consider who helps a person develop into their adult selves, it is not solely parents, even in individualist societies (Emmott, 2019). Others who may serve in helping to parent young people include grandparents, neighbors, coaches, teachers, therapists, etc. A developing being's experience with these individuals is referred to as alloparenting (Emmott, 2021). An uncommon way of rearing offspring, alloparenting is only displayed among 9-10% of mammals (Emmott, 2021). However, it existed among hunter-gathers and continues to occur today among human beings around the world (Emmott, 2021). While classic attachment theory proposed by Bowlby and Ainsworth aligns with the exclusive-caretaker model, the multi-caretaker model of alloparenting suggests there is more to attachment theory and the creation of an individual's internal working model than solely the relationship between child and mother.

By a child's third birthday, roughly 90% of children in the United States have experienced consistent alloparenting care (Emmott, 2021). Research by Pluess & Belsky (2009), suggests that the quality and quantity of this type of parenting may predict social-emotional and cognitive-linguistics outcomes and these experiences may interact with a child's temperament to predict future behavior and social competence. Margaret Mead expressed concerns with the less frequent allo-parenting that occurs in many American homes, arguing that nobody is asked to live alone the way we do (Mead, 1975). Mead believed greatly in the important role community had on the developing person. Bronfenbrenner believed the same and went further to articulate that it is not as much the support that matters, but how the help is received by the child (Bronfenbrenner, 2006). While theories in sociology and developmental psychology propose alloparenting is an important aspect to consider, little research has yet to explore the role of the

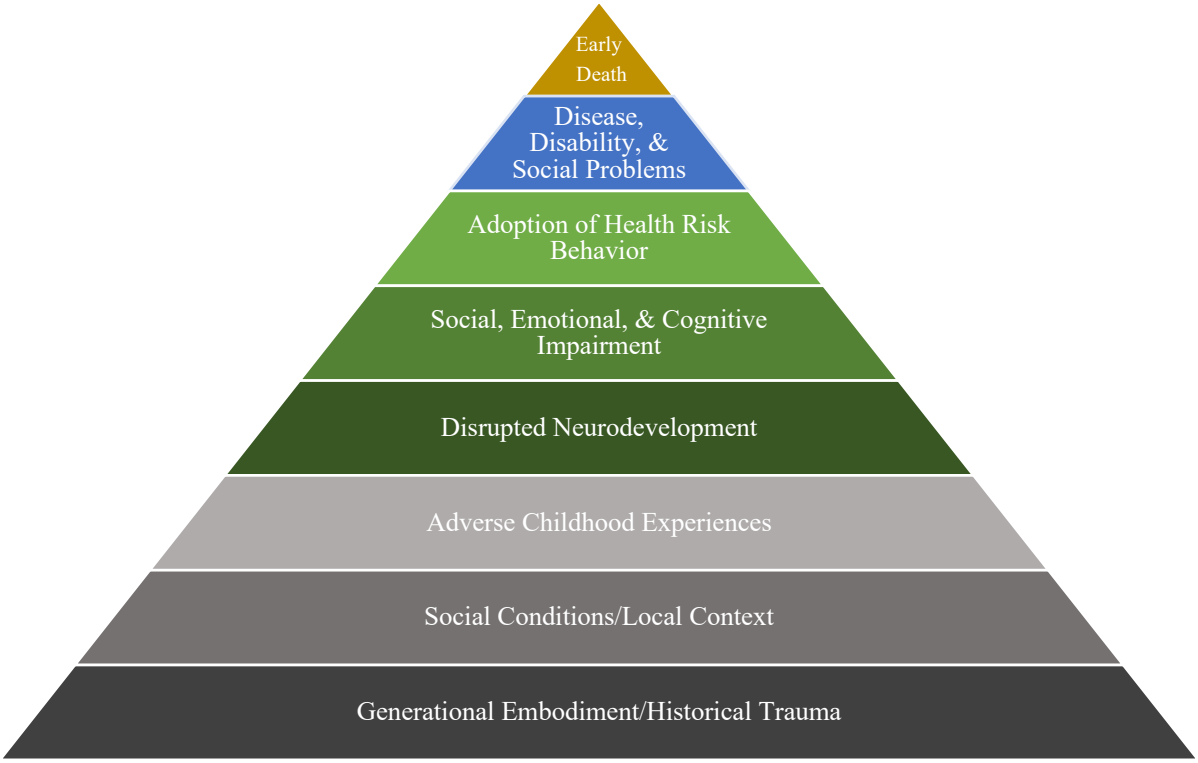
individual in these relationships and how they may support greater well-being for at-risk college students.

Adverse Childhood Experiences

Research suggests that many college students have histories of adverse childhood experiences (ACEs), which refer to traumatic events that occur before the age of 18 (Read et al., 2011; Felitti et al., 1998). Between 1995 and 1997, Kaiser Permanente first examined the effects of adverse childhood experiences on the health and well-being of patients by providing a questionnaire to more than 17,000 individuals with questions pertaining to three domains: child abuse and neglect, household challenges, and socio-behavioral factors (Felitti et al., 1998). The original questionnaire consisted of ten questions, including "Did a parent or other adult in the household often swear at you, insult you, put you down, or humiliate you?" Though it should be stressed that the ACEs questionnaire was not originally intended for individual or clinical use and does not encompass all childhood trauma, individual reported total scores have been found to be associated with health outcomes (Finkelhor, 2013). Research using this measure suggests exposure to ACEs is high. Felitti et al. (1998) found that more than 50% of individuals reported having experienced at least one ACE, and 25% reported experiencing 2 or more. Not only is exposure high, but it is also problematic. The more ACEs individuals experience, the more likely they are to report adverse developmental outcomes (Finkelhor, 2013). For instance, a linear relationship was found between an increase in adverse childhood experiences and an increase in health risks for alcoholism, drug abuse, depression, and suicide attempt (Felitti et al., 1998). Similarly, a study on self-harm behaviors in an in-patient rehabilitation center concluded that women with four our more ACEs were more likely to engage in repeated self-harm behaviors (Cleare et al., 2018). Another study determined that individuals with higher ACE

scores are less likely to complete high school, be unemployed, and live below the federal poverty level (Metzler, 2017). Given the pervasive and serious problems associated with cumulative exposure to ACEs, it is vital to explore ways of minimizing their negative influence, by considering protective factors, such as mentorship.

Figure 1: The ACE Pyramid, updated (CDC, 2020). Mechanism by which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan.



Psychiatric "Disorders"

Each year, more than three million children are reported to have experienced abuse and/or neglect in the United States (Wang & Daro, 1997). This includes hitting a child, kicking them, swearing, putting them down, and not providing basic physical and emotional support. Such childhood experiences are correlated with psychiatric disorders, including "post-traumatic stress disorder" (PTSD), "borderline personality disorder (BPD)," complex post-traumatic stress disorder (CPTSD)," and "attention-deficit hyperactivity disorder

(ADHD)" (van der Kolk, 2007; Ackerman et al., 1998; Kramer et al., 2016). Often beginning early in life, these multiple, and/or chronic traumatizing events frequently place children at risk for academic, behavioral, and other challenges (Kramer et al., 2016). The ACE study authors (Felitti et al., 1998) suggested that childhood trauma often resulted in anxiety, anger, and depression in children. Poor self-regulation skills further place these individuals at risk for risky health behaviors, including substance use, unsafe sexual activity, and poor dietary behaviors (Shin et al., 2018). However, for some children, despite their environments and likelihood of engaging in risky behaviors, they succeed in following a different path and find safety in school (Bessey, 2017).

Psychological Well-Being

An important aim for psychology is to understand the pathways and their mechanisms that lead to greater well-being. Researchers studying well-being have found that those who are satisfied with their lives follow at least one path towards happiness, whether that be by way of hedonism or eudaimonia (Peterson, 2005). Hedonism is the attempt to limit pain and maximize pleasure, whereas eudaimonia is being true to one's virtues (Peterson, 2005). While happiness may be achieved through either pathway, it is believed that the greatest well-being to result from eudaimonia, as those who have a resting state of negative affect may still feel fulfilled and content with their lives if they live in harmony with their true virtues (Peterson, 2005).

According to Ryff and Keyes (1995), psychological well-being is comprised of 6 factors, including purpose in life, personal growth, positive relationships, environmental mastery, autonomy, and self-acceptance. The Scales of Psychological Well-being was designed to gauge each of these dimensions (Ryff & Keyes, 1995) as it relates to eudaimonia. Individuals who experience moderate to high rates of trauma early in life and yet find refuge in school report

experiencing indicators of psychological well-being (Bessey, 2017). For at-risk individuals who do seek higher education as a pathway to greater well-being, they often do so as a means to escape their circumstances, engage in a supportive community, and create non-familiar relationships that provide normal models of success and interaction (Bessey, 2017). While these non-familiar relationships with mentors have been found to support greater well-being for this population, little is known about the individual differences in how these students engage with learning that may strengthen these relationships, and subsequently, support their well-being.

Depression and Well-Being

Studies on adverse childhood experiences (ACEs) and depression have found a strong dose-response relationship between one's ACE score (0-10) and depressive disorders (Chapman et al., 2004). Other studies have found that low subjective well-being significantly predicts higher levels of depressive symptoms (Grant et al., 2013). In a ten-year cohort study, researchers found that the absence of eudemonic well-being was a risk-factor for depression. While depression is not the inverse of well-being, literature has found that individuals with lower levels of well-being are at a higher risk for being depressed (Wood, 2010).

Schools as Positive Contexts

Education can serve as an important protective factor for individuals who experience hardships early in life, as attachment to teachers and active engagement in school may provide a pathway in which maltreated children may attain developmental competence (Lynch & Cicchetti, 1992). In a study examining foster youth attending college, researchers found that for all 14 participants, school was reported as a haven where they felt supported (Hines et al., 2005). In a recent qualitative study, featuring 7 doctoral students who experienced high rates of ACEs early in life, researchers found that schools served as positive contexts for their development (Bessey,

2017). Across interviews, themes of positive mentorship supporting resilience emerged (Bessey, 2017). Researchers concluded that at least some individuals who experience high rates of ACEs: 1) use education as a means of escape, 2) participate in school activities to remain engaged, and 3) view academic success as an opportunity to feel successful and receive validation (Bessey, 2017). These findings are underscored by another qualitative study that found that caring adult relationships, mental health, education, and youth development were associated with resiliency among individuals with moderate to high ACE scores (Malti & Noam, 2008). In another study, one community college student referred to school as his anchor, conveying that despite all his challenges, he continued with classes (Bonanno & Mancini, 2012). Taken together, these findings suggest that for at least some individuals, mentoring relationships in the academic setting may buffer the effects of early trauma. Remaining in school may be a way to move out of trauma and towards greater well-being (Bonanno & Mancini, 2012). However, more research is needed to understand why mentorship may buffer the effects of early trauma for some individuals and not for others with particular attention given to the role of not only the mentor in the bi-directional relationship, but the student's approach to learning.

Mentorship

Throughout time, we as a species have relied on the passing down of knowledge from one generation of our ancestors to the next (Nakamura et al., 2009). Though we may not stop to think about how our ancestors have shaped us, we are aware that activities that are important to us, such as calling our friends, cooking meals, and traveling, are interwoven network of practices for maintaining the knowledge humans have learned overtime (Nakamura et al., 2009). Mentors are key actors in the transmission of such knowledge, especially for individuals who are raised in difficult lives where parents are absent, neglectful, and/or harmful (Antonucci, 2001; Bessey,

2017). An exemplary mentor has historically been considered someone who advises, sponsors, hosts, and guides a beginner who is transitioning from a place of dependence with limited experience to independence and competence. A good mentor may support the mentee's achievements by providing them with opportunities to be successful and sharing responsibility and conveying trust (Nakamura et al., 2009).

While most are familiar at a basic level with what "mentoring" is, there is little consensus over its specific characteristics and little understanding of the bi-directional relationship and its mechanisms (Berk et al, 2005). Mentors serve many roles, including teachers, a guide, and someone to look towards as a model or a source of moral support (Levinson et al., 1978), and these relationships are personal and reciprocal. Jacobi (1991) highlighted the following as core aspects to the mentorship relationship: "(1) focuses on achievement or acquisition of knowledge; (2) consists of three components: emotional and psychological support, direct assistance with career and professional development, and role-modeling; (3) is reciprocal, where both mentor and mentee (aka protégé) derive emotional or tangible benefits; (4) is personal in nature, involving direct interaction; and (5) emphasizes the mentor's greater experience, influence, and achievement within a particular organization" (p.66). It is a relationship that is focused on the growth of an individual by way of various forms of assistance, including professional and career development (Brown et al. 1999; Campbell and Campbell 1997). It a relationship that that occurs through a series of stages, which begins with the initiation stage followed by a cultivation stage and ending with separation and ending (Kram, 1983).

Historically, the mentoring relationship has focused heavily on the role of the mentor (Levinson et al., 1978) with little emphasis on the role the individual student plays in the dyad as an agent of the proximal process (Bronfenbrenner and Morris, 2006). As researchers have

suggested, to further understand the effect that the mentorship relationship has on an individual, further research is needed to examine not only the role of the mentor, but also the role of the individual in their approaches to learning, to understand if particular characteristics, such as curiosity, growth mindset, and hope, support a successful mentorship experience (Campbell & Campbell, 1997).

Curiosity

Curiosity is a vital human motivation that effects learning, the acquisition of knowledge, and life fulfillment (Kashdan et al., 2018). Those who are said to be curious are known to ask many questions (Kashdan et al., 2018). Those who regularly act on their curiosity are said to, "expand knowledge, build competencies, strengthen social relationships, and increase intellectual and creative capacities" (Kashdan et al., 2018, p. 130). Recently, models of curiosity have worked to differentiate features. For example, the revised Curiosity and Exploration Inventory (CEI-II) worked to differentiate *stretching* (ascribing for new knowledge and experiences) and *embracing* (an ability to accept our ever-changing and dynamical lives) (Kashdan et al., 2009). Other scales have explored breadth versus depth of curiosity (Ainley, 1987), as well as epistemic, sensory, and perceptual curiosity (Collins, Litman, & Spielberger, 2004; Litman, Collins, & Spielberger, 2005; Litman & Spielberger, 2003; Mussel, 2010). Some models have worked to explore curiosity within particular life-domains, such as one's willingness to engage in financial, physical, and social risks for the opportunity to experience new adventures. The 5-dimensional curiosity scale (Kashdan et al., 2018) attempts to build on these theories and methodologies to create one, overarching single framework. From this framework, five dimensions of curiosity were coined: 1) Joyous Exploration, 2) Deprivation Sensitivity, 3) Stress Tolerance, 4) Social Curiosity, and 5) Thrill Seeking.

Research has found that the quality of proximal processes, such as the mentorship relationship, varies as a result of both the characteristics of the individual, such as their level of curiosity, and the environment. Bronfenbrenner and Morris (2006) theorize developmentally generative force characteristics most likely to set proximal processes in motion, such as curiosity. Curiosity has been distinguished from other positive emotions in that there is greater emphasis on growth and expansion rather than familiarity and simplicity (Cupchick & Gebotys 1990). Researchers found that further developing curiosity among students was possible by implementing intrinsically-motivating, inquiry-based project learning and that such projects strengthened student engagement with peers and mentors (Mackinnon, 2017). However, for at-risk youth, an amalgamation of setbacks has been found to decrease student curiosity and engagement (Mackinnon, 2017).

Hope

Hope is defined as one's belief that with agency, they can create pathways that lead to desired goals (Snyder, 2002). Put another way, "Hope is a positive motivational state that is based on an interactively derived sense of success (a) agency (goal-directed energy), and (b) pathways (planning to meet goals)" (Snyder et al., 1991, p. 287). Possessing consistent higher levels of hope is correlated with better outcomes in academics, athletics, physical health, and psychological adjustment (Snyder, 2003). Additionally, hope has been linked to copying with adversity (Munoz et al., 2022). A meta-analysis found that hope has a positive relationship with physical and mental health, interpersonal skills, and healthy behaviors (Ong et al., 2018). Little is known though about how it shapes the mentorship experience.

Growth Mindset

Students with a growth mindset believe that intelligence is malleable and they themselves have the ability to change (Dweck, 2008). On the other hand, students with a fixed mindset believe that their intelligence is static, and they are not in control of this outcome (Dweck, 2008). Many students with complex trauma histories have been more likely to view setbacks as having less potential for success and not "belonging" at school (Smith, Beauliueu, & Seraphine, 1995). Contributing factors to attainment gaps for these students are vast, including environmental factors, cultural influences, and parental beliefs (Smith, Beauliueu, & Seraphine, 1995). However, recent research on growth mindset interventions which focus on cultivating the belief that students can increase their intelligence and succeed academically has shown to significantly improve academic performance. In one study of female students in math, a growth mindset intervention was found to significantly improve standardized test scores (Good, Aronson, & Inzlicht, 2003). In another study of students in rural areas of the United States, a mindset intervention was found to indirectly increase motivation to learn (Burnette et al., 2018). While research suggests that at-risk students are less likely to exhibit a growth mindset, the role of growth mindset in influencing the mentorship relationship in higher education has yet to be fully explored.

CHAPTER 3: PRESENT STUDY

Though they may hide their stories, a percentage of students in higher education have complex trauma histories (Brogden & Gregory, 2019; Bessey, 2017). Research has found that those with four or more ACEs were at a 460% risk of being severely depressed and a 1,220% increased risk of committing suicide (ACEs Too High, 2016). Though these students are often in great need of social support, only some manage to secure this in higher education and thrive. While research suggests that mentorship is vital for the well-being of at-risk students, these students are often not identified and only some manage to form a secure relationship with a mentor (Bessey, 2017). Though qualitative research reveals that the educational context, specifically, mentorship, may play an important role in helping some individuals thrive despite high levels of childhood trauma, quantitative research is needed to examine how positive individual approaches to learning may strengthen proximal processes between students and instructors and enhance well-being for this population.

The purpose of this study is to examine how mentorship may moderate the relationship between an at-risk student's level of curiosity, hope, and growth mindset and their well-being in higher education. Given that research on coaching has found entrepreneur's coachability to be related to particular individual characteristics and that such coachability is correlated with greater mentorship experiences, as well as research highlighting that teachers and professors may serve as surrogate attachment figures for at-risk students, it is hypothesized that higher levels of curiosity, hope, and growth mindset will strengthen the mentorship relationship and these relationships will support greater well-being for this population (Kurato et al., 2021; Bessey, 2017).

CHAPTER 4: METHODOLOGY

Procedure

Prior to completing this study, a pilot study using Amazon Mturk was conducted with 1,000 participants to confirm a high prevalence of adult individuals who have experienced three or more adverse childhood experiences and who have completed at least a 2-year degree. The present study used Amazon Mturk for a second time with 1,000 new participants to identify those who met the inclusion criteria. Participants who met the inclusion criteria were provided a consent form, containing information regarding the purpose of the study, procedures, benefits and risks to participating, voluntary participation, counseling services, and contact information for researchers. From 1,0000 participants, 120 individuals were identified as meeting criteria and from this sample and asked to complete additional surveys. Fifty participants in total completed the 1) Growth Mindset Scale, 2) Five-Dimensional Curiosity Scale, 3) Hope Scale, 4) Patient Health Questionnaire-9 Depressive Assessment, and 5) Mentorship Effectiveness Scale. Data was then analyzed using both quantitative and qualitative methods to understand whether hope, curiosity, and growth mindset shaped the mentorship experience for at-risk students and whether mentorship experiences supported greater levels of well-being.

Participants

One hundred and twenty (N=120) young adults between the ages of 20 and 29 with ACE scores of 3 or more were recruited using Amazon Mturk from a pool of 1,000 individuals. Based on a Gpower analysis and seeking power of 0.80, this sample size of 114 or more was sufficient. However, fifty individuals in total responded to the follow-up survey, and three responses were removed due to fast response time (less than five minutes).

Amazon Mturk workers are diverse with regards to age, gender, and ethnicity; as such, they are largely representative of the broader United States population (Silberman et al., 2010). Additionally, there is a higher prevalence of educated individuals on Mturk than in the general United States population. As this study aims to understand how the relationship between receiving mentorship in the educational context and well-being is moderated by individual characteristics among those in higher education, the Mturk platform provides access to participants who meet our inclusion criteria. All participants reported having at least a 2-year tertiary degree program, reported experiencing 3 or more adverse childhood experiences before the age of 18, and felt proficient in reading and comprehending English. More females were surveyed than those who identify as men, non-binary/third gender, trans male or trans female.

Table 1

Demographic Characteristics

Variables	N	%
Gender		
Male	11	23%
Female	31	65%
Trans female	1	2%
Trans male	0	0%
Non-binary/Third Gender	2	4%
Other	0	0%
Ethnicity		
White	31	65%
Black or African American	8	17%

Asian	0	0%
Native Hawaiian or Pacific Islander	2	4%
Other	5	10%
Highest Level of Education		
Associate degree	26	54%
Bachelor degree	18	38%
Masters degree	2	4%
PhD/JD/MD	1	2%

Note. N=48

Measures

Participants in this study completed six measures, including 1) The original 10-ACEs questionnaire, 2), Growth Mindset Scale, 3) The Five-Dimensional Curiosity Scale, 4) The Hope Scale, 5) The PHQ-9 Depression Assessment, and 6) The Mentorship Effectiveness Scale.

Original 10-ACEs Questionnaire (Wingenfeld, et al., 2010). This 10-item questionnaire probes possible childhood trauma individuals may have experienced prior to their 18th birthday. The questionnaire was designed to be used with adults over the age of 18. Though not originally intended to be used as an individual measure, recent studies in which it has been used as an individual measure have found higher rates of ACEs to be associated with psychiatric disorders, alcoholism, allostasis, and early mortality (Luecken & Gress, 2010). Questions include 5 individual experiences, including emotional, physical, and sexual abuse and 5 familial experiences, including having a parent who is an alcoholic or a mother who is a victim of domestic violence. Individuals who have experienced the trauma, report a 1 for that item.

Otherwise, they leave that item blank. Higher scores mean the individual experienced higher rates of trauma. Prior use of this scale suggests it is internally consistent (Cronbach's alpha = .88; Wingenfeld, K. et al., 2010).

Growth Mindset Scale. This 3-item questionnaire uses a 6-point scale (1= strongly agree; 6 = strongly disagree) to examine how much students agree with three statements about whether their efforts can influence their intelligence, such as, "You can learn new things, but you can't really change your basic intelligence." This measure has been used in previous research with first generation college students (Claro et al., 2016). Higher scores are associated with students feeling that they have control over their intelligence. Lower scores are associated with a fixed mindset that intelligence is out of their control (Claro et al., 2016). Dweck completed a series of validation studies showing high internal consistency (.94 and .98) and retest stability (.80 across a two-week interval) (Dweck et al., 1995).

The Five-Dimensional Curiosity Scale—Revised (5DCR). Sixteen items were used from this scale to assess individual levels of curiosity and the domains within this construct. Stress tolerance and thrill seeking were removed, as they were not relevant to the aspects of curiosity were interested in examining as related to the mentorship experience. The domains of curiosity explored were joyous exploration, sensitivity deprivation, overt curiosity, and covert curiosity. The 5DCR is a holistic approach to operationalizing curiosity (Kashdan et al., 2018). It differentiates between experiences of curiosity that vary in emotional variance. Kashdan (2018) argues that there are two experiences that are enjoyable in which an individual finds the world novel and exciting, which is considered Joyous Exploration, and dissimilarly, there is the anxiety and frustration of feeling aware of information you do not know, seek to know, and push

yourself to understand (Loewenstein, 1994). This is referred to as Deprivation Sensitivity. This measure's reliability was acceptable (α = .82, .83, 84, .82, 86).

The Hope Scale (Snyder et al., 1991). This is a 12-item measure of a respondent's level of hope. The scale is divided into two sub-scales that comprise Snyder's cognitive model of hope: (1) Agency (i.e., goal-directed energy) and (2) Pathways (i.e., planning to accomplish goals). Of the 12 items, 4 make up the Agency sub-scale and 4 make up the Pathways sub scale. The remaining 4 items are fillers. Each item is answered using an 8-point Likert-type scale ranging from Definitely False to Definitely True. Cronbach's alpha is .74 to .84 (Halama, 1999).

The Mentorship Effectiveness Scale (Berk et al., 2005). This is a measure with 12 items that uses a Likert-type 6-point summated scale is used to elicit responses from mentees regarding their mentorship experience. All participants were asked to identify one mentor they have had a relationship with and respond to 12 statements with respect to the effectiveness of their mentorship relationships. It follows an agree-disagree continuum: 0= strongly disagree, 1 = disagree, 2 = slightly disagree, 3 = slightly agree, 4 = agree, 5 = strongly agree. An open-ended question was also included to discern fabrication of a mentor and elicit information about their mentorship experience. They were each asked to name their mentor and then describe their mentorship experience in 3-5 sentences. A statistical sample of mentor ratings could not be obtained; therefore, internal consistency, such as coefficient alpha, could not be computed (Berk et al., 2005).

Patient-Health Questionnaire-9 Depression Assessment. The Patient-Health Questionnaire-9 (PHQ-9) Depression Assessment is a 3-page diagnostic instrument used to assess eight diagnoses separated into threshold diagnoses that correspond to the DSM-V diagnoses: major depressive disorder, panic disorder, other anxiety disorder, and bulimia

disorder) and subthreshold disorders (disorders whose criteria met fewer criteria that are needed for specific DSM-V diagnoses: other depressive disorder, probable alcohol abuse/dependence, somatoform, and binge eating disorder (Kroenke et al., 2001). It scores each of the nine DSM-IV criteria as “O” (not at all) to “3” (nearly every day) (Kroenke et al., 2001). The PHQ-9 has a high degree of internal consistency: (0.88; Zuithoff et al., 2010).

CHAPTER 5: RESULTS

Correlation and multiple regression were used to investigate the relationship between well-being as measured by lack of depressive symptoms and several predictor variables. The predictor variables examined were curiosity, hope, growth mindset, and mentorship. Well-being was the primary outcome measure and mentorship was used as a moderator. Descriptive statistics are provided in Table 2. A listwise deletion was performed of participants in which missing data was found or completion time was too fast (less than five minutes), followed by consideration of univariate outliers. Less than five minutes was chosen as the cutoff, as it would not be possible to complete all surveys adequately within this time. In total, three participants of the fifty collected were removed from the data set due to possible bot responses or fast completion time (less than five minutes). Sample size was reduced to 47 participants. Data appeared to be normally distributed across all variables in the model. Histograms appeared normally distributed and the assumptions of linearity did not appear violated. Skew for all variables was within the extremes ±3 (Hope = -0.36, Growth mindset = 0.33, Mentorship = -0.98, Curiosity = -0.46, PhQ-9 = 1.20) and kurtosis was also within the extremes for all variables ±10 (Hope = 0.09, Growth mindset = -0.59, Mentorship = 0.51, Curiosity = 0.62, PhQ-9 = 0.13). A Breusch-Pagan test was run and returned a non-significant value, $x^2(1) = 0.94$, $p = .331$, suggesting consistency of variables. Examination of predictor variables for collinearity revealed that tolerance was above .20 across all variables and indicating no violation. Hope, Curiosity, growthmindset, and mentorship were then centered.

Table 2

Descriptive Statistics and Correlations for Study Variables

	N	*M*	*SD*	1	2	3	4

1. Hope	47	5.36	1.45				
2.Growthmindset	47	3.62	0.92	0.04			
3. Curiosity	47	6.71	1.39	0.71***	-0.05		
4. Depression	47	72.00	6.05	-0.41**	0.16	-0.38**	
5. Mentorship	47			0.32**	-0.24	0.44**	-0.20

Note. Hope range = 1-8, Growth mindset range =1-6, Curiosity range = 1-7, Depression = PHQ Depression Total Score (range 1-27; higher scores predictive of higher levels of depression), Mentorship range = 0-6, *p<.05, **p<.01 ***p<.001*

Hope is positively correlated with curiosity and mentorship and negatively associated with higher levels of depressive symptoms. Additionally, both hope and curiosity are positively correlated with stronger mentorship experiences (Table 2). Growth mindset is not significantly correlated with any of the variables. Of the predictors examined, Hope appeared to be most significantly correlated with lower levels of depression on the PHQ Sum, $p = .004$.

Multiple regression was used to assess, separately, the prediction of PHQ by hope, curiosity, growth mindset, and mentorship, followed by an analysis of mentorship moderating each of these relationships.

Table 3

Regression Examining Centered Individual Characteristic Predictors of Depression

	B	SE	*F*	df	ΔR^2
Model 1			11.73***	2,44	.310
Intercept	21.40	0.84			
Hope_C	-3.96	0.88			
Mentorship_C	-0.13	0.85			
Model 2			3.73**	3,43	0.15
Intercept	21.17	0.96			
Curiosity_C	-2.81	0.99			
Mentorship_C	0.10	1.03			
Model 3			0.98	2,44	.000
Intercept	72.02	0.49			

Growthmindset_C	0.19	1.02
Mentorship_C	-1.31	1.00

*Note. Hope_C = centered hope values, Curiosity_C = centered curiosity values, Growthmindset_C = centered growthmindset values. *p<.05, **p<.01 ***p<.001*

Hope

Overall, the model with hope and mentorship significantly predicted PHQ-9, *F* (2, 44) = 11.73, p < .001, R2 adj. = .310. Hope had a significant, negative relationship with PHQ-9, B = -3.96, SE = 0.88, p < .001. However, mentorship was not significantly related to PHQ-9, B = -0.13, SE = 0.85, p = .882. Additionally, the interaction between hope and mentorship was included to assess if the relationship between hope and PHQ varied by reported level of mentorship. The model was significant, F (3, 43) =7.85, p = >.001, adj. R2 = 0.309. The interaction did not add significantly more variance explained and was not a significant predictor, B = 0.55, SE = .86, *p* = .527.

Curiosity

Overall, the model with curiosity and mentorship significantly predicted PHQ-9, *F* (2, 44) = 5.36, p = .008, R2 adj. =.159. Curiosity had a significant, negative relationship with PHQ, B = -2.86, SE = 0.99, p = .006. However, mentorship was not significantly related to PHQ, B = -0.08, SE = 0.10, p = .938. Additionally, the interaction between curiosity and mentorship was included to assess if the relationship between curiosity and PHQ varied by reported level of mentorship. The model was significant, F(3, 43) = 3.73, *p* = .018, adj. R2 = 0.151. The interaction did not add significantly more variance explained and was not a significant predictor, B= 0.61, SE = .80, p =. 451.

Growth Mindset

Overall, the model with growth mindset and mentorship did not significantly predict PhQ-9, F (2, 44) = 0.98, p = .384, R2 adj = .000. Growth mindset did not have a significant negative relationship with PHQ, B = 0.19, SE = 1.02, p = .854. Mentorship was also not significantly related to PHQ, B = -1.31, SE = 1.00, p = .200. Additionally, the interaction between growth mindset and mentorship was included to assess if the relationship between curiosity and PHQ varied by reported level of mentorship. The model was not significant, F (3, 43), = 0.64, p = .595, R2 adjusted - .000. The interaction did not add significantly more variance explained and was not a significant predictor, B= 0.05, SE = 1.27, p = .966.

Thematic Analysis of Qualitative Data

The 50 participants were also asked to describe their relationship with their mentor in 3-5 sentences. All 50 responses were analyzed using thematic analysis and the following themes regarding the qualities of good mentors emerged: 1) encouragement/validation, 2) advice, 3) close surrogate parent relationship, 4) role model, and 5) resource provider. A thematic analysis was used, as it allows for flexibility in identifying themes by analyzing and conjoining components or fragments of ideas or experiences from all surveyed to understand what exemplifies a positive mentorship relationship.

I started the analysis process by immersing myself in the data (Nowell et al., 2017). Data was first extracted from Qualtrics and placed in a Word document. Following Nowell et al. (2017), the six phases of thematic analysis were performed: 1) familiarizing yourself with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes, and 6) reporting findings. In reviewing themes, two superordinate categories, “parent relationship” and “close friend” were collapsed into “surrogate parent relationship”. No others were collapsed. As I analyzed the data, I created my own codebook, going through the

data on four occasions to ensure codes were correct. From the data, the following themes emerged:

Encouragement/Validation

Above all, respondents consistently noted ways in which their mentor made them feel. All good mentors were described as being individuals who were encouraging and validating. For example, participants reported: “He made me feel confident not only in doing my job, but confident in the choices I make,” “She praised me for my capabilities and creativity,” and “She saw my potential before I could see it in myself.”

Individual Characteristics

Many participants also reported individual characteristics of their mentors that they appreciated, which included empathy and being personable. One participant was noted to describe their mentor as follows: “She was nice, empathetic, and also very understanding about my mental health issues.”

Advice

An array of advice was mentioned throughout respondents’ responses. This included advice about navigating a particular field and advice about life. One stated: “He has given me some excellent advice on preparing for life ahead of college and how to civilly engage with others.” Another reported, “He gave really good advice on obstacles in my field as well as recommendations for future endeavors.”

Close Friend/Surrogate Parent Relationship

Many participants described their relationship with their mentor as being similar to a close friend/surrogate parent. One participant reported, “My relationship with my mentor is similar to a father son relationship.” One reported, “I become good friends with this person.”

Another reported, “He was a crazy xxxx and said a lot of whacky xxxx, but he treated me like his son and helped me get through life at the time.”

Role Model

Many participants mentioned viewing their mentor as a role model stating, “‘She is living her best life even though she has had a lot of challenges” and “I look up to him all the way—hard working man.”

Safety

Lastly, many described their mentor as someone who provided a security net, stating, “She always had my back when I felt like giving up” and “He likes to make sure that everything is okay.”

CHAPTER 6: DISCUSSION

People who experience four or more adverse childhood experiences are twice as likely than their peers with no ACEs to not finish high school and are four times less likely to earn a college degree (Bessey, 2017). Despite these odds, some individuals with moderate to high levels of ACEs manage to remain in school, with some continuing on to complete doctoral degrees (Bessey, 2017).

In our sample of fifty participants with three or more adverse childhood experiences and at least two years of college education, 54% reported their highest degree earned as an associate degree, and only 6% reported completing a master's degree or higher. Such findings align with research suggesting that the road to becoming highly educated is difficult for this population, with many presenting with mental health challenges and learning disorders, as well as lack of self-worth, overwhelming stress, and on-going struggles related to ACE events (Brogden and Gregory, 2019). Given the high percentage of individuals with moderate to high levels of ACEs earning associate degrees, a need to further expand the work of Brogden and Gregory (2019) and find ways to identify this population and support their resilience cannot be stressed enough.

No matter their level of college, students with histories of childhood trauma are often in need of additional support, as their convoys frequently lack critical attachment relationships that are important for supporting them in navigating the world and feeling safe to do so. With needs not often understood in higher education, these individuals struggle to access badly needed resources. Unfortunately, there does not exist a box on college applications to signal this, and so these at-risk college students often struggle alone. Many of these students attempt to lean on mentors and other alloparents or surrogates for safety, support, and encouragement, as they are

unable to find a haven at home (Bessey, 2017). Despite research emphasizing the difficulty of the roads these individuals must walk no matter their mentors, studies have found that mentors do play a critical role in the lives of these individuals by not only providing safety and encouragement, but also providing normal models of success and interaction (Bessey, 2017).

The purpose of the present study was twofold. First, I was interested in considering the often not researched individual in a mentorship: the mentee and attempting to understand if general force characteristics of the individual impact the mentorship, as Bronfenbrenner's ecological model suggests they do. Secondly, I was interested in understanding if having stronger mentorship experiences supported individuals with moderate to high levels of childhood trauma in experiencing greater levels of well-being.

In order to examine the relationship between different individual approaches to learning (curiosity, hope, and growth mindset) in relation to mentorship and well-being for at-risk college students, one thousand individuals were first surveyed to ensure participants met criteria of having three or more adverse childhood experiences (ACEs) and at least two years of higher education. From this sample, 120 participants met criteria and were asked to complete a follow-up survey. 50 individuals responded. Results indicated that higher levels of hope and curiosity are significantly correlated with lower levels of depression and better mentorship experiences. Growth mindset was not significant. While better mentorship experiences were positively associated with lower levels of depression for this population, it did not significantly moderate the relationship between positive approaches to learning and lower levels of depression.

In describing their mentors, however, participants indicated that mentors provided much-needed support, particularly by way of providing advice, serving as a surrogate parent/close friend, providing safety, and serving as a role model. These findings align with those of Bessey

(2017) who found that doctoral students with high levels of ACEs remained in school because it provides safety and an opportunity to have positive models to look up to. Participants reported that the advice they received form their mentors did not only include navigating the academic realm, but also navigating personal obstacles. Additionally, several participants mentioned the significance of their advisor serving in a parental role, suggesting for this population, that attachment needs are still not fulfilled when they reach higher education and forming a close relationship with an advisor serves a greater purpose in their lives than academic achievement alone.

Taken together, findings of this study suggest that even with positive mentorship experiences, this population may still struggle with high levels of depression, mentors still play a significant role in the well-being of this population, but providing greatly needed resources, attention, and encouragement, and when possessing higher levels of hope and curiosity, one's mentorship experience is likely to be fortified.

CHAPTER 7: STRENGTHS, LIMITATIONS, AND FUTURE DIRECTION

Strengths

Several strengths are present throughout this study, one being the study's consideration of a neglected topic in the mentorship domain: the role of the mentee. An abundance of research on mentorship has examined what makes a quality mentor, but little research to date has explored the role of the mentee, despite models and theories, such as the bioecological model of human development, suggesting development is a bi-directional process. Secondly, to my knowledge, this is the first study to look at how individual differences in approaching learning may affect the mentorship relationship for at-risk college students, which is critical, as an abundance of literature suggests mentorship for this population is important (Bessey, 2017). Lastly, this brings attention to the seriousness of the difficulties those with moderate to high levels of ACEs face while attempting to attend higher education, shedding light on their often-hidden situations and the difficulty institutions of higher education have in identifying and best supporting them. While mentorship may be beneficial to this group of students, identifying them is difficult.

Limitations

Several limitations were present in this study. First, given that Amazon Mturk workers do not consistently work online, reaching all 120 individuals who met criteria from the 1,000 who were surveyed was difficult, and only 50 individuals in total completed the final compilation of surveys, making it difficult to detect an effect of mentorship as a moderator because the analyses were underpowered. Secondly, not all individual characteristics that may support a stronger mentorship experience, such as determination, adaptability, and taking charge, were not explored. Given research on what makes a great mentee, research suggests these particular

individual characteristics may play a significant role in positive mentorship outcomes (Fry & Sheetz, 2020; Barkham, 2005). Lastly, given the number of surveys used in this study, the PHQ-9 Depressive Assessment was used to assess an individual's well-being as it was shorter, rather than a more comprehensive assessment, such as Ryff's Scales of Psychological Well-being. While some researchers have argued that well-being can be conceptualized as the absence of depressive symptoms, a study in which a more comprehensive assessment of subjective well-being may result in different findings. Taken together, if a remedy to these limitations were possible, an effect of mentorship could possibly be detected, as there was a positive, non-significant effect.

Future Directions

There are many future directions worth exploring following this study. First, a larger qualitative study using semi-structured interviews to explore the convoys of at-risk college students and the role of mentors, could be fruitful. Additionally, completing this study with a larger sample size, using a different mentorship measure and exploring different individual approaches to learning, such as determination, could be beneficial.

Final Remarks

Many students with histories of childhood trauma struggle to speak to someone about what they have endured and the difficulties they are facing in attempting to remain in school and excel (Bessey, 2017). It would be of great benefit to students with histories of adverse childhood experiences to have a way to communicate to universities their backgrounds and what they are struggling with, if they wish to. While students are asked to list their parents' highest level of education on their applications, as well as their ethnicity and race, these details do not clearly convey to the university the situations of students with childhood trauma. Students either do not

report anything of concern in their applications or attempt to use a box they do not fully fit in, as is the story of Mackenzie Fierceton (*The New Yorker,* 2022). A student at the University of Pennsylvania, Mackenzie grew up in a wealthy home but was put into foster care at the age of 17 after being physically abused by her mother. In an attempt to convey her situation to her university, she selected that she was a first-generation college student and later had her degree withheld for lying. Stories like Mackenzie's are not uncommon, and as we become more informed of ACEs, it should be the aim of institutions in higher education to work to better understand the complexities of trauma and support this population because it is their diverse voices that are needed in helping us solve some of the wicked problems of today.

Appendix A: Original 10-ACEs Questionnaire

Prior to your 18th birthday:

1. Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt? No___If Yes, enter 1 __

2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured? No___If Yes, enter 1 __

3. Did an adult or person at least 5 years older than you ever… Touch or fondle you or have you touch their body in a sexual way? or Attempt or actually have oral, anal, or vaginal intercourse with you? No___If Yes, enter 1 __

4. Did you often or very often feel that … No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other? No___If Yes, enter 1 __

5. Did you often or very often feel that … You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it? No___If Yes, enter 1 __

6. Were your parents ever separated or divorced? No___If Yes, enter 1 __

7. Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife? No___If Yes, enter 1 __

8. Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs? No___If Yes, enter 1 __

9. Was a household member depressed or mentally ill, or did a household member attempt suicide? No___If Yes, enter 1 __

10. Did a household member go to prison? No___If Yes, enter 1 __

Appendix B: PHQ-9 (Patient Health Questionnaire-9, Kroenke, Spitzer, & Williams, 2001)

This questionnaire is used to assist clinicians in making a diagnosis of depression and monitor its severity. Higher PhQ-9 scores are associated with decreased functional status, increased symptom-related difficulties, sick days, and healthcare utilization.

Instructions: Please report how often have you experienced the following over the last two weeks:

1. Little interest or pleasure in doing things?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

2. Feeling down, depressed, or hopeless?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

3. Trouble falling or staying asleep, or sleeping too much?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

4. Feeling tired or having little energy?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

5. Poor appetite or overeating?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

6. Feeling bad about yourself— or that you are a failure or have let yourself or your family down?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

7. Trouble concentrating on things, such as reading the newspaper or watching television?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

8. Moving or speaking so slowly that other people could have noticed? Or so fidgety or restless that you have been moving a lot more than usual?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

9. Thoughts that you would be better off dead, or thoughts of hurting yourself in some way?

a. Not at all
b. Several days
c. More than half the days
d. Nearly every day

Appendix C: Mentorship Effectiveness Scale (Berk, Berg, Mortiner, Walton-Moss, & Yeo, 2002).
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Instructions: Think about someone who you identify as having served as a mentor for you. The purpose of this scale is to evaluate the mentoring characteristics of the mentor who you have identified as having had a mentor/mentee relationship with you. Indicate the extent to which you agree or disagree with each statement below with respect to the mentor you have identified.

0 = Strongly Disagree (SD)
1 = Disagree (D)
2 = Slightly Disagree (SID)
3 = Slightly Agree (SIA)
4 = Agree (A)
5 - Strongly Agree (SA)
6 - Not applicable (NA)

In answering the following questions, please think of ONE, and only ONE, mentor who you have identified as having a mentor/mentee relationship with you.

1. My mentor was accessible.

0 1 2 3 4 5 6

2. My mentor demonstrated professional integrity.

0 1 2 3 4 5 6

3. My mentor demonstrated content expertise in my area of need.

0 1 2 3 4 5 6

4. My mentor was approachable.

0 1 2 3 4 5 6

5. My mentor was supportive and encouraging.

0 1 2 3 4 5 6

6. My mentor provided constructive and useful critiques of my work.

0 1 2 3 4 5 6

7. My mentor motivated me to improve my work product.

0 1 2 3 4 5 6

8. My mentor was helpful in providing direction and guidance on professional issues (e.g., networking).

0 1 2 3 4 5 6

9. My mentor answered my questions satisfactorily (e.g., timely response, clear, comprehensive).

0 1 2 3 4 5 6

10. My mentor acknowledged my contributions appropriately (e.g. committee contributions, awards).

0 1 2 3 4 5 6

11. My mentor suggested appropriate resources (e.g., experts, electronic contacts, source materials).

0 1 2 3 4 5 6

12. My mentor challenged me to extend my abilities (e.g., risk taking, try a new professional activity, draft a section of an article).

0 1 2 3 4 5 6

Appendix D: The Hope Scale (Snyder et al., 1991)

Description of Measure: A 12-item measure of a respondent's level of hope. The scale is divided into two sub-scales that comprise Snyder's cognitive model of hope: (1) Agency (i.e., goal-directed energy) and (2) Pathways (i.e., planning to accomplish goals). Of the 12 items, 4 make up the Agency sub-scale and 4 make up the Pathways sub scale. The remaining 4 items are fillers. Each item is answered using an 8-point Likert-type scale ranging from Definitely False to Definitely True.

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

1 = Definitely False
2 = Mostly False
3 = Somewhat False
4 = Slightly False
5 = Slightly True
6 = Somewhat True
7 = Mostly True
8 = Definitely True

1. I can think of many ways to get out of a jam. ____

1. I energetically pursue my goals. ____

2. I feel tired most of the time. _____

3. There are lots of ways around any problem. ____

4. I am easily downed in an argument. _____

5. I can think of many ways to get the things in life that are important to me. _____

6. I worry about my health. ____

7. Even when others get discouraged, I know I can find a way to solve the problem. _____

8. My past experiences have prepared me well for my future. _____

9. I've been pretty successful in life. _____

10. I usually find myself worrying about something. _____

12. I meet the goals that I set for myself. _____

Appendix E: Growth Mindset Scale (Dweck, 2006)

Number of items: 3

Answer Format:

1 = strongly agree
2 = agree
3 = mostly agree
4 = mostly disagree
5 = disagree
6 = strongly disagree

Instructions: Read each sentence below and then circle the one number that shows how much you agree with it. There are no right or wrong answers.

1. You have a certain amount of intelligence, and you can't really do much to change it.

1 2 3 4 5 6

2. Your intelligence is something about you that you can't change very much.

1 2 3 4 5 6

3. You can learn new things, but you can't really change your basic intelligence.

1 2 3 4 5 6

Appendix F: Five-Dimensional Curiosity Scale Revised (5DCR)

Instructions: Below are statements people often use to describe themselves. Please use the scale below to indicate the degree to which these statements accurately describe you. There are no right or wrong answers.

1- Does not describe me at all

2- Barely describes me

3- Somewhat describes me

4- Neutral

5- Generally describes me

6- Mostly describes me

7- Completely describes me

Joyous Exploration:

1. I view challenging situations as an opportunity to grow and learn.
2. I seek out situations where it is likely that I will have to think in depth about something.
3. I enjoy learning about subjects that are unfamiliar to me.
4. I find it fascinating to learn new information.

Deprivation Sensitivity:

1. Thinking about solutions to difficult conceptual problems can keep me awake at night.
2. I can spend hours on a single problem because I just can't rest without knowing the answer.

3. I feel frustrated if I can't figure out the solution to a problem, so I work even harder to solve it.
4. I work relentlessly at problems that I feel must be solved.

Overt Social Curiosity:

1. I ask a lot of questions to figure out what interests other people.
2. When talking to someone who is excited, I am curious to find out why.
3. When talking to someone, I try to discover interesting details about them.
4. I like finding out why people behave the way they do.

Covert Social Curiosity:

1. When other people are having a conversation, I like to find out what it's about.
2. When around other people, I like listening to their conversations.
3. When people quarrel, I like to know what's going on.
4. I seek out information about the private lives of people in my life.

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