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AN EXPLORATION OF THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND STRESS USING THE THEORY OF EMERGING ADULTHOOD

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AN EXPLORATION OF THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND STRESS USING THE THEORY OF EMERGING ADULTHOOD

A THESIS APPROVED FOR THE
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“*It is easier to build strong children than to repair broken men*”

-Frederick Douglas

Abstract

Few studies have examined cross-relations between Adverse Childhood Experiences (ACE) and assimilation into emerging adulthood through developmental psychology theory (IDEA), and how this can contribute to stress levels. Participants (N = 531) were emerging adults (18-29) recruited in one south-central state in the United States. Correlations between ACE, IDEA, and stress were conducted, as well as multiple linear regressions to analyze the mediating effect that ACE may have on the relationship between IDEA and stress. Exposure to ACE was predominant in this sample, with 97.2% of participants having experiences at-least one form of ACE. Higher levels of ACE exposure had significant associations with IDEA constructs, specifically that of greater Instability. Further, the IDEA constructs of Possibilities/Instability, Self-Focus/Feeling In-Between had significant associations with higher stress levels. Lastly, ACE positively mediated the relationship between IDEA and stress levels. Results from this study posit the need to acknowledge emerging adulthood as a critical developmental period and the possible influence ACE and stress have on altering the theorized developmental path.

Keywords

Emerging Adults, Adverse Childhood Experiences, Stress, Young Adulthood, Developmental Psychology

Chapter I

Introduction

Adverse Childhood Experiences (ACE) are any stressful life event, moderate to severe, occurring before the age of 18 (Centers for Disease Control and Prevention [CDC], 2016). ACE include, but are not limited to, abuse (e.g. emotional, physical, sexual), neglect (e.g. emotional, physical), household dysfunction (e.g. mental illness, substance use, parental separation), and violence (e.g. community, gang, domestic; Felitti et al., 1998). The last two decades of research on ACE have exposed childhood trauma as a significant contributor to later health outcomes (Smyth, Hockemeyer, Heron, Wonderlich, & Pennebaker, 2008). Notably, these studies have linked ACE to a wide array of negative health outcomes, ranging from poor physical health to poor psychiatric health (Larkin, Shields, & Anda, 2012), making ACE a significant public health concern. In the United States, as well as 21 additional countries, up to 30% of all psychiatric disorders among adults have been linked to ACE (Green et al., 2010; Kessler et al., 2010). Early ACE literature focused mainly on health outcomes in older adults, as it was previously believed that ACE manifested in later life (Kessler et al., 2010). However, more recent literature has shifted the focus from older adults to young adults, as the relationship between ACE and mental health outcomes appears to be stronger in cohorts aged 18 to 29 years old (Logan-Greene, Green, Nurius, & Longhi, 2014).

The period of emerging adulthood is characterized as a transitional period for individuals aged 18 to 29 as they move from the routines of adolescence into the roles of adulthood (Arnett, 2001). Psychologists argue that this period of life is critically unique for development, as individuals are adapting to new social roles, expectations, and exploring identity (Arnett, 2000). Contrarily, this period can be rife with stressors, as individuals find themselves

balancing new roles and demands (Arnett, 2001). For those emerging adults carrying ACE from younger years, ACE may increase the existing feelings of instability during this period of life (Karatekin, 2018). Emerging adults with ACE exposure may be transitioning under disruptive contexts, such as family dysfunction, traumatic experiences, or abusive relationships, all which research suggests can change individual assimilation into social culture (Corrales et al., 2016). While numerous studies have examined prevalence of ACE among young adults, few have explored how this exposure can contribute to poor mental health and impact a healthy transition into emerging adulthood.

Framework

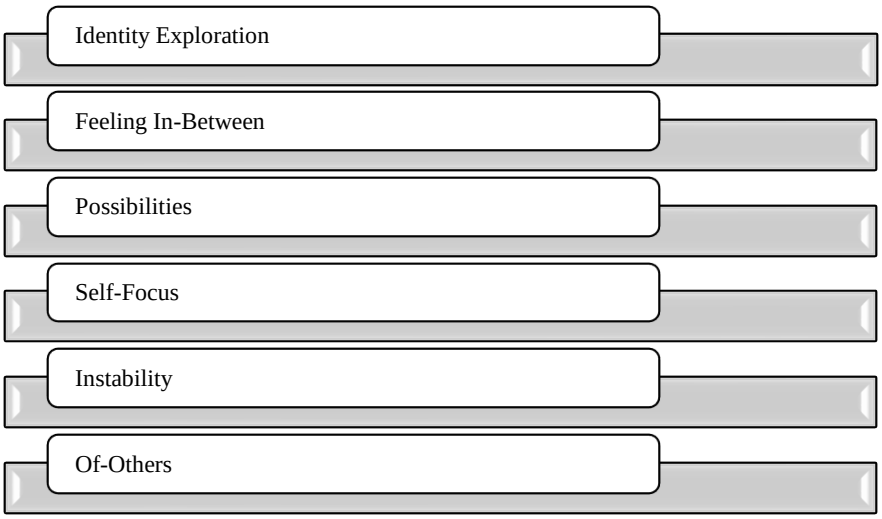

Figure 1. The Theory of Emerging Adulthood

The Theory of Emerging Adulthood (TEA) provides a framework that aids in the explanation of characteristics unique to this period of development (Arnett, 2000). The TEA assumes that individuals in this period of development are more likely to relate to the five constructs: identity exploration, feeling in-between, possibilities, self-focus, and instability. *Identity exploration (IE)* is characterized as freedom to try various life paths; *Feeling In-Between (FIB)* is characterized by the shift from adolescent behaviors to adult roles; *Possibilities (PB)* is

characterized as optimism; *Self-Focus (SF)* is characterized as recognition of individual wants and needs; and *Instability (IS)* is characterized as the struggle to balance numerous roles and responsibilities (Arnett & Tanner, 2006). *Of-Others (OF)* was added during the scale development, to characterize being less likely to think of the problems and development of others (Reifman, Arnett, & Colwell, 2007).

Contrarily, psychologists suggest that those individuals with ACE are more likely to be burdened by stress, depression, and anxiety, and therefore, will relate less to the constructs of the TEA (Arnett, 2016). The few studies examining ACE and the constructs of the TEA have reported that those individuals with higher ACE exposure reported less feelings of possibility and self-focus and greater feelings of instability (Davis, Dumas, & Roberts, 2018). This contributes to the notion that ACE in adolescence may have an impact on later functioning in emerging adulthood. What is not being explored, however, is the relationship between the constructs of the TEA and mental health outcomes, such as stress, and how this relationship may be impacted by ACE exposure during adolescence.

Purpose of the Study

Suggestions for future research highlight the need to understand further impacts of ACE on transition into adulthood. Much of the research thus far has focused on the impact of ACE on physiological, psychological, and behavioral functioning (Kalmakis & Chandler, 2015). Current studies on ACE and mental health aim to demonstrate the prevalence of stress among those emerging adults with higher levels of ACE. However, little focus has been given to how ACE may contribute to healthy transition into adulthood, beyond just increased rates of poor health outcomes. This study aimed to contribute to the gap in the literature by exploring the relationship between the TEA constructs, ACE, and stress among a sample of emerging adults. Overall, this

study aimed to contribute to the literature by exploring the utility of theory, specifically the TEA, when examining the relationship between ACE experiences and stress.

Research Questions

This study explored the following research questions:

Primary Research Questions

1. What is the relationship between ACE exposure and the TEA constructs in emerging adults?
2. What is the relationship between the TEA constructs and stress in emerging adults?
3. How does ACE exposure impact the relationship between the TEA constructs and stress in emerging adults?

Secondary Research Questions

4. Is there a difference in ACE exposure among emerging adults based on demographic variables?
5. Is there a difference in the TEA constructs among emerging adults based on demographic variables?

Null Hypotheses

- H_{01}: There will be no relationship between ACE exposure and the TEA constructs in emerging adults.
- H_{02}: There will be no relationship between the TEA constructs and stress in emerging adults.
- H_{03}: ACE exposure will have no impact on the relationship between the TEA constructs and stress in emerging adults.
- H_{04}: There will be no difference in ACE exposure based on demographic variables.

- H_{05}: There will be no difference in the TEA constructs based on demographic variables.

Alternative hypothesis

- H_{A1}: There will be a negative relationship between ACE exposure and the TEA constructs.
- H_{A2}: There will be a negative relationship between the TEA constructs and stress in emerging adults.
- H_{A3}: ACE exposure will have a negative impact on the relationship between the TEA constructs and stress in emerging adults.
- H_{04}: There will be a difference in ACE exposure based on demographic variables.
- H_{05}: There will be a difference in the TEA constructs based on demographic variables.

Significance of the Study

Presently, only one study exists examining the relationship among ACE and the constructs of the TEA and stress, warranting need for more research on this relationship (Davis et al., 2018; Karatekin & Ahluwalia, 2016; Allem, Lisha, Soto, Baezconde-Garbanati, & Unger, 2013). The study was the first to use the TEA to examine ACE and stress levels, and found moderate to weak associations between the variables (Davis et al., 2018). The researchers noted the need to expand the literature on ACE using the TEA. The current study may strengthen the information found in the previous study and could contribute more information regarding the relationship between ACE, the TEA, and stress to the literature. Additionally, findings from this study may provide a better understanding of the themes of transition to adulthood, and therefore may help better inform the development of health promotion interventions and strategies for

stress reduction in emerging adults, specifically targeting individuals within this age group who have experienced ACE.

Limitations

There were several anticipated limitations for this study. First, data was collected using a non-random convenience sampling technique within one south-central state in the United States. A more diverse sample may have allowed for better examination of ACE exposure across different subgroups. Conversely, while different groups may have different levels of ACE exposure, the association between ACE and health outcomes may not differ, as one study across eight European countries reported no moderation on the association between ACE and health outcomes (Bellis et al., 2014). Second, data was collected using self-report online surveys. More objective measures of ACE, the TEA, and stress could strengthen the results and minimize association error due to common source bias. Finally, the retrospective nature of ACE measures are criticized for their potential for recall bias, especially for those respondents currently suffering from poor health outcomes (Scott, Smith, & Ellis 2010). However, other studies have indicated that current respondent status does not affect the reliability of ACE reports, and retrospective measures of ACE are commonly used in this area of research (Pinto, Correia, & Maia, 2014).

Delimitations

Delimitations for this study included participant recruitment in one south-central state in the United States. The inclusion criteria for this study limited participants to be between the ages of 18 and 29 years old and currently living in the state of recruitment.

Assumptions

The following was assumed in the current study:

- Participants had access to an online source to complete the survey.
- Participants understood the instructions for completing the survey.
- Participants answered all survey questions honestly and to the best of their ability.
- The JVQ-EF scale correctly assessed ACE.
- The IDEA scale correctly assessed the Theory of Emerging Adulthood constructs.
- The Perceived Stress Scale correctly assessed stress among emerging adults.

Operational definitions

Adverse Childhood Experiences (ACE): refers to any event, stress, or trauma experienced by a child in early life. These experiences can include the different forms of abuse (emotional, physical, or sexual), neglect (emotional or physical), household violence, household dysfunction, and peer and community violence (WHO, 2019).

Emerging Adults: Includes any individual between the ages of 18-29 (American Psychological Association, 2006).

Theory of Emerging Adulthood: Includes five features to capture unique experience of emerging adults including age of identity exploration, instability, self-focus, feeling in-between, and possibilities (American Psychological Association, 2006).

Stress: Relative to the context and individual, stress can be any physiological or psychological response following a change in demand and can be categorized as a burdening feeling such as chest pain, headache, or heart palpitations (The American Institute of Stress, n.d.).

Identity Exploration (IE): Characterized by having the freedom to try various life paths, while figuring out who they are and what they want to be (Arnett, 2000).

Feeling in-between (FIB): Characterized by not fully taking on roles of adulthood, but at the same time moving away from adolescent behaviors (Arnett, 2000).

Possibilities (PB): Characterized by optimism toward the changes and opportunities in their lives and futures (Arnett, 2000).

Self-Focus (SF): Characterized by the breakaway from mediated and directed paths from adolescence and focusing on individual wants and needs (Arnett, 2000).

Instability (IS): Characterized by having numerous roles and responsibilities within different contexts such as work, home, social, and academic (Arnett, 2000).

Of-Others (OF): Characterized by being less likely to think of the problems and development of others (Arnett, 2000).

Chapter 2

Literature Review

Adverse Childhood Experiences

The CDC (2016) defines adverse childhood experiences (ACE) as any stressful life experience, moderate to severe, experienced before the age of 18. These experiences can include, but are not limited to: physical, sexual, or emotional abuse, community violence, inter-parental abuse, household substance abuse, mental illness, death or separation of parents, and household member incarceration (CDC, 2016). In 1998, the CDC and Kaiser Permanente conducted a study that introduced the medical, psychological, and scientific world to the first evidence demonstrating a link between traumatic experiences, or ACE, and negative health outcomes in later life (Felitti et al., 1998).

In the time since this study, ACE has raised interest within the behavioral science community as a possible contributing factor for numerous negative health behaviors and outcomes, as one early systematic review found that it can impact COPD, early death, sleep disturbances, autoimmune disorders, obesity, smoking, intimate partner violence, and lower perceived ratings of health (Smyth et al., 2008). Another review of ACE found that trauma from childhood is related to poor physical health, poor psychological health, health risk behavior, developmental disruption, and increased healthcare utilization and cost (Kalmakis et al., 2015). This alarming range of health outcomes has driven researchers, practitioners, and organizations to further understand the components of ACE.

According to the 2016 Behavioral Risk Factor Surveillance System (BRFSS) data collected by the CDC, there are four categories of ACE that have higher prevalence among individuals under the age of 18 when compared to others. Physical abuse was the highest

reported ACE (28.3%). The second most prevalent was household substance abuse (26.9%), followed by parental separation or divorce at (23.3%), and sexual abuse (20.7%; CDC, 2016).

These experiences, especially at a young age, can be viewed as toxic stressors that if accumulated, can alter the inherent social and biological processes that individuals have to cope and handle stressful events, eventually hindering health and recovery (Nurius, Green, Logan-Greene, & Borja, 2015). Repeated exposures can cause emotional dysregulation within adolescents, burdening their social experiences, altering development, and leading to the possibility of poor mental health in later life (Eisenberg, Lipson, & Posselt, 2016).

Research has shown that early adversity can impair certain functions of health, including neurobiological pathways that can manifest as increased stress sensitivity, meaning that even minor stressors can evoke a large reaction (Hammen, Henry, Daley, & Kendall, 2000). As adults, especially those in early adulthood, this can impair response to changing environments around them including academic, social, work-related, family, and personal stressors (Karatekin & Hill, 2018). Young adults are of interest, as this population is characterized by balancing the demands of transitioning from adolescence to adulthood, which can present stressors in several different forms (Forster, Grigsby, Rogers, & Benjamin, 2018).

A study on the stress and social implications of ACE on health in emerging adults found that despite the sample being of greater socioeconomic status, those with higher levels of ACE demonstrated poor ratings of mental health and high levels of stress (Karatekin, 2016). Additionally, those participants with ACE reported having less social support. Another study looking at family functioning and ACE showed a similar trend, where those individuals with greater levels of ACE felt they had less support from their family as young adults (Forester et al.,

2017). This information is pertinent to the current study, as it looks to explore how ACE may impact development into young adulthood.

Emerging Adults

Emerging adults are characterized as individuals in the transition from adolescence to adulthood and are between the ages of 18 to 29 (American Psychological Association, 2006). Increased diversity, breaking from the homogenous routine of secondary education, and reliance on self-direction for everyday life are among the multiple new roles that emerging adults face (Schulenberg, Sameroff, & Cicchetti, 2004). Researchers emphasize the critical juncture between adolescence and adulthood, as no two transitions are the same. Emerging adults are heavily influenced by an individual's social and cultural contexts, including gender, socioeconomic status, and historical period (Schulenberg et al., 2004). Emerging adulthood is characterized most by the transitions in development, such as learning how to regulate emotions, taking on new perspectives, and separating from parental affiliations (Badger, Nelson, & Berry, 2006). In the developmental literature, there is a large gap in this specific age group, as it has been historically noted as adolescent or adult development. Leading figures in emerging adulthood literature argue that this period is contextually unique and can be compared to neither adolescence nor adulthood. Rather, it is characterized by its own social roles and expectations and should be viewed as a separate developmental period (Arnett, 2000).

This period of life increases instability for emerging adults as they work to meet the evolving social contexts around them. Many individuals may feel in-between, not quite an adult, but not adolescent either. This places burden on emerging development, especially on those who ascribe to adult roles quicker (Reifman, Arnett, & Colwell, 2007). Taking on traditional adult

roles at younger ages than expected can shorten an individual's time for identity exploration and assimilation into social culture (Arnett, 2001).

Emerging adulthood can be particularly challenging for those individuals carrying trauma from childhood (Horan & Widom, 2015). These individuals may be transitioning to adulthood under the contexts of disruptive family relations and traumatic or abusive experiences, which researchers have suggested can change the pathway of an individual transitioning to adulthood (Corrales et al., 2016). They are more focused on attaining independence, self-reliance, and financial stability, which can shorten this period of self-focus and exploration (Arnett, 2000).

Although an estimated 60% of adolescents in the United States have reported experiencing one or more ACE (Finkelhor, Turner, Shattuck, & Hamby, 2015), there have been few studies conducted to understand how ACE affects emerging adulthood. In emerging adulthood, traditional adult roles are often delayed allowing more time for identity exploration (Arnett & Tanner, 2006). However, a recent study found that individuals with ACE reported having to take on more responsibility at a younger age and felt like adults much sooner than their peers (Arnett, 2016). This early maturation paired with the stressors from childhood and current stressors in adulthood can cumulatively place pressure on these individuals (Mersky, Topitzes, & Reynolds, 2013). Further research in this population is needed, as they are not only at high risk for negative mental health outcomes such as stress, depression, and anxiety (Sussman & Arnett 2014), but are also less likely to experience the developmental constructs of the Theory of Emerging Adulthood (Davis et al., 2018).

Much of the research on emerging adults has been conducted with students attending four-year universities or other academic institutions (Schwartz, 2016). This has drawn criticism from developmental psychologists, who question the generalizability of emerging adulthood

themes across different sub-groups, such college, non-college, married, & single emerging adults (Cóté, 2014). One study identified heterogeneous groups of emerging adults, which included those who never attended college, full-time workers, and those raising families (Maggs, Jager, Patrick, & Schulenberg, 2012). These studies question the applicability of the dimensions of emerging adulthood to those individuals who have more financial responsibility and are less likely to delay adulthood and explore future possibilities (Schoon, Chen, Kneale, & Jager, 2012).

Demographically, emerging adults who are college students have been found to differ from non-college student emerging adults based on socioeconomic status, educational opportunities, and ethnicity (Arnett, 2016). Individuals within the college setting have more natural opportunity to explore identity, try new worldviews, and change career paths without fear of permanence (Montgomery & Côté, 2003). Contrarily, non-college student emerging adults may look for permanent work and stable environments sooner, especially those of lower socioeconomic status (Mitchell & Syed, 2015). This demonstrates how emerging adulthood manifests differently across sub-groups, such as those who can delay adult responsibilities (i.e. college students) and those who cannot (Schwartz, 2016). Prior research has recommended the inclusion of more diverse groups (i.e. non-college) of emerging adults for future studies (Smith, Bahar, Cleeland, & Davis, 2014). This study aimed to build on that notion by exploring ACE in emerging adult samples including non-college attending individuals.

Theory of Emerging Adulthood

The recommendations to distinguish emerging adulthood as a distinct period of life led researchers to create a theoretical framework specific to the experiences of emerging adults. Throughout this period, emerging adults experience diverse changes and a wide range of socioeconomic resources (Eagen et al., 2014). Therefore, the Theory of Emerging Adulthood

(TEA) was created to explain factors that impact young adults' unique experiences during this period of life (Arnett, 2000). The five constructs include the following: (1) *Identity Exploration:* which is characterized by having the freedom to try various life paths while an individual explores who they are and who they want to be; (2) *Feeling In-Between:* which is characterized by not fully taking on the roles of adulthood but, but at the same time moving away from adolescent behaviors; (3) *Possibilities:* which is characterized as optimism toward the changes and opportunities in their lives and futures; (4) *Self-Focus:* which is characterized by the breakaway from mediated and directed paths from adolescence and focusing on individual wants and needs; and (5) *Instability:* which is characterized by having balancing numerous roles and responsibilities within different contexts such as work, home, social, and academic (Arnett & Tanner, 2006). A later (6) *Of-Others:* construct was added during development of the TEA scale, to reflect the opposite ideals of Self-Focus, and can be characterized as the level which emerging adults think about the problems and situations of others (Reifman, Arnett, & Colwell, 2007).

The TEA was developed with the assumption that individuals in this developmental period will experience the TEA constructs. Studies examining ACE and emerging adulthood contradict this claim, reporting that those individuals who experienced childhood trauma are less likely to progress through the developmental constructs of the theory (Davis et al., 2018). This suggests that exposure to ACE may impact the transition to emerging adulthood and experience of the TEA constructs.

The Inventory of the Dimensions of Emerging Adulthood (IDEA) scale was created to assess the six dimensions outlined by the TEA (Reifman et al., 2007). Studies conducted using the IDEA among emerging adults have found the scale to be predictive of individual perceptions on the transition to adulthood (Skulborstad & Hermann, 2016). A study between Chinese and

American emerging adults using the IDEA demonstrated cultural differences on the perceptions of emerging adulthood. Many of the Chinese emerging adults reported feeling like they had reached adulthood when compared to American emerging adults (Badger et al., 2006). Additionally, studies using the IDEA note that the dimensions of emerging adulthood are predictive of each other (Skulborstad & Hermann, 2016). For example, perceptions of IE are positively correlated with perceptions of PB and FIB (Skulborstad et al., 2016).

Recent studies have used the IDEA as a predictor of emerging adults' behavior, such as smoking, drug, and alcohol use (Allem, Forster, Neiberger, & Unger, 2015; Allem & Unger, 2016; Smith et al., 2014). Those emerging adults with higher perceptions of IE and PB are also at increased risk of using substances such as tobacco and alcohol. (Smith et al., 2014). A study examining e-cigarette use among emerging adults found that participants who reported greater feelings of PB smoked e-cigarettes more frequently and had more positive feelings toward smoking (Allem et al. 2015). Missing from the literature, however, are studies using the IDEA to examine other health related outcomes such as stress among emerging adults.

Stress

Stress can be characterized by a physiological response to an external factor, involving the activation of sympathetic systems in our brain, as well as the release of certain hormones such as adrenaline and norepinephrine (Shonkoff, 2016). This response can act to remove our bodies from homeostasis, by increasing our heart rate, breathing, and the overall load on our body. Reoccurring or strong exposures to these external factors can result in toxic stress, which can cause the body de-regulate emotional and physical functioning (Shonkoff, 2016 & The American Institute of Stress, n.d.).

As reported by the Anxiety and Depression Association of America, seven out of 10 adults in the U.S. experience a form of stress daily (Anxiety and Depression Association of America, n.d.). The burden of stress is predicted to affect younger generations at higher rates, as societal roles and demands evolve and place increased pressure on young adults (Foster, Hagan, & Brooks-Gunn, 2008). Among young adults, one study identified factors that were reported to place the most stress on individuals (Beiter et al., 2015). Examples included finances, future plans, and relationships with families and friends (Beiter et al., 2015).

A common theme found in the literature on stress among young adults is IS (Beiter et al., 2015; Hurst & Baranik, 2012; & Kumaraswamy, 2013). Individuals are leaving the dependence of adolescence and gaining responsibilities such as housing expenses, bills, and job demands (Hurst et al., 2012). For individuals who are unsupported through this process, this period can exacerbate the effects of stress (Kumaraswamy, 2013). These young adults may be attempting to gain independence from unstable homes, families, or communities (Delker, Smith, Rosenthal, Bernstein, & Freyd, 2017). A recent study of young adults reported that of those were abused during childhood, the majority felt betrayed by their families as young adults (Delker et al., 2017). Thus, young adults that faced ACE during childhood continue to carry the burden of their trauma as they transition to adulthood.

The types of ACE, such as abuse and trauma, can be seen as toxic stressors in adolescent development (Felitti et al., 1998). This disruption in brain processing at a young age can hinder development and later adult functioning (Teicher & Samson 2016). A study on the neurobiological consequences of child maltreatment found that toxic stress resulting from types of ACE, such as abuse, can later manifest into negative adult character qualities such as poor emotional regulation. (Teicher & Samson 2016). Additionally, increased sensitivity to stress is a

common manifestation found in later life, which can be particularly concerning for emerging adults with ACE, who are more likely to be exposed to multiple stressors in a shorter time period (Barnes, Howell, & Miller-Graff, 2016).

It was previously thought that psychiatric effects of ACE manifest in later adulthood, but current literature is contradicting this claim by reporting the relationship between mental health and ACE in ages 18 to 30 to be just as prominent as older cohort studies (Logan-Greene et al., 2014). A study examining ACE and psychological well-being in young adults found that the greater the impact of the ACE (i.e. greater severity of abuse and neglect), the higher the participants scored on the perceived stress test (Schilling, Aseltine, & Gore, 2008). Another study focusing solely within a population of college students looked to highlight ACE, perceived stress, and social support. Aside from 34% of the sample experiencing two or more categories of ACE, those participants who reported higher levels of stress also reported less feelings of social support (Karatekin et al., 2016).

The population of emerging adults are of interest in relation to studying stress, as emerging adults can be classified in a transitional period of life, presented with a variety of new tasks and external stressors. For individuals who experienced ACE, these new experiences may exacerbate the toxic stressors carried from childhood, which could impact their future success.

ACE and TEA

Previous literature has suggested that individuals who experienced trauma in childhood are required to assimilate into adult responsibilities sooner, and therefore feel like adults earlier than others (Arnett, 2016). One study on the TEA across different social classes suggested that individuals with ACE are less likely to relate to the dimensions of emerging adulthood, such as optimism and possibilities, due to their early transition into adult roles (Arnett, 2016). The TEA

has been used clinically among emerging adults to understand variations in health behaviors, such as substance use and mental health (Allem et al., 2015 & Schulenberg et al., 2004), but has limited use in understanding transition into emerging adulthood (Allem et al., 2015). There is a need to extend the use of the TEA in emerging adult populations to understand developmental differences in individuals who have experienced ACE and those who have not experienced ACE.

Presently, one study has been conducted using the TEA to demonstrate differences in those individuals with and without ACE and explored how those constructs may contribute to stress levels (Davis et al., 2018). In a sample of over 1,000 participants, those individuals with higher ACE scores showed less feeling of PB and SF and higher feelings of IS. Additionally, stress levels had a strong, positive relationship with feelings of IS. The researchers noted that the associations found in this study were small but introduced the notion of using the TEA and expanding it to research ACE.

The previously described study is the only study in the current literature examining the combination of ACE, TEA, and stress in emerging adults. However, participants for the study were all recruited from a single place of employment (Davis et al., 2018). The authors highlight the need for more research on the associations between ACEs and emerging adulthood across diverse groups (Davis et al., 2018). The findings from the current study look to expand the literature on ACE emerging adulthood. Specifically, it will contribute more information on the utilization of the TEA when examining ACE and stress across diverse groups of emerging adults.

Summary

Currently, research on ACE has focused on the physiological, psychological, and behavioral consequences of ACE exposure (Kalmakis et al., 2015). However, little focus has been given to the influences of ACE on healthy transitions into adulthood. To date, one study has

been conducted that examines the relationship between ACE, TEA, and stress (Davis et al., 2018). This warrants the need for more research on this relationship (Allem et al., 2013; & Karatekin et al., 2016). The findings from this study look to expand the limited literature on the associations between ACEs and emerging adulthood. More specifically, this study will provide new information on the utility of the TEA when examining ACE and stress across diverse groups of emerging adults. Further, the findings from this study will provide future researchers with more information on the themes of emerging adulthood, which can assist future interventions targeting emerging adults.

Chapter 3

Methodology

Introduction

The purpose of this study was to examine the relationship among ACE, the TEA constructs, and stress via an online questionnaire administered to a sample of emerging adults from a south-central state in the United States. This study aimed to provide more information on the relationship between ACE and stress by utilizing a theoretical framework, specifically the TEA, which can provide further information on the utility of theory when examining ACE and stress.

This chapter includes a summary of the study sample, recruitment process, sampling techniques, instrumentation and measurement protocols, research design, data collection and management procedures, and data analysis.

Research Questions

The research questions for this study are:

Primary Research Questions

1. What is the relationship between ACE exposure and the TEA constructs in emerging adults?
2. What is the relationship between the TEA constructs and stress in emerging adults?
3. How does ACE exposure impact the relationship between the TEA constructs and stress in emerging adults?

Secondary Research Questions

1. Is there a difference in ACE exposure among emerging adults based on demographic variables?

2. Is there a difference in the TEA constructs among emerging adults based on demographic variables?

Sample

The study used a non-random convenience sample design. Participants were 531 emerging adults between the ages of 18 to 29, presently living in a south-central state where data collection occurred. This sample consisted of 129 (24.3%) male, 393 (74%) female, and 9 (1.7%) transgender emerging adults. The average age of the sample was 21 years (*SD* = 2.91). 357 (67.2%) were White, 25 (4.7%) Black or African American, 46 (8.7%) Hispanic or Latino, 48 (9.0%) Asian or Pacific Islander, 19 (3.6%) American Indian, Alaskan Native, or Native Hawaiian, and 36 (6.8%) were Biracial or Multiracial. Demographics varied across participants, including college, non-college, married, and single emerging adults. Detailed participant characteristics can be found in Table 1. Inclusion of diverse groups was of importance for this study, as preceding literature has suggested the need for more research on the overlooked half of emerging adults, in reference to non-college individuals (Smith, Bahar, Cleeland, & Davis, 2014). Additionally, examining ACE in samples including non-college individuals holds further importance, as literature suggests that non-college emerging adults with ACE exposure are likely to mature into adult roles sooner, have lower perceived ratings of mental health, and relate less to the TEA constructs when compared to college student emerging adults (Arnett 2016; Sussman & Arnett 2014; & Davis et al., 2018).

Initially 683 individuals were recruited and gave consent to participate in the survey, 660 participants passed the screening question (age between 18-29) and were eligible for the study. Missing data was identified through examination of the response time and running frequency tests on the variables. In several cases (129), participants dropped out of the survey after only

completing the first or second scale, and therefore were omitted from the sample. By screening out cases with missing variables, a final sample of 531 participants were used for further analysis.

The sample size was pre-determined using a power analysis conducted with G*Power software (Version 3.1.9.2) for the multiple regression analysis using designated parameters (effect size = .10, Power = .80, α = .05, 7 tested predictors, 11 total predictors). The power analysis calculated a sample size of 151. This was rounded up to 200 to account for incomplete data and participant dropout. The final sample size of 531 exceeded the required the sample size to detect relationship significance, which was judged appropriate. The selection of emerging adults for this study was based on previous research recommendations that emerging adults need to be further studied in relation to ACE, as well as fitting within the inclusion criteria for utilizing the Theory of Emerging Adulthood as the theoretical framework for this study.

Table 1. Participant Characteristics

Demographics	Total (N = 531) *M (SD) or n (%)*
Age, in years	21.1 (2.91)
Female	393 (74.0%)
Male	129 (24.3%)
Transgender	9 (1.7%)
Race	
White	357 (67.2%)
Black or African American	25 (4.7%)
Hispanic or Latino/a	46 (8.7%)
Asian or Pacific Islander	48 (9.0%)
American Indian, Alaskan Native, or Native Hawaiian	19 (3.6%)
Biracial or Multiracial	36 (6.8%)
Education	
Graduate or Professional Degree (Master's, PhD, JD, MD)	62 (11.7%)
Bachelor's Degree	267 (50.3%)
Associate's Degree	44 (8.3%)
High School Diploma or Lower	158 (29.8%)
Employment	
Student	359 (67.6%)
Full-Time	72 (13.6%)
Part-Time	90 (16.9%)
Unemployed	10 (1.9%)
Marital Status	
Single	475 (89.5%)
Partnered	56 (10.5%)
Having Child(ren)	21 (4.0%)

Note. M = mean, SD = standard deviation.

Inclusion Criteria

Inclusion criteria for this study was limited to (1) emerging adults between the ages of 18 and 29 years old (2) currently living near the recruitment area. Participation was not restricted by gender, race, or any other demographic classification. Aside from meeting the age requirements, there were no other exclusion criteria for participation.

Instrumentation

The survey for this study was administered electronically via Qualtrics™, a secure online survey service, subscribed to by the primary investigator's institution. The 83-item survey

included a combination of demographic questions and measurement scales to assess the important study variables. Survey items included yes/no, Likert scale, and multiple-choice questions. Table 2 provides a summary of the survey instruments that were used in the electronic survey.

Table 2. Summary of Survey Scales and Items

Scale	Variable	Number of Items
Demographics	Participant Demographics	9
JVQ-EF	Adverse Childhood Experiences	33
IDEA	Theory of Emerging Adulthood constructs	31
PSS	Stress level	10

Note. JVQ-EF = Juvenile Victimization Questionnaire – Expanded Form; IDEA = Inventory of the Dimensions of Emerging Adulthood; PSS = Perceived Stress Scale.

Demographics. This survey included nine items to assess common demographic variables relevant to the population in question, including age, sex, race, highest educational attainment, employment status, hours worked per week, marital and parental status. These items were adapted from the National College Health Assessment (NCHA) and the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (CDC BRFSS, 2019). The demographic variables were used to compare group differences during data analysis.

Juvenile Victimization Questionnaire (JVQ) - Expanded Form. The Juvenile Victimization Questionnaire - Expanded Form (JVQ-EF) was chosen to measure ACE, the independent variable, in this study (Karatekin & Hill, 2018). The JVQ-EF is a 31-item measurement that assesses moderate to severe ACE experiences between the ages of 0 to 18. The

scale was adapted from the original ACE measurement (Felitti et al., 1998) and the original JVQ (Hamby et al., 2005) to expand on the definition of ACE. When completing the JVQ-EF, respondents answered questions regarding experiences that occurred before the age of 18. Response options for all items were dichotomous (yes/no) choices. A sample item from the scale states, "Did you often feel that no one in your family loved you or thought you were important?" 'Yes' responses were summed to yield an ACE score ranging between 0 to 31. When examined for psychometric properties, the combined measure showed good internal consistency reliability (Cronbach's alpha of .84 in this study) and good concurrent validity (Karatekin & Hill, 2018).

Inventory of the Dimensions of Emerging Adulthood. The Inventory of the Dimensions of Emerging Adulthood (IDEA) scale was used to measure the constructs of the Theory of Emerging Adulthood (TEA; Reifman et al., 2007). To date, the IDEA scale is the only existing measurement for the TEA constructs. The 31-item scale is a self-report measure that assesses the six constructs of the TEA: Identity Exploration, Instability, Self-Focus, Feeling In-Between, Possibilities, and Of-Others. Respondents answered items regarding current feelings using a 5-point Likert scale (1=strongly disagree; 5=strongly agree). A sample item from the scale states, "Is this period of your life a time of many possibilities?" Items within each subscale were averaged to receive a score ranging from 0 to 5. In previous studies, internal consistency reliability (Cronbach's alpha) scores were found to range from .70 to .85 for the various subscales in the IDEA, demonstrating acceptable internal consistency reliability (Riefman et al., 2007). The Cronbach's alpha in the present study was (.73) for IE, (.77) for PB, (.78) for IS, (.63) for SF, (.78) for FIB, and (.63) for OF.

Perceived Stress Scale. Participant stress levels were measured using the perceived stress scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). The 10-item self-report scale has

been widely used to measure how stressful individuals perceive situations in their lives to be (Cohen et al., 1983). The scale assessed the degree to which individuals perceive life events as uncontrollable and unpredictable (Nielsen et al., 2016). Respondents answered items about their feelings and thoughts over the last month using a 5-point Likert scale (0=never; 4=very often). A sample item from the scale states, "In the last month, how often have you been upset because of something that happened unexpectedly?" Reverse coding was used on the four positively stated items (4, 5, 7, and 8). That is, responses of the positively stated items were coded using the logic, 0 = 4, 1 = 3, 2 = 2, 3 = 1, and 4 = 0. Scores were obtained by reversing responses of the four positively stated items first, and then summing all scale items for a possible total score ranging from 0 to 40. Among 12 studies that have utilized the PSS, the Cronbach's alpha, or internal consistency reliability, was reported to be greater than .70 in all studies (Lee, 2012). The Cronbach's alpha of the scale in the present study was (.86).

Research Design

This study was a non-experimental cross-sectional quantitative study, which collected data from participants during a single point in time. The chosen research design was appropriate to measure the hypothesized relationships between the independent variable (ACE) and dependent variables (TEA constructs and stress level; Davis et al., 2018; & Corrales et al., 2014). The use of self-report data, as well as the sensitive and intimate nature of ACE and mental health, could have led to errors within internal validity. To address this, self-report questionnaires were selected to assist in comfort and privacy for participants. Additionally, participants were not asked to provide identifiable information and a waiver of informed consent was used to further protect participants' confidentiality and privacy. Another threat to internal validity could have been the retrospective nature of the ACE measure, which may have been

subject to recall bias (Karatekin, 2016). However, other studies have used this measure of ACE and have deemed that participant's current status does not impact the reliability of past childhood maltreatment reports (Pinto, Correia, & Maia, 2014). Further, due to the sample selected (i.e. emerging adults age 18 to 29), retrospective reports of ACE must be utilized, as all ACE events occur before the age of 18 years.

Participant Recruitment

In-person and email recruitment occurred at various sites in the Cleveland-Oklahoma metro areas, including local religious organizations, job training institutes, clinics, family planning organizations, and other corporations that employ emerging adults between the ages of 18 to 29. Dependent on the organization, recruitment occurred through multiple ways.

In-person recruitment: If the select organization granted permission for in-person recruitment, the researchers distributed the survey using the participant's handheld device. A weblink or QR code was used to open the survey. In-person recruitment allowed the researchers to monitor survey activity and to answer any questions the participant may have.

Email recruitment: If the select organization granted permission for email recruitment, an email containing the weblink and information about the study was sent to individuals by the organization on the behalf of the researchers. The researchers contact information was provided on the email if the participants were to have any comments, questions, or concerns.

Flyer recruitment: If the select organization granted permission for flyer recruitment, flyers containing a QR code, weblink, and a brief narrative about the study were posted in places designated by the organization.

Social media recruitment: If the select organization granted permission for social media recruitment, a post with the target population, a brief narrative of the study, and a weblink to the survey were distributed by the organization on behalf of the researchers.

Through the different avenues of recruitment, all participants were taken to the online survey. Participants were notified of the voluntary nature of this study. Participants were made aware of their confidentiality rights as a participant before consenting to partake in the study. Once consent was given, participants began the online survey. Researchers contact information was included on the consent form so that participants could contact if they had any questions about the survey or their rights as a participant.

Data Collection Procedures

Approval for data collection was obtained from the Institutional Review Board (IRB) at the University of Oklahoma, Norman campus before conducting the study. A comprehensive online survey was created using Qualtrics™, where participants were asked to respond to questions from the JVQ-EF Measure, IDEA measure, PSS measure, and provide demographic information. A weblink to the survey and/or a QR code to access the survey was distributed during participant recruitment processes. To protect participant confidentiality and due to the minimal risk associated with the study, a waiver of informed consent was requested from the IRB. In lieu of completing an informed consent document, which could identify participants, participants accessed the informed consent information on the first page of the survey.

The first page of the survey included the study's purpose, inclusion criteria, length of completion, voluntary nature of the study, confidentiality of participation, and the researcher's contact information. Participants were informed of their right to obtain their data after completing the study. At the end of the consent information, participants were asked to indicate

if they agree to participate in the study and were informed that participating in the study encompasses consent for participation. Participants who agreed to participate selected that they agree and proceeded to complete the online survey. Upon completion of the survey, participants were given the option to follow a separate link to enter a drawing to win one (1) of twenty electronic gift cards. The use of a separate link ensured that the participants who elected to enroll in the drawing could not be linked to their previous survey responses.

Participants' responses were recorded in the Qualtrics™ software after they were submitted and were exported to the statistical software following data collection for data analysis. The student researcher was responsible for data collection and management of the study data. Participant recruitment and data collection occurred during the fall of 2019.

Data Analysis

Following conclusion of data collection, the survey data was exported into the Statistical Package for Social Sciences (SPSS; Version 24) and was cleaned and prepared for data analysis. The researchers performed various descriptive statistics such as mean, frequency, and standard deviation for the primary study variables (PSS, IDEA, JVQ-EF) and demographic variables. Bivariate analyses (i.e., Pearson correlation, independent *t*-tests, and one-way ANOVA) were used to identify differences in the primary study variables (i.e., ACE, IE, PB, IS, SF, FIB, OF, & PSS) between participants based on demographic characteristics.

To answer RQ1, Pearson correlations were used to examine the bivariate relationships between ACE exposure (JVQ-EF) and the TEA constructs (IDEA) and multiple linear regression was used to examine how ACE exposure linked with TEA constructs controlling for demographic variables. Similarly, for RQ2, to examine the relationship between the TEA constructs (IDEA) and stress levels (PSS), Pearson correlation and multiple linear regression

were performed controlling for demographic factors. To determine how ACE exposure (JVQ-EF) may impact the relationship between the TEA constructs (IDEA) and stress (PSS; RQ3), multiple linear regression was performed including ACE, TEA constructs that significantly associated with stress, interaction between ACE and these TEA constructs as independent variables, and stress as dependent variables, controlling for demographic characteristics. Lastly, a series of independent sample t tests and one-way ANOVA's were used to examine the difference in ACE exposure (JVQ-EF) and TEA constructs (IDEA) between various demographic characteristics (RQ 4 and 5). Statistical analyses are outlined in Table 2 and organized by research question.

Table 3. Summary of Data Analysis Procedures by Research Question

Research Question	Data Analysis Procedures	Variable(s)
RQ 1: What is the relationship between ACE exposure and the Theory of Emerging Adulthood constructs in emerging adults?	Pearson correlation; Multiple linear regression	JVQ-EF, IDEA Subscales, Demographic variables
RQ 2: What is the relationship between the Theory of Emerging Adulthood constructs and stress in emerging adults?	Pearson correlation; Multiple linear regression	IDEA Subscales, Perceived Stress Scale, Demographic variables
RQ 3: How does ACE exposure impact the relationship between the Theory of Emerging Adulthood constructs and stress in emerging adults?	Multiple linear regression	IDEA Subscales, Perceived Stress Scale, JVQ-EF, Demographic variables
RQ 4: Is there a difference in ACE exposure among emerging adults based on demographic variables?	Independent Sample T-Test, one-way ANOVA	Demographic variables, JVQ-EF
RQ 5: Is there a difference in the Theory of Emerging Adulthood constructs among emerging adults based on demographic variables?	Independent Sample T-Test, one-way ANOVA	Demographic variables, IDEA Subscales

Note. JVQ-EF = Juvenile Victimization Questionnaire- Expanded Form; IDEA = Inventory of the Dimensions of Emerging Adulthood; PSS = Perceived Stress Scale.

Chapter 4

Results

RQ1: ACE Exposure and the Theory of Emerging Adulthood Constructs

As shown in Table 4, Pearson correlation suggested that ACE exposure was significantly associated with Identity Exploration (IE) ($r = .09$, $p < .05$) and Instability (IS) ($r = .18$, $p < .01$). Bivariate correlations were not significant with other TEA constructs. Multiple regression results (Table 5) indicated that ACE had significant association with Instability (ß = .19, $p < .001$) after controlling for gender, race, education, employment, and marital status. The relationship between ACE exposure and IE, however, became nonsignificant ($ß = .08$, $p = .09$) after controlling for these demographic characteristics.

The results partially supported H_1, as there was a significant relationship between higher levels of ACE exposure and the construct of Instability (NI). Therefore, we reject the null hypothesis as higher levels of ACE exposure were significantly associated with greater feelings of Negativity and Instability.

Table 4. Bivariate Correlations among Variables

	Mean	SD	Range	IE	PB	IS	OF	SF	FIB	ACE	PS
IE	24.03	3.25	0-28	1.00	.438**	.157**	0.08	.459**	.379**	.086*	0.02
PB	16.82	2.49	0-20	.438**	1.00	0.02	-0.08	.633**	.288**	-0.02	-.163**
IS	22.39	3.49	0-28	.157**	0.02	1.00	-0.06	-.125**	.238**	.181**	.637**
OF	7.34	2.06	0-12	0.08	-0.08	-0.06	1.00	0.01	-.089*	0.04	-0.04
SF	20.27	2.43	0-24	.459**	.633**	-.125**	0.01	1.00	.174**	0.02	-.252**
FIB	10.29	2.01	0-12	.379**	.288**	.238**	-.089*	.174**	1.00	-0.02	.204**
ACE	7.66	5.23	0-33	.086*	-0.02	.181**	0.04	0.02	-0.02	1.00	.280**
PS	20.99	6.72	0-40	0.02	-.163**	.637**	-0.04	-.252**	.204**	.280**	1.00

Note. IE = Identity Exploration, P = Possibilities, I = Instability, OF = Of Others, SF = Self-Focus, FIB = Feeling In-Between, ACE = Adverse Childhood Experiences, PS = Perceived Stress, SD = standard deviation,
Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5. Regression Analysis of ACE Predicting IDEA

	Identity Exploration	Possbilities	Instability	Of-Others	Self-Focus	Feeling In-Between
	Standardized Coefficients Beta	Standardized Coefficients Beta	Standardized Coefficients Beta	Standardized Coefficients Beta	Standardized Coefficients Beta	Standardized Coefficients Beta
ACE	0.08	0.06	0.19***	-0.01	0.09	0.03
Age	-0.07	-0.22***	-0.04	0.03	-0.02	-0.26***
Gender (reference: male)						
Female	0.15***	0.12**	0.16***	0.00	0.14**	0.21***
Transgender	0.01	0.01	0.10**	-0.02	-0.05	0.08
Race (reference: white)						
Black or African American	0.08	-0.04	-0.02	-0.03	-0.01	0.00
Hispanic or Latino/a	0.01	0.03	0.01	-0.01	0.01	0.01
Asian or Pacific Islander	0.03	0.05	-0.03	0.02	0.06	-0.02
American Indian, Alaskan Native, or Native Hawaiian	0.00	-0.04	-0.01	0.05	-0.09*	-0.07
Biracial or Multiracial	0.02	-0.06	0.05	-0.04	-0.05	-0.01
Education (reference: High School or Lower)						
Graduate or Professional Degree (Master's, PhD, JD, MD)	-0.01	0.02	-0.05	0.14*	0.01	0.07
Bachelor's Degree	0.01	0.07	0.06	0.13*	0.00	0.12*
Associate's Degree	0.03	0.08	-0.02	0.11*	0.02	0.01
Employment (reference: Student)						
Full-Time	0.00	-0.06	-0.07	0.10*	-0.07	-0.09
Part-Time	-0.06	-0.09	0.05	0.08	-0.08	0.07
Unemployed	0.05	-0.03	0.05	0.05	-0.07	0.04
Marital Status Partnered (reference: Single)	-0.04	-0.1*	-0.01	0.23***	-0.07	-0.13**
Having Child(ren)	0.01	-0.19***	-0.08	0.15***	-0.12**	-0.07

Note. Numbers are in standardized beta coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$.

RQ2: The Theory of Emerging Adulthood Constructs and Stress

Significant bivariate correlations were identified for Possibilities (r = -.16, p < .01), Instability (r = .64, p < .01), Self-Focus (r = -.25, p < .01), and Feeling In-Between (r = .20, p < .01). As shown in Table 6, the same relationships hold with regression analysis. That is, stress level was significantly associated with the TEA constructs of Possibilities ($ß$ = -.14, p < .01), Instability ($ß$ = .59, p < .001), Self-Focus ($ß$ = -.10, p < .05), and Feeling In-Between ($ß$ = .12, p < .01) after controlling for gender, race, education, employment, marital status, and having children. Associations were not significant with other TEA constructs.

These results show strong support for H_2, as several TEA constructs had a significant relationship with stress levels. Individuals with higher levels of stress reported less feeling of Experimentation and Possibilities, greater feelings of Negativity and Instability, less feeling of Self-Focus, and greater feelings of Feeling in Between. Therefore, we reject the null hypothesis as the results did show significant relationships between stress and the TEA constructs.

Table 6. Regression analysis of IDEA Predicting Stress

	Unstandardized Coefficients B	Standardized Coefficients Beta	*t*	*p* value
Identity Exploration	-0.07	-0.03	-0.81	0.42
Possibilities	-0.37	-0.14	-3	0.003**
Instability	1.14	0.59	17.06	.000***
[thinking] Of-Others	0	0	0.02	0.98
Self-Focus	-0.27	-0.1	-2.22	0.02*
Feeling In-Between	0.41	0.12	3.12	0.002**
Age	-0.04	-0.02	-0.41	0.68
Gender (reference: male)				
Female	1.25	0.08	2.34	0.02*
Transgender	2.08	0.04	1.21	0.23
Race (reference: white)				
Black or African American	0.34	0.01	0.33	0.75
Hispanic or Latino/a	0.93	0.04	1.19	0.23
Asian or Pacific Islander	0.69	0.03	0.9	0.37
American Indian, Alaskan Native, or Native Hawaiian	1.81	0.05	1.49	0.14
Biracial or Multiracial	-0.96	-0.04	-1.1	0.27
Education (reference: High School or Lower)				
Graduate or Professional Degree (Master's, PhD, JD, MD)	-1.53	-0.07	-1.57	0.12
Bachelor's Degree	-0.89	-0.07	-1.48	0.14
Associate's Degree	-1.96	-0.08	-2.08	0.04*
Employment (reference: Student)				
Full-Time	1.29	0.07	1.81	0.07
Part-Time	-0.07	0	-0.1	0.92
Unemployed	-1.45	-0.03	-0.88	0.38
Marital Status Partnered (reference: Single)	-0.6	-0.03	-0.77	0.44
Having Child(ren)	1.69	0.05	1.37	0.17

Note. Numbers are standardized beta coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$.

RQ3: ACE Exposure, the Theory of Emerging Adulthood Constructs, and Stress

A significant bivariate correlation was identified between ACE exposure and stress level (r = .28, p < 01). To examine how ACE exposure impacted the relationship between the TEA constructs and stress, multiple linear regression was conducted. This analysis was only performed with TEA constructs that were significantly associated with stress in the prior multiple regression analysis, namely, experimentation/possibilities, negativity/instability, self-focus, and feeling in between. Significant interaction effect was identified for ACE and feeling in between influencing stress (ß = .07, p < .05). As shown in Figure 1, a steeper increase of stress associated with feeling in between was observed among those who reported higher ACE compared to these reported lower ACE. No significant interaction effect was identified with other IDEA variables. The results partially supported H_3, as ACE exposure was found to only impact the relationship between feeling in between and stress. Therefore, we reject the null hypothesis.

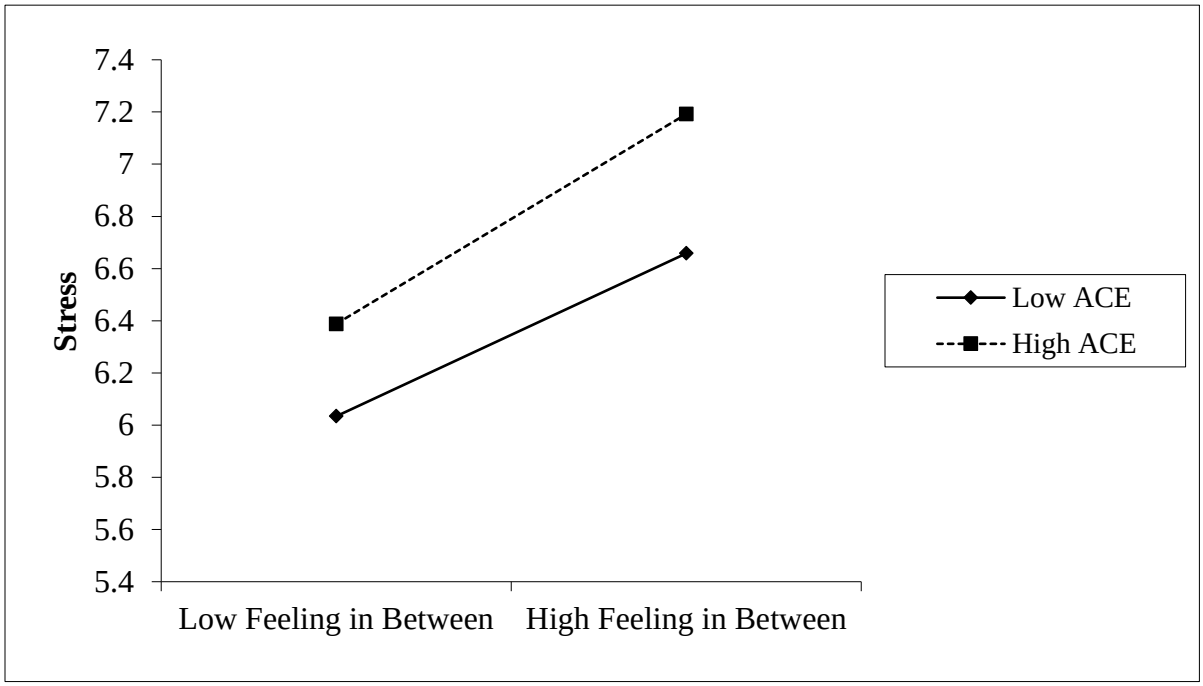

Figure 1. Interaction Plot for ACE and Feeling in Between Influencing Stress

RQ4: ACE Exposure by Demographic Characteristics

Among the 531 emerging adults who completed the survey, 516 (97.2%) had experienced at least one form of ACE. Over two-thirds of the sample (67.5%) had 5 or more ACE's, and a third of the sample (32.1%) had 10 or more ACE's.

One-way ANOVA test identified significant group differences for ACE by race, F (5, 525) = 7.01, $p < .001$. Bonferroni post hoc analysis indicated that those who identified as Hispanic or Latino/a (M = 9.80, SD = 5.24) and American Indian, Alaskan Native, or Native Hawaiian (M = 11.95, SD = 6.68) reported higher levels of ACE than those who identified as White (M = 7.07, SD = 4.98) and those who identified as Asian or Pacific Islander (M = 6.35, SD = 5.23). Other comparisons of race categories did not show significant difference on ACE exposure.

Significant group differences were identified for ACE by employment, F (3, 527) = 6.88, $p < .001$. Bonferroni post hoc analysis indicated that those who were employed full-time (M = 9.54, SD = 5.88) reported higher levels of ACE than those who were full-time students (M = 7.02, SD = 5.07). Other employment categories did not show significant difference on ACE.

Significant group difference was also identified for having children. Those who had children (M = 11.86, SD = 7.02) reported significantly higher ACE compared to those who did not have children (M = 7.48, SD = 5.08), t (20.87, equality of variance not assumed) = 2.82, p <.05. No significant difference was identified for education, F (3, 527) = 1.08, p = .36, gender, F (2, 528) = .84, p = .43, or marital status t (67.92, equality of variance assumed) = -1.36, p <.16.

These results supported H_4, as significant group differences were identified for ACE exposure among different demographic variables. Group differences were identified for ACE by race, employment status, and having had children. Therefore, we reject the null hypothesis.

RQ5: The Theory of Emerging Adulthood Constructs by Demographic Characteristics

IE. For Identity Exploration, significant group differences were identified by gender, F (2, 528) = 6.62, $p < .001$. Females (M = 25.33, SD = 3.19) reported greater feelings of Identity Exploration when compared to males (M = 23.15, SD = 3.29). Other gender categories did not show significant difference on IE. No significant difference was identified for race, F (5, 525) = 1.13, p = .34, education, F (3, 527) = 1.08, p = .34, employment, F (3, 527) = .95, p = .42, marital status t (65.45, equality of variance assumed) = .89, $p < .37$, and those who had children t (21.98, equality of variance assumed) = .44, $p < .66$.

PB. For Possibilities, significant group differences were identified by gender, F (2, 528) = 2.99, $p < .05$. Females (M = 16.97, SD = 2.46) reported greater feelings of Possibilities when compared to males (M = 16.36, SD = 2.55). Other gender categories did not show significant difference on EP. Significant group differences were also identified for education, F (3, 527) = 5.72, $p < .001$. Bonferroni post hoc analysis indicated that those with a Graduate or Professional Degree (Master's, PhD, JD, MD) (M = 15.85, SD = 2.79) reported greater feelings of Possibilities when compared to those with a Bachelor's Degree (M = 17.19, SD = 2.38). Other education categories did not show significant differences on PB. Significant group differences were also identified for employment, F (3, 527) = 6.92, $p < .001$. Bonferroni post hoc analysis indicated that those who were employed part-time (M = 16.33, SD = 2.19) and employed full-time (M = 15.92, SD = 2.59) reported greater feelings of Possibilities than those who identified as students (M = 17.14, SD = 2.41). Other employment categories did not show significant difference on PB.

Significant group difference was also identified for marital status. Those who identified as single (M = 16.98, SD = 2.36) reported greater feelings of Possibilities than those who

identified as partnered (*M* = 15.48, *SD* = 3.12), *t* (62.67, equality of variance not assumed) = 3.47, *p* <.001. Significant group difference was also identified for having had children. Those who did not have children (*M* = 16.95, *SD* = 2.34) reported greater feelings of Possibilities than those who had children (*M* = 13.66, *SD* = 3.79), *t* (20.63, equality of variance not assumed) = -3.93, *p* <.001. No significant difference was identified for race, *F* (5, 525) = 1.11, *p* = .35.

IS. For Instability, significant group differences were identified by gender, *F* (2, 528) = 9.47, *p* < .001. Bonferroni post hoc analysis indicated that females (*M* = 22.71, *SD* = 3.27) and transgender (*M* = 24.33, *SD* = 2.74) reported greater feelings of Instability when compared to males (*M* = 21.31, *SD* = 3.95). Significant group differences were also identified for education, *F* (3, 527) = 4.55, *p* < .01. Bonferroni post hoc analysis indicated that those with a High School Diploma or Lower (*M* = 22.58, *SD* = 3.42) and those with a Bachelor's Degree (*M* = 22.72, *SD* = 3.39) reported greater feelings of Instability than those with a Graduate or Professional Degree (Master's, PhD, JD, MD) (*M* = 21.16, *SD* = 3.72). Other education categories did not show significant difference on IS. Significant group differences were also identified for employment, *F* (3, 527) = 2.72, *p* < .05. However, based on Bonferroni post hoc analysis, no significant between differences were identified. No significant difference was identified for race, *F* (5, 525) = 1.20, *p* = .31, marital status *t* (66.35, equality of variance assumed) = .89, *p* < .37, and having children *t* (21.39, equality of variance assumed) = -1.49, *p* < .14.

OF. For [thinking] Of-Others, significant group differences were identified for education, *F* (3, 527) = 6.36, *p* < .001. Bonferroni post hoc analysis indicated that those with an Associate's Degree (*M* = 8.04, *SD* = 2.31) and those with a Graduate or Professional Degree (Master's, PhD, JD, MD) (*M* = 8.09, *SD* = 2.37) reported greater feelings of thinking Of-Others than those with a High School Diploma or Lower (*M* = 6.99, *SD* = 1.89). Additionally, those with a Graduate or

Professional Degree (Master's, PhD, JD, MD) (M = 8.09, SD = 2.37) reported greater feelings of thinking Of-Others than those with a Bachelor's Degree (M = 7.25, SD = 1.97).

Significant group differences were also identified for employment, F (3, 527) = 5.31, p < .001. Bonferroni post hoc analysis indicated that those who were employed full-time (M = 8.14, SD = 2.06) reported greater feelings of thinking Of-Others than those employed part-time (M = 7.25, SD = 1.96) and those who identified as students (M = 7.17, SD = 2.03), Other employment categories did not show significant difference.

Significant group difference was also identified for marital status. Those who identified as partnered (M = 9.14, SD = 2.15) reported greater feelings of thinking Of-Others than those who identified as single (M = 7.12, SD = 1.94), t (65.98, equality of variance not assumed) = -6.69, p <.001. Furthermore, those who did have children (M = 9.71, SD = 2.61) reported greater feelings of thinking Of-Others than those who did not have children (M = 7.24, SD = 1.97), t (20.95, equality of variance not assumed) = 4.29, p <.001.No significant difference was identified for gender, F (2, 528) = .37, p = .69, or race, F (5, 525) = 1.08, p = .37.

SF. For Self-Focus, significant group differences were identified for gender, F (2, 528) = 5.12, p < .01. Bonferroni post hoc analysis indicated that females (M = 20.46, SD = 2.39) reported greater feelings of SF than males (M = 19.79, SD = 2.51). Other gender categories did not show significant difference. Significant group differences were also identified for marital status. Those who identified as single (M = 20.35, SD = 2.39) reported greater feelings of SF than those who identified as partnered (M = 19.55, SD = 2.67), t (65.85, equality of variance not assumed) = 2.15, p <.05. Those who did not have children (M = 20.34, SD = 2.36) reported greater feelings of SF than those who did have children (M = 18.52, SD = 3.33), t (20.84, equality of variance not assumed) = -2.48, p <.05. Despite an overall significant test result for

employment, F (3, 527) = 3.23, $p < .05$, Bonferroni post hoc analysis identified no significant between group differences. No significant difference was identified for race, F (5, 525) = 1.03, p = .39, or education, F (3, 527) = .71, p = .55.

FIB. For Feeling In-Between, significant group differences were identified for gender, F (2, 528) = 10.81, $p < .001$. Bonferroni post hoc analysis indicated that females (M = 10.50, SD = 1.87) reported greater feelings of FIB than males (M = 9.60, SD = 2.28), but no difference was found with the transgender group.

Significant group differences were also identified for education, F (3, 527) = 9.24, $p <$ .001. Bonferroni post hoc analysis indicated that those with a High School Diploma or Lower, (M = 10.37, SD = 1.70) and those with a Bachelor's Degree (M = 10.60, SD = 1.82) reported greater feelings of FIB than those with an Associate's Degree (M = 9.39, SD = 2.51) and those with a Graduate or Professional Degree (Master's, PhD, JD, MD) (M = 9.45, SD = 2.62).

Significant group differences were also identified for employment, F (3, 527) = 9.85, $p <$ .001. Bonferroni post hoc analysis indicated that those employed part-time (M = 10.59, SD = 1.66) and those who identified as students (M = 10.45, SD = 1.89) reported greater feelings of FIB than those who were employed full-time (M = 9.14, SD = 2.38).

Those who identified as single (M = 10.43, SD = 1.81) reported greater feelings of FIB than those who identified as partnered (M = 9.14, SD = 2.98), t (59.89, equality of variance not assumed) = 3.17, $p <.01$. Finally, those who did not have children (M = 10.36, SD = 1.95) reported greater feelings of FIB than those who did have children (M = 8.62, SD = 1.95), t (20.89, equality of variance not assumed) = -2.98, $p <.01$. Lastly, no significant difference was identified for race, F (5, 525) = 1.09, p = .37.

These results supported H_5, as significant group differences were identified for TEA constructs among different demographic variables. Group differences were identified for all constructs, varying on the demographic variable. Therefore, we reject the null hypothesis.

Chapter 5

Discussion

Adverse Childhood Experiences (ACE), Stress, and Emerging Adulthood have been researched thus far in their own respects, with limited research exploring how these three elements may co-exist. This study investigated the relationship between ACE, stress, and feelings toward Emerging Adulthood in a sample of emerging adults. Overall, this study identified significant relationships between ACE and the TEA construct Instability; significant relationships between the TEA constructs of Possibilities, Instability, Self-Focus, and Feeling In-Between and stress; and significant relationships between ACE exposure and stress varied by the TEA construct Feeling-In-Between. Additionally, several significant group differences were identified for ACE and TEA constructs, which varied by demographic factors. This chapter discusses the findings on the prevalence of ACE, perceived stress, feelings toward emerging adulthood, discussion of results, limitations, and recommendations for future research.

Prevalence of ACE among Emerging Adults

The sum of ACE scores (M = 7.66, SD = 5.23, *Scale Range* = 0-23) can be broken down into different dimensions of ACE. Four categories of ACE were examined, including peer dysfunction, household dysfunction, community dysfunction, and child maltreatment. Recent reports from the Behavioral Risk Factor Surveillance System (BRFSS) that examined these same ACE dimensions, indicated that in a national sample, 61% of individuals had experienced one or more ACE (Merrick et al., 2018). In this study, 97.2% of participants in the current study reported one or more ACE, which is much greater than the national score.

Peer Dysfunction. Being the most reported ACE category in this study, 451 participants (84.9%) had experienced peer dysfunction, which included properties such as physical bullying,

name-calling, and social isolation. This finding is particularly important, as peer dysfunction is an emerging category of ACE, less prominent in older ACE literature. Bullying, threatening, and racial discrimination are among the multiple socio-behavioral factors that researchers urged be included in modern ACE scales, now that more information has emerged on the negative health outcomes as a result of these (Karatekin & Hill, 2018; Hertz & Wright, 2013; & CDC, 2020).

Household Dysfunction. The second most reported ACE was household dysfunction, as 393 participants (74%) reported having experienced family substance abuse, separation of parents, family psychopathology, or domestic violence. These findings are consistent with data from the CDC's Behavioral Risk Factor Surveillance System (BRFSS), which identified household substance abuse to be the second most prevalent category of ACE nationally, followed by parental separation or divorce (CDC, 2016).

Community Dysfunction. 350 participants (65.9%) reported having experienced community dysfunction, which included properties such as witnessing physical violence, criminal activity, and forced sexual encounters. Of the 350 participants who reported community dysfunction, 264 (75.4%) were females. This finding could be attributed to the sample being predominately female (74%), however, the finding is consistent with previous ACE findings, as women are more likely to experience and report sexual abuse and physical violence when compared to men (Finkelhor, Turner, Shattuck, & Hamby, 2015).

Child Maltreatment. While slightly less prevalent, a little over half of the sample, 300 participants (56.5%), Childhood maltreatment experiences include physical and verbal abuse, neglect, domestic violence, and family separation. Lower levels of child maltreatment within this sample could be attributed to the higher education levels, as over two thirds of the sample (70.2%) reported having an Associate's Degree or higher. Higher educational attainment has

previously been correlated with lower levels of child maltreatment (Nurius, Green, Logan-Greene, & Borja, 2015).

Perceived Stress among Emerging Adults

Among 521 participants, the lowest reported stress level was 3 and the highest was 36 (*Scale Range* = 0-40). Therefore, 100% of the sample reported experiencing stress. The mean stress level for this population (*M* =20.99, *SD* = 6.72) was considerably higher than older studies that have examined perceived stress (Cohen et al., 1988) but consistent with newer studies using emerging adult populations (Beiter et al., 2015; Davis et al., 2018; & Kalmakis et al., 2019). This high level could be attributed to multiple factors, such as much of the sample identifying as students (67.6%) as research indicated that students generally experience higher levels of stress when compared to non-students (Kalmakis et al., 2019). Additionally, the identified high level of stress is consistent with TEA's proposition that emerging adults who are experimenting and exploring social roles may encounter stress while doing so (Kumaraswamy, 2013 & Barnes, Howell, & Miller-Graff, 2016).

Feelings toward Emerging Adulthood

Arnett's theory of emerging adulthood suggests that emerging adulthood is characterized as a transitional period, where individuals are delaying adult roles and exploring where they fit in society (Arnett, 2000). The study sample of 521 emerging adults overall supported the constructs of this theory, as most indicated that this period of their lives was a time for Identity Exploration (*M* = 24.03, *SD* = 3.25, *Scale Range* = 0-28), a time for Possibilities (*M* = 16.82, *SD* = 2.49, *Scale Range* = 0-20), and a time for Self-Focus (*M* = 20.27, *SD* = 2.43, *Scale Range* = 0-24). Also supporting the theory, the sample indicated that this period of their life was not a time for Thinking of Others (*M* = 7.34, *SD* = 2.06, *Scale Range* = 0-12). This sample reported higher

levels of Feeling In-Between (*M* = 10.30, *SD* = 2.01, *Scale Range* = 0-12) than previous studies with emerging adult samples (Davis et al., 2018), which suggests this sample may have a harder time distinguishing between not quite an adult yet, but not a child anymore either. Lastly, this sample had greater feelings of Instability (*M* = 22.39, *SD* = 3.49, *Scale Range* = 0-28) when compared to the previous study, but compliments the findings of the other TEA constructs in this study, as the theory predicts that emerging adults experiencing the other constructs are also more likely to feel unstable (Arnett & Tanner, 2006).

RQ1: ACE Exposure and the Theory of Emerging Adulthood Constructs

Unlike previous studies that identified emerging adults with high levels of ACE exposure to be less likely to endorse the constructs of emerging adulthood (Davis et al., 2018), our study identified greater feelings of Identity Exploration among those with higher ACE exposure in bivariate analysis. This difference can be viewed through modern adaptations of literature on ACE, which support the notion of individuals with ACE assimilating into emerging adulthood being more likely to break away from the norms of their childhood (Karatekin et al., 2016). However, this association went away after controlling for demographic characteristics indicating it was probably specific demographic groups that have been driving the bivariate relationship. More research within younger generations, especially within Gen Y and Gen Z, is needed to understand how modernization and access to resources has changed how individuals cope with childhood trauma.

Consistent with previous literature were the findings of greater feelings of Negativity and Instability were associated with higher levels of ACE, even after controlling for a range of demographic characteristics. ACE's have been found to impair healthy emotional functioning, including neurobiological pathways that attribute negative feelings toward events, such as increased stress responses (Hammen, Henry, Daley, & Kendall, 2000).

RQ2: The Theory of Emerging Adulthood Constructs and Stress

Significant relationships between stress and TEA were identified for 4 of the 6 constructs, Possibilities, Instability, Self-Focus, and Feeling In-Between. Individuals with higher levels of stress reported less feeling of Possibilities. Stress can come from multiple sources in emerging adulthood, such as finances, school, and social life (Saleh, Camart, & Romo, 2017). The stress from these obligations can make the individuals feel like they have less possibilities or opportunities as others. Also reported was greater feelings of Instability, which is consistent with literature on stress in emerging adults, as higher stress can make them feel like situations in their life are uncontrollable (Karatekin et al., 2016). This sample also reported feeling less Self-Focus, which is contradictory for what the TEA hypothesizes, which is that emerging adults will be more focused on themselves (Arnett, 2000). However, psychology literature supports the idea that higher levels of stress can disrupt normal emotion processing in this population, which could give explanation for why they are less Self-Focused (Teicher & Samson 2016). Lastly, this sample reported greater feelings of Feeling in Between. This finding is particularly important, as it demonstrates that higher stress can contribute to not quite feeling like adults yet, but at the same time not children anymore, which can feed into the TEA constructs previously mentioned.

No previous studies have identified significant relationships between the constructs of the TEA and stress levels in emerging adults. However, the findings are consistent with literature on stress in emerging adults which have identified instability and gain of independence as major sources of stress for this developmental stage (Beiter et al., 2015; Hurst & Baranik, 2012; & Kumaraswamy, 2013). It is also important to note that these results are consistent with evolving societal pressures placed on younger generations, such as role demands, achievements, and socializing (Foster, Hagan, & Brooks-Gunn, 2008). This further compels the need for more research within the emerging adulthood population.

RQ3: ACE Exposure, the Theory of Emerging Adulthood Constructs, and Stress

Emerging adults who reported higher levels of the TEA construct of Feeling In-Between experienced higher stress level and this relationship was stronger among those who reported more ACE exposure compared to those who reported less ACE exposure. As discussed in the previous section, Feeling In-Between is characterized as uncertainty of not quite feeling like an adult, but not a child anymore either. This uncertainty can evoke stress, as individuals struggle to identify with one group (Karatekin & Hill, 2018). The presence of ACE exacerbating stress levels in individuals who feel in between is of novel importance as it introduces a new idea to the literature, which is that emerging adults with ACE might have a harder time emotionally coping with the uncertainty of this period of life, due to being more susceptible to higher levels of stress. Evidence can be partially given for this claim, as prior research has shown that ACE can impair emotional response in adulthood, such as minor events evoking larger stress reactions (Hammen, Henry, Daley, & Kendall, 2000; & Teicher & Samson 2016).

With ever changing social norms and demands, including increased performance expectations of emerging adults, future research among this population would benefit from focusing on individuals with ACE, and how their emotional response to the uncertainty of emerging adulthood can impact this.

RQ4: ACE Exposure by Demographic Characteristics

Individuals who identified as Hispanic or Latino/a and American Indian, Alaskan Native, or Native Hawaiian reported higher ACE exposure than those individuals who identified as White and Asian or Pacific Islander. These findings are consistent with literature on ACE prevalence across different cultural groups, which has identified higher prevalence of ACE among Hispanic children when compared to White and Asian (Caballero et al., 2017; Sacks & Murphey, 2018). Higher ACE exposure was also identified for those who had children, when

compared to those who did not have children. Previous ACE literature has supported the notion that individuals with ACE will be more likely to have children and start families at a younger age than individuals without ACE (Arnett, 2016). These findings demonstrated differences among individuals within the same age group based on life experiences, which propels the need for further understanding in ACE manifestation.

RQ5: The Theory of Emerging Adulthood Constructs by Demographic Characteristics

Identity Exploration. The only significant group differences identified for IE were between Gender. Females reported greater feelings of IE, which suggests that females might be exploring new interests, hobbies, areas of study, or careers during this time, when compared to males (Chen et al., 2018).

Possibilities. Differences were identified by gender for PB, as females reported greater feelings than males. This could be viewed in connection with the above construct, IE, as females may feel greater flexibility during this time. Education was also significant between groups, as those with a Graduate or Professional degree felt that they had greater PB than those with a bachelor's degree. There can be many explanations for this, such as greater job flexibility that comes with a higher-level degree- leading to greater possibilities or having a greater salary with a higher-level degree- leading to more life possibilities for the individual. Additionally, those individuals who worked part-time and full-time reported greater feelings of PB when compared to students. Similar to the explanation above, these working individuals might have greater flexibility, such as moving cities for jobs, or having a stable salary, which can increase PB. Those who identify as students are likely confined to one environment, and have no constant income yet, leading to less life PB. Lastly, significant difference was identified for those who were partnered vs. single, and those who had children vs. did not have children. Individuals that

were partnered and individuals that had children reported significantly less feelings of PB. This can be explained through responsibilities and obligations that those individuals have for others, which may remove them from the individualistic idea of PB.

Instability: Significant group differences were identified for IS by gender. Females and Transgender reported greater feelings of IS when compared to males. This can be attributed to several things, such as females usually reporting higher emotional levels as males, but it can also be attributed to different societal pressure and expectation placed on Females and Transgender, such as stigma, appearance, and vulnerability (Hushto, Reisner, & Pachankis, 2015). Those individuals with high school diploma's and bachelor's degrees also reported higher IS when compared to those with a graduate or professional degree. Like the construct of PB, individuals with lower level education may feel less flexibility to move within their career, as well as lower levels of pay that could increase feelings of IS.

Of-Others: For OF, those individuals with a graduate or professional degree reporting greater thinking OF when compared to those with a high school diploma or bachelor's degree. This can be explained through different life positioning. Those with a graduate degree are expected to be older, or in the upper portion of the 18-29 age range, and therefore may have family obligations, or jobs with greater expectations, that would increase their feelings of OF. The same occurred to those who worked full-time, who reported greater feelings of thinking OF when compared to those working part-time or students. The same notion above can be applied, which is that those working full-time could have greater job demands, or be supporting families, and therefore think OF more. Lastly, those individuals who were partnered, and those who had children reported greater feelings of thinking OF than their opposites, which comes with

perfectly clarity, as these individuals have instances outside of their individual life that come with commitment.

Self-Focus: Consistent with other constructs, females reported greater feelings of SF when compared to males. Similar to the construct of IE, females are more focused identifying their likes, dislikes, and roles. Those individuals who identified as single, and those without children reported greater feelings of SF when compared to those partnered and those with children, which can be viewed in the exact opposite sense of the above construct, thinking OF. Those single and without children are less likely to have obligations needing regular attention, which allows for more individualistic thinking and actions.

Feeling In-Between. In this sample, females reported greater FIB than males. This finding is consistent with TEA literature, as it is anticipated that greater levels of exploration, possibilities, and instability will place individuals in an uncertain phase in between childhood and adulthood (Arnett, 2000). Those with a high school diploma or bachelor's degree reported greater FIB than those with an associate's degree or graduate or professional degree, which seems scattered, but when you consider that often associate's degrees are obtained to enter the workforce, this might mean that the population with associate's and graduate or professional degrees lean more towards adult roles, whereas those with a high school diploma or bachelor's are still in the exploratory middle phase. Those with a part-time job and those that identified as students reported greater FIB than those working full-time, which speaks to the aspect of stability. Those working full-time might feel stable in their jobs and relate greater to adulthood, when compared to students and part-time workers that are still in a temporary phase. Finally, those who were single and those who did not have children reported greater FIB than their

opposites, which may indicate that those who are partnered, and those with children feel more assimilated into adult roles, whereas their counterparts do not yet feel one way or the other.

Limitations

Several limitations should be considered when interpreting the results of this study. This study focused on ACE exposure and emerging adulthood experiences in one sample of 18-29-year-olds, and therefore generalizations should not be made for other populations. Participants for this study were recruited in one south-central state in the United States, limiting the diversity of the sample. The study design was cross-sectional, and therefore focused on a certain time period, so associations found between variables cannot be assumed to be causal relationships. Data was collected using a non-random convenience sampling technique, and participation in the study was voluntary, therefore sample representativeness is a possible issue. The retrospective nature of the ACE measures has potential for recall bias, and since participants were beyond the age of 18 at the time of the study. Data was collected through a self-administered survey, and participant response was not monitored, which increased the chances of participants partially completing the survey or dropping out. In light of these issues, responses of participants who did not fully complete the survey were excluded in the analysis and the length of survey completion was also used as a consideration for data retention. Despite these measures taken to ensure data quality, the limitations of the data collection procedure should be noted.

Recommendations for Future Research

This study used a health behavior theoretical approach to understand influences of ACE stress and emerging adulthood experiences. Much of the current literature on ACE focuses on ACE manifestations in older adult populations, specifically in relation to poor health outcomes such as chronic health conditions and early death (Smyth et al., 2008). Missing from the ACE

literature, however, are analyses of those critical life moments in between, such as stress, stability, and sense of belongingness. Future research on ACE would benefit from understanding the progression of ACE from childhood as individuals mature into emerging adulthood, and how it can act to impair cognitive and social functioning. Additionally, future studies interested in how ACE manifests into poor health outcomes in older adults would also benefit from understanding where disruption originally occurred, such as already elevated stress levels as a young adult. Results from this study are to be interpreted lightly, as this is a new and emerging dimension of ACE literature. However, results from this study can be expanded and manipulated to cover a wide range of health outcomes in relation to ACE and emerging adulthood.

Conclusions

Current research on ACE exposure within emerging adult populations focuses primarily on negative health outcomes, such as alcohol and drug use, risky sexual behavior, and poor psychological health (Smyth et al., 2008). This study went beyond that, to understand how ACE exposure impacts everyday living for emerging adults, including how they view this period of life and what their roles in society are. Previous research has urged that emerging adulthood be viewed as a crucial period of development, equal to childhood, during which individuals' transition from the norms of their childhood into the norms of society (American Psychological Association, 2006). The Theory of Emerging Adulthood suggests that during this time, individuals are exploring their identities separate from their childhood, and are experimenting with their societal roles. Contrarily, disruptive life events such as ACE, can act as an antagonist in this critical development period. Individuals burdened by ACE may be less enthusiastic to experiment with roles and may live in what can be referred to as 'day to day' living, with little motivation or sense of purpose (Horan & Widom, 2015). This study identified that individuals

with ACE do not positively experience certain dimensions of emerging adulthood as developmental psychology suggests they would. However, individuals with ACE are more unstable and can evoke a larger stress reaction when faced with the uncertainty of emerging adulthood. This instability may be a result of un-predictable circumstances faced during childhood, now altering emotional coping strategies when presented with the new stressors of emerging adulthood.

The results of this study are not celebratory, as they shed perspectives into the intimate lives of individuals that may or may not have been placed into harsh situations out of their control. Childhood trauma continues to be a gray area for the behavioral science community, as every human life is delicately complex, and there are no one-way solutions. In what is usually considered a resilient and overlooked population, this study shows that emerging adults are equally, if not more vulnerable to events from their childhood and the social climate surrounding their age. Through mass media, childhood trauma is no longer a taboo and hidden conversation. Shared stories and open words of support can be seen on popular media sites, and future research on ACE must acknowledge this cultural shift with younger generations. This is a moment of empowerment, which can prove advantageous for future intervention strategies when working to address Adverse Childhood Experiences.

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Appendix A

Survey Instrument

Views of Life Survey (IDEA)

<u>Section A</u>: Choose the number that best describes you.

• First, please think about this time in your life. By "time in your life," we are referring to the present time, plus the last few years that have gone by, and the next few years to come, as you see them. In short, you should think about a roughly five-year period, with the present time right in the middle.

• For each phrase shown below, please place a check mark in one of the columns to indicate the degree to which you agree or disagree that the phrase describes this time in your life. For example, if you "Somewhat Agree" that this is a "time of exploration," then on the same line as the phrase, you would put a check mark in the column headed by "Somewhat Agree" (3).

• Be sure to put only one check mark per line.

Is this period of your life a…	Strongly Disagree (1)	Somewhat Disagree (2)	Somewhat Agree (3)	Strongly Agree (4)
Time of many possibilities?				
Time of exploration?				
Time of confusion?				
Time of experimentation?				
Time of personal freedom?				
Time of feeling restricted?				
Time of responsibility for yourself?				
Time of feeling stressed out?				

Time of instability?				
Time of optimism?				
Time of high pressure?				
Time of finding out who you are?				
Time of settling down?				
Time of responsibility for others?				
Time of independence?				
Time of open choice?				
Time of unpredictability?				
Time of commitments to others?				
Time of self-sufficiency?				
Time of many worries?				
Time of trying out new things?				
Time of focusing on yourself?				

Time of separating from parents?				
Time of defining yourself?				
Time of planning for the future?				
Time of seeking a sense of meaning?				
Time of deciding on your own beliefs and values?				
Time of learning to think for yourself?				
Time of feeling adult in some way but not others?				
Time of gradually becoming an adult?				
Time of being not sure whether you have reached full adulthood?				

Perceived Stress Scale (PSS)

<u>Section B</u>: Please choose the number that best describes you.

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often 1. In the last month, how often have you been upset because of something that happened unexpectedly?

0 1 2 3 4 2. In the last month, how often have you felt that you were unable to control the important things in your life?

0 1 2 3 4 3. In the last month, how often have you felt nervous and "stressed"? 0 1 2 3 4 4. In the last month, how often have you felt confident about your ability to handle your personal problems?

0 1 2 3 4 5. In the last month, how often have you felt that things were going your way?

0 1 2 3 4 6. In the last month, how often have you found that you could not cope with all the things that you had to do?

0 1 2 3 4 7. In the last month, how often have you been able to control irritations in your life?

0 1 2 3 4 8. In the last month, how often have you felt that you were on top of things?

0 1 2 3 4 9. In the last month, how often have you been angered because of things that were outside of your control?

0 1 2 3 4 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Juvenile Victimization Questionnaire- Expanded Form (JVQ-EF)

Section C: Please select yes/no to the statements that apply to you.

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

1. Did you get scared or feel really bad because grown-ups who took care of you (for example, parents, adult relatives, other adults who lived with you) called you names, said mean things to you, or said they didn't want you? Yes (1)/no (2)
2. Did you often feel that no one in your family loved you or thought you were important or special? Or did you feel that your family members didn't look out for each other, feel close to each other, or support each other? Yes/no
3. Not including spanking on your bottom, did grown-ups who took care of you (for example, parents, adult relatives, other adults who lived with you) ever hit, beat, kick, or physically hurt you in any way? Yes/no
4. Did any grown-up in your life (whether you knew him/her or not) touch your private parts when they shouldn't have or make you touch their private parts? Or did a grown-up force you to have sex, that is sexual intercourse of any kind? Yes/no
5. When someone is neglected, it means that the grown-ups in their life didn't take care of them the way they should. They might not get them enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. Were you neglected?
6. Was a member of your household diagnosed with depression, bipolar disorder, anxiety, or other psychiatric disorder? Or did a household member attempt suicide? Yes/no
7. Was there a time that a member of your household drank or used drugs so often that it caused problems? Yes/no
8. Was there a time when a grown-up member of your household (for example, a parent, step-parent, an adult relative, your parent's boyfriend or girlfriend) was arguing with, yelling at, and angry at another grown-up family member a lot of the time? Yes/no
9. Did you SEE a grown-up in your household get pushed, slapped, hit, punched, beat up, or hurt with or threatened with a weapon by another grown-up in the house? Yes/no
10. Did you SEE a grown-up member of your household hit, beat, kick or physically hurt your brothers or sisters, not including a spanking on the bottom? Yes/no
11. Did a parent, or someone who was like a parent to you (for example, a step-parent, guardian, close adult relative), have to go to prison? Yes/no
12. Did a parent, or someone who was like a parent to you, die for reasons other than being murdered? Yes/no
13. Were your parents separated or divorced? Yes/no

14. Did a parent, or someone who was like a parent to you, have to leave the country to fight in a war and was gone for several months or longer? Yes/no
15. Were you sent away or taken away from a parent or your family for any reason (not including voluntary separations, such as going to summer camp)? Yes/no
16. Sometimes people are attacked with sticks, rocks, guns, knives, or other things that would hurt. Did other kids, your siblings, or a girlfriend or boyfriend hit or attack you on purpose WITH an object or weapon? Somewhere like: at school, at a store, in a car, on the street, or anywhere else? Yes/no
17. Did other kids, your siblings, or a girlfriend or boyfriend threaten to physically hurt you when you thought they might really do it? Yes/no
18. Did you get scared or feel really bad because other kids, your siblings, your girlfriend or boyfriend were calling you names, saying mean things to you, or saying they didn't want you around? Yes/no
19. Did other kids, your siblings, a boyfriend, or a girlfriend force you to do sexual things? Yes/no
20. Were you hit or attacked because of your skin color, religion, or where your family comes from? Because of a physical problem you have? Or because someone said you were gay? Yes/no
21. Excluding instances where you were hit or attacked because of your skin color, religion, physical disability, sexual orientation, or where your family comes from, did you FEEL discriminated against because of these characteristics? Yes/no
22. Did you SEE anyone in real life get attacked on purpose WITH a stick, rock, gun, knife, or other thing that would hurt? Somewhere like: at school, at a store, in a car, on the street, or anywhere else <u>outside of home</u>? Yes/no
23. Did anyone steal something from your house that belongs to your family or someone you lived with? Things like a TV, stereo, car, or anything else? Yes/no
24. Was anyone close to you (for example, a family member, a friend, or neighbor) murdered? Yes/no
25. Did you see someone murdered in real life (not on TV, video games, or in the movies)? Yes/no
26. Were you in any place in real life where you could see or hear people being shot, bombs going off, or street riots? Yes/no
27. Were you in the middle of a war where you could hear real fighting with guns or bombs? Yes/no
28. Did anyone steal something from you and never give it back? Things like a backpack, money, watch, clothing, bike, stereo, or anything else? Yes/no
29. Did anyone use force to take something away from you that you were carrying or wearing? Yes/no
30. Did anyone break or ruin any of your things on purpose? Yes/no

31. Did someone you were really close to have a VERY BAD illness (e.g., heart attack, stroke, cancer) where he or she had to be in the hospital a lot? This would be someone important to you, like a family member or best friend. Yes/no
32. Did someone you were really close to have a VERY BAD accident (e.g., a traffic accident) where he or she had to be in the hospital for many days? Again, this would be someone important to you, like a family member or best friend. Yes/no
33. Was there a period of time when you had no really good friends and there was no one else you felt close to? Yes/no

Demographics

<u>Section D</u>: Choose the answer that best describes you.

1. What is your age? ____ years.

2. What is your gender?
   - Male
   - Female
   - Transgender
   - Other _____.

3. How do you usually describe yourself? (Mark all that apply)
   - White
   - Black
   - Hispanic or Latino/a
   - Asian or Pacific Islander
   - American Indian, Alaskan Native, or Native Hawaiian
   - Biracial or Multiracial
   - Other _____.

4. What is the highest level of school you have completed?
   - Less Than a High School Degree
   - High School diploma or Equivalent
   - Some College no Degree
   - Associate Degree
   - Bachelor's Degree
   - Graduate or Professional Degree (Master's, PhD, JD, MD)

5. Are you currently…?
   - Employed Full-Time
   - Employed Part-Time
   - Self-employed
   - Out of work for 1 year or more
   - Out of work for less than 1 year
   - A homemaker
   - A student
   - Unable to work
   - Other _____.

6. If yes to student, are you…?
   - Full-time
   - Part-time

7. If yes to student, what is your status?
    - Freshman
    - Sophomore
    - Junior
    - Senior
    - Graduate Student
    - Other _____.
8. What is your marital status?
    - Single
    - Married/Partnered
    - Separated
    - Divorced
    - Other _____.
9. Are you currently the parent of and/or guardian to a child under the age of 18?
    - Yes
    - No