ASSOCIATIONS BETWEEN ADVERSE CHILDHOOD EXPERIENCES (ACES) AND ANXIETY, LGBTQ BELONGINGNESS, AND RESILIENCE IN LGBTQ EMERGING ADULTS

By

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The current study sought to investigate the relationship between adverse childhood experiences (ACEs) and anxiety, and ACEs and LGBTQ belongingness. Further, the study examined the moderating impact of resilience on the relationship between ACEs and anxiety, and ACEs and LGBTQ belongingness. The increasing awareness of childhood trauma impacting anxiety outcomes, LGBTQ belongingness, and resilience for minority individuals, such as LGBTQ emerging adults, warrants the need to further understand the widespread impacts. Utilizing the minority stress theory, the researcher seeks to understand the impact of minority stressors such as discrimination or victimization on minority individuals. Primary data was analyzed using a survey, created in the online website Qualtrics. Findings highlight a partial significance between ACEs and anxiety, but not for ACEs and LGBTQ belongingness. Overall, results found resilience to moderate the interaction between high ACEs and high anxiety, but only for LGBTQ emerging adults with high resilience.

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CHAPTER 1: INTRODUCTION

Today, openly identifying as Lesbian, Gay, Bisexual, Transgender, Queer, and/or Questioning (LGBTQ) has become more common. According to a recent study, 4.5% of the United States population identifies as LGBTQ (LGBT, 2019). Similar to LGBTQ identification becoming more customary and drawing research and media attention, adverse childhood experiences (ACEs) have also seen increased interest among Americans. In 2019, the Centers for Disease Control and Prevention (CDC) reported that about 61% of adults surveyed across 25 U.S. states had experienced at least one ACE. In addition, a different study found LGBTQ participants reported experiencing multiple ACEs, with 58% reporting emotional neglect, 56% reporting emotional abuse, and 51% living with a family member with mental health illness (Craig et al., 2020). Resilience can play a crucial role in the relationship between ACEs and the well-being of LGBTQ individuals by moderating adverse outcomes associated with mental and physical health. Such adverse effects may include anxiety, depression, brain impairment, and more (Schnarrs et al., 2020).

There is a gap in the literature on ACE scores and resilience associated with LGBTQ emerging adults' anxiety and belongingness; therefore, this warrants more exploration. In addition, research shows the need to explore resiliency factors among LGBTQ individuals that might moderate risks of childhood adversity in adulthood (Anderson & Blosnich, 2013). The current study will address this gap in the literature using the minority stress model to examine the relationship between ACEs and LGBTQ emerging adults' anxiety symptoms and LGBTQ belongingness. Further, this study will determine whether resilience moderates this relationship, allowing for a better understanding of the potential impact resilience has on LGBTQ emerging adults' mental health after enduring ACEs. The current study will focus on all sexual identities

among the LGBTQ population. However, relevant studies cited throughout may only include specific sexual identities from the LGBTQ population, using only certain acronyms (i.e., LGB).

CHAPTER 2: LITERATURE REVIEW

Theoretical Framework

"Minority stress is the stress that occurs when the experience of an individual in a minority group is in contradiction to the majority culture" (Meyer, 1995). The minority stress model developed by Ilan Meyer was derived from the results in his initial study focusing on the higher prevalence of disorders among LGBTQ people (Meyer, 1995; Meyer & Dean, 1998; Meyer, 2003). The results showed that stigma, prejudice, and discrimination create a stressful social environment, which leads to mental health problems for individuals belonging to stigmatized groups (Meyer, 1995). For this reason, Meyer developed the minority stress theory to understand better the association between social stress (i.e., prejudice and discrimination) and mental health disorders among LGBTQ individuals. His model also included psychological theory, examination of stress and coping LGBTQ health research, and social theories that focused on the effects of stigma and prejudice (2003). Meyer outlined his model with distal stressors (i.e., objective events and conditions) and interactive and internalized proximal stressors (i.e., subjective events and individual processes) that are unique and persistent for minority populations (2003). Meyer provided four specific minority stress processes for the framework of his model: (a) persistent and severe prejudiced-related events (distal stressors); (b) expectation of minority stress and the alertness this expectation entails (interactive proximal stressors); (c) concealment of sexual orientation (interactive proximal stressors); and (d) accepting of negative societal outlooks (internalized homophobia) (internalized proximal stressors) (2003). Although the minority stress model discusses coping and social support, highlighting individual coping effects on a person's mental health, it focuses more on minority group coping, specifically minority group members including LGBTQ individuals (Meyer,

2003). The minority stress model revealed evidence provided within the conceptual framework, using meta-analyses that showed the prevalence of mental health disorders is higher for LGBTQ people than heterosexual people. Results also revealed that the higher prevalence of mental health illnesses stemming from excessive social stressors is associated with stigma and prejudice (Meyer, 2003). LGBTQ individuals routinely experience stressful events involving stigma, prejudice, and discrimination. These types of stressful events are the trademark of minority stress (Alessi, 2014; Brooks, 1981).

The minority stress model is widely used to explain prejudice, social stress, and mental health problems among LGBTQ individuals. For example, a research study incorporating the minority stress model found that mental health disparities revealed a higher risk of internalized mental health disorders in LGBTQ individuals (Pitonak, 2017). Specifically, gay and bisexual men were found three times more likely to meet the criteria for major depression, 4.7 times more likely to suffer from panic attacks, and 2.6 times more likely to report psychological distress than heterosexual men. The results for lesbian and bisexual women showed two times higher prevalence for major depression and about four times higher generalized anxiety disorder than heterosexual women (Pitoňák, 2017). However, researchers have found the minority stress model can also be applied for the same relations among transgender and gender nonconforming (TGNC) populations (Valentine & Shipherd, 2018). In reviewing the literature with the minority stress model as the framework for TGNC populations' mental health outcomes, findings were consistent with those focusing on LGBTQ people. The results showed that TGNC individuals are exposed to several social stressors (i.e., stigma, discrimination, and bias events) that contribute to mental health disparities (Valentine & Shipherd, 2018).

Research has given insight into the effects of minority stress and the mental health outcomes among minority populations. Still, there is little research on minority stress and adverse childhood experiences for LGBTQ individuals. Researchers suggest that certain minority groups, such as LGBTQ individuals, experience a higher prevalence of ACEs due to added stressors LGBTQ individuals may experience (Anderson & Blosnich, 2013). The minority stress model could help better understand the implications of ACEs for LGBTQ minority populations. Meyer's conceptual framework can further examine the associations between ACEs in LGBTQ minority emerging adults and their anxiety symptoms, belongingness, and resilience.

Meyer's minority stress theory has two conceptual views of stress: the subjective and objective views, each proposing various public health and public policy interventions. The subjective view highlights the distal stressors and suggests interventions that aim to change the appraisal approach or the person's way of evaluating their condition and coping with stress and adversity. The objective view highlights proximal stressors and suggests remedies to change the stressful environment and reduce stress exposure (2003). These stressors when not dealt with, hinder resilience skills, and can lead to a higher prevalence of mental health outcomes. For instance, recent research has shown that LGBTQ youth experience more significant minority stressors, such as bullying, discrimination, and exposure to conversion therapy, than their peers (Meyer et al., 2021; Meyer, 2016). These minority stressors continue into adulthood, but positive changes in the appraisal approach and social environments have been reported to improve these stressors and reduce mental health outcomes, such as psychiatric disorders, suicide attempts, and all-cause mortality (all causes of death) (Meyer et al., 2021; Meyer, 2016).

Emerging Adulthood

In 2000, Arnett proposed the term emerging adulthood for the age period from the late teens to the mid-late twenties. Arnett offers five aspects that distinguish emerging adulthood from other developmental stages: the age of identity explorations, the period of instability, the self-focused age, the age of feeling in-between, and the age of possibilities (Arnett, 2007). Arnett stated that these five aspects were not made to be universal features but are most experienced in emerging adulthood rather than in other age periods. Emerging adulthood can allow some individuals to thrive on freedom and exploration. Still, this lack of obligation and structure can lead some emerging adults to feel lost and experience mental health issues. Arnett et al. stated that instability might account for mental health issues such as anxiety and self-esteem in emerging adulthood (2014). Therefore, a further understanding of emerging adults' experiences of instability is vital to address mental health issues.

Rahmadina et al. (2020) interviewed emerging adults who revealed that they suffered from anxiety disorders and found that the anxiety's uncertainty caused them to worry about their futures. During emerging adulthood, avoidance behavior towards life tasks such as going to college, attending lectures, marriage proposals, starting a career, building friendships, and more (Kranzler et al., 2019) is commonly associated with anxiety and is detrimental. Success during emerging adulthood requires individuals to perform these tasks that could stimulate anxiety and to take charge of their own lives. These tasks require the willpower to tolerate uncertainty and overcome the risks of failure, and for emerging adults with anxiety disorders, it can be a complicated process to endure (Kranzler et al., 2019). Emerging adulthood is filled with uncertainties that play a considerable role in various aspects of health, especially for those with adverse childhood experiences.

Arnett stated that individuals who experienced early childhood trauma and were required to take on adult responsibilities might feel like adults at an earlier age. Therefore, causing them to feel less like emerging adults than their peers who have not experienced extensive trauma (2014). Davis et al. examined the associations between ACEs and emerging adulthood and found emerging adults who experienced higher ACEs were less likely to experience experimentation, stability, and possibilities, which are noted as distinct identifiers of emerging adulthood (2017). The feeling of being more like an adult than an emerging adult can be considered an adaptive response for those emerging adults who have experienced ACEs. Early adaptation may affect developmental dimensions in emerging adulthood, such as endorsing adult roles earlier in life and missing opportunities to engage in Arnett's five aspects of emerging adulthood (Davis et al., 2017). The impact of this study provided insight for future investigations and an expansion of the theory of emerging adulthood and the effects of ACEs. Emerging adulthood is a critical period for development for all individuals, but specifically for individuals who have experienced ACEs. Davis et al. (2017) stated that individuals who experience ACEs take on traditional adult roles earlier than peers who have not experienced ACES. Additionally, prior research has stated that it is likely emerging adults who experienced ACEs could respond psychologically differently to current stressors compared to those who have not experienced ACES (Davis et al., 2017). More research is needed to evaluate the impacts of adverse childhood experiences for LGBTQ emerging adults.

Adverse Childhood Experiences

A wealth of research focusing on ACEs (e.g., Social Work, ACEs research, and ACEs Task Force) states that childhood trauma, impairing a child's brain developmental process, can damage their immune system and alter stress reactions into adulthood. The original ACEs study

included 17,421 participants and showed a direct relationship between childhood trauma and adverse medical, mental, and social problems during adulthood (Felitti et al., 1998). The CDC and Kaiser Permanente developed the Adverse Childhood Experiences (ACEs) study in the late 1990s. From the survey, they developed ten categories of ACEs which include, physical, emotional, and sexual abuse; physical and emotional neglect; witnessing domestic violence; having a family member affected by mental health, substance abuse, or incarceration; and losing a parent to separation or divorce (Felitti et al., 1998). In addition, medical research displays a captivating association between ACEs' magnitude and health risk behavior outcomes in adulthood (Larkin et al., 2013). Since developing the original ACEs studies, various researchers, organizations and agencies (e.g., Center for Youth Wellness, American Academy of Pediatrics, ACEs Connection, and the CDC) and professionals have either administrated or modified the original ACE questionnaire. Researchers have pointed toward the need for expanding the ten conventional categories of ACEs to include additional adverse experiences that can significantly impact individuals' mental and physical health outcomes (Cronholm et al., 2015).

The Philadelphia ACEs Task Force designed the Philadelphia (PHL) ACEs survey to examine Conventional ACEs included in the Kaiser ACE questionnaire with the addition of Expanded ACEs, common in urban economically distressed areas (Wade Jr. et al., 2016). Some examples of Expanded ACEs are living in an unsafe neighborhood, experiencing bullying, witnessing violence, history of living in foster care, and/or experiencing discrimination (Cronholm et al., 2015). A few adaptions were made to the Kaiser ACEs questionnaire, including word phrasing, and assessing parental divorce or separation during childhood. The PHL ACEs sample was also more diverse than the Kaiser ACEs study. More participants reported being African American and younger, with fewer participants who reported being white (Cronholm et

al., 2015). About one-third (31.7%) of respondents in the PHL ACEs sample reported no experience with Conventional ACEs growing up. Nearly half (47.6) experienced 1-3 Conventional ACEs, and one-fifth (20.7) experienced four or fewer Conventional ACEs. More participants in the PHL ACEs sample experienced Conventional ACEs than the original Kaiser results, even with measuring fewer adversities (i.e., divorce was excluded) (Cronholm et al., 2015). A little over a third (36.6%) of participants reported no experience with Expanded ACEs. Half (50%) of respondents experienced 1-2 Expanded ACEs, and 13.4% experienced three or fewer Expanded ACEs.

Further, Cronholm et al. (2015) examined the association between participants with no ACEs, at least one Conventional ACEs, at least one Expanded ACEs, and the overlap of experiencing both Conventional and Expanded ACEs. Almost one-half (49.3%) of participants reported experience with both types of ACEs, and 13.9% of respondents had adversity exposure limited only to Expanded ACEs. These Expanded ACEs would have gone unnoticed if only the original Kaiser ACE survey (only Conventional ACEs) was assessed (2015). The added Expanded ACE questions are crucial for the current study concerning ACEs for individuals who identify as LGBTQ because of questions involving adverse community exposure (i.e., discrimination, community violence, and bullying), which LGBTQ individuals have higher risks of experiencing. However, out of the ample amount of ACEs research conducted, there is insufficient research on LGBTQ emerging adults (Anderson & Blosnich., 2013).

Adverse Childhood Experiences in LGBTQ Emerging Adults

Bond et al. (2021) stated that sexual and gender minority individuals have a higher risk of exposure to adversity during childhood. Much of the research regarding LGBTQ youth has focused on LGBTQ victimization, bullying, or victimization at school. However, exposure to

LGBTQ stressors or adversities within the family and community are also prevalent for LGBTQ youth and understudied (Clements-Nolle et al., 2018). In the PHL ACEs survey, Cronholm et al. (2015) touched on the prevalence of expanded adversity exposure within the community. Specifically, when examining the prevalence of Expanded ACEs within the sample, participants reported high rates of exposure to witnessing community violence (40.5%), racial discrimination (34.5%), and unsafe neighborhoods (27.3%). About one in ten participants (8%) described being bullied while growing up and 2.5% of participants experienced living in the foster care system (2015). The Conventional ACEs most frequently reported from the PHL ACEs sample included: experiencing physical abuse (38.1%), having a household member suffering from substance abuse, and experiencing emotional abuse (33.2%) (Cronholm et al., 2015). Cook-Daniels and Munson (2019) stated LGBTQ youth experience higher rates of emotional abuse (47.9%) and exposure to domestic violence (24.1%) compared to non-LGBTQ youth who experienced emotional abuse at a rate of 29.6% and domestic violence at a rate of 15.4%. Cook-Daniels and Munson found that in 2018 in the U.S., 20% - 33% of non-LGBTQ students were bullied, compared to 65% - 85% of LGBTQ students (2019). In general, the impacts of bullying negatively impact students' self-esteem, school attendance, aspirations, relationships with friends and family and increases depression, anxiety, and suicidality (Cook-Daniels & Munson., 2019). The impacts LGBTQ individuals have from adverse experiences are on a continuum through adulthood, affecting various areas of daily life. Charak et al. (2019) stated that LGBTQ emerging adults with higher childhood maltreatment, intimate partner violence (IPV), and adversities have a higher risk of experiencing anxiety, depression, and emotional dysregulation. Further, LGBTQ adults with higher ACEs experience greater rates of sexual assault, IPV, hate crimes, mental health issues (e.g., depression, anxiety, and suicidality), and substance abuse than non-LGBTQ

adults (Cook-Daniels & Munson., 2019). These findings suggest a need to investigate further the impacts ACEs have on LGBTQ emerging adulthood to prevent future disparities.

Research has found that the prevalence of ACEs among LGBTQ emerging adults can include other forms of victimization, complicating the consequences of childhood trauma experienced and ultimately inducing trauma (Craig et al., 2020). In a large sample, LGBTQ participants aged 14-18 were examined on ACE patterns, and results were compared across subgroups and to other populations. The overall results indicated that almost one-half (43%) of LGBTQ participants experienced four or more ACEs, compared to 12%-16% of the general population with ACEs (Craig et al., 2020; Merrick et al., 2018). Further, a systematic review evaluating stressful childhood experiences using the ACE survey in LGBTQ individuals found that stressful childhood experiences showed a higher prevalence in LGBTQ populations, causing alignments with mental and physical symptoms and disorders (Schneeberger et al., 2014). The findings from these three studies shed light on how common it is for LGBTQ individuals to experience multiple ACEs and the correlations with mental and physical health outcomes. Therefore, due to the lack of research on ACEs and LGBTQ emerging adults, there is a further reason to explore ACEs' impact on LGBTQ emerging adults and their mental health outcomes.

Anxiety in LGBTQ Emerging Adults

Despite increasing social acceptance for LGBTQ individuals, the detrimental mental health outcomes are seen across developmental stages (Russel & Fish, 2016). For this reason, the current study will examine mental health, specifically anxiety, in LGBTQ emerging adults. Anxiety is defined as the anticipation of future threats, distinguished from fear, and the emotional response to perceived or actual threats (Crocq, 2015). *According to the Handbook of Depression and Anxiety*, Generalized Anxiety Disorder (GAD) is excessive anxiety and worry,

occurring most days for at least six months, about multiple events or activities (Kasper et al., 2003). In a national health statistics webinar presented by the CDC, data on GAD revealed that in 2019, 15.6% of U.S. adults experienced anxiety symptoms in the past two weeks. Out of those adults experiencing anxiety symptoms, the highest percentage was among emerging adults aged from 18-29 (Kranzler et al., 2019). Various factors in a person's life, whether past or present, can cause anxiety, and for emerging adults, those added factors could be increased instability and change, as previously mentioned.

One factor researchers have examined in emerging adults is associations between ACEs and trauma. Reiser et al. (2014) stated that there had been numerous studies on the association between adverse childhood experiences and depression, somatization, and expressing emotions through physical symptoms, but little research on ACEs and anxiety associations. In the Reiser et al. study of adverse childhood experiences and health anxiety in adulthood, 264 participants aged 18-59 took part in a survey with two objectives. The first objective assessed the relationships between ACEs, health anxiety, and adverse effects and anxiety traits. The second objective was to examine the number of ACEs and adverse effects and anxiety traits in adulthood. Results showed a statistically significant association between ACEs scores and health anxiety, negative affect and anxiety traits. The study also revealed a significant, positive correlation designating that as the number of ACEs increased, levels of anxiety traits in adulthood increased. This study's findings provide a deeper understanding of risk factors correlated with anxiety symptoms for people who have endured adverse childhood experiences and why they might develop anxiety traits compared to others who do not (Resiser et al., 2014).

Adverse childhood experiences cause added stress and anxiety in emerging adults in general, but ACEs could be even more detrimental for minority individuals (Schnarrs et al.,

2019). To further examine how critical this period is, Woodford et al. (2015) studied social climate aspects for LGBTQ emerging adults and the associations with anxiety, perceived stress, and self-esteem. Social climate aspects include sexual orientation environmental microaggressions. Woodford et al. described microaggressions as verbal, nonverbal, and environmental insults, whether intentional or unintentional, that communicate negative, hostile, or derogatory messages. These messages are based solely on a person's marginalized identity, whereas environmental microaggressions consist of aspects in systems or institutions that communicate negative messages to LGBTQ individuals. Results revealed that LGBTQ emerging adults who see proximal environmental microaggressions in their community could have increased anxiety and stress (Woodford et al., 2015). During emerging adulthood, LGBTQ emerging adults' anxiety symptoms are prevalent, but there is a gap in the literature on the impacts of these symptoms. The current study will attempt to fill these gaps with data examining the effects of anxiety in LGBTQ emerging adults.

LGBTQ Emerging Adults Belongingness

Kohut's Self Psychology suggested a need for individuals to have alter ego self-objects, also known as belongingness. Furthermore, he stated that individuals seek to establish a subjective sense of belongingness or "being a part of" in efforts to avoid feelings of loneliness and isolation (Kohut, 1984). Lee and Robbins' theoretical framework of belongingness derived from Kohut's Social Psychology and the need for individuals to have alter ego self-objects. Alter ego self-objects are created to elude feelings of loneliness and isolation by producing a subjective sense of companionship, affiliation, and connectedness (1995). Lee and Robins conducted a study to assess if a reliable and valid measure of belongingness could be developed from Kohut's Self-Psychology theoretical components. They created the Social Connectedness

Scale (SCS) and the Social Assurance Scale (SAS) and found both scales were reliable and valid measures of a subjective sense of belongingness (1995). Lee and Robbins (1995) developed a multi-dimensional and comprehensive definition of belongingness composed of three aspects: companionship, affiliation, and connectedness. Companionship indicates the need for people to form emotional and intimate relationships and attachments with other individuals. Companionships are critical because they lessen loneliness and increase a sense of security and social satisfaction. Affiliation reflects the need for humans to interrelate and socialize with peer relationships. Affiliation increases the self-esteem and autonomy of individuals (Lee & Robbins, 1995). Finally, a sense of connectedness refers to the need for people to identify with and feel included within a broader social community than family and friends. Connectedness increases feelings of acceptance and identifying with others who are perceived differently (Lee & Robbins, 1995; Kohut, 1984).

Other researchers have noted the beneficial aspects of belongingness. For example, Meyers theorized that belongingness would be a resourceful coping mechanism for LGBTQ individuals to avoid loneliness, anxiety, and emotional suffering affiliated with institutional prejudice (2003). LGBTQ individuals with affirming companionships, positive affiliations, and connectedness with the LGBTQ community have lower expectations of rejections, identity concealment, and negative self-conceptualization (Frost & Meyer, 2012; Meyer, 2003).

Murray and Dailey (2020; 2012) noted that belongingness is a critical concept to assess when working with LGBTQ individuals because it could promote elevated self-esteem and well-being. They found that out of the limited scope of tools, the Connectedness to the LGBTQ Community-Scale developed by Frost and Meyer was seen as one of the most psychometrically sound instruments. However, no evaluation tools are explicitly designed to measure the multi-

dimensional components of belongingness established by Lee and Robins (1995). Therefore, Murray and Dailey proposed to develop a measurement of belongingness for LGBTQ individuals, as conceptualized by Lee and Robbins (1995). They created the LGBTQ Belongingness Attainment Scale (LGBTQ BAS) to measure belongingness in the larger LGBTQ community (2020). The LGBTQ BAS scale includes items from the SCS scale and the SAS scale by Lee and Robbins, and the Connectedness to the LGBTQ Community-scale by Frost and Meyer (1995; 2012). The purpose of the LGBTQ BAS scale was to reflect Frost and Meyer's focus on connectedness within the LGBTQ community in collaboration with Lee and Robbins' focus on a multi-dimensional definition of belongingness to include companionship, affiliation, and connectedness (Murray & Dailey, 2020).

Using the LGBTQ BAS scale for the current study in collaboration with the minority stress theory may increase a better understanding of LGBTQ emerging adult's experiences with ACEs and anxiety. Meyer (2003) stated within the minority stress theory that the importance of feeling a part of a community of similar individuals could allow LGBTQ individuals to create favorable social comparisons to other like people. This subjective sense of belongingness to the LGBTQ community could be a coping mechanism for the relationship between minority stressors (i.e., discrimination, stigmatization, and prejudice) and mental health. Considering the LGBTQ BAS scale was newly developed, prior studies have primarily focused on LGBTQ individuals and school belongingness. However, researchers have started to explore LGBTQ belongingness within the LGBTQ community. For example, Parmenter et al. (2020) conducted a study to examine LGBTQ emerging adults' community members' positive perceptions of the LGBTQ culture. Respondents reported that involvement in the LGBTQ culture consisted of engagement and connectedness with the LGBTQ community, a sense of group identity based on

shared struggles, resiliency, and support for other LGBTQ people. Lastly, shared beliefs, values, history, and engagement in social action. Further, participants described a connection and sense of belongingness identifying with the LGBTQ community. The results of this study support examination of the benefits of LGBTQ belongingness to further understand the impacts of LGBTQ individuals' experiences with ACEs and mental health outcomes.

Resilience in LGBTQ Emerging Adults

Schmitz and Tyler (2018) expressed the importance of acknowledging that although LGBTQ emerging adults experience unique challenges concerning their identity development, they also develop resilience. When studying youth's lives, a strengths-based approach can reveal their strength by focusing on coping skills rather than solely examining their experiences as problematic. Resilience is defined as adapting effectively to conflicting life experiences, including sexual and gender identity obstacles (2018; Russel, 2008; Zimmerman, 2013). Smith et al. (2008) developed the brief resilience scale (BRS) that is the only measure that explicitly examines the basic level of resilience. This scale is different from previous measures that assessed the personal characteristics that encourage positive adaptation and not on resilience itself. Further, unlike previous scales assessing individual characteristics influencing positive adaption, the BRS scale examined stressful events, and because of this, unique effects were found specific to decreasing adverse outcomes (e.g., anxiety, depression, negative affect, and physical symptoms) (Smith et al., 2008).

Lira and Morais (2018) noted that there had been an increased awareness concerning the process of resilience in LGBTQ populations in current years. This awareness gives insight into protective mechanisms facilitating positive transformations against multiple forms of adversity, possibly leading to positive mental health outcomes. The process of resilience shifts with

development, especially for LGBTQ emerging adults, as changing life circumstances present the opportunity to incorporate one's strengths (Allesi et al., 2017; Luther et al., 2000). For example, Colpitts et al. (2016) included strengths and found LGBTQ emerging adults demonstrated resilience by resisting discrimination, finding a safe place and safe people, and declaring the natural aspects of sexual diversity (e.g., accepting the various outlooks and qualities intertwined with one's sexual diversity) (Scroufield et al., 2008). A more recent study found that although microaggressions contribute to psychological distress among LGBTQ emerging adults, the correlation is mediated by positive self-acceptance revealing aspects of resilience (Woodford et al., 2014). Resilience relating to ACEs and LGBTQ emerging adults revealed that among participants with a low BRS score, physical neglect (34.7%), witnessing domestic violence (30.9%), and emotional abuse (30.4%) were the most common ACEs items (Schnarrs et al., 2020). There is limited research on the role of resilience moderating impacts on the association between ACEs and risky mental health outcomes among LGBTQ individuals (Schnarrs et al., 2020). Therefore, there is a need to explore the impacts of resilience on ACEs in LGBTQ emerging adults.

Current Study

There is limited research on the impact of adverse childhood experiences scores (ACEs) among LGBTQ emerging adults. The current study seeks to understand the relationship between ACEs scores and LGBTQ emerging adults' belongingness and the relationship between ACEs scores and LGBTQ anxiety. The need for this research is vital, especially with literature exemplifying the prevalence of ACEs LGBTQ individuals experience and the occurrence of adverse mental health problems. This study also seeks to understand how resilience impacts anxiety symptoms and belongingness levels among LGBTQ emerging adults. Further, this study

will seek to understand resilience as a modifier of any relationship between ACEs scores and anxiety and ACEs scores and belongingness levels.

The current study addressed the following research questions:

Research Question 1: What is the relationship between ACEs and LGBTQ belongingness?

Research Question 1a: What is the relationship between ACEs and anxiety?

Research Question 2: Does resilience moderate the relationship between ACEs scores and LGBTQ belongingness?

Research Question 3: Does resilience moderate the relationship between ACEs scores and anxiety?

CHAPTER 3: METHODOLOGY

Study Design and procedure

The study received approval from the institutional review board (IRB) before the start of data collection. The current study used a quantitative survey design to examine the associations between ACEs scores and anxiety levels and ACE scores and LGBTQ belongingness among LGBTQ emerging adults. Further, the study examined whether resilience moderates these relationships. Likert scales and Ordinal Scales were utilized to examine current ACEs scores, anxiety levels, LGBTQ belongingness, and resilience scores. Specific details on the scales are described further in the measures section. The survey was administered online through Qualtrics, and participants were able to complete the survey at their convenience. Before completing the survey, participants were asked to complete an informed consent form. The survey was disbursed via multiple social media platforms (specifically Facebook and Instagram), ECU's LGBTQ Resource Center's listserv, and class listservs with details concerning the study's aims.

Sample

To participate in the current study, the participants were emerging adults between the ages of 18 to 29 years old and identified as LGBTQ. Participants were not excluded based on relationship status, religion, race/ethnicity, gender, socioeconomic status, presence or absence of ACES, or education level. To successfully complete the online measures used in the current study, participants were literate in the English language and had internet access. Based on the possible four variables in the proposed regression analyses, our proposed sample size was 150 participants. We had 132 participants complete the survey and then 26 participants were removed for not meeting inclusion criteria, bringing the final analytic sample size to 106 participants.

Measures

Socio-demographic Variables

The demographic data collected included age, race/ethnicity, sexual orientation, gender identity, relationship status, education level, and geographic location. Age was measured by asking what is your current age? Race/ethnicity was measured in a two-part question. Part one addressed ethnicity by asking do you identify as Hispanic, Latino, or are of Spanish origin, with answer options of yes, no, other (please specify), and prefer not to say. Part two asked how you best describe yourself with answer choices of American Indian, Asian, Black or African American, Native Hawaiian or Pacific Islander, White, Other (please specify), or prefer not to say. Sexual orientation was measured by asking which of these best describes your current sexual orientation by selecting one of the following options: Asexual, Bisexual, Gay/Lesbian, Heterosexual/Straight, Pansexual, Queer, Sexual orientation not listed here: fill in the answer. Gender identity was measured by asking which of these choices best describes your current gender identity, with the option of choosing one of the following: Cisgender female/Woman, Cisgender male/Man, Genderqueer/Gender non-binary/Gender fluid, Transgender female/Woman, Transgender male/Man, Gender not listed here: fill in the answer. Relationship status was measured by asking current relationship status with the following answer choices: single, dating, married, divorced, widowed, or separated. Education was measured by examining the highest degree or level of education completed with answer choices of some high-school, high school, Bachelor's Degree, Master's Degree, Ph.D. or higher, Trade School, or prefer not to say. Finally, geographic location was measured by asking what state of current residence, with a blank field to write in the answer.

The independent variable (IV) in the current study is LGBTQ emerging adult's ACEs score. The dependent variables (DV) in the present study are anxiety levels and LGBTQ belongingness among emerging adults. The moderating variable (MV) is resilience.

Scales

The current study utilized three Likert scales: the Brief Resilience Score (BRS), the PHL Expanded Adverse Childhood Experiences (ACEs) survey, and the LGBTQ Belongingness Attainment Scale (BAS), and one Ordinal scale: the Generalized Anxiety Disorder-7 (GAD-7) scale. Further explanation on each scale is detailed below. There were a total of 42 survey questions, 37 related to the variables, and five for demographics.

Adverse Childhood Experiences

ACEs scores were examined using the PHL expanded ACEs survey. The PHL ACEs survey consists of a 22-item self-report scale that measures Conventional ACEs derived from the original Kaiser ACE questionnaire: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, domestic violence, household substance abuse, household mental health illness, parental separation, or divorce and added Expanded ACEs: incarcerated household member, witness violence, felt discrimination, adverse neighborhood experience, bullied, and lived in foster care. Cronholm et al. (2015) used univariate descriptive statistics to assess prevalence rates for childhood adversity and a binomial test to compare prevalence rates for Conventional ACEs between the Expanded ACE Survey and the Kaiser ACEs survey. Ordinal logistic regression models were used to examine the correlations between Conventional and Expanded ACEs scores and demographic features. Compared to the original Kaiser study results, more participants reported experienced Conventional ACEs ($p<0.001$), with fewer adversity indicators measured. Specific demographic features were correlated with higher risk for

Conventional ACEs but were not predictive of Expanded ACEs and vice versa (Cronholm et al., 2015). In the present study, the PHL ACEs scale demonstrated acceptable reliability (α= 0.810). An example of a question from this survey is, "How often were you bullied by a peer or classmate? Responses are given as a four-point scale: all of the time, most of the time, some of the time, and none of the time. Following the original PHL ACEs scoring code, 'none of the time' was coded as 0, and all other responses were coded as 1. Each of the 22 ACEs measured was recoded to have answer choices of yes or no, with yes coded as 1 and no coded as 0. Additionally, per the original PHL ACE scoring code, "none of the time" was coded as no and all other responses coded as yes. For a final score, we added answers up for a total ACE score.

LGBTQ Belongingness Attainment Scale

Belongingness was assessed using the LGBTQ Belongingness Attainment Scale. Murray and Dailey (2020) developed an 18 item self-report survey, the LGBTQ BAS, to examine LGBTQ belongingness within the LGBTQ community, derived from items in the Social Connected Scale and the Social Assurance Scale by Lee and Robbins (1995), and the Connectedness to Community-Scale by Frost and Meyer (2012). The LGBTQ BAS scale used a 6-point Likert choice scale with responses ranging from 1= strongly disagree – 6= strongly agree. In the present study, the LGBTQ BAS scale demonstrated acceptable reliability (α= 0.91).

Resilience

Resilience was assessed using the Brief Resilience Scale (BRS). Smith et al. (2008) developed the BRS scale to examine whether resilience is an appropriate aspect that adheres to bouncing back from stress. In the present study, the BRS scale demonstrated acceptable reliability (α= 0.83). The BRS scale included six items. Items 1, 3, and 5 are positively worded

and items 2, 4, and 6 are negatively worded (Smith et al., 2008). The BRS scale was scored by reverse coding items 2, 4, and 6 and finding the average of the six items (Smith et al., 2008). An example of an item from this survey is "I usually come through difficult times with little trouble." Responses were given as a 5-point scale with choices from "strongly disagree to agree strongly."

Anxiety

Anxiety was measured using the Generalized Anxiety Disorder scale (GAD-7). Spitzer et al. (2006) had the goal of developing a brief scale to determine probable causes of GAD-7 and examine symptom severity. In the present study, the GAD-7 scale demonstrated acceptable reliability (α= 0.89). The GAD-7 scale included seven items. An example of an item from this survey is: "Over the last two weeks, how often have you been bothered by feeling afraid, as if something awful might happen?" The GAD-7 scale is scored by assigning scores of 0, 1, 2, and 3 to the response categories of: "not at all, several days, more than half the days, and nearly every day," the total score for the seven items ranges from 0-21 (Spitzer et al., 2006).

Analytic Strategy

The current study used IBM SPSS version 28.0 (IBM Corp, 2021), to conduct all analyses. The reported ACEs, LGBTQ belongingness, anxiety, and resilience data were downloaded into SPSS. Missing values and outliers were listwise deleted through SPSS. Linear regression was utilized to examine the relationship between ACEs and the outcome variable of anxiety, and ACEs and the outcome variable of LGBTQ belongingness. To determine if resilience moderates these relationships, hierarchical multiple regression with an interaction term was used. An interaction term is commonly used in a regression analysis to examine whether the

independent variables interact with each other. Interaction terms indicate that a third variable influences the independent and dependent variable outcomes (Frost, 2017).

CHAPTER 4: RESULTS

Sample

The sample accounted for gender identity and received results of Cisgender Female (54.5%), Genderqueer/Gender Non-Binary/Gender Fluid (26.8%), Cisgender Male (10.7%), Transgender Male (6.3), and Transgender Female (0.9%). One person responded with other identifying as questioning. Sexual orientation was broken down as follows: Bisexual (38.4%), Gay/Lesbian (29.5%), Pansexual (16.1%), Queer (8.9%), Heterosexual/Straight (2.7%), and Asexual (1.8%). Three participants responded that their sexual orientation was not listed, one identified as Ace Lesbian, and two identified as Demisexual. Participants ages ranged from 18 to 29 (SD: 21), with an average age of 22 years old. Over half of participants were between the ages of 18-21 years old (52.7%). Ethnicity was broken down as follows: Non-Hispanic (92.9%) and Hispanic, Latino, or of the Spanish origin (7.1%). Race was broken down as follows: White (82.1%), Black or African American (8.9%), Other (3.6%), American Indian (2.7%), Asian (.9%), Native Hawaiian or Pacific Islander (.9%), and Prefer not to say (.9%). Of the participants that responded other two identified as biracial, one identified as Indian, and one identified as Middle Eastern.

Current relationship was broken down as Dating (53.6%), Single (40.2%), Married (5.4%) and Separated (.9%). No participants responded as being divorced so for analytical purposes divorced was removed. Highest degree or level of education was broken down as follows: Some College (39.3%), Bachelor's Degree (27.7%), High School (13.4%), Associate's Degree (8.0%), Master's Degree (8.9%), Some high school (.9%), PhD. or higher (.9) and Prefer not to say (.9%). Participants responded to state they currently live in as follows: North Carolina (84.8%), Virginia (8.9%), Utah (1.8%), California (0.9%), District of Columbia (0.9%), Maine (0.9%),

New York (0.9%), and Vermont (.9%). Before answering any survey questions, participants were given information for the criteria of the current study, which included identifying as LGBTQ. However, three participants responded as heterosexual/straight as their sexual orientation, with one identifying as Transgender Male/Man and the other two as Cisgender Female/Woman.

Table 1
Demographic descriptive statistics

	Full sample ($N = 106$)	
	n	%
Gender Identity		
Cisgender Female/Woman	61	54.5%
Cisgender Male/Man	12	10.7%
Genderqueer/Gender Non-Binary/Gender Fluid	30	26.8%
Transgender Female/Woman	1	0.9%
Transgender Male/Man	7	6.3%
Other	1	0.9%
Sexual Orientation		
Asexual	2	1.8%
Bisexual	43	38.4%
Gay/Lesbian	33	29.5%
Heterosexual/Straight	3	2.7%
Pansexual	18	16.1%
Queer	20	8.9%
Other	3	2.7%
Relationship Status		
Single	45	40.2%
Dating	60	53.6%
Married	6	5.4%
Separated	1	0.9%

Race		
American Indian	3	2.7%
Asian	1	0.9%
Black or African American	10	8.9%
Native Hawaiian or Pacific Islander	1	0.9%
White	92	82.1%
Biracial	2	1.8%
Other	2	1.8%
Prefer not to say	1	0.9%
Ethnicity/Hispanic, Latino, or of Spanish Origin		
Yes	8	7
No	104	92.9%
Highest educational level		
Some high school	1	0.9%
High school	15	13.4%
Some college	44	39.3%
Associate degree	9	8.0%
Bachelor's Degree	31	27.7%
Master's Degree	10	8.9%
PhD. Or Higher	1	0.9%
Prefer not to say	1	0.9%
Current State		
California	1	0.9%
District of Columbia	1	0.9%
Maine	1	0.9%

New York	1	0.9%
North Carolina	95	84.8%
Utah	2	1.8%
Virginia	10	8.9%
Vermont	1	0.9%

Preliminary Analyses

Prior to testing specific research questions, preliminary assumption testing was conducted to check for normality, homoscedasticity, linearity, and multicollinearity. All data met the assumptions. Descriptive statistics on demographic variables was assessed and results are in Table 1. Descriptive statistics (see Table 2) and correlations (see Table 3) for outcome variables were also computed prior to running analyses. In a Pearson Correlation, ACEs was used as the univariate with anxiety, LGBTQ belongingness, and resilience. Pearson correlations indicated a positive relationship between ACEs and anxiety, and a negative relationship between ACEs and resilience, and a negative relationship LGBTQ belongingness and resilience.

Table 2

Variable Descriptive Statistics

	N	Range	Min.	Max.	Sum	*M*	SD	Variance	Skewness		Kurtosis	
Resilience	105	3.50	1.50	5.00	301.67	2.8730	.74947	.562	.271	.236	-.503	.467
Belonging	107	2.61	3.39	6.00	564.61	5.2767	.54583	.298	-1.239	.234	1.653	.463
ACEs	110	18.00	.00	18.00	805.00	7.3182	4.04092	16.329	.279	.230	-.233	.457
Anxiety	106	20.00	8.00	28.00	2085.00	19.6698	5.33760	28.490	-.370	.235	-.835	.465
Valid N (listwise)	104											

Table 3

Correlations

		Belonging	Anxiety	ACEs	Resilience
Belonging	Pearson Correlation	1	-.083	.045	-.184*
	Sig. (1-tailed)		.199	.323	.030
	N	107	106	105	105
Anxiety	Pearson Correlation	-.083	1	.314**	-.237**
	Sig. (1-tailed)	.199		<.001	.007
	N	106	106	105	105
ACEs	Pearson Correlation	.045	.314**	1	-.113
	Sig. (1-tailed)	.323	<.001		.127
	N	105	105	110	104
Resilience	Pearson Correlation	-.184*	-.237**	-.113	1
	Sig. (1-tailed)	.030	.007	.127	
	N	105	105	104	105

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

ACEs and LGBTQ Belongingness Relationship

Regression was used to examine the relationship between ACEs scores and LGBTQ Belongingness (RQ1). There was no significant relationship found for ACEs score and LGBTQ belongingness (Table 4). Due to the insignificant relationship between ACEs and LGBTQ belongingness no moderation was examined for LGBTQ belongingness (RQ2).

Table 4

Regression of ACEs on Belongingness[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.233	.115		45.477	<.001
	ACEs	.006	.014	.045	.461	.646

a. Dependent Variable: Belonging

ACEs and Anxiety Relationship

Regression was used to examine the relationship between ACEs and anxiety (RQ1a). Results showed a significant relationship between ACEs and current anxiety symptoms (Table 5). For the current sample, those who had a high ACE score also reported a higher rate of anxiety symptoms, and vice versa.

Table 5

Regression of ACES on Anxiety[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.604	1.058		15.691	<.001
	ACEs	.427	.127	.314	3.362	.001

a. Dependent Variable: Anxiety

Resilience as a Moderator

An ACEs and resilience interaction term was created, and hierarchical regression was used to examine resilience as a moderator of ACEs and anxiety symptoms (RQ3). Analyses revealed that resilience significantly moderated the relationship of ACEs and anxiety symptoms (Table 6 & 6-A). For those who had a high resilience score, anxiety increased as their ACEs score increased; for those with low resilience, there was no significant relationship between ACEs score and anxiety (Graph 1).

Table 6

ACEs and Resilience interaction on Anxiety[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	20.883	2.241		9.317	<.001
	ACEs	.402	.126	.296	3.195	.002
	Resilience	-1.440	.654	-.204	-2.203	.030
2	(Constant)	31.212	3.785		8.246	<.001
	ACEs	-1.096	.469	-.808	-2.340	.021
	Resilience	-4.889	1.215	-.693	-4.023	<.001
	ACEs_Resilience	.510	.154	1.192	3.307	.001

a. Dependent Variable: Anxiety

Table 6-A

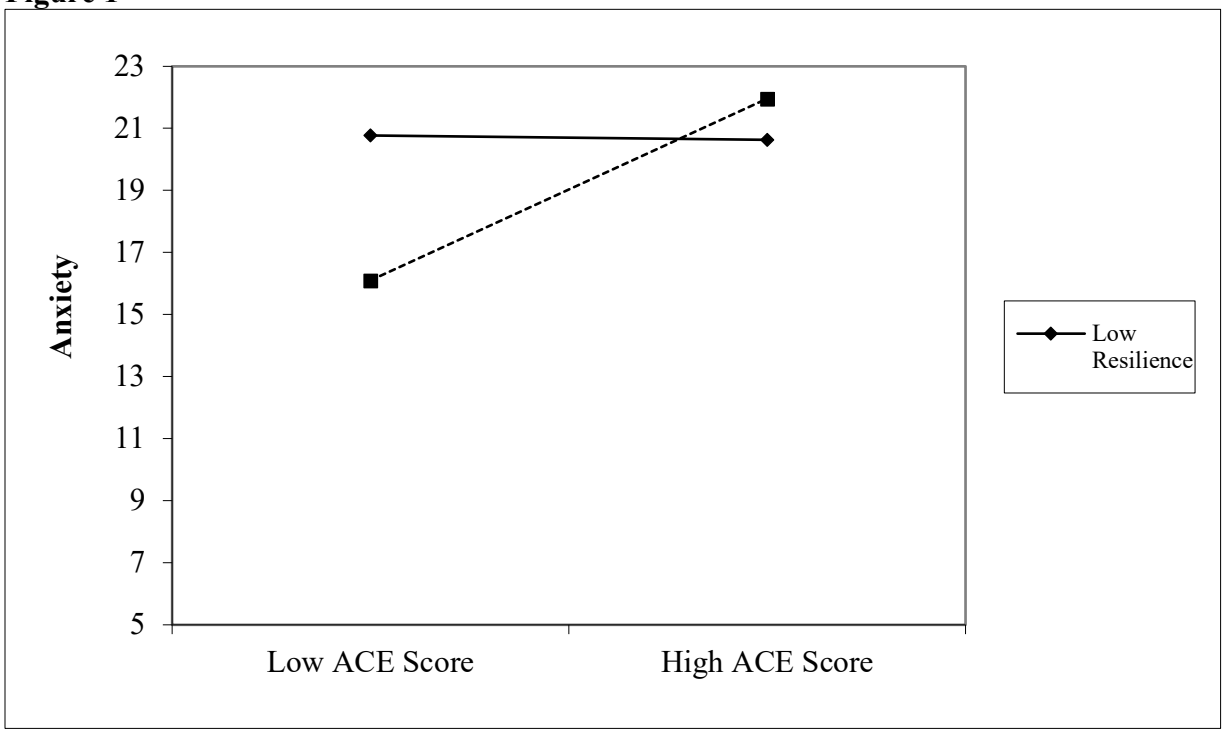
ACEs and Resilience interaction on Anxiety continued

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.378[a]	.143	.126	4.96450	.143	8.432	2	101	<.001
2	.477[b]	.228	.204	4.73691	.084	10.938	1	100	.001

a. Predictors: (Constant), Resilience, ACEs

b. Predictors: (Constant), Resilience, ACEs, ACEs_Resilience

Figure 1


23
21
19
17
15
13
11
9
7
5
Anxiety
Low ACE Score
High ACE Score
Low Resilience

CHAPTER 5: DISCUSSION

The current study contributes to the developing body of literature examining the roles of ACEs and resilience among LGBTQ emerging adults' belongingness and mental health. Prior research has found higher rates of mental health problems among LGBTQ individuals compared to heterosexuals, but now researchers are beginning to understand the effect of ACEs on the mental health of the LGBTQ population (Schnarrs et al., 2020). Additionally, research has found that feeling connected to the LGBTQ community is an important factor to consider when examining the mental health and well-being of LGBTQ individuals (Frost & Meyer, 2012). Still, this research lacks consideration of the effects of resilience on LGBTQ belonging and anxiety. The minority stress theory conceptualizes that minority stressors (i.e., prejudice and discrimination) that LGBTQ individuals may experience can lead to stressful social environments, which may result in higher mental health problems. Although these minority stressors may result in poorer mental health outcomes, resilience and a sense of belonging to the LGBTQ community may help alleviate stressors or increase coping (Meyer, 2003).

Our findings partially support previous research focused on minority stress theory. For example, there is an association between minority individuals experiencing added stresses (i.e., items found in the PHL ACEs) and anxiety; however, in the current study this relationship was only noted when resilience was high. Unlike the Meyers (2003), the relationship between ACES and belongingness was not significant. Possible explanations and further interpretation of results are discussed in the next several sections. For instance, in our sample, individuals reported having high anxiety (M= 20), with a range statistic of 20.

Adverse Childhood Experiences and LGBTQ Belongingness

No relationship between ACEs and LGBTQ belongingness was found (RQ1). Due to the lack of literature reviewing ACEs and LGBTQ belongingness, this result neither supports nor contradicts prior research. There could be a number of reasons for the insignificant relationship in our study. For instance, our study examined all PHL ACEs instead of one specific ACE as some past studies have done. If our study had examined one specific ACE in conjunction with LGBTQ belongingness and resilience, results may have differed on the associations between ACEs and LGBTQ belongingness. Prior research from Hatchel et al. (2018) examined the associations between peer sexual harassment (ACE) and depressive symptoms, and whether school belongingness mediated the relationship for LGBTQ adolescents. Results from the Hatchel et al. (2018) study revealed that school belongingness mediated the relationship between victimization and depressive symptoms. Perhaps taking a closer look at the relationship between specific ACEs and LGBTQ Belongingness may provide more understanding what is most influential in regard to belonginess.

Another potential reason for insignificant results between ACES and LGBTQ belongingness could be that LGBTQ belongingness was examined in our study as a dependent variable rather than a mediator or moderator variable. Having a sense of belonging to close relationships has been shown to increase resiliency against the adverse outcomes of childhood trauma (Torgerson et al., 2018). Torgerson et al. (2018) received significant results when examining belongingness as a moderator for negative effects of childhood trauma on adult mental health and risky alcohol abuse. The findings showed that the overall negative relationship of childhood trauma on adult mental health and risky alcohol outcomes was partially moderated by belongingness. Further these findings indicate that a sense of belongingness may buffer the impact of childhood trauma

on adult mental health and risk alcohol outcomes (Torgerson et al., 2018). In the current sample, LGBTQ belongingness was high (5.3=*M*), indicating that those in our sample felt a high sense of belonginess in their community. As such, this may have been an important moderating variable when examining the relationship between ACEs and mental health outcomes.Future research is needed to explore the potential mediating and moderating role of this variable, as well as examining a sense of belongingness.

Although, there was an insignificant relationship found between ACEs and LGBTQ belongingness, our study contributes to the literature by providing insights for future studies. For example, the timing of coming out and openly identifying as LGBTQ may be important to consider in conjunction with belongingness. The current study focused on emerging adulthood, and it may be that this age group is feeling more secure in their belongingness as they are likely not living at home.

Adverse Childhood Experiences and Anxiety Symptoms

Results from the current study found a positive relationship between ACEs and anxiety symptoms. Higher ACEs were related to higher anxiety symptoms among LGBTQ emerging adults. Our study focused on the age group of emerging adults, with an average age of around 22 years old. Leung et al. (2022) reviewed emerging adults' resilience after experiencing ACEs and results reported that resilience was experienced more as "self-righting" appraisals, dependent on their social support systems and a culturally determined sense of self-reliance. "Self-righting" in this study was the act of emerging adults able to proclaim values that helped restructure past adversities and move onward with their lives (Leung et al., 2022). The findings from Leung et al. (2020) study are specifically important being that over half of our participants aged from 18-21 years old (52.7%). In terms of emerging adulthood (18-29), 18-21 years old is on the younger

side of the age frame and our results of higher anxiety could reflect the lack of a sense of self-reliance for individuals aging from 18-21 years old. The relationship between ACEs and anxiety symptoms was moderated by resilience. LGBTQ emerging adults who had higher ACE scores and high anxiety symptoms, also had high resilience scores. However, this relationship was not noted for those with low resilience scores.

The current study examined resilience as the only moderator without looking at other possible variables that could moderate the relationship between ACEs and anxiety, and ACEs and LGBTQ belongingness. Research has shown that the variable social support is likely to impact resilience, giving indication that social support could also impact the levels of resilience. Leung et al. (2022) study highlighted that resilience was interdependent of social support for emerging adults by appearing to counteract negative and unconsciously learned temperaments as a response to ACEs. The current study found resilience to moderate the relationship between high ACES and high anxiety, but only when resilience was high. Adding the variable of social support as an additional moderator or as a mediator could give more varying results on resilience levels.

Additionally, future studies may benefit from examining specific aspects of resilience or a different resilience scale. While the BRS is a validated measure, it may not be the best way to capture resilience, particularly for an emerging adult population. Our sample reported high anxiety (20*M*; 5.3*SD*) and therefore could be associating that with how they respond to stress, Additionally, these data were collected during the COVID-19 Pandemic when the world was undergoing its own trauma. The COVID-19 pandemic changed the world, causing unwarranted fear, anxiety, and depression among individuals across the globe. These unwarranted feelings effected emerging adults possibly more than other generations due to the already known

instability and unknown possibilities experienced during this age frame. A study examining COVID-19 stressful events and internalized symptoms such as anxiety among emerging adults and found that emerging adult's anxiety was moderately associated with COVID-19 stressful events (Kujawa et al., 2020). These findings lead to believe that the emerging adults in the current study could be experiencing higher anxiety levels due to being the midst of a pandemic.

Limitations

The findings from the current study give significant implications for future studies, but inevitably there are limitations with every study. The data collected from the current study included emerging adults ranging from 18-29 years old. This could have been a limitation as the sample only reflects a particular portion of people in a similar age cohort, whose experiences are happening at the same generational time. Further, Arnett empathizes the importance of identity exploration and instability during the earlier years of emerging adulthood, and over half (52.8%) of the participants for the current study are between the ages of 18-21 years old. This could have been a limitation to the insignificant relationship between ACEs and LGBTQ belongingness due to participants possibly not having that sense of belonging to the LGBTQ community yet. Additionally, due to time constrictions the current study was stopped before reaching the anticipated sample size of 150 participants. This may be a limitation as the sample reflects a small number of individuals. Additionally, due to our small sample size we were unable to address the intersectionality of identifying with multiple minority populations and the impact on ACEs. Despite the lower number of participants, this study could also be a strength as the topic of this study is one of very few studies to exist.

McLennan et al. (2020) mentioned that although the ACEs questionnaire is widely used and adapted, failure to evaluate the strengths and limitations often occurs. For example, issues

include a simple scoring approach, response options, item coverage, and lack of psychometric assessment. In the current study, we recoded the answer choices for ACEs to yes or no, allowing for a simpler scoring process. This recode of answer choices may be a limitation as adding up responses and giving one point for each answer could imply that each ACE carries equal weight when influencing outcomes. However, recoding these answer choices may be a strength by giving added data and contributing to current research regarding ACEs and the impacts they have. Further, the BRS scale could be named as a limitation since resilience in this scale is viewed more of as a process, rather than an outcome. Salisu & Hashim, (2017) stated that the BRS scale is used to analyze the ability to bounce back or recover from stress. While the BRS scale is a widely used instrument, resilience scales such as the Connor-Davidson Resilience Scale or the Resilience Scale for Adults could align better depending on the target population (Salisu & Hashim, 2017).

Future Directions

The current study fills a gap in the literature regarding the relationship between ACEs, anxiety, and LGBTQ belongingness with resilience moderating the relationship. Although there is some research on LGBTQ emerging adults' ACEs and mental health outcomes and impacts of resilience, the literature lacks research on ACEs and LGBTQ belongingness. Findings implicate that higher ACE scores are connected to higher anxiety symptoms only for individuals with high resilience scores. However, results did not find a significant association between ACEs and LGBTQ belongingness. Future studies may consider investigating other variables of belongingness for LGBTQ emerging adults, such as community belongingness and school belongingness. Implications for professionals may consider utilizing trauma counseling for

individuals who experienced ACEs or anxiety for emerging adulthood, as results suggest that they are at a higher risk of anxiety outcomes.

Since our findings highlighted data from only LGBTQ emerging adults, future studies may consider expanding the population to include heterosexuals. Expanding the population allows for a comparison between LGBTQ emerging adults and heterosexual emerging adults, adding more perspective and understanding to the topic. This information could be useful for researchers when examining these variables and determining the diversity of the population. Since the findings of resilience were significant, further research may investigate other factors impacting resilient skills. Research may benefit from looking at social support roles and examining the impacts on resilient skills after experiencing ACEs. Additionally, it may be beneficial to look at what type of social support has more of an impact on resilient skills. The presence of social support systems may provide a more thorough understanding of experiencing ACEs and impacts of resilience on anxiety symptoms.

Further, due to the low sample size, there was not a diverse representation of the community, which prevented examining intersectionality of identifying with multiple minority stressors and the impacts on ACEs. Anderson & Bloshnich, (2013) suggested that some minority individuals experience higher ACEs compared to their counterparts. Future studies may receive more significant findings by examining how identifying with more than one minority population impacts the associations between ACEs and anxiety, and ACEs and LGBTQ belongingness. Additionally, the presence of assessing multiple minority identification may provide a more in-depth understanding of added adversities and possible impacts of resilience as a moderator. Additionally, another interesting implication for future studies may include examining resilience with a different measure. Although, the BRS scale is widely used to examine resilience factors,

utilizing a different resilience measure could reveal a more significant relationship between all variables. Further, future studies examining emerging adults who have experienced childhood trauma may benefit from asking the question “What age do you feel like you are” to account for how trauma affects the developmental process during emerging adulthood.

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APPENDIX A: EAST CAROLINA UNIVERSITY & MEDICAL CENTER INSTITUTIONAL REVIEW BOARD

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** ·
rede.ecu.edu/umcirb/

Notification of Exempt Certification

From: Social/Behavioral IRB
To: Alexis Askew
CC: Kate Harcourt
Date: 10/28/2021
Re: UMCIRB 21-002179
Associations between Adverse Childhood Experiences (ACES) and Anxiety, LGBTQ Belongingness, and Resilience in LGBTQ Emerging Adults

I am pleased to inform you that your research submission has been certified as exempt on 10/28/2021. This study is eligible for Exempt Certification under category # 2a.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

Document	Description
Email Script- ECU LGBTQ Center(0.02)	Recruitment Documents/Scripts
Email Script- HDFS Faculty(0.02)	Recruitment Documents/Scripts
Qualtrics Thesis Survey(0.01)	Surveys and Questionnaires
Social Media Script(0.01)	Recruitment Documents/Scripts
Survey Consent Paragraph- Exempt(0.01)	Consent Forms
Thesis Proposal(0.01)	Study Protocol or Grant Application

For research studies where a waiver or alteration of HIPAA Authorization has been approved, the IRB states that each of the waiver criteria in 45 CFR 164.512(i)(1)(i)(A) and (2)(i) through (v) have been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: PHL ACEs SURVEY

THE PHILADELPHIA ACE PROJECT

Philadelphia ACE Telephone Survey Questions

FOR Qs1-4: While you were growing up, that is during your first 18 years of life…)

1. Did you feel safe in your neighborhood (READ LIST)?
   (IF RESPONDENT MENTIONS HAVING LIVED IN MULTIPLE NEIGHBORHOODS WHILE GROWING UP ASK: Overall, did you feel safe in the neighborhoods you grew up in?)

   1 All of the time
   2 Most of the time
   3 Some of the time, or
   4 None of the time
   D (DO NOT READ) Don't know
   R (DO NOT READ) Refused

2. Did you feel people in your neighborhood looked out for each other, stood up for each other, and could be trusted (READ LIST, IF NECESSARY)?
   (IF RESPONDENT MENTIONS HAVING LIVED IN MULTIPLE NEIGHBORHOODS WHILE GROWING UP ASK: Overall, did you feel people in the neighborhoods you grew up in looked out for each other…?)

   1 All of the time
   2 Most of the time
   3 Some of the time, or
   4 None of the time
   D (DO NOT READ) Don't know
   R (DO NOT READ) Refused

3. How often were you bullied by a peer or classmate? (READ LIST, IF NECESSARY)?

   1 All of the time
   2 Most of the time
   3 Some of the time, or
   4 None of the time
   D (DO NOT READ) Don't know
   R (DO NOT READ) Refused

4. How often, if ever did you see or hear someone being beaten up, stabbed, or shot in real life? Would you say (READ LIST)?

   1 Many times
   2 A few times
   3 Once, or
   4 Never
   R (DO NOT READ) Refused

Now please think about your childhood, in general, not just your neighborhood or community.

FOR Q5-6:While you were growing up, during your first 18 years of life, how true were each of the following statements?

5. There was someone in your life who helped you feel important or special. Was this (READ LIST)?

   1 Very often true
   2 Often true
   3 Sometimes true
   4 Rarely true, or
   5 Never true
   D (DO NOT READ) Don't know
   R (DO NOT READ) Refused

6. Your family sometimes cut the size of meals or skipped meals because there was not enough money in the budget for food. Was this (READ LIST)?

   1 Very often true
   2 Often true
   3 Sometimes true
   4 Rarely true, or
   5 Never true
   D (DO NOT READ) Don't know
   R (DO NOT READ) Refused

Sometimes people are treated badly, not given respect, or are considered inferior because of the color of their skin, because they speak a different language or have an accent, or because they come from a different country or culture.

7. While you were growing up during your first 18 years of life how often did you feel that you were treated badly or unfairly because of your race or ethnicity? Would you say…?
   (READ LIST)

   1 Very often true
   2 Often true
   3 Sometimes true
   4 Rarely true, or
   5 Never true
   D (DO NOT READ) Don't know
   R (DO NOT READ) Refused

Again, I want to remind you that the next questions refer to the time period while you were growing up in your first 18 years of life. During your first 18 years of life:

8. Did you live with anyone who was depressed or mentally ill?

   1 Yes
   2 No
   D (DO NOT READ) Don't know/Not Sure
   R (DO NOT READ) Refused

9. Did you live with anyone who was suicidal (IF NECESSARY: during your first 18 years of life)?

   1 Yes
   2 No
   D (DO NOT READ) Don't know/Not Sure
   R (DO NOT READ) Refused

10. Did you live with anyone who was a problem drinker or alcoholic (IF NECESSARY: during your first 18 years of life)?

    1 Yes
    2 No
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

Still looking back to your first 18 years of life…

11. Did you live with anyone who used illegal street drugs or who abused prescription medications?

    1 Yes
    2 No
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

12. Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?

    1 Yes
    2 No
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

13. Were you ever in foster care? (IF NECESSARY: during your first 18 years of life)?

1 Yes
2 No
D (DO NOT READ) Don't know/Not Sure
R (DO NOT READ) Refused

Sometimes physical blows occur between parents or other adults in the house.
FOR Q14-Q16: While you were growing up, that is during your first 18 years of life…

14. How often, if ever, did you see or hear a parent, step parent or another adult who was helping to raise you being yelled at, screamed at, sworn at, insulted or humiliated? Would you say…(READ LIST)

1 Many times
2 A few times
3 Once, or
4 Never
D (DO NOT READ) Don't know/Not Sure
R (DO NOT READ) Refused

15. How often, if ever, did you see or hear in your home a parent, step parent or another adult who was helping raise you being slapped, kicked, punched or beaten up? (READ LIST)

1 Many times
2 A few times
3 Once, or
4 Never
D (DO NOT READ) Don't know/Not Sure
R (DO NOT READ) Refused

16. How often, if ever, did you see or hear a parent, step parent or another adult who was helping to raise you being hit or cut with an object, such as a stick or cane, bottle, club, knife, or gun? (READ LIST, IF NECESSARY)

1 Many times
2 A few times
3 Once, or
4 Never
D (DO NOT READ) Don't know/Not Sure
R (DO NOT READ) Refused

Sometimes parents or other adults hurt children.

While you were growing up, that is during your first 18 years of life, how often, if ever, did a parent, step-parent, or another adult living in your home…

17. Swear at you, insult you, or put you down? (READ LIST)

    1 More than once
    2 Once, or
    3 Never
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

How often, if ever, did a parent, step-parent, or another adult living in your home…

18. Push, grab, shove, or slap you? (READ LIST)

    1 More than once
    2 Once, or
    3 Never
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

19. Hit you so hard that you had marks or were injured? (READ LIST)

    1 More than once
    2 Once, or
    3 Never
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

20. Act in a way that made you afraid that you would be physically hurt? (READ LIST)

    1 More than once
    2 Once, or
    3 Never
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

Some people, while growing up in their first 18 years of life, had a sexual experience with an adult or someone at least five years older than themselves. These experiences may have involved a relative, family friend, or stranger.

During the first 18 years of life, did an adult or older relative, family friend or stranger who was **at least five years older than yourself** ever…?

21. Touch or fondle you in a sexual way or have you touch their body in a sexual way?

    1 Yes
    2 No
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

22. Attempt to have or actually have any type of sexual intercourse, oral, anal, or vaginal, with you?

    1 Yes
    2 No
    D (DO NOT READ) Don't know/Not Sure
    R (DO NOT READ) Refused

We are almost done with the interview but have a few more questions about your health and well-being over your entire lifetime.

Have you EVER been told by a doctor or other health professional that you have or had any of these medical conditions or illnesses?

How about…?

23. Angina, coronary heart disease, or a heart attack also called a myocardial infarction?

    1 Yes
    2 No
    D (DO NOT READ) Don't know
    R (DO NOT READ) Refused

24. A stroke or "small stroke?"

    1 Yes
    2 No
    D (DO NOT READ) Don't know
    R (DO NOT READ) Refused

25. Chronic bronchitis or emphysema?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

26. Broken any bones?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

27. Yellow jaundice, hepatitis, or any liver trouble?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

28. A sexually transmitted infection, such as chlamydia, gonorrhea, syphilis, or trichamoniasis (also known as Trich)?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

Our next few questions are about your sexual relationships and practices. Remember that your answers will be kept strictly confidential. When we talk about a sex partner, we mean any person, male or female, with whom you had sex, even if it was just once. By sex, we mean oral sex, vaginal sex, or anal sex. The next questions are about your VOLUNTARY sex experiences.

29. How old were you the first time you had sex?

_____(age 9-60)
N (DO NOT READ) Never had sex(GO TO Q.35)
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

31. How many different sex partners have you ever had? Remember, we are talking about people you had oral, vaginal or anal sex with. If you don't know the exact number, please give your best estimate.

_____ (RANGE 1-100)
101 More than 100
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

31a. I am going to read some ranges. You can just stop me when I get to the right category.

Can you tell me if you have had:

1 Five or fewer
2 Six to ten
3 Eleven to 29, or
4 Thirty or more sexual partners
D(DO NOT READ) Don't know
R(DO NOT READ) Refused

Again I want to remind you that these questions are asking about your sexual relationships and practices over your entire lifetime.

32. Female: Have you ever been pregnant?/Male: Have you ever gotten someone pregnant?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

(ASK Q33 IF Q32 = 1)

33. Female: When your first pregnancy began, did you intend to get pregnant at that time in your life?/ Male: When you got someone pregnant for the first time, did you intend to get them pregnant at that time in your life?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

(ASK Q34 IF Q32 = 1)

34. Female: How old were you when you first became pregnant?/ Male: How old were you when you first got someone pregnant?

_____ (age 9-60)
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

(ASK Q34a IF Q34 = D)

34a. We understand that you may not remember your exact age. Please try to recall your age range.Were you…(READ LIST)?

1 Less than 15 years old
2 Between 15 and 19 years
3 Between 20 and 24 years
4 Between 25 and 29 years
5 Between 30 and 34 years
6 35 years or older
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

Now, a few questions about various personal health behaviors.

35. Have you ever used or injected illicit drugs, such as marijuana, cocaine, including crack, hallucinogens, inhalants, heroin, or prescription drugs that were not prescribed for you, including OxyContin, Xanax, or Adderall?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

36. In the past year, have you had two or more weeks of being in a depressed mood, that is feeling down, depressed, or hopeless, or had little interest in doing things?

1 Yes

2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

37. Have you ever attempted to commit suicide?

1 Yes
2 No
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

And now, a couple general questions:

38. Did you grow up in the city of Philadelphia? (PROBE, IF RESPONDENT IS UNSURE: Did you live in Philadelphia for at least a significant amount of time, when you were growing up, during the first 18 years of your life?)

1 Yes, grew up or spent a significant part of first 18 years of life in Philadelphia
2 No
D (DO NOT READ) Don't know/Not Sure
R (DO NOT READ) Refused

(ASK Q39 IF Q38 = 2,D,R)

39. What State did you grow up in?
(PROBE, IF RESPONDENT IS UNSURE: What state did you live in for most of the first 18 years of your life?)

01 _____ (State)
6 (DO NOT READ) Grew up in another country (Specify) _____
N (DO NOT READ) Moved around all of the time – didn't grow up any particular place
D (DO NOT READ) Don't know
R (DO NOT READ) Refused

APPENDIX C: BRIEF RESILIENCE SCALE

THE OHIO STATE UNIVERSITY

Brief Resilience Scale (BRS)

Please respond to each item by marking one box per row		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BRS 1	I tend to bounce back quickly after hard times	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
BRS 2	I have a hard time making it through stressful events.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
BRS 3	It does not take me long to recover from a stressful event.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
BRS 4	It is hard for me to snap back when something bad happens.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
BRS 5	I usually come through difficult times with little trouble.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
BRS 6	I tend to take a long time to get over set-backs in my life.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

Scoring: Add the responses varying from 1-5 for all six items giving a range from 6-30. Divide the total sum by the total number of questions answered.

My score: _____ item average / 6

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International journal of behavioral medicine*, *15*(3), 194-200.

APPENDIX D: GENERALIZED ANXIETY DISORDER SCALE

GAD-7 Anxiety

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid, as if something awful might happen	0	1	2	3

Column totals _____ + _____ + _____ + _____ =

Total score _____

If you checked any problems, how difficult have they made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

Source: Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD-PHQ). The PHQ was developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues. For research information, contact Dr. Spitzer at ris8@columbia.edu. PRIME-MD® is a trademark of Pfizer Inc.

Scoring GAD-7 Anxiety Severity

This is calculated by assigning scores of 0, 1, 2, and 3 to the response categories, respectively, of "not at all," "several days," "more than half the days," and "nearly every day."
GAD-7 total score for the seven items ranges from 0 to 21.

0–4: minimal anxiety

5–9: mild anxiety

10–14: moderate anxiety

15–21: severe anxiety

APPENDIX E: LGBTQ BELONGINGNESS ATTAINTMENT SCALE

LGBTQ Belongingness Attainment Scale

Instructions: Read each statement carefully. Note that LGBTQ is an acronym used when referring to lesbian, gay, bisexual, transgender, and queer individuals and community. Respond by circling the number that best indicates how you feel about each statement. Only circle one number for each of your responses. The responses for each statement are as follows:

1 = Strongly Disagree
2 = Disagree
3 = Somewhat Disagree
4 = Somewhat Agree
5 = Agree
6 = Strongly Agree

1. You feel the problems and challenges of the LGBTQ community have an impact on you.	1 2 3 4 5 6
2. You enjoy socializing with other LGBTQ individuals.	1 2 3 4 5 6
3. You feel emotionally supported by a close friend or companion.	1 2 3 4 5 6
4. It is important for you to feel that you support the LGBTQ community in some manner.	1 2 3 4 5 6
5. It is important for you to develop a social network with other LGBTQ individuals.	1 2 3 4 5 6
6. You have a close friend or companion who you interact with on a regular basis.	1 2 3 4 5 6
7. You are proud to be a part of the LGBTQ community.	1 2 3 4 5 6
8. You feel a sense of togetherness when you are with other LGBTQ individuals.	1 2 3 4 5 6
9. You have a close friend or companion who understands you.	1 2 3 4 5 6
10. Participating in LGBTQ community events and activities is a positive experience for you.	1 2 3 4 5 6
11. You feel a common bond with other LGBTQ individuals.	1 2 3 4 5 6
12. You have a close friend or companion who you can discuss your problems with.	1 2 3 4 5 6
13. You feel a sense of connectedness to the LGBTQ community.	1 2 3 4 5 6
14. You feel more at ease when you are around other lesbian, gay, bisexual, and/or transgender individuals.	1 2 3 4 5 6
15. You have a close friend or companion who cares about you.	1 2 3 4 5 6
16. It is important for you to participate in LGBTQ community events and activities.	1 2 3 4 5 6
17. You feel a sense of acceptance when you are with other LGBTQ individuals.	1 2 3 4 5 6
18. You have a close friend or companion who accepts you.	1 2 3 4 5 6
Calculate score by adding the numbers that were circled:	**Total Score =**