THE RELATIONSHIP BETWEEN THREE DIFFERENT TYPES OF CHILD ABUSE AND COLLEGE ACADEMIC ADJUSTMENT

by

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ABSTRACT

The current study examined how three different types of child abuse (sexual, physical, psychological) related to college academic adjustment. Potential moderators of the relationship, including perceived social support, mistrust, and gender, also were investigated. Included in the final analyses were 79 (30 men and 49 women) undergraduate students. Participants completed several surveys measuring limited demographic information, social support, mistrust, adjustment to college, grade point average (GPA), and a history of child abuse. Exploratory analyses also were conducted to examine whether pet owners endorsed items indicating their companion animals served as a source of social support. Results indicated that only a history of childhood psychological abuse predicted educational functioning scores on a college adjustment measure. None of the abuse variables correlated with GPA, and no statistically significant moderators of the relationship between child abuse and academic adjustment were found. Additionally, most pet owners did indicate receiving support from their pet.

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CHAPTER I: INTRODUCTION

The literature on child abuse and neglect indicates that maltreatment during childhood and adolescence is not only prevalent (Stoltenborgh et al., 2015), but is correlated with adult well-being and adjustment (Child Welfare Information Gateway, 2019). According to the World Health Organization (WHO, 2020), child maltreatment involves any physical or psychological maltreatment, neglect, sexual abuse, and other types of exploitation that occur within a relationship of trust, responsibility, or power. The maltreatment or abuse results in actual or potential harm to a child's health, development, or survival (WHO, 2020). The current study focused on three specific types of child abuse: physical (CPhA), sexual (CSA), and psychological (sometimes referred to as emotional; CPsyA). These three types of child abuse involve acts of commission towards a child less than 18 years old from an adult or an older adolescent.

Based on 2018 data from the Children's Bureau of the U.S. Department of Health and Human Services (2020), there were approximately 678,000 victims of child abuse and neglect in the United States. The collected data indicate that 15.5% of victims suffer two or more types of maltreatment and estimate that 1,770 children died of abuse or neglect that year alone. These estimates from the Children's Bureau (2020) are based on data provided by states to the National Child Abuse and Neglect Data System, a system for collecting information on state child abuse and neglect. Using both data collected by child protective services and data reported by community professionals, the Fourth National Incidence Study of Child Abuse and Neglect estimated that 1,256,600 children were maltreated during 2005-2006 (Sedlak et al., 2010). It was found that 553,300

children were abused, with 58% (323,000) being physically abused, 24% (135,300) being sexually abused, and 27% (148,500) being psychologically abused.

Definitions and use of the terms child abuse and child maltreatment vary depending on the source of information. Throughout the current review, the terms child abuse and child maltreatment were used depending upon the cited material. For the purposes of this study, CPhA was defined as physical acts against a child that resulted in actual or potential harm (WHO, 1999). These acts include but are not limited to hitting, beating, shaking, choking, burning, kicking, and shoving. CPhA definitions are often restricted to actions of a parent, caregiver, or authorized individual (e.g., a teacher; Robinson, 2019). CSA was defined in the current study as any kind of sexual activity that a child or adolescent is unable to give informed consent to, and it can be perpetrated by adults and/or older adolescents who have responsibility of, trust with, or power over the victim (WHO, 2017). Three types of CSA are noncontact, contact (involving intercourse), and contact CSA excluding intercourse but involving fondling, kissing, and other inappropriate touching (WHO, 2017).

CPsyA, a component of psychological maltreatment, is an area in the literature that has not received as much attention in comparison to CSA or CPhA (Christ et al., 2019). According to the American Professional Society on the Abuse of Children (APSAC Taskforce, 2019):

> Psychological maltreatment is defined as a repeated pattern or extreme incident(s) of caretaker behavior that thwart the child's basic psychological needs (e.g., safety, socialization, emotional and social support, cognitive stimulation, respect)

> and convey a child is worthless, defective, damaged goods, unloved, unwanted, endangered, primarily useful in meeting another's needs, and/or expendable. (p. 3)

Although this particular type of maltreatment may be chronic or episodic, the majority of psychological maltreatment is chronic (Brassard et al., 2019). It is noteworthy to mention that the definition of psychological maltreatment is complex as it is comprised of both CPsyA and childhood psychological neglect (Taillieu et al., 2016). Acts of commission such as degradation, exploitation, isolation, rejection, and terrorization constitute CPsyA (Leeb et al., 2008), whereas acts of omission, such as emotional unresponsiveness, encompass childhood psychological neglect (APSAC, 2019). The current study focused on CPsyA rather than childhood psychological neglect, and for all these types (i.e., CPhA, CSA, CPsyA), also included acts committed by older adolescents and adults, such as strangers, in their definitions.

Negative Correlates of Child Abuse

Child abuse has been linked to numerous clinical symptoms and negative health outcomes in adulthood (e.g., Evans et al., 2013; Hodgdon et al., 2018; Humphreys et al., 2020; Mills et al., 2013; Wright et al., 2009). Among the different types of abuse, CSA has received the most attention in research, followed by CPhA (Humphreys et al., 2020; Mills et al., 2013; Robinson, 2019). There is, however, growing literature on the long-term correlates of child CPsyA and psychological maltreatment (e.g., Christ et al., 2019; Spinazzola et al., 2014). Moreover, the study of multiple types of abuse co-occurring with one another is expanding as it is recognized that a child may experience more than

one type of abuse (Higgins & McCabe, 2001a; Wright et al., 2009). Additionally, various studies exist comparing the different types of child abuse and their negative correlates (e.g., Angelakis et al., 2019; Gardner et al., 2019; Halpern et al., 2018).

The negative correlates of CSA have been extensively reported in research. A large-scale review of CSA literature conducted by Cashmore and Shackel (2013) found numerous mental health correlates associated with CSA, including but not limited to, post-traumatic symptoms, depression, substance abuse, and anxiety. A comprehensive systematic review and meta-analysis by Chen et al. (2010) found statistically significant relationships between a history of CSA and anxiety, posttraumatic stress disorder (PTSD), sleep disorders, eating disorders, depression, and suicide attempts. In an umbrella review of existing meta-analyses on various CSA correlates, Hailes et al. (2019) concluded that CSA is linked to increased risk of long-term psychiatric and psychosocial correlates, including schizophrenia, PTSD, and substance abuse.

CPhA also has received attention in the literature regarding its associated mental health correlates in adulthood. In a population-based study examining the long-term physical and mental health correlates of CPhA, Springer et al. (2007) found associations between CPhA and depression, anxiety, anger, and an increased likelihood of reporting diagnosed illnesses. A meta-analysis of CPhA in China indicated that people with CPhA histories were more likely to experience negative mental health adjustment difficulties than those who did not have CPhA histories (Ip et al., 2016). CPhA has been associated with depression later in life (Humphreys et al., 2020), as well as problems in early

adulthood with violent offending and increased alcohol and drug use (Savage & Crowley, 2018).

A history of CPsyA has been linked to various negative mental health correlates as well. In a study exploring the role of emotional dysregulation and interpersonal problems in CPsyA and depressive symptoms, Christ et al. (2019) found that CPsyA was independently associated with all three aforementioned factors among a sample of female college students in the Netherlands. A review of data collected in the United States from the National Epidemiological Survey on Alcohol and Related Conditions conducted by Taillieu et al. (2016) found that experiencing CPsyA alone compared to childhood psychological neglect alone was associated with significantly higher odds of lifetime diagnoses of mania, depression, PTSD, alcohol use/dependence, and several personality disorders. Additionally, there exists evidence for CPsyA being linked to nonsuicidal self-injury (Kang et al., 2018), as well as depressed mood (Cohen et al., 2019).

There have been multiple studies comparing different abuse types and/or maltreatment in childhood and their associated correlates. For example, Gardner et al. (2019) conducted a large-scale systematic review of the relationship between five forms of child maltreatment (CPhA, CSA, CPsyA, exposure to intimate partner violence, and neglect) and depressive and anxiety disorders. These researchers found that each type of maltreatment was linked to a significant increase in the risk of developing depressive and anxiety disorders later in life. In another study by Adams et al. (2018), the characteristics of CPhA and CSA were examined as predictors of psychopathology in a sample of young adults. It was found that onset of physical abuse in childhood and onset of sexual abuse in

childhood and adolescence predicted depression, anxiety, and PTSD symptoms (Adams et al., 2018). In a meta-analysis conducted by Angelakis et al. (2019) examining the association between different types of child maltreatment and suicidality, it was found that CSA was linked to a 3-fold increased risk for attempted suicide in adulthood (in comparison to CPhA and CPsyA associated with a 2.5-fold greater risk). Halpern et al. (2018) explored the relationships between child maltreatment and the development of substance use disorders in adulthood. They discovered, through an analysis of seven relevant studies, that individuals who experienced CSA had a 73% greater risk of developing substance abuse later in life in comparison to those with CPhA or neglect histories.

The negative correlates of child abuse and maltreatment have been researched in studies focusing on one specific type of abuse (e.g., Cashmore & Shackel, 2013; Springer et al., 2007), as well as in studies that compare multiple types of abuse (e.g., Angelakis et al., 2019). Samples that often are used in child abuse research include community (e.g., Adams et al., 2018), clinical (e.g., Hodgdon et al., 2018), and college (e.g., Christ et al., 2019) samples. Among these different sample types, college students were of interest to the current study in order to provide more information to the available literature on child abuse among this population.

Child Abuse Reported by College Students

Available prevalence rates of child abuse and child maltreatment among college students vary by source (e.g., Binelli et al., 2012; Duncan et al., 2000) as there currently does not exist a national epidemiological study on the prevalence within this population

(Moore et al., 2020; Welsh et al., 2017). An early retrospective study conducted by Braver et al. (1992) examined psychological functioning in a university counseling center sample that included clients reporting CSA, CPhA, and CPsyA and clients with no history of child abuse. Their findings revealed 35.7% of the treatment-seeking participants indicated having experienced some form of child abuse. Specifically, of those who indicated child abuse, 16.7% reported CSA, 83.3% reported CPsyA, and 23.3% reported CPhA, with 23.3.% of participants reporting multiple forms of abuse. In a more recent meta-analysis conducted by Fu et al. (2018) on the prevalence of child maltreatment among college students in China, the reported combined prevalence rate of various types of child maltreatment was 64.7%. The grouped estimates of specific types of child maltreatment were 36.7% for CPsyA, 17.4% for CPhA, 15.7% for CSA, 54.9% for childhood physical neglect, and 60% for childhood psychological neglect. As indicated by these two studies (e.g., Braver et al., 1992; Fu et al., 2018), histories of child abuse and maltreatment are not uncommon among college students.

According to Welsh et al. (2017), college students with child maltreatment histories make up a notable subset of the total university population. Their research, that included students from a university in the western United States, found a base rate of approximately 30% of college students with child maltreatment histories. Richmond et al. (2009) conducted a study among college women examining history of childhood victimization, the occurrence of multiple types of victimization, and psychological distress. They found that 97% of participants indicated experiencing at least one type of maltreatment or victimization during childhood. Specific to CSA and CPhA, the

participants indicated having experienced at least one type of physical assault (80.4%) or at least one type of sexual assault, abuse, or harassment (46.3%). Forster et al. (2018) examined the occurrence of five adverse childhood experiences (ACEs) and substance use behaviors in a college sample. Their study found that almost half of the sample endorsed experiences of ACEs. In order of most common among those who reported ACEs, participants indicated experiencing verbal abuse (25%), parental substance abuse (23%), CSA by a caregiver or parent (16%), CPhA by a caregiver or parent (14%), and witnessing parental intimate partner violence (9%).

Child abuse and maltreatment have been found to be prevalent among college students (e.g., Forster et al., 2018; Fu et al., 2018). Although the negative correlates of child abuse across different samples (e.g., clinical, community) have received a sizeable amount of research (e.g., Evans et al., 2013; Hodgdon et al., 2018; Humphreys et al., 2020; Mills et al., 2013; Wright et al., 2009), the ways in which child abuse may potentially impact college students are equally as important to explore. The current review discussed the relevant literature on the negative correlates of child abuse among college students.

Negative Correlates Among College Students

The educational experience of attending college is often a pivotal moment in students' lives (Forster et al., 2018). The negative correlates of child abuse are well documented in the literature, and it is reasonable to consider that any one of the various negative correlates of child abuse could complicate success in college. Increased knowledge about how child abuse affects students' experiences during college may allow

for the implementation of intervention strategies and for a greater availability of assistance (Merians et al., 2019), thus, increasing the odds of success within academia for these students.

Research (e.g., Forster et al., 2018; Moore et al., 2020) has looked at relationships between different types of child abuse and maltreatment and the associated negative correlates among college students. In a study conducted by Forster et al. (2018), results indicated a strong relationship between substance use behaviors and reported ACEs among college students. Although their data are cross-sectional and causation cannot be inferred, it is suggested by Forster et al. (2018) that this relationship exists due to students using illicit substances as a way to cope with their adversities experienced in childhood. Other research conducted by Moore et al. (2020) examined the associations between child maltreatment history, aggression, and college outcomes among a student sample. Their findings demonstrated relationships between a history of child maltreatment, increased anger and hostility, and lower levels of personal-emotional adjustment to college. Both of these studies call attention to the impact that maltreatment and adversity in childhood can have on students' college experience.

The documented prevalence among college students as well as the known negative correlates of child abuse demonstrate a need for more research on how child abuse may play a role in the lives of students enrolled in college. Currently, there exists less research on the mediators and moderators of child abuse and its associated correlates compared to the literature available on the long-term correlates of child abuse. The current study sought to contribute to the literature on child abuse through the exploration

of potential moderators (i.e., perceived social support, mistrust, and gender) of the relationship between child abuse and college academic adjustment.

College Academic Adjustment

The negative correlates of child abuse have been studied and reported in previous literature (e.g., Gardner et al., 2019; Hodgdon et al., 2018), and the area of child abuse and maltreatment among college students has received a substantial amount of attention (Welsh et al., 2017). There exists, however, a need for more research on the relationships between a history of child abuse and students' adjustment to college (Moore et al., 2020). Attending college consists of many transitions and challenges for students (Bowman, 2010). It is probable that students with child abuse histories will struggle with these transitions more so than those without (Moore et al., 2020).

In the current literature on college adjustment and child abuse (e.g., Forster et al., 2018; Welsh et al., 2017), the typical domains explored are psychological, social, and academic. There appears to be more research focusing primarily on the social and psychological realms of adjustment (e.g., Berzenski et al., 2011; Richmond et al., 2009; Welsh et al., 2017; Wright et al., 2009) in comparison to academic adjustment (e.g., Duncan, 2000; Himelein, 1995). There does, however, exist a large amount of research on the academic and educational correlates among children and adolescents (e.g., McGuire & Jackson, 2018).

Academic adjustment refers to the ability of students to manage academic responsibilities, such as academic achievement and the motivation to complete assignments (Friedlander et al., 2007). The available research on child maltreatment and

academic functioning in college students indicate that the two have a negative relationship (Tanaka et al., 2015). For example, one longitudinal study conducted by Duncan (2000) found that college students who experienced child abuse had higher drop-out rates in comparison to their nonabused peers. Duncan's (2000) study followed 210 freshmen throughout their 4 years of undergraduate enrollment and found that students with histories of child abuse were less likely than students without child abuse histories to be enrolled in each semester following their first. Additionally, Hardner et al. (2018) researched CSA and college students' academic success through their exploration of the association between higher educational attainment, internalizing behaviors, and trauma symptoms in individuals with CSA histories. Their results found that increased post-trauma symptoms were significantly negatively correlated with levels of educational attainment. Some of the specific trauma symptoms that were found to be related to lower educational attainment were anxiety, depression, and internalized behaviors. CSA, as suggested by these results, appears to have a negative relationship with attaining higher education (i.e., attending and/or completing college).

In another study conducted by Jordan et al. (2014), a history of sexual abuse, including sexual assault and rape, and its relationship with grade point average (GPA) in a sample of college women was examined. Their results indicated that sexual abuse statistically significantly negatively predicted students' GPAs in high school as well as in the first and second semesters of college. Research by Welsh et al. (2017) examined the relationships between self-reported child maltreatment history, performance on two executive function tasks, and academic outcomes (measured by GPA and a college

adaptation measure). Their results found that higher scores on a child maltreatment history questionnaire had a nonsignificant relationship with GPA, but a statistically significant negative relationship with self-reported adaptation to college. Other studies have found weak, negative relationships between a history of abuse and academic adjustment. For example, research conducted by Merians et al. (2019) examined nine types of child abuse and household dysfunction. Their results found that college students who reported experiencing at least five maltreatment types had lower GPAs than those who reported no maltreatment. They concluded, based on their findings, that the relationship between GPA and a history of maltreatment was small (Merians et al., 2019).

In parallel research on grade school to high school students, Fry et al. (2018) conducted a global systematic review and meta-analysis of relevant literature to explore how different types of violence experienced in childhood were associated with educational functioning. Their review found that any form of childhood violence was associated with a 13% greater probability of not graduating from high school compared to those without a history. Specifically, it was found that CPhA was associated with a 20% greater probability and CSA was associated with a 14% greater probability of not graduating compared to students without a history of childhood violence.

Although most of the research on child abuse and adjustment focus on psychological and social domains of adjustment (e.g., Berzenski et al., 2011; Richmond et al., 2009), the available literature suggests that there is a negative relationship between child abuse and academic adjustment in college (Tanaka et al., 2015). Child abuse has been found to be positively correlated to college drop-out rates (Duncan, 2000) and

negatively related to levels of higher educational attainment (Hardner et al., 2018) and GPA (Merians et al., 2019). The current study sought to address the overlooked area of academic adjustment by exploring the relationship between three different types of child abuse (CSA, CPhA, and CPsyA) and college adjustment in the academic domain. There exists potential moderators (i.e., perceived social support, mistrust, and gender) of this relationship that are worth exploring and will be described in the following sections.

Factors that Influence the Relationship Between Abuse and Adjustment

Perceived social support from people. College is a time of transition (Bowman, 2010) and can be a difficult period for students with new academic stressors and changes in responsibilities (Baqutayan, 2011). During this time, students may seek out ways to manage their college-related stress such as through the social support from people (Baqutayan, 2011). It has been hypothesized that perceived social support (PSS) from humans acts as a buffer against the negative associations of stressful events (i.e., buffering hypothesis; Cohen & Wills, 1985). PSS can be defined as the belief that other individuals are available to provide emotional support when needed (Gayer-Anderson et al., 2015). Recently, research has been conducted to examine the relationship between PSS and college academic adjustment (e.g., Akanni & Oduaran, 2018; Li et al., 2018) and has produced conflicting results (Tinajero et al., 2020). Numerous studies have been conducted exploring the role of PSS as a moderator or “buffer” between child maltreatment and its associated negative correlates (e.g., Evans et al., 2013; Gayer-Anderson et al., 2015), yet the findings from these studies have been mixed as well (Folger & Wright, 2013).

In research examining mental health adjustment (e.g., Folger & Wright, 2013), there have been findings supporting the buffering effect of PSS on the correlates of child abuse, but there also exists research (e.g., Gayer-Anderson et al., 2015) that has not found supporting results. Folger and Wright (2013) examined the protective factors of family and friend support in a college sample of individuals with child maltreatment histories. Their study found that levels of PSS were negatively correlated with levels of maladaptive symptoms. In related ACEs research, Karatekin and Ahluwalia (2020) found that PSS was a significant negative predictor of general emotional problems, depression, nervousness, and fatigue among college students. Results from Gayer-Anderson et al. (2015) found no statistically significant evidence that PSS buffered against the impact of CPhA or CSA on psychosis in participants when the relationships between CPhA and CSA, social support, and psychosis were examined in a clinical sample.

Additional research on PSS and child abuse and maltreatment has found that reported levels and the protective role of PSS are related to severity and type of abuse experienced (e.g., Beilharz et al., 2020; Evans et al., 2013; Folger & Wright, 2013; Karatekin & Ahluwalia, 2020). In a nonclinical community sample of adults, Beilharz et al. (2020) found that trauma in childhood (CPhA, CSA, CPsyA, childhood psychological neglect, and physical neglect) was significantly negatively correlated with reported levels of PSS; further, they found that those with trauma histories had lower levels of PSS compared to individuals without trauma histories. Evans et al. (2013) found that PSS from family protected against trauma symptoms of maltreated individuals only when they had experienced low-to-moderate levels of severity of maltreatment. Also supporting this

finding is research conducted by Folger and Wright (2013) that found PSS acted as a buffer for individuals with lower, but not higher, levels of child maltreatment.

Regarding academic adjustment, the research available on PSS and its relationship with college academic adjustment is limited, and findings from studies are conflicting (Tinajero et al., 2020). There exists studies that support PSS playing a role in college academic adjustment (e.g., Akanni & Oduaran, 2018), and there are results from other research that do not show a relationship between the two (e.g., Friedlander et al., 2007). For instance, Li et al. (2018) explored how social support, as measured by total score on the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) was associated with academic achievement and emotional exhaustion in Chinese undergraduate students. Their results found that PSS was positively correlated with academic achievement as measured by reported GPA. In another study conducted by Akanni and Oduaran (2018), relationships among PSS, life satisfaction, and academic self-efficacy and adjustment were explored. Results from their research found that PSS scores were positively related to scores on both academic self-efficacy and academic adjustment measures among Nigerian college freshmen students.

Tinajero et al. (2020) measured PSS using three different social support scales and used GPA as a measure of academic achievement in Spanish college students. Combined, the three social support measures totaled 12 different subscales. Statistically significant findings were found between GPA and three of the 12 subscales: satisfaction of support, perceptions of family acceptance, and reassurance of worth. The perceived availability of social support subscale, however, was not found to be significantly related

to GPA in Tinajero et al.'s (2020) study. Other research conducted by Friedlander et al. (2007) also did not find evidence for PSS as a predictor of academic adjustment. Academic adjustment was measured in Friedlander et al.'s (2007) study by a subscale on a college adaptation questionnaire, and results indicated that increased social support from friends was positively associated with social and personal-emotional domains of college adjustment, but not academic. Additionally, Friedlander et al.'s (2007) results found that increased social support from family was significantly correlated with overall adjustment, but not specifically to academic.

PSS has received attention in different areas of research such as child abuse and maltreatment (e.g., Beilharz et al., 2020; Karatekin & Ahluwalia, 2020) and academic adjustment (e.g., Akanni & Oduaran, 2018; Li et al., 2018). Findings across both areas have been mixed regarding whether PSS serves as a protective factor (Folger & Wright, 2013) and if PSS is related to academic adjustment (Tinajero et al., 2020). There are challenges, however, to be aware of when drawing inferences from the various studies on PSS due to differences in the measures and definitions used, as well as the differences in the various types of social support explored (Sperry & Widom, 2013). The current study sought to add to the literature on PSS from people through the exploration of its potential moderating effect on the relationship between child abuse and college academic adjustment.

Perceived social support from companion animals. According to the American Pet Products Association (2020) National Pet Owners Survey, 67% of households in the United States own a pet (also referred to as a companion animal). Although findings on

whether companion animals provide benefits for pet owners have been mixed (Brooks et al., 2018), some research (e.g., McConnell et al., 2011; Meehan et al., 2017) has demonstrated that companion animals are often considered a source of social support for pet owners. Given that some research supports PSS from humans serving as a protective factor for both college academic adjustment (e.g., Akanni & Oduaran, 2018; Li et al., 2018) and the correlates of child abuse (e.g., Folger & Wright, 2013; Karatekin & Ahluwalia, 2020), the current study explored whether companion animals would be indicated as a source of PSS. Moreover, there appears to exist more qualitative than quantitative research in this area (Brooks et al., 2018) representing a need for more objective data.

A recent study conducted by Meehan et al. (2017) examined the social support of and attachment to companion animals in a college sample of pet owners in Australia. Participants completed a pet attachment measure and a modified version of the MSPSS (Zimet et al., 1988) that included six items addressing companion animals as a source of social support. Pet owners indicated, on average, that they perceived their companion animals as a source of social support distinct from the social support received from a significant other, parents, and friends. Pet owners who indicated a stronger attachment to their companion animals also indicated greater PSS from their pets compared to individuals who were less attached to their pets.

Research conducted by McConnell et al. (2011) examined the possible benefits of pet ownership in a community sample through three different studies. In their first study, differences in well-being between pet owners and nonowners were measured using

various scales of psychological adjustment and physical health. Findings from this study demonstrated that pet owners indicated higher levels of self-esteem, increased levels of exercise and physical fitness, and reduced levels of loneliness compared to nonowners. Overall social support measures demonstrated that support from companion animals among pet owners was statistically equal to the quantity of support given to them by parents or siblings, with best friends being the only group indicated as providing more support than pets.

In the next study by McConnell et al. (2011), dog owners' social support from humans and from their dog were examined in order to explore how the different sources predicted well-being. The results from this study demonstrated that when dog owners reported more social support from their pet, they were less depressed and lonely, indicated higher self-esteem, and showed a tendency to experience less perceived stress. Additionally, it was found that as social support from dogs increased, pet owners' overall support from parents, siblings, and best friends also increased. The findings of this study support the complement hypothesis that states social support from pets complements social support received from humans rather than supplements social support that is lacking from humans.

McConnell et al.'s (2011) final study tested whether a companion animal provides social support for participants after a social rejection experience was induced compared to a control group. Rejection was induced among participants by having them write about a time in their life in which they felt excluded or rejected socially. A control group wrote about their morning the day of the study. After this, participants wrote a paragraph about

either their companion animal or best friend, or as a control condition, sketched a map of campus. Findings from this study suggest that the participants who wrote about their companion animal indicated just as much social needs fulfillment as those who wrote about their best friend. Additionally, the control condition reported less fulfillment of their social needs at the completion of the study compared to those who wrote about their best friend or pet. These results qualitatively support companion animals providing social support for their owners.

Peacock et al. (2012). did not find evidence for companion animals providing social support to owners. Their study examined the relationship between psychological distress and companion animal attachment, and whether companion animal attachment moderated the relationship between social isolation and psychological distress. Results found that companion animal attachment was a significant positive predictor of psychological distress among participants. Perhaps this was found because individuals with fewer human attachments turn to their companion animals for support during times of stress. Also, attachment to a pet was not found to moderate the relationship between social isolation and psychological distress, suggesting that the social relationship with a pet does not equate to the social relationship with a human.

Companion animals are a common element of many households (American Pet Products Association, 2020). Some research (e.g., McConnell et al., 2011; Meehan et al., 2017) has found support for companion animals providing social support and other benefits to pet owners, whereas other research (e.g., Peacock et al., 2012) has not. The

current study examined whether or not participants with pets indicate that their companion animals serve as a source of social support.

Mistrust. Studies have demonstrated that individuals with child maltreatment histories have an increased risk of impaired interpersonal relationships in adulthood (e.g., Huh et al., 2014; Lamoureux et al., 2012; Messman-Moore & Coates, 2007; Nielsen et al., 2018). One proposed reason for why this occurs is that individuals with a history of maltreatment may be mistrustful of others or unwilling to accept support that is available to them (Sperry & Widom, 2013). As mentioned previously, social support has been found in some research to be positively related to college academic adjustment (e.g., Akanni & Oduaran, 2018; Li et al., 2018) and to moderate the relationship between child abuse and the associated negative correlates (e.g., Folger & Wright, 2013; Karatekin & Ahluwalia, 2020). If mistrust is related to a decrease in social support, then mistrust also may moderate the relationship between child abuse and college academic adjustment.

Definitions of mistrust vary, but according to Omodei and McLennan (2000), mistrust is when an individual is skeptical of the motivation of others. This definition (Omodei & McLennan, 2000) suggests that mistrust can be manifested as a propensity to see people as unreliable, malicious, self-centered, or otherwise not dependable. Relevant research conducted by Nereo et al. (2002) explored willingness to self-disclose history of CSA in a sample of college women. Results from their research found that CSA was related to difficulties trusting others in adulthood. Participants with a history of CSA indicated an unwillingness to disclose sexual or general information to both intimate partners and strangers in comparison to those without CSA histories.

In a similar study by Easton et al. (2014), researchers examined different barriers (i.e., sociopolitical, interpersonal, and personal domains) of disclosure for men with CSA histories. They conducted a secondary analysis of qualitative data from three national organizations that help individuals with CSA histories. It was found in the interpersonal domain that mistrust of others was related to reluctance of disclosure after abuse and that mistrust was the third most frequently indicated category in this domain. These researchers noted that, "For many men, the abuser shattered notions of trust" (Easton et al., 2014, p. 464). The men in their study expressed worry over how others would respond to their disclosure as well as worry about being unable to predict responses of others. It was found that mistrust manifested itself as a concern of unpredictable outcomes, which, in turn, inhibited CSA disclosure.

Berenson and Andersen (2006) examined the effects of projection (referred to as transference in the study) in interpersonal relationships among a sample of female undergraduate students with and without histories of parental CPhA and CPsyA. In the first session, participants were asked to describe their parents. In a second session that was presented as unrelated to the first, participants learned about new individuals who were designed to resemble their previous parental descriptions. Self-reported interpersonal reactions as well as assessment of facial affect and mood were recorded. Results found that, compared to those without abuse histories, participants who had experienced CSA or CPsyA were significantly more mistrustful in their projection towards the newly described individuals.

The potential role that mistrust plays in the interpersonal relationships of those with child abuse histories is an interesting area that would benefit from further exploration (Sperry & Widom, 2013). Individuals with histories of child abuse often report lower levels of social support (Beilharz et al., 2020) and experience impaired interpersonal relationships (Huh et al., 2014; Lamoureux et al., 2012; Messman-Moore & Coates, 2007; Nielsen et al., 2018). Sperry and Widom (2013) proposed mistrust as a possible explanation for these lower levels of social support and impaired interpersonal relationships. Support for the role of mistrust can be found in results from previous research (e.g., Easton et al., 2014; Nereo et al., 2002) indicating that individuals who have a history of child abuse may have their sense of trust broken as a result of their abuse. Due to available research (e.g., Akanni & Oduaran, 2018; Li et al., 2018) indicating a relationship between social support and college academic adjustment, mistrust was explored as a potential moderating variable between child abuse and college academic adjustment. Currently, there are no studies available examining mistrust as a moderator of this relationship.

Gender differences. Gender differences in the negative correlates associated with child abuse have been reported in several research studies and meta-analyses (e.g., Adams et al., 2018; Hodgdon et al., 2018; Norman et al., 2012). Additionally, the differences in academic adjustment between males and females have been researched among elementary to high school students as well as in college students (e.g., Balkis & Duru, 2017; Fry et al., 2018; Voyer & Voyer, 2014). There is no available literature,

however, on gender differences in the relationship between child abuse and college academic adjustment.

Gender differences are often reported (e.g., Adams et al., 2018; Hodgdon et al., 2018; Karatekin & Ahluwalia, 2020; Sunley et al., 2020) in studies that demonstrate relationships among child abuse and its mental health correlates (e.g., Humphreys et al., 2020; Spinazzola et al., 2014). In a 2018 study by Adams et al., gender differences in the relationships between CPhA and CSA and mental health correlates in a community sample of young adults were examined. Their results found that for women, longer-lasting CSA predicted PTSD symptoms and adolescent-onset of CSA predicted symptoms of anxiety. These correlations, however, were not statistically significant for men. Additionally, Adams et al.'s (2018) study found that a greater severity of CSA was associated with fewer PTSD symptoms in men. Whereas for women, severity of CSA did not predict fewer PTSD symptoms. Their results also indicated that men were statistically significantly more likely to have experienced physical abuse in early childhood and adolescence compared to women. Of note, it was reported that women indicated having experienced statistically significantly higher rates of sexual abuse than men in early childhood, childhood, and adolescence. Other research conducted by Sunley et al. (2020) examined sex and ethnic differences between different types of child maltreatment and depressed mood in a large sample of adults from the Netherlands. Their results found that female participants reported statistically significantly higher rates of CPsyA, CSA, and psychological neglect compared to males, but found no significant sex differences for CPhA.

Hodgdon et al.'s (2018) research examined three different types of child maltreatment (CSA, CPhA, and psychological maltreatment) and mental health correlates among a large sample of clinic-referred youth with histories of maltreatment. Their study found that higher externalizing symptoms were significantly associated with male gender. Additionally, positive significant associations were found between PTSD scores and a number of variables including female gender, higher number of co-occurring traumas, a larger proportion of maltreatment exposure, and older age at first exposure to maltreatment. In other related research, Karatekin and Ahluwalia (2020) measured ACEs, stress levels, and social support among college students. These researchers found that although there were no gender differences in reported ACEs, gender was found to be a statistically significant predictor of mental summary scores (i.e., general emotional problems, depression, nervousness, and fatigue) with women having lower scores (i.e., indicating worse mental health) than men.

In the area of academic adjustment, differences between males and females have been researched and reported (e.g., Balkis & Duru, 2017; Voyer & Voyer, 2014). For example, Balkis and Duru (2017) conducted research on gender differences on the association between satisfaction with academic life, academic procrastination, and academic performance in a college sample. Results indicated that female students reported higher levels of academic life satisfaction and had a higher overall GPA compared to male students. Moreover, other studies that utilized GPA as a measure of academic performance and adjustment (e.g., Khwaileh & Zaza, 2011; Tinajero et al., 2020; Wan Chik et al., 2012) found supporting evidence for females achieving higher

GPAs compared to males. Lastly, a large meta-analysis of studies reporting achievement in elementary through high school students, as well as undergraduate and graduate students, found small but statistically significant differences in the grades of females compared to males, with females receiving higher grades (Voyer & Voyer, 2014).

Gender differences have been found in not only the negative correlates of child abuse (e.g., Adams et al., 2018; Hodgdon et al., 2018), but also in academic adjustment (e.g., Balkis & Duru, 2017; Voyer & Voyer, 2014). Research findings suggest that duration, onset, and severity of child abuse have a greater influence on the associated negative correlates for females than males (Adams et al., 2018) and that PTSD scores tend to be higher among females with child abuse histories than males with child abuse histories (Adams et al., 2018; Hodgdon et al., 2018). Also, the literature on academic adjustment and gender differences suggest that females have higher academic performance than their male counterparts (Balkis & Duru, 2017; Wan Chik et al., 2012). Currently, there exists no studies on the role of gender as a moderating variable in the relationship between child abuse and college academic adjustment. The current study sought to fill this gap in the literature by exploring gender differences in the relationship between different types of child abuse (CSA, CPhA, CPsyA) and academic adjustment in a college sample.

Summary

Child abuse and maltreatment have been researched extensively. The available literature indicates that child maltreatment is a prevalent issue, with an estimated 678,000 children abused and neglected in the United States in 2018 (Children's Bureau, 2020).

Definitions of child abuse vary among sources and sometimes are restricted to the actions of a parent, caregiver, or authorized individual (e.g., a teacher; Robinson, 2019).

The correlates of child abuse have received much attention in the literature as many negative mental health symptoms have been associated with a history of child abuse (e.g., Evans et al., 2013; Hodgdon et al., 2018; Humphreys et al., 2020; Mills et al., 2013; Wright et al., 2009). CSA has been researched the most followed by CPhA (Humphreys et al., 2020; Mills et al., 2013; Robinson, 2019), but there is growing literature on CPsyA (e.g., Christ et al., 2019; Spinazzola et al., 2014). Studies (e.g., Adams et al., 2018; Gardner et al., 2019) have found that correlates, such as anxiety and depression, are often associated with more than one type of child abuse (e.g., CSA, CPhA, and CPsyA).

College students with a history of child abuse or maltreatment make up a meaningful subset of the total college population, with some research finding rates of approximately 30% (Welsh et al., 2017). The prevalence rates of child abuse and child maltreatment among college students, however, do vary by source (e.g., Binelli et al., 2012; Duncan, 2000). When considering the influence that college has on a student's life (Forster et al., 2018), increased awareness and information about how child abuse may affect a student's academic experience is important (Merians et al., 2019). In relevant research examining the negative correlates of child abuse and maltreatment in college samples (e.g., Forster et al., 2018; Moore et al., 2020), findings have demonstrated that child abuse does have an influence on some students' academic experience, and that the two have a negative relationship (Tanaka et al., 2015). The research, however, is mixed

as some studies (e.g., Merians et al., 2019) have not found strong statistically significant associations between a history of child abuse and academic adjustment.

Although there is a large amount of research on child abuse in college students, there exists a need for more research on the relationships between child abuse and students' adjustment to college (Moore et al., 2020). The common areas of adjustment explored are psychological, social, and academic, with more research currently available on the social and psychological domains (e.g., Berzenski et al., 2011; Richmond et al., 2009; Welsh et al., 2017; Wright et al., 2009) compared to academic (e.g., Forster et al., 2018; Himelein, 1995). Several studies have found associations between a history of child abuse and academic adjustment such as higher drop-out rates (Duncan, 2000), lower levels of educational attainment (Hardner et al., 2018), lower GPA (Merians et al., 2019), and lower self-reported adaptation to college (Welsh et al., 2017). These findings point towards a negative relationship between child abuse and academic adjustment.

A potential moderator of the relationship between child abuse and academic adjustment is PSS from people. There is research (e.g., Evans et al., 2013; Gayer-Anderson et al., 2015) available supporting the association between PSS and college academic adjustment, but the findings are limited and have mixed results (Tinajero et al., 2020). Multiple studies have been conducted exploring the role of PSS as a moderator between child abuse and the associated negative correlates but results on whether it serves as a protective factor have been conflicting (Folger & Wright, 2013). Regarding academic adjustment, PSS has been found to be positively correlated with academic

achievement as measured by reported GPA (Li et al., 2018) and academic self-efficacy and adjustment measures (Akanni & Oduaran, 2018).

Additionally, companion animals may act as a source of social support for individuals with histories of child abuse who own pets. There presently exists some research on whether or not companion animals serve as a means of social support for pet owners (e.g., Brooks et al., 2018; Meehan et al., 2017). Less quantitative data are available in this research area, but there have been studies conducted that found support for companion animals providing benefits, such as social support, to pet owners (e.g., McConnell et al., 2011; Meehan et al., 2017). Conversely, a study conducted by Peacock et al. (2012) found that attachment to a companion animal was positively related to psychological distress among pet owners. Therefore, companion animals potentially providing social support to pet owners is an area that would benefit from further exploration.

Another possible moderator of the relationship between child abuse and college academic adjustment is mistrust. Mistrust is an area in the literature that has not received as much attention, but it has been proposed as a potential explanation for the lower levels of social support among those with child abuse histories (Sperry & Widom, 2013). There is research (e.g., Easton et al., 2014; Nereo et al., 2002) that provides some support for this proposal with findings that indicate individuals with a history of abuse may have their sense of trust broken as a result of their traumatic experience.

An additional potential moderator of the relationship between a history of child abuse and college academic adjustment is gender. Gender differences have been studied

in the literature on academic adjustment (e.g., Balkis & Duru, 2017; Fry et al., 2018; Voyer & Voyer, 2014) and on the negative correlates of child abuse (e.g., Adams et al., 2018; Hodgdon et al., 2018; Norman et al., 2012). There is no available research, however, on gender differences in the relationship between child abuse and college academic adjustment. Some research (e.g., Adams et al., 2018) on the negative correlates of child abuse suggest that duration, onset, and severity of child abuse have a greater influence on the associated correlates for women than men. In the available research on academic performance and adjustment (e.g., Balkis & Duru, 2017; Khwaileh & Zaza, 2011; Tinajero et al., 2020; Wan Chik et al., 2012), supporting evidence has been found for women achieving higher GPAs than men.

There exists less research on the moderating variables of the relationships between child abuse and the various domains of adjustment in comparison to the literature available on the long-term correlates of child abuse. Additionally, there exists more research on the psychological and social domains of college adjustment in comparison to the academic domain. The current study sought to contribute to the literature on child abuse and address the less researched area of college academic adjustment by exploring the relationship between three different types of child abuse (CSA, CPhA, and CPsyA) and college academic adjustment. Potential moderators (i.e., PSS from people, mistrust, and gender) of the relationship between child abuse and college academic adjustment were explored in the current study.

Hypotheses

H1: It was hypothesized that there would be statistically significant gender differences for mean scores on the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). Specifically, the mean score for men was expected to be statistically significantly lower than the mean score for women on this measure. It also was hypothesized that there would be statistically significant gender differences for mean scores on the Interpersonal Mistrust Trust Measure (IMTM; Omodei & McLennan, 2000). Specifically, the mean score for men was expected to be statistically significantly higher than the mean score for women on the IMTM. It was additionally hypothesized that there would be statistically significant gender differences for mean scores on three scales (i.e., physical abuse, sexual abuse, psychological maltreatment) of the Comprehensive Child Maltreatment Scale (CCMS; Higgins & McCabe, 2001b). The mean scores for women on the sexual abuse and psychological maltreatment scales of the CCMS were expected to be statistically significantly higher than those of men. The mean score for men on the physical abuse scale of the CCMS was expected to be statistically significantly higher than that of women. It was further hypothesized that there would be statistically significant gender differences for mean scores on the educational functioning subscale of the College Adjustment Questionnaire (CAQ; O'Donnell et al., 2018) and self-reported GPA. Specifically, the mean scores for women were expected to be statistically significantly higher than the mean scores for men on each of the measures.

H2: It was hypothesized that three different types of child abuse (i.e., CSA, CPhA, CPsyA) as measured by scores on three scales (i.e., physical abuse, sexual abuse,

psychological maltreatment) of the Comprehensive Child Maltreatment Scale (CCMS; Higgins & McCabe, 2001b) would be negatively correlated with self-reported GPA for men and women, respectively, as well as for the entire sample. It was further hypothesized that scores on each of the three CCMS scales would be negatively correlated with scores on the educational functioning subscale of the CAQ (O'Donnell et al., 2018). It was expected that scores on each of the three scales of the CCMS would be negatively correlated to scores on the educational functioning subscale of the CAQ for both genders and for the overall sample.

H3: It was hypothesized that scores on each of the three scales (i.e., physical abuse, sexual abuse, psychological maltreatment) of the CCMS (Higgins & McCabe, 2001b) would have a positive relationship with overall scores on the Interpersonal Mistrust Trust Measure (IMTM; Omodei & McLennan, 2000) for men and women, respectively, as well as for the entire sample. Individual scores on each of the three CCMS scales also were expected to be negatively correlated with overall scores on the MSPSS (Zimet et al., 1988) for the overall sample as well as for both genders. Further, it was hypothesized that overall scores on the IMTM would be negatively associated with scores on the educational functioning subscale of the CAQ and with self-reported GPA for both genders and the overall sample. It also was hypothesized that overall scores on the MSPSS would have a positive correlation with self-reported GPA and with scores on the educational functioning subscale of the CAQ for men and women, respectively, as well as for the entire sample.

H4: Up to six regression models would be analyzed to examine the relationship between each type of child abuse and the two academic adjustment measures. It was hypothesized that PSS, mistrust, and gender would be significant moderators of the relationship between three different types of child abuse and two measures of college academic adjustment. If necessary, statistical analyses were conducted separately for each of the three abuse scales of the CCMS and for the two measures of college academic adjustment (i.e., educational functioning scores on the CAQ [CAQef] and self-reported GPA) in this regression model. The equations for the six regression models are:

$$GPA = \beta_0 + \beta_1 CSA + \beta_2 PSS + \beta_3 mistrust + \beta_4 gender + \beta_5 PSS*CSA + \beta_6 mistrust*CSA + \beta_7 gender*CSA + \beta_8 PSS*mistrust + \beta_9 gender*PSS + \beta_{10} gender*mistrust$$

$$GPA = \beta_0 + \beta_1 CPhA + \beta_2 PSS + \beta_3 mistrust + \beta_4 gender + \beta_5 PSS*CPhA + \beta_6 mistrust*CPhA + \beta_7 gender*CPhA + \beta_8 PSS*mistrust + \beta_9 gender*PSS + \beta_{10} gender*mistrust$$

$$GPA = \beta_0 + \beta_1 CPsyA + \beta_2 PSS + \beta_3 mistrust + \beta_4 gender + \beta_5 PSS*CPsyA + \beta_6 mistrust*CPsyA + \beta_7 gender*CPsyA + \beta_8 PSS*mistrust + \beta_9 gender*PSS + \beta_{10} gender*mistrust$$

$$CAQef = \beta_0 + \beta_1 CSA + \beta_2 PSS + \beta_3 mistrust + \beta_4 gender + \beta_5 PSS*CSA + \beta_6 mistrust*CSA + \beta_7 gender*CSA + \beta_8 PSS*mistrust + \beta_9 gender*PSS + \beta_{10} gender*mistrust$$

$CAQef = \beta_0 + \beta_1 CPhA + \beta_2 PSS + \beta_3 mistrust + \beta_4 gender + \beta_5 PSS*CPhA + \beta_6 mistrust*CPhA + \beta_7 gender*CPhA + \beta_8 PSS*mistrust + \beta_9 gender*PSS + \beta_{10} gender*mistrust$

$CAQef = \beta_0 + \beta_1 CPsyA + \beta_2 PSS + \beta_3 mistrust + \beta_4 gender + \beta_5 PSS*CPsyA + \beta_6 mistrust*CPsyA + \beta_7 gender*CPsyA + \beta_8 PSS*mistrust + \beta_9 gender*PSS + \beta_{10} gender*mistrust.$

For this multiple regression model, specific type of abuse (i.e., physical abuse, sexual abuse, psychological maltreatment) of the CCMS (Higgins & McCabe, 2001b), overall MSPSS (Zimet et al., 1988) scores, overall IMTM (Omodei & McLennan, 2000) scores, gender, the interaction of MSPSS scores with CCMS scores on the three scales, the interaction of IMTM scores with CCMS scores on the three scales, the interaction of MSPSS and IMTM scores, the interaction of participant gender with CCMS scores on the three scales, the interaction of gender with MSPSS scores, and the interaction of gender with IMTM scores were considered potential predictors of educational functioning scores on the CAQ (O'Donnell et al., 2018) and self-reported GPA.

Exploratory analyses were conducted for this study as well. Specifically, correlations among the individual subscale scores of the original MSPSS (Zimet et al., 1988; Family, Friends, and Significant Other) and author-constructed companion animal support items were examined. It was hypothesized that participants with companion animals would endorse items on a modified version of the MSPSS (Zimet et al., 1988) that indicate their companion animals serve as a source of social support. Additionally, it was predicted that there may be statistically significant relationships between social

support received from companion animals and the different abuse types (i.e., physical abuse, sexual abuse, psychological maltreatment), overall social support received from people, and mistrust.

CHAPTER II: METHOD

Participants

Undergraduate students at a midsized university, Middle Tennessee State University, in the southeast United States were recruited using the Psychology Research Pool. Participants received extra or course credit in their psychology course as compensation for their participation. All participants were at least 18 years of age or older. The initial sample size was 82 participants. Three participants were not included due to a substantial amount of missing data on the abuse variables. Of the remaining, 30 men and 49 women made up the sample. As seen in Table 1, the majority of participants were White/Caucasian (70.51%) and 18 to 21 years old (87.34%). Before data collection began, approval was obtained by Middle Tennessee State University's Institutional Review Board (see Appendix A).

Measures

Demographic form. The participants were given a demographic form prior to completing the other measures (See Appendix B). Participants were asked in the demographic form about their gender (Male, Female, Other/I prefer not to respond), age (18 to 21 years old, 22 to 25 years old, 26 and older, or I prefer not to respond), and ethnicity (Black/African American, White/Caucasian, Other, or I prefer not to respond) in a multiple-choice format. The age variable was divided into groups in order to prevent those representing the more extreme end of the continuum (i.e., older, nontraditional students) from being more easily inadvertently identifiable. Similarly, limited options

Table 1

Demographic Information

Variable	*n*	%
Gender		
Male	30	37.97
Female	49	62.03
Other/I prefer not to respond	0	0
Ethnicity		
Black/African American	10	12.82
White/Caucasian	55	70.51
Other	11	14.10
I prefer not to respond	2	2.56
Age (years)		
18-21	69	87.34
22-25	5	6.33
26 and older	5	6.33
I prefer not to respond	0	0

N = 79.

were provided for ethnicity to ensure that the participants would not be inadvertently identifiable.

Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS (Zimet et al., 1988) is a self-report measure designed to assess subjective perceptions of available social support. The MSPSS is made up of 12 items, divided into three subscales, that address PSS received from family, friends, and a significant other (Zimet et al., 1988). Responses for individual items are indicated on a 7-point scale of *very strongly disagree* to *very strongly agree*. There are four items per subscale of support (i.e., friends, family, and significant other). The scores on the three different subscales can be summed to obtain a total PSS score. Higher scores indicate higher levels of PSS.

The MSPSS has a total Cronbach's coefficient alpha of .88 (Zimet et al., 1988). The alpha coefficients were analyzed for the three different subscales to determine internal consistency. The alphas for friends, family, and significant other were .85, .87, and .91 respectively (Zimet et al., 1988). Construct validity was demonstrated by correlations between the subscales of the MSPSS and the depression and anxiety scales of the Hopkins Symptom Checklist (Zimet et al., 1988). For depression symptoms, PSS from friends and from family were both significantly negatively related $r = -.24$, $p < .01$, and PSS from a significant other was significantly negatively related $r = -.13$, $p < .05$. For anxiety, PSS from family was significantly negatively related $r = -.18$, $p < 0.1$, but friends and a significant other were not. The total scale was significantly negatively correlated with depression, $r = -.25$, $p < .01$ (Zimet et al., 1988).

The original authors (Zimet et al., 1988) of the MSPSS granted approval for the current study to modify their measure through the addition of exploratory items that address PSS of pet/companion animals. Previous research (Meehan et al., 2017) has added six items to the MSPSS to evaluate pets as a source of social support. Meehan et al. (2017) created a pets subscale by substituting the word "pet" into original items of the MSPSS in order to measure pet owners' recognition of social support provided by their companion animal. Their study found a Cronbach's alpha of .92 for the pets subscale. The current study similarly created a companion animal subscale of PSS by generating additional items to include with the original MSPSS that address perceptions of companion animal support (See Appendix C). Some of the author-constructed companion animal items also addressed what type of pet the participants' own, whether the pet currently lives with participants, and how often participants see their pet if the pet does not live with them.

In the current study, the MSPSS had a total Cronbach's coefficient alpha of .91. The alphas for friends, family, and significant other were .92, .94, and .95 respectively. The author-constructed companion animal subscale had a coefficient alpha of .92.

Interpersonal Mistrust Trust Measure (IMTM). The IMTM (Omodei & McLennan, 2000) is a self-report measure assessing interpersonal mistrust as a negative cognitive attitude towards other people. The IMTM consists of 18 items describing perceptions of hypothetical interpersonal interactions; nine items are worded positively for mistrust and nine items are worded positively for trust (Omodei & McLennan, 2000). Response ratings are on a 7-point scale of *not likely to respond in this way* to *very likely*

to respond this way instructing participants to indicate how likely it would be for the hypothetical individual described in the item to act towards them in the manner described. The nine items worded positively for trust are reversed scored. The responses to the 18 items can be summed to obtain a total mistrust score. Higher scores indicate higher levels of global interpersonal mistrust. The original IMTM utilizes interpersonal situations and language that were common in Australia in the 1990s. The authors of the IMTM granted approval for the current study to modify items as needed for relevance to 2020 North America. The author of the current study examined the original IMTM items and evaluated whether the wording was appropriate for the intended sample. Interpersonal interactions and associated responses were reworded using synonyms and similar phrases that are commonly used among young adults in North America currently (See Appendix D).

The Cronbach's coefficient alpha for the IMTM is .81 (Omodei & McLennan, 2000). Construct validity of the IMTM was demonstrated through correlations with the Interpersonal Trust Scale, the Trust-Suspicion Scale, and the fearful subscale of the Relationship Style Questionnaire (Omodei & McLennan, 2000). Scores on the IMTM were significantly negatively correlated with scores on the Interpersonal Trust Scale (r = -.41) and significantly positively correlated with scores on the Trust-Suspicion Scale (r = .53). Significant positive correlations also were found between scores on the IMTM and the Relationship Style Questionnaire's fearful subscale (Omodei & McLennan, 2000). In the current study, the IMTM had a coefficient alpha of .68.

College Adjustment Questionnaire (CAQ). The CAQ (O'Donnell et al., 2018) is a self-report measure that assesses students' adjustment to college across three different domains of functioning – educational, relational, and psychological. The CAQ is made up of 14 items (O'Donnell et al., 2018), divided into three subscales based on area of functioning that provide various statements describing potential experiences of students while in college. Participants are instructed to indicate how accurately the statements describe their current college experience on a 5-point scale of *very inaccurate* to *very accurate*. The educational and relational functioning subscales contain five items each, and the remaining subscale, psychological functioning, contains four items. Five of the total 14 items are reversed scored. Responses to the 14 items can be summed to obtain a total college adjustment score, and responses for the three subscales also may be summed to obtain adjustment scores for the different domains of functioning. Higher overall scores on this measure indicate a greater adjustment to college whereas lower scores indicate poorer college adjustment.

The CAQ subscales have demonstrated good internal consistency, with a Cronbach's coefficient alpha of .89 for educational functioning, .84 for relational functioning, and .79 for psychological functioning (O'Donnell et al., 2018). Construct validity of the CAQ was demonstrated through statistically significant correlations with the widely used Student Adaptation to College Questionnaire (SACQ). The educational subscale of the CAQ was positively correlated with the academic subscale of the SACQ (r = .65). The relational subscale was positively correlated with the social subscale of the SACQ (r = .67). The psychological subscale was positively correlated with the emotional

subscale of the SACQ (r = .69). The current study used total scores on the educational functioning subscale as a measure of college academic adjustment. The Cronbach's coefficient alpha for the educational functioning subscale in the current study was .91.

Grade Point Average (GPA). GPA is a widespread measure of academic achievement; it is the mean number of grade points that a student receives for every graded course taken (Perkins et al., 2004). The most widely used scale for GPA is a 4-point scale in which "... the letter grade 'A' equals four points, the letter grade 'B' equals three points, the letter grade 'C' equals two points, the letter grade 'D' equals one point, and the letter grade 'F' equals zero points" (Perkins et al., 2004, p. 3-1). Total points are summed, then divided by the total number of credits taken (Perkins et al., 2004).

The current study asked participants to report their current college GPA rounded to the first decimal place as indicated by the university's online Web interface, PipelineMT (See Appendix E). PipelineMT is an online portal that provides students access to campus and academic resources, including class schedule and current GPA. Self-reported GPA was used as a measure of college academic adjustment in the current study.

Comprehensive Child Maltreatment Scale (CCMS). The CCMS (Higgins & McCabe, 2001b) is a retrospective self-report measure that was designed for use in adults to assess maltreatment experienced during childhood. The CCMS is comprised of 22 questions divided into categories to separately assess five different types of maltreatment: physical abuse, sexual abuse, psychological maltreatment, witnessing family violence, and neglect (Higgins & McCabe, 2001b). Response ratings are *never or*

almost never to *very frequently* for all categories except for sexual abuse. For sexual abuse, participants rate items on a 6-point scale (0 = *never*, 1 = *once*, 2 = *twice*, 3 = *3 to 6 times*, 4 = *7 to 20 times*, 5 = *more than 20 times*). Items within four of the categories (i.e., physical abuse, sexual abuse, psychological maltreatment, neglect) are asked three times to account for the relationship of different individuals (i.e., mother, father, other adult/older adolescent) potentially involved in the childhood abuse experienced. The category of witnessing family violence is made up of two items calling for a global response regarding family violence that was observed. The different scores on all five scales can be added to obtain a total score for each scale. The current study used individual scores from the psychological maltreatment, physical abuse, and sexual abuse scales of the CCMS as a measure of a history of child abuse. The neglect and witnessing family violence scales of the CCMS were not included in the statistical analyses of the current study.

The CCMS has a total Cronbach's coefficient alpha of .93 (Higgins & McCabe, 2001b). For each individual scale, the alpha coefficients were analyzed: physical abuse .66, sexual abuse .88, psychological maltreatment .78, witnessing family violence .77, and neglect .84 (Higgins & McCabe, 2001b). The test-retest reliability for the total CCMS over a 6 to 8-week interval was .92 (Higgins & McCabe, 2001b). Concurrent criterion-related reliability was evidenced when the CCMS was compared to comparable subscales of the Child Abuse and Trauma Scale (Higgins & McCabe, 2001b). In the current study, the Cronbach's coefficient alpha for the psychological maltreatment, physical abuse, and sexual abuse scales were .82, .90, and .98 respectively.

Procedure

Approval from the Middle Tennessee State University's Institutional Review Board was obtained prior to conducting any research. Once the current study was approved, participants were recruited for this online study using the Psychology Research Pool. As part of the online nature of the current study, the Psychology Research Pool provided participants with a link to access the study via Qualtrics. Prior to signing up for the research, the participants reviewed the exclusionary criteria, which stated that participants must be at least 18 years old. Once participants read exclusionary criteria, they were directed to Qualtrics for the current study. They were asked to read an informed consent form, which detailed the procedure, risks, and benefits (See Appendix F). Participants then were asked to check boxes indicating that they agreed to participate in the study and that they were at least 18 years old.

Once participants consented to engage in the current study and indicated their self-reported age to be at least 18 years old, they were provided with online versions of several surveys that included instructions on how to complete them. The demographic form was presented first, followed by the MSPSS (Zimet et al., 1988), the exploratory companion animal items, the IMTM (Omodei & McLennan, 2000), the CAQ (O'Donnell et al., 2018), and an item that asked for self-reported college GPA. Due to the possibility of reactivity happening after the child abuse questions, the CCMS (Higgins & McCabe, 2001b) was presented last. Once participants completed the study, they were provided with a debriefing form that included information about the study's purpose, contact

information for the principal investigator and faculty advisor, and child abuse resources (See Appendix G).

CHAPTER III: RESULTS

Descriptive Statistics

For each of the study variables (i.e., child abuse, PSS, and mistrust), mean scores and standard deviations were included in the descriptive statistics for the sample (See Table 2). To account for potential unequal variance between genders, Welch *t* tests for independent samples were conducted for total scores for all variables (i.e., child abuse, social support, and mistrust) to examine gender differences (See Table 2). Further, bivariate correlations were conducted among all of the study variables (See Table 3).

Hypotheses Testing

The statistical software SAS Studio (version 3.80) was used to perform all statistical analyses. Welch *t* tests were used to test hypothesis one concerning gender differences among the study variables. As can be seen in Table 2, no gender differences emerged among the study variables.

Pearson's correlations and the associated significance tests were performed to test hypothesis two concerning correlations between the abuse variables and GPA and educational functioning scores. As can be seen in Table 3, psychological abuse was significantly negatively correlated with educational functioning. None of the other types of abuse correlated with educational functioning or GPA. Similarly, by gender, psychological abuse and educational functioning were significantly negatively correlated for women (See Table 4). For men, however, these two variables were not significantly correlated.

Table 2

Gender Differences Among Study Variables

Variable	Overall		Men		Women		*t*	*df*	Cohen's *d*
	M	*SD*	*M*	*SD*	*M*	*SD*			
Sexual Abuse	35.19	15.13	36.20	19.68	34.57	11.71	0.41	41.76	0.10
Psychological Abuse	16.90	6.70	15.47	5.02	17.78	7.46	-1.64	76.23	-0.36
Physical Abuse	12.05	5.05	13.10	5.96	11.41	4.34	1.35	47.86	0.32
Educational Functioning	17.10	4.98	17.33	4.57	16.96	5.25	0.33	67.93	0.08
GPA	3.22	0.62	3.11	0.66	3.29	0.59	-1.22	53.88	-0.29
Social Support	65.33	12.82	64.30	14.58	65.96	11.72	-0.53	51.63	-0.13
Mistrust	57.53	11.67	58.90	8.38	56.69	13.31	0.90	79.91	0.20

Note. N = 78-79. Sexual Abuse = total score of the sexual abuse scale of the Comprehensive Child Maltreatment Scale (CCMS). Psychological Abuse = total score of the psychological maltreatment scale of the CCMS. Physical Abuse = total score of the physical abuse scale of the CCMS. Educational Functioning = total score of the educational functioning subscale of the College Adjustment Questionnaire. GPA = self-reported grade point average. Social Support = total score of the Multidimensional Scale of Perceived Social Support. Mistrust = total score of the Interpersonal Mistrust Trust Scale.

*$p < .05$.

Table 3

Correlations Among Study Variables

Variable	1	2	3	4	5	6	7
1. Sexual Abuse	–						
2. Psychological Abuse	.35**	–					
3. Physical Abuse	.70**	.44**	–				
4. Educational Functioning	-.15	-.23*	-.07	–			
5. GPA	-.12	-.01	-.07	.56**	–		
6. Social Support	-.25*	-.28*	-.31**	.37**	.27*	–	
7. Mistrust	.22*	.07	.28*	-.15	-.04	-.39**	–

Note. N = 78-79. Sexual Abuse = total score of the sexual abuse scale of the Comprehensive Child Maltreatment Scale (CCMS). Psychological Abuse = total score of the psychological maltreatment scale of the CCMS. Physical Abuse = total score of the physical abuse scale of the CCMS. Educational Functioning = total score of the educational functioning subscale of the College Adjustment Questionnaire. GPA = self-reported grade point average. Social Support = total score of the Multidimensional Scale of Perceived Social Support. Mistrust = total score of the Interpersonal Mistrust Trust Scale.

*$p < .05$. **$p < .01$.

Table 4

Correlations Among Study Variables by Gender

Variable	1	2	3	4	5	6	7
1. Sexual Abuse	–	.62**	.63**	-.14	-.09	-.30	.42*
2. Psychological Abuse	.26	–	.52**	-.05	-.01	-.14	.31
3. Physical Abuse	.82**	.51**	–	.02	-.02	-.34	.50**
4. Educational Functioning	-.19	-.29*	-.15	–	.70**	.51**	-.41*
5. GPA	-.14	-.04	-.07	.52**	–	.39*	-.23
6. Social Support	-.18	-.39**	-.26	.30*	.16	–	-.51**
7. Mistrust	.13	.04	.18	-.07	.05	-.36*	–

Note. The results for the male sample (n = 29-30) are shown above the diagonal. The results for the female sample (n = 49) are shown below the diagonal. Sexual Abuse = total score of the sexual abuse scale of the Comprehensive Child Maltreatment Scale (CCMS). Psychological Abuse = total score of the psychological maltreatment scale of the CCMS. Physical Abuse = total score of the physical abuse scale of the CCMS. Educational Functioning = total score of the educational functioning subscale of the College Adjustment Questionnaire. GPA = self-reported grade point average. Social Support = total score of the Multidimensional Scale of Perceived Social Support. Mistrust = total score of the Interpersonal Mistrust Trust Scale.

*p < .05. **p < .01.

Pearson's correlations and the associated significance tests were calculated to test hypothesis three concerning correlations between the abuse variables and mistrust and social support. As can be seen in Table 3, sexual abuse and physical abuse significantly positively correlated with mistrust. Psychological abuse, however, did not correlate with mistrust. Similarly, for men, sexual abuse and physical abuse were significantly positively correlated with mistrust (See Table 4). For women, however, none of the abuse types were correlated with mistrust. Although not hypothesized, as can be seen in Table 3, mistrust and social support were significantly negatively correlated.

All three abuse types significantly negatively correlated with social support for the overall sample. For women, psychological abuse significantly negatively correlated with social support, but the other abuse types did not. For men, none of the abuse types correlated with social support. Moreover, both educational functioning and GPA significantly positively correlated with social support, but these two variables did not correlate with mistrust. For men, educational functioning and GPA significantly positively correlated with social support. Whereas for women, educational functioning significantly positively correlated with social support, but GPA did not. For men, educational functioning significantly negatively correlated with mistrust, but GPA did not. For women, neither educational functioning nor GPA correlated with mistrust.

As previously mentioned, neither sexual nor physical abuse were significantly correlated to educational functioning or GPA. Psychological abuse, however, was found to be significantly negatively correlated to educational functioning. Additionally, social support was found to be significantly negatively correlated to psychological abuse and

significantly positively correlated to educational functioning. Therefore, for hypothesis four, a regression analysis, using a standardized data set to address potential collinearity issues, was conducted to test for moderation. Educational functioning can be predicted by some combination of psychological abuse, social support, and the interaction of abuse with social support, $R^2 = .16$, $F(3, 75) = 4.65$, $p = .005$. When controlling for psychological abuse and the interaction of abuse with social support, social support was found to be a significant predictor of educational functioning, $F(1, 75) = 9.17$, $p = .003$. Social support, however, was not found to be a statistically significant moderator of the relationship, $F(1, 75) = 0.16$, $p = .69$. Exploratory mediation analyses revealed that social support was a complete mediator of the relationship, $F(1, 76) = 1.51$, $p = .22$.

Exploratory Analyses

Exploratory correlational analyses were conducted to investigate correlations among the subscale scores on the MSPSS (Zimet et al., 1988; Family, Friends, and Significant Other) and the author-constructed companion animal support scale. Also, bivariate correlations were conducted to examine if a statistically significant relationship existed between social support received from companion animals and the different types of abuse (i.e., physical abuse, sexual abuse, psychological maltreatment), overall social support received from people, and mistrust. As seen in Table 5, companion animal support did not correlate with any of these variables.

As seen in Table 6, participants endorsed items indicating companion animals as a source of social support. Descriptive statistics of the companion animal support scale can be found in Table 7.

Table 5

Correlations Between Companion Animal Support and Social Support, Abuse, and Mistrust

Variable	Companion Animal Support
Social Support	
Friends	.20
Family	.10
Significant Other	.01
Total	.12
Child Abuse	
Sexual	-.03
Psychological	.01
Physical	.05
Mistrust	-.13

Note. N = 51. Friends = total score of the friends subscale of the Multidimensional Scale of Perceived Social Support (MSPSS). Family = total score of the family subscale of the MSPSS. Significant Other = total score of the significant other subscale of the MSPSS. Total = total score of the MSPSS. Sexual Abuse = total score of the sexual abuse scale of the Comprehensive Child Maltreatment Scale (CCMS). Psychological Abuse = total score of the psychological maltreatment scale of the CCMS. Physical Abuse = total score of the physical abuse scale of the CCMS. Mistrust = total score of the Interpersonal Mistrust Trust Scale.

*$p < .05$.

Table 6

Indication of Companion Animals as Social Support

Item	*M*	*SD*	% Agree[1]
I receive emotional support from my pet.	5.35	1.51	70.59
I can depend on my pet to be there for me when things fall apart.	5.45	1.51	66.67
I can talk about my worries with my pet.	4.84	2.03	54.90
When I feel down, my pet comforts me.	5.71	1.45	78.43
My pet provides me with friendship.	5.78	1.39	80.39
My pet cares about my feelings.	5.02	1.78	52.94
My pet is there for me when I need him/her.	5.47	1.54	76.47
Overall support	37.63	9.28	88.24

Note. $N = 51$.

[1] Percentage of participants who indicated 5 (*Mildly Agree*), 6 (*Strongly Agree*), or 7 (*Very Strongly Agree*) on items.

Table 7

Descriptive Statistics of Companion Animal Support Scale

Variable	*n*	%
Pet Ownership		
Yes	51	64.56
No	28	35.44
Type of Pet[1]		
Dog	38	74.51
Cat	10	19.61
Rabbit	0	0
Horse	0	0
Other small mammal (e.g., Guinea pig, hamster, rat)	2	3.92
Bird	0	0
Reptile	0	0
Fish	1	1.96
Other	0	0
Currently Reside with Owner		
Yes	40	78.43
No	11	21.57
Interactions with Pet (if not living with owner) [2]		
On all or most weekends	4	36.36
During fall break	5	45.45
During winter break	6	54.55
During spring break	5	45.45
During summer break	10	90.91

[1] Participants were asked to designate one animal if they had multiple pets.

[2] Participants were asked to indicate how often they interacted with their pet if the animal did not reside with them.

CHAPTER IV: DISCUSSION

The relationship between child abuse and adjustment has received a lot of attention in the literature (e.g., Gardner et al., 2019; Hodgdon et al., 2018). There is a greater need, however, for research on how child abuse relates to academic adjustment in college students (Moore et al., 2020). The current study sought to explore the relationships between three different types of child abuse (sexual [CSA], physical [CPhA], and psychological [CPsyA]) and college academic adjustment (i.e., self-reported GPA and educational functioning subscale scores of the CAQ [O'Donnell et al., 2018]). Perceived social support (PSS), mistrust, and gender were included as potential moderators of these relationships. Additionally, exploratory analyses were conducted to examine whether pet owners indicated that companion animals serve as a source of social support and if support received from companion animals was related to child abuse, academic adjustment, and the potential moderators.

Contrary to what was predicted, none of the child abuse variables significantly correlated with GPA. These findings are consistent with research conducted by Welsh et al. (2017) that found a statistically nonsignificant relationship between GPA and scores on a child maltreatment questionnaire. Further, the current study's findings are relatively consistent with Merians et al.'s (2019) study that found weak statistically significant correlations between college students' GPA and exposure to child abuse and household dysfunction. There does exist other research, however, that has found stronger relationships between GPA and a history of child abuse, such as the study conducted by Jordan et al. (2014). Their research found that a history of sexual abuse significantly

predicted first and second semester college GPAs. Therefore, the current study's findings of no statistically significant relationships among the abuse variables and GPA aligned with results from some previous studies but were not consistent with others.

There are a few factors to consider regarding the statistically nonsignificant correlations found between child abuse and GPA. For example, the current sample was recruited from the university's psychology research pool during the spring semester. The psychology research pool is mainly comprised of general psychology students, who are often first-year students. Therefore, for most students, their self-reported GPA was based on their first semester of college. When compared to samples including students who have been in college for a full academic year or longer, the reported GPAs in the current study would represent a shorter period of college enrollment across students. There may exist less variability between the reported GPAs of the current sample and students who have been in college for a greater duration. It is possible that the current study's sample of mainly first-year students reporting first-semester GPAs does not provide as much information about college academic adjustment than if more students who have been enrolled for at least a year had participated. Subsequently, this could have influenced the correlations between abuse and GPA.

An additional factor to discuss relevant to the nonsignificant correlations between child abuse and GPA is that the GPAs obtained in the current study were self-reported. It is not uncommon for studies examining academic adjustment or achievement to utilize self-reported GPA (e.g., Jordan et al., 2014, Merians et al., 2019, Welsh et al., 2017) as it is a convenient method of obtaining this information. A recent study conducted by Caskie

et al. (2014) explored the accuracy of college students' self-reported GPA compared to their actual, university-recorded GPA. Their results indicated that only half (50.5%) of the students in the sample accurately reported their GPA, with almost one-third (28.9%) overestimating and one-fifth (20.6%) underestimating their GPAs from the previous semester (Caskie et al., 2014). Therefore, for the current study, it can be postulated that some of the GPA self-reports may not have been accurate representations of the participants' current college GPA. This would then limit the findings and potentially impact the correlations between the abuse variables and GPA. Obtaining participants' GPAs from an objective source would be a way to resolve this limitation.

In addition to the statistically nonsignificant findings between the abuse variables and GPA, CSA and CPhA were not correlated with educational functioning subscale scores of the CAQ. The only abuse variable that was statistically significantly correlated with educational functioning scores was CPsyA. A potential reason for this finding is that CPsyA was found to be more common than the other abuse types in the current study. This is consistent with other research (e.g., Merians et al., 2019) that has found CPsyA to be most common when compared to CSA or CPhA. In the current study, most participants reported experiencing some form of CPsyA (90%), whereas the majority of the sample (85%) indicated no CSA experience, and a little less than half (46%) reported not experiencing any CPhA. The lower incidences and decreased variability of CSA and CPhA in the current sample may have contributed to why no significant relationships were found between them and educational functioning.

As previously discussed in the introduction, there is a growing body of literature on CPsyA and its associated correlates (e.g., Christ et al., 2019; Spinazzola et al., 2014), but there has not been as much research conducted on CPsyA compared to the other abuse types (i.e., CSA & CPhA; Humphreys et al., 2020; Mills et al., 2013; Robinson, 2019). Subsequently, there is limited availability of research on CPsyA and college academic adjustment. The current study's findings of CPsyA correlating with educational functioning are somewhat consistent with the study conducted by Welsh et al. (2017). Although not statistically significant with emotional abuse, Welsh et al. (2017) found that higher scores on an emotional neglect subscale of a childhood trauma questionnaire predicted poorer academic outcomes. The results from the current study help to contribute more information to the literature on CPsyA and its associated negative correlates, specifically for academic adjustment.

Relevant to the correlational findings among all the child abuse variables and the two measures of academic adjustment, it should be considered that other researchers who found significant relationships between a history of abuse and measures of academic adjustment (e.g., Hardner et al., 2018, Tanaka et al., 2015) may have used stricter definitions of abuse than what was used in the current study. The CCMS (Higgins & McCabe, 2001b) is a widely used measure of childhood maltreatment and abuse, but studies using measures with different definitions of abuse may yield different results. This could potentially play a part in why none of the abuse variables correlated with GPA and why only CPsyA was statistically significantly correlated with educational functioning scores in the current study.

Among the variables explored as potential moderators (i.e., PSS, mistrust, and gender) of the relationships between abuse and academic adjustment, only PSS was found to be correlated with both the three types of abuse and academic adjustment. PSS was statistically significantly negatively correlated with all three abuse variables and significantly positively correlated with GPA and educational functioning scores. These results are consistent with research conducted by Folger and Wright (2013) and Beilharz et al. (2020) that both found significant negative correlations between PSS and childhood maltreatment and abuse. Moreover, the current findings are comparable with Li et al.'s (2018) study that found PSS was positively correlated with GPA, as well as results from Akanni and Oduaran's (2018) research that found PSS was positively correlated with scores on academic self-efficacy and academic adjustment measures. Although findings have been mixed on PSS and child abuse (e.g., Folger & Wright, 2013) and PSS and academic adjustment (Tinajero et al., 2020), the current study found support for correlations between PSS and these variables.

Due to the statistically significant correlations found between CPsyA and educational functioning and the statistically significant correlations of PSS with both variables, a regression analysis was conducted to perform a moderation analysis. Results of the regression indicated that CPsyA predicted educational functioning scores, but contrary to what was predicted, PSS was not found to be a statistically significant moderator of the relationship. Overall, the correlation between PSS and the other variables were weakly significantly correlated and this may be why PSS was not found to moderate the relationship between CPsyA and educational functioning.

Although not originally hypothesized, there was a significant negative correlation found between PSS and mistrust. Mistrust was included in the study as a possible moderating variable for its potential relationship with PSS as suggested by Sperry and Widom (2013). These researchers explained that individuals with maltreatment histories may be mistrustful of others and unwilling to accept social support that is available to them. The author of the current study proposed that if mistrust is possibly related to a decrease in social support, which has support for its moderating role in the relationship between child abuse and adjustment (e.g., Evans et al., 2013; Gayer-Anderson et al., 2015), then mistrust also may moderate the relationship between child abuse and college academic adjustment. Mistrust was not found to be a moderator in the current study, but its statistically significant negative correlation with PSS is noteworthy and worth further exploration in future research.

As mentioned previously, the author of the current study conducted exploratory analyses to examine whether pet owners indicated that companion animals serve as a source of social support and if support received from companion animals was related to the other study variables. In the current sample, over half (65%) of participants indicated that they had a pet. Most people who had a pet reported receiving support from them (88%), but companion animal support was not significantly correlated with any of the other study variables (i.e., child abuse, academic adjustment, PSS, mistrust). These findings are supported in other research (e.g., McConnell et al., 2011; Meehan et al., 2017) that found companion animals are considered a source of social support for pet owners. The literature in this area currently contains more qualitative research (Brooks et

al., 2018) demonstrating a need for more objective data, which the current study has provided.

There are further limitations of the current study that deserve consideration. One limitation worth noting is the small sample size that was used. A smaller sample can affect statistical power and analyses. Additionally, there exists limitations of generalizability due to the recruitment method of the current study. The participants were younger, college-aged individuals recruited from a psychology research pool. It is unknown how these students may differ from other individuals at the university and from the general population.

An additional drawback of this study is the limited number of men who participated in the current study. Due to the majority female sample, gender differences among the study variables were difficult to explore. This could partly explain why no significant gender differences were found. Also, the sample was comprised of mostly Caucasian individuals with less representation of racial minorities. Relative to the undergraduate population at the university from which the data were collected (Office of Institutional Effectiveness, Planning and Research, 2020), there was a slightly higher representation of Caucasian students. Future research could include a larger, diverse sample that includes a wider range of students across different academic areas, more male participants, greater racial diversity, and more upperclassmen to address the potential GPA limitation previously discussed.

The findings of the current study indicate that CPsyA predicts college academic adjustment. It would be beneficial for students who have CPsyA histories if future studies

continued research on CPsyA and its relation to academic adjustment. A greater understanding of how CPsyA impacts student's academic experience would equip administrators and leaders in education with valuable information that can help to guide strategies aimed at improving students' opportunities for success and aid in assisting these individuals.

Further, given the significant negative relationship between PSS and mistrust found in this study, this relationship is a topic that deserves further exploration. Future studies could utilize correlational designs to gather additional data on how PSS and mistrust are related. It would be appropriate to continue research with samples that include individuals with child abuse histories. As mentioned earlier, it is conceivable that those who have experienced abuse will have their trust broken as a result (Easton et al., 2014). Therefore, these individuals may be reluctant or mistrustful to receive social support (Sperry & Widom, 2013). Increased knowledge about the relationship between mistrust and PSS would allow for more informed strategies aimed at increasing social support among individuals who have experienced child abuse.

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APPENDICES

APPENDIX A: MIDDLE TENNESSEE STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

IRB
INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129
FWA: 00005331/IRB Regn. 0003571

MIDDLE TENNESSEE STATE UNIVERSITY

IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE

Monday, March 22, 2021

Protocol Title	***The relationship between three different types of child abuse and college academic adjustment***
Protocol ID	**21-2134 7q**
Principal Investigator	**Myra A. Pennington** (Student)
Faculty Advisor	Mary Ellen Fromuth
Co-Investigators	NONE
Investigator Email(s)	*map6s@mtmail.mtsu.edu; maryellen.fromuth@mtsu.edu*
Department	Psychology
Funding	**NONE**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU IRB through the **EXPEDITED** mechanism under 45 CFR 46.110 and 21 CFR 56.110 within the category *(7) Research on individual or group characteristics or behavior*. A summary of the IRB action is tabulated below:

IRB Action	**CONDITIONALLY APPROVED**		
Date of Expiration	**7/31/2021**	*Date of Approval*: 3/22/21	*Recent Amendment*: NONE
Sample Size	TWO HUNDRED (200)		
Participant Pool	*Target Population:* Primary Classification: **Health Adults (18 or older)** Specific Classification: **MTSU SONA students**		
Type of Interaction	☐ Non-interventional or Data Analysis ☒ Virtual/Remote/Online interaction ☐ In person or physical interaction – Mandatory COVID-19 Management		
Exceptions	Retention of participant information to comply with MTSU SONA Policy is permitted		
Restrictions	**1. Mandatory ACTIVE Informed Consent.** **2. Other than the exceptions above, identifiable data/artifacts, such as, audio/video data, photographs, handwriting samples, personal address, driving records, social security number, and etc., MUST NOT be collected. Recorded identifiable information must be deidentified as described in the protocol.** **3. Mandatory Final report (refer last page).** **4. The protocol details must not be included in the compensation receipt.** **5. NOT APPROVED for in person interaction**		
Approved Templates	*IRB Templates:* Informed Consent and SONA Script *Non-MTSU Templates:* NONE		
Research Inducement	Course credit		
Comments	The PI's CITI training expires on 07/04/2021; the conditional approval will be extended once the PI completes the refresher cours(es).		

Post-approval Requirements

The PI and FA must read and abide by the post-approval conditions (Refer "*Quick Links*" in the bottom):

- ***Reporting Adverse Events:*** The PI must report research-related adversities suffered by the participants, deviations from the protocol, misconduct, and etc., within 48 hours from when they were discovered.
- ***Final Report:*** The FA is responsible for submitting a final report to close-out this protocol before **3/31/2022 (Refer to the Continuing Review section below)**; REMINDERS WILLNOT BE SENT. **Failure to close-out or request for a continuing review may result in penalties** including cancellation of the data collected using this protocol and/or withholding student diploma.
- ***Protocol Amendments***: An IRB approval must be obtained for all types of amendments, such as: addition/removal of subject population or investigating team; sample size increases; changes to the research sites (appropriate permission letter(s) may be needed); alternation to funding; and etc. The proposed amendments must be requested by the FA in an addendum request form. The proposed changes must be consistent with the approval category and they must comply with expedited review requirements
- ***Research Participant Compensation:*** Compensation for research participation must be awarded as proposed in Chapter 6 of the Expedited protocol. The documentation of the monetary compensation must Appendix J and MUST NOT include protocol details when reporting to the MTSU Business Office.
- ***COVID-19:*** Regardless whether this study poses a threat to the participants or not, refer to the COVID-19 Management section for important information for the FA.

Continuing Review (The PI has requested early termination)

Although this protocol can be continued for up to THREE years, The PI has opted to end the study by **3/31/2022** **The PI must close-out this protocol by submitting a final report before 3/31/2022 Failure to close-out may result in penalties that include cancellation of the data collected using this protocol and delays in graduation of the student PI.**

Post-approval Protocol Amendments:

The current MTSU IRB policies allow the investigators to implement minor and significant amendments that would fit within this approval category. ***Only TWO procedural amendments will be entertained per year*** *(changes like addition/removal of research personnel are not restricted by this rule).*

Date	Amendment(s)	IRB Comments
NONE	NONE.	NONE

Other Post-approval Actions:

The following actions are done subsequent to the approval of this protocol on request by the PI/FA or on recommendation by the IRB or by both.

Date	IRB Action(s)	IRB Comments
NONE	NONE	NONE

COVID-19 Management:

The PI must follow social distancing guidelines and other practices to avoid viral exposure to the participants and other workers when physical contact with the subjects is made during the study.

- The study must be stopped if a participant or an investigator should test positive for COVID-19 within 14 days of the research interaction. This must be reported to the IRB as an "adverse event."
- The MTSU's "Return-to-work" questionnaire found in Pipeline must be filled by the investigators on the day of the research interaction prior to physical contact.
- PPE must be worn if the participant would be within 6 feet from the each other or with an investigator.
- Physical surfaces that will come in contact with the participants must be sanitized between use
- **FA's Responsibility:** The FA is given the administrative authority to make emergency changes to protect the wellbeing of the participants and student researchers during the COVID-19 pandemic. However, the FA must notify the IRB after such changes have been made. The IRB will audit the changes at a later date and the FA will be instructed to carryout remedial measures if needed.

Data Management & Storage:

All research-related records (signed consent forms, investigator training and etc.) must be retained by the PI or the faculty advisor (if the PI is a student) at the secure location mentioned in the protocol application. The data must be stored for at least three (3) years after the study is closed. Additional Tennessee State

data retention requirement may apply (*refer "Quick Links" for MTSU policy 129 below*). The data may be destroyed in a manner that maintains confidentiality and anonymity of the research subjects.

The MTSU IRB reserves the right to modify/update the approval criteria or change/cancel the terms listed in this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University

Quick Links:

- Post-approval Responsibilities: http://www.mtsu.edu/irb/FAQ/PostApprovalResponsibilities.php
- Expedited Procedures: https://mtsu.edu/irb/ExpeditedProcedures.php
- MTSU Policy 129: Records retention & Disposal: https://www.mtsu.edu/policies/general/129.php

APPENDIX B: DEMOGRAPHIC FORM

To avoid inadvertently identifying participants, only very broad categories are being used in the following questions.

1. Gender:
    a. Male
    b. Female
    c. Other/I prefer not to respond

2. Ethnicity
    a. Black/African American
    b. White/Caucasian
    c. Other
    d. I prefer not to respond

3. Age
    a. 18-21
    b. 22-25
    c. 26 and older
    d. I prefer not to respond

APPENDIX C: COMPANION ANIMAL SOCIAL SUPPORT ITEMS

1. Do you have a pet/companion animal?

   Yes – No

(If answer to question 1 is "No," participants automatically will be directed to the next survey in the study.)

If you have more than one pet, please answer the following questions with regard to the one with which you spend the most time.

2. What type of pet do you have?

   Dog
   Cat
   Rabbit
   Horse
   Other small mammal (e.g., Guinea pig, hamster, rat, mouse)
   Bird
   Reptile
   Fish
   Other

3. Does your pet <u>currently</u> live with you?

   Yes – No

(If answer to question 3 is "Yes," participants will skip question 4. If answer to question 3 is "No," participants will be asked to answer question 4.)

4. How often do you see your pet? Please select all that apply.

   On all or most weekends
   During fall break
   During winter break
   During spring break
   During summer break

5. I receive emotional support from my pet.

Very Strongly Disagree - Strongly Disagree - Mildly Disagree - Neutral - Mildly Agree - Strongly Agree - Very Strongly Agree
(1) (2) (3) (4) (5) (6) (7)

6. I can depend on my pet to be there for me when things fall apart.

Very Strongly Disagree - Strongly Disagree - Mildly Disagree - Neutral - Mildly Agree - Strongly Agree - Very Strongly Agree
(1) (2) (3) (4) (5) (6) (7)

7. I can talk about my worries with my pet.

Very Strongly Disagree - Strongly Disagree - Mildly Disagree - Neutral - Mildly Agree - Strongly Agree - Very Strongly Agree
(1) (2) (3) (4) (5) (6) (7)

8. When I feel down, my pet comforts me.

Very Strongly Disagree - Strongly Disagree - Mildly Disagree - Neutral - Mildly Agree - Strongly Agree - Very Strongly Agree
(1) (2) (3) (4) (5) (6) (7)

9. My pet provides me with friendship.

Very Strongly Disagree - Strongly Disagree - Mildly Disagree - Neutral - Mildly Agree - Strongly Agree - Very Strongly Agree
(1) (2) (3) (4) (5) (6) (7)

10. My pet cares about my feelings.

Very Strongly Disagree - Strongly Disagree - Mildly Disagree - Neutral - Mildly Agree - Strongly Agree - Very Strongly Agree
(1) (2) (3) (4) (5) (6) (7)

11. My pet is there for me when I need him/her.

Very Strongly Disagree - Strongly Disagree - Mildly Disagree - Neutral - Mildly Agree - Strongly Agree - Very Strongly Agree
(1) (2) (3) (4) (5) (6) (7)

APPENDIX D: MODIFIED INTERPERSONAL MISTRUST TRUST MEASURE

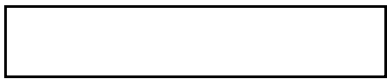
Original IMTM Items	Modified IMTM Items
1. A workmate complains to you of a bad headache and asks you to finish a boring task.	A coworker complains to you about a bad headache and asks you to finish a boring task.
2. While working with a friend on a task that you are obviously quite good at, the friend remarks on how well you work.	While working with a friend on a task that you are obviously quite good at, the friend makes a comment on how well you work.
3. You are in the pub with an acquaintance who refuses your offer of a drink.	You are at a bar with an acquaintance who refuses your offer of a drink.
4. You are having trouble using an automatic banking machine. The next person in the queue offers to help. *He or she plans to read your secret code number.*	You are having trouble using an ATM. The next person in line offers to help. *He or she is trying to steal your PIN number.*
5. You are waiting to order a meal in a restaurant, and your companion recommends a particular dish. *Your companion's main concern is that you enjoy your meal.*	You are waiting to order a meal in a restaurant, and your friend recommends a particular dish. *Your friend's main concern is that you enjoy your meal.*
6. Your employer suggests that you leave work early because you look tired. *Your employer is feeling kindly towards you.*	Your boss suggests that you leave work early because you look tired. *Your boss is being thoughtful towards you.*
8. You and a friend are working on a difficult task that you are certain that you are doing in the easiest way possible. Your friend suggest that another way would be easier still.	You and a friend are working on a difficult task that you are sure that you are doing in the easiest way possible. Your friend suggests that another way would be even easier.
9. During an interview for entry into a special program or course, the interviewer asks if you find the room stuffy.	During an interview for admission into an academic program, the interviewer asks if you find the room stuffy.

11. Someone in your household complains of not feeling well and asks you to finish some unpleasant housework for him or her. *The household member is feeling better than he or she pretends.*	Your roommate complains that they do not feel well and asks you to finish some unpleasant chores for him or her. *The roommate is feeling better than he or she pretends.*
12. You are trying on a garment in a department store, and the attendant comments on how well it suits you.	You are trying on a jacket in a retail store and a salesperson comments on how it looks good on you.
13. A workmate offers to help you finish your work because you look slightly ill. *The workmate is feeling sorry for you.*	A coworker offers to help you finish your work because you look a little sick. *The coworker is feeling sorry for you.*
14. You offer a lift to an acquaintance, but your offer is refused. *He or she does not want you to feel noble for going out of your way.*	You offer to give an acquaintance a ride, but they decline it. *He or she does not want you to feel good for going out of your way.*
15. You are holidaying in a new city and become lost. A stranger offers to show you to your motel. *The stranger has sinister motives.*	You are vacationing in a new city and become lost. A stranger offers to show you how to get back to your hotel. *The stranger has ulterior motives.*
16. A workmate accidentally causes a small fire. As you both put out the fire, this workmate keeps asking if you are burnt. *The workmate is trying to stop you from realizing that he or she caused the fire.*	A coworker accidentally causes a small fire. As you both put out the fire, the coworker keeps asking if you were burned. *The coworker is trying to stop you from realizing that he or she caused the fire.*
18. While telling a close friend of an embarrassing mistake you made, you see the friend smile. *The friend feels kindly toward you because of your mistake*	While telling a close friend of an embarrassing mistake you made, you see the friend smile. *The friend feels compassionate towards you because of your mistake.*

APPENDIX E: GRADE POINT AVERAGE

Please enter your ***current overall*** college GPA rounded to the first decimal place (e.g., 3.2).

If you are unsure, you may log onto your PipelineMT account:
In another tab or window, go to https://pipeline.mtsu.edu and log in using your MTSU username and password. Under the tab labeled “Registration & Student Records” find the section “Academic Records” and select “GPAs”.



APPENDIX F: INFORMED CONSENT

Information and Disclosure Section

The following information is provided to inform you about the research project in which you have been invited to participate. Please read this disclosure and feel free to ask any questions. The investigators must answer all of your questions and please save this page as a PDF for future reference.

- Your participation in this research study is voluntary.
- You are also free to withdraw from this study at any time without loss of any benefits.

For additional information on your rights as a participant in this study, please contact the Middle Tennessee State University (MTSU) Office of Compliance (Tel 615-494-8918 or send your emails to irb_information@mtsu.edu. (URL: http://www.mtsu.edu/irb).

Please read the following and respond to the consent questions in the bottom if you wish to enroll in this study.

1. **Purpose**: This research project is designed to evaluate various factors that potentially influence undergraduates' academic adjustment.

2. **Description**: If you agree to participate after reading this informed consent form, there are several parts to this project. They are:
   - A brief demographic survey that will collect information about your gender, age, and ethnicity.
   - A survey that will ask you about negative situations you possibly experienced during childhood, including abuse (e.g., sexual, physical, psychological).
   - A survey that will ask questions about potential support you receive from others and from animals.
   - A survey that will ask you to indicate your perceptions of interactions with other people.
   - A survey that will explore your perceptions about your current college experience.
   - A question asking you to report your current college GPA.

3. **IRB Approval Details**
   - Protocol Title: __The relationship between three different types of child abuse and college academic adjustment.__
   - Primary Investigator: _Myra A. Pennington___
   - PI Department & College: _Psychology___
   - Faculty Advisor: __Mary Ellen Fromuth__
   - Protocol ID: _21-2134 7q_ Approval Date: _03/22/2021_ Expiration Date: _03/31/2022_

4. **Duration**: The whole activity should take less than 30 minutes.

5. **Here are your rights as a participant:**
    - Your participation in this research is voluntary.
    - You may skip any item that you don't want to answer, and you may stop the experiment at any time (but see the note below)
    - If you leave an item blank by either not clicking or entering a response, you may be warned that you missed one, just in case it was an accident. But you can continue the study without entering a response if you didn't want to answer any questions.

6. **Risks & Discomforts:** For participants who may have a history of negative experiences during childhood, participation in this study may elicit emotional responses. The likelihood and extent of the discomfort, however, are not higher than could be expected during a routine psychological examination. Available resources will be provided at the end of the study for those who wish to speak with a professional. MTSU will not provide compensation in the case of study related injury.

7. **Benefits:**
    a. Benefits to you: There are no direct benefits to you.
    b. Benefits to the field of science or the community: Although there is no direct benefit to the participant, there is social and scientific value to exploring factors that may be related to students' academic adjustment to college.

8. **Identifiable Information**: You will NOT be asked to provide identifiable personal information such as your M-number, name, or IP address.

9. **Compensation:** The MTSU SONA participants will receive class credit if they meet the following requirements:

    a) The qualifications to participate in this research are: You must be at least 18 years of age to participate. *If you do not meet these qualifications, you will not be included in the research and you will not be compensated.*
    b) Please do not participate in this research more than once. Multiple attempts to participate will not be compensated.
    c) To be compensated, you will need to click through until the end to receive compensation (just leave the items blank and click through until the end <; if items require a response to present the survey accurately, you will need to respond to those items as your progress to the end of the survey>).
    d) At the end of the survey, you will be directed automatically back to the SONA System to receive credit for your participation in this study. To be used as a

receipt, should you need to prove your participation, we recommend that you take a screenshot of the last page.

10. **Confidentiality.** All efforts, within reason, will be made to keep your personal information private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, *if* you or someone else is in danger or if we are required to do so by law.

11. **Contact Information.** If you should have any questions about this research study or possibly injury, please feel free to contact Myra A. Pennington by email map6s@mtmail.mtsu.edu OR my faculty advisor, Dr. Mary Ellen Fromuth by email (MaryEllen.Fromuth@mtsu.edu) or via telephone (615 898 2548). You can also contact the MTSU Office of compliance via telephone (615 494 8918) or by email (compliance@mtsu.edu). This contact information will be presented again at the end of the experiment.

You are not required to do anything further if you decide not to enroll in this study. Just quit your browser. Please complete the response section below if you wish to learn more or you wish to part take in this study.

Participant Response Section

☐No ☐Yes I have read this informed consent document pertaining to the above identified research

☐No ☐Yes The research procedures to be conducted are clear to me

☐No ☐Yes I confirm I am 18 years or older

☐No ☐Yes I am aware of the potential risks of the study

By clicking below, I affirm that I freely and voluntarily choose to participate in this study. I understand I can withdraw from this study at any time without facing any consequences.

☐ NO I do not consent

☐ Yes I consent

APPENDIX G: DEBRIEFING FORM

YOU MUST CLICK TO THE NEXT PAGE TO RECEIVE CREDIT FOR PARTICIPATION.

Child abuse has been found to be associated with a number of adjustment problems such as symptoms of anxiety and depression (e.g., Gardner et al., 2019). Research also has found that people with a history of child maltreatment are more likely to report social (Welsh et al., 2017) and emotional (Moore et al., 2020) adjustment difficulties in college. Less is known, however, about the relationships between child abuse and college academic adjustment (Moore et al., 2020). The current study investigated the possible relationship between child abuse and college academic adjustment. Also, this study explored whether social support, trust, and gender were related to child abuse and academic adjustment.

If you should have any questions about this research study, please feel free to contact Myra A. Pennington (map6s@mtmail.mtsu.edu) or my faculty advisor, Dr. Mary Ellen Fromuth by email (MaryEllen.Fromuth@mtsu.edu) or via telephone (615 898 2548). You also can contact the MTSU Office of Compliance via telephone (615 494 8918) or by email (compliance@mtsu.edu). If you, or someone you know, have experienced child abuse, you may wish to speak to a professional. If you would like to talk with someone, the following resources are available:

MTSU Counseling Services

(located in the Keathley University Center)

Visit: https://www.mtsu.edu/countest

Call: (615) 898-2670

Domestic Violence & Sexual Assault Center

(located in Murfreesboro, TN)

Visit: https://dvsacenter.org

Call: (615) 896-7377

Emergency line: (615) 896-2012

Mobile Crisis Line for Emergencies

Call: 1-800-704-2651

A NOTE TO PARTICIPANTS: Continue on to the next page to complete this survey. You automatically will be redirected back to the SONA System to receive credit for your participation. We suggest that you take a screenshot of this debriefing page to keep for your records. This would give you access to the resources on this page and could, if need be, serve as additional proof of your participation.

YOU MUST CLICK TO THE NEXT PAGE TO RECEIVE CREDIT FOR PARTICIPATION.