

**THE RELATIONSHIP BETWEEN YOUNG ADULT ATTACHMENT AND  
LONELINESS FACTORS WITH THEIR CHILDHOOD SOCIAL MEDIA  
USAGE PATTERNS**

by

Kenneth W. Mark

Liberty University

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APPROVED BY:

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Dr. Brian Kelley, PhD, Committee Chair

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Dr. Margaret Gopaul, PhD, Committee Member

### **Abstract**

Social media use has become an integral and often ignored part of children's lives because it is rationalized not to be detrimental to their future development. However, childhood social media use was associated with insecure attachment styles and possible loneliness issues emerging in young adulthood. Past research examined social media use and secular attachment in the present only, without examining spiritual attachment or loneliness levels. This is the first research study to explore longitudinally the relationship between past childhood social media use and current young adult (aged 18-24) secular attachment, spiritual attachment, and loneliness levels. The population ( $N = 149$ ) aged 18-24 took a demographic survey and four online surveys that measured past childhood social media use, current secular attachment, current spiritual attachment, and current loneliness. ANOVAs analyzed the variable relationships divided up at 33% cutoff scores to create Low, Moderate, and High levels. It was hypothesized as childhood social media use levels increased then insecure spiritual attachment, insecure secular attachment, and loneliness levels would increase. It was hypothesized as insecure attachment in one variable increased then increased insecure attachment in the other relationship variable and in loneliness would relate. It was discovered as Childhood Social Media Use increased then Anxious Attachment to God and Total Insecure Attachment to God both increased, and as Total Insecure Attachment to God increased then insecure secular attachment levels and loneliness levels increased. It is suggested interventions to limit childhood social media use be implemented to avoid the downward spiral of detrimental impacts on their social, spiritual, and internal relationships when they become adults.

*Keywords:* Social Media, God, Development, Attachment, Loneliness

## TABLE OF CONTENTS

ABSTRACT .....	2
List of Tables .....	6
List of Figures .....	7
CHAPTER 1: INTRODUCTION TO THE STUDY .....	11
Introduction .....	11
What is Social Media .....	14
Background .....	18
Problem Statement .....	19
Purpose of the Study .....	22
Research Questions .....	24
Hypotheses .....	29
Limitations and Challenges of the Study .....	32
Advantages of the Study .....	34
Theoretical Foundations of the Study .....	34
Definition of Terms .....	35
Significance of the Study .....	37
Summary .....	39
CHAPTER 2: LITERATURE REVIEW .....	41
Overview .....	41
Description of Research Strategy .....	41
Review of Literature .....	42
General Social Media Usage and Attachment Style .....	42

Problematic Internet Use and Attachment Style .....	44
Posting Images and Text on Social Media and Attachment Style .....	46
Smart Phone/APP use and Attachment Style .....	47
Fear Of Missing Out (FOMO), Social Media Use, and Attachment Style .....	48
Social Support and Positive Aspects of Social Media and Attachment Style ..	49
Attachment to God and Social Media Use .....	50
Loneliness .....	51
Synthesis of the Variable Concepts .....	52
Biblical Foundations of the Study .....	53
Summary .....	54
<b>CHAPTER 3: RESEARCH METHOD .....</b>	<b>55</b>
Overview .....	55
Research Questions .....	55
Hypotheses.....	57
Research Design .....	60
Participants .....	60
Study Procedures .....	61
Instrumentation and Measurement .....	63
Operationalization of Variables .....	64
Data Analysis .....	64
Delimitations, Assumptions, and Limitations.....	65
Summary .....	66
<b>CHAPTER 4: RESULTS .....</b>	<b>69</b>

Overview .....	69
Descriptive Results .....	74
Study Findings .....	91
Summary .....	140
CHAPTER 5: DISCUSSION .....	146
Overview .....	146
Summary of Findings .....	146
Discussion of Findings .....	151
Implications .....	158
Limitations .....	162
Recommendations for Future Research .....	171
Summary .....	176
REFERENCES .....	179
APPENDIX: Complete 114 Question Survey (Demographics, Experiences in Close Relationships – Relationship Structures Questionnaire (ECR-RS), Outside School Social Media Behavior Scale (OSSMBS), The Attachment to God Inventory (AGI), Student Social Capital Instrument (SSCI)) .....	191

**List of Tables**

Table 1: Social Media Site Usage by Age 2005-2021 ..... 16

Table 2: Social Media Platforms and 2021 USA Usage ..... 17

### List of Figures

Figure 1: Concept Map of Research Questions 1-6 .....	24
Figure 2: Concept Map of Research Questions 7-9 .....	27
Figure 3: Concept Map of Hypotheses .....	29
Figure 4: Male and Female Numbers with On and Off Campus Living Status.....	75
Figure 5: Overall Score Mean, Score Range, and Standard Error of the Mean for All Significant Variables in the Study .....	78
Figure 6: Frequency Distribution Histogram of the True Level/Amount of Childhood Social Media Use with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness.....	79
Figure 7: Frequency Distribution Histogram of the True Level/Amount of Relationship Anxiety to Parents with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness.....	80
Figure 8: Frequency Distribution Histogram of the True Level/Amount of Avoidant Attachment to God with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness.....	81
Figure 9: Frequency Distribution Histogram of the True Level/Amount of Anxious Attachment to God with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness.....	82
Figure 10: Frequency Distribution Histogram of the True Level/Amount of Total Insecure Attachment to God with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness.....	83

Figure 11: Frequency Distribution Histogram of the True Level/Amount of Loneliness with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness..... 84

Figure 12: Childhood Social Media Use as Measured by the Outside School Social Media Behavior (OSSMB) Scale ..... 85

Figure 13: Relationship Anxiety to Parents as Measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) ..... 86

Figure 14: Avoidant Attachment to God as Measured by the Attachment to God Inventory (AGI) Subscale Avoidant ..... 87

Figure 15: Anxious Attachment to God as Measured by the Attachment to God Inventory (AGI) Subscale Anxiety..... 88

Figure 16: Total Insecure Attachment to God as Measured by the Attachment to God Inventory (AGI) using both Subscales of Avoidance and Anxiety ..... 89

Figure 17: Loneliness as Measured by the Student Social Capital Instrument (SSCI) .. 90

Figure 18: One-way ANOVA between Outside School Social Media Behavior (OSSMB) Scale (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (DV)..... 92

Figure 19: One-way ANOVA between Outside School Social Media Behavior (OSSMB) Scale (IV) and Total Scores on the Attachment to God Inventory (AGI) (DV)..... 96

Figure 20: One-way ANOVA between Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (DV) ..... 100

Figure 21: One-way ANOVA between Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (IV) and Total Scores on the Attachment to God Inventory (AGI) (DV)..... 103

Figure 22: One-way ANOVA between Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (IV) and Student Social Capital Instrument (SSCI) (DV)..... 106

Figure 23: One-way ANOVA between Attachment to God Inventory (AGI) Subscale Avoidance (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (DV)..... 109

Figure 24: One-way ANOVA between Attachment to God Inventory (AGI) Subscale Avoidant (IV) and Student Social Capital Instrument (SSCI) (DV) ..... 112

Figure 25: One-way ANOVA between Attachment to God Inventory (AGI) Subscale Anxiety (IV) and Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (DV)..... 115

Figure 26: One-way ANOVA between Attachment to God Inventory (AGI) Subscale Anxiety (IV) and Attachment to God Inventory (AGI) Subscale Avoidance (DV)..... 119

Figure 27: One-way ANOVA between Attachment to God Inventory (AGI) Subscale Anxiety (IV) and Student Social Capital Instrument (SSCI) (DV) ..... 122

Figure 28: One-way ANOVA between Total Score on Attachment to God Inventory (AGI) (IV) and Student Social Capital Instrument (SSCI) (DV) ..... 125

Figure 29: One-way ANOVA between Student Social Capital Instrument (SSCI) (IV) and Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (DV)..... 128

Figure 30: One-way ANOVA between Student Social Capital Instrument (SSCI) (IV) and Attachment to God Inventory (AGI) Subscale Avoidance (DV).....	132
Figure 31: One-way ANOVA between Student Social Capital Instrument (SSCI) (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (DV) .....	135
Figure 32: One-way ANOVA between Student Social Capital Instrument (SSCI) (IV) and Total Score on Attachment to God Inventory (AGI) (DV).....	138
Figure 33: Research Design Flowchart.....	197

## Chapter 1: Introduction to the Study

### **The Relationship Between Young Adult Attachment and Loneliness Factors with Their Childhood Social Media Usage Patterns**

The current generation of young adults, aged 18-24 years old, have grown up in a world infused with social media since the launching of Yahoo Messenger and MSN Messenger in 1999, Skype in 2003, Facebook and Flickr in 2004, the release of the iPhone in 2007, Tumblr in 2007, Snapchat in 2011, and TikTok in 2016, to name a few of the most popular platforms. Currently as of July 2022, 4.70 billion people use social media platforms on a daily basis. This number has doubled since 2015, and this accounts for over 60% of the world's population. Only 40% of these users utilize social media for work purposes, the remaining 60% use social media for personal reasons (Chaffey, 2022; Dean, 2021). Social media has become a part of the everyday lives of current young adults and most other ages, sometimes problematically, and it has been shown increased social media usage leads to decreased social interaction skills, increased depression and suicidal ideation, and a growing population of youth who have become socially isolated due to lack of face to face interactions (Abbasi & Drouin, 2019; Muzi et al., 2021). Research indicated how social media usage was a psychological stress upon children and young adults (Flynn et al., 2018), and research has shown how social media usage correlated negatively with attachment style (Eichenberg et al., 2019).

The research studies included in the literature review section of this dissertation cast light upon the positive and negative aspects of social media use by children and adults in relation to the impacts and correlations with attachment styles and loneliness. These studies have assisted in creating interventions and advancing practical knowledge

about the social media situation to inform parents and users alike how to be more mindful of this new medium of expression. However, gaps existed in these studies regarding how the attachment style of adults aged 18-24 related to the social media usage patterns these young adults had when they were children, how loneliness levels related to attachment styles formed in these young adults, and how attachment to God related to these variables in young adults.

This cross-sectional research study was important to understanding how social media usage should be modified to better assist in developing more secure attachment style formations in children and young adults. The results of this study could impact the level of loneliness children and young adults experience, and they could assist science in understanding how the attachment styles formed by these young adults have a relationship with their past, possibly problematic, childhood social media usage. It was hypothesized the results of this study would demonstrate how a high amount of childhood social media usage had now resulted in adults 18-24 presenting with statistically significant insecure secular and spiritual attachment styles and a greater sense of loneliness, and how a low amount of childhood social media usage had now resulted in adults 18-24 who presented with statistically significant secure secular and spiritual attachment styles and less loneliness.

It was hypothesized the results of this study would demonstrate how high secure attachment to God had a relationship with low childhood social media usage, high secular secure attachment, and low loneliness. It was hypothesized the results of this study would demonstrate how high insecure attachment to God had a relationship with high childhood social media usage, high levels of insecure secular attachment styles, and a greater sense

of loneliness having formed in the adults aged 18-24. It was hypothesized the results of this study would demonstrate how high secular attachment had a relationship with low childhood social media usage, high spiritual secure attachment, and low loneliness. It was hypothesized the results of this study would demonstrate how high insecure secular attachment had a relationship with high childhood social media usage, high levels of insecure spiritual attachment, and a greater sense of loneliness having formed in the adults aged 18-24. It was hypothesized the results of this study would demonstrate how a high sense of loneliness had a relationship with high childhood social media usage and high spiritual and secular insecure attachment. It was hypothesized the results of this study would demonstrate how low loneliness had a relationship with low childhood social media usage and low levels of insecure secular and spiritual attachment having formed in the adults aged 18-24. This research could assist in developing parent/child attachment interventions to possibly decrease the negative impacts of childhood social media usage on young adults, and it could lead to the development of interventions to increase the positive impacts of childhood social media use upon the future young adult population who are children social media users now.

In this present age of social media vastness, we need to “be sober-minded (and) be watchful, (for) your adversary the devil prowls around like a roaring lion seeking someone to devour” (1 Peter, 5:8, ESV). We must “see to it that no one takes you captive by philosophy and empty deceit, according to human tradition, according to the elemental spirits of the world, and not according to Christ” (Colossians, 2:8, ESV). We need to “not be overcome by evil, but [to] overcome evil with good” (Romans, 12:21, ESV), for from God “behold, I give you a wise and discerning mind, so that none like you has been

before you and none like you shall arise after you” (1 Kings, 3:12, ESV). As a result of this research study and the interventions to be derived from it, “the child [can grow] and became strong, filled with wisdom, and the favor of God [be] upon him” (Luke, 2:40, ESV), since “I have filled him with the Spirit of God, with ability and intelligence, with knowledge and all craftsmanship” (Exodus, 31:3, ESV) “so that what is lame may not be put out of joint but rather be healed” (Hebrews, 12:13, ESV). Hopefully, from the fruits of this current study, young adults will now be able to “renounce ungodliness and worldly passions, and live self-controlled, upright, and Godly lives in the present age” (Titus, 2:12, ESV).

### **What is Social Media**

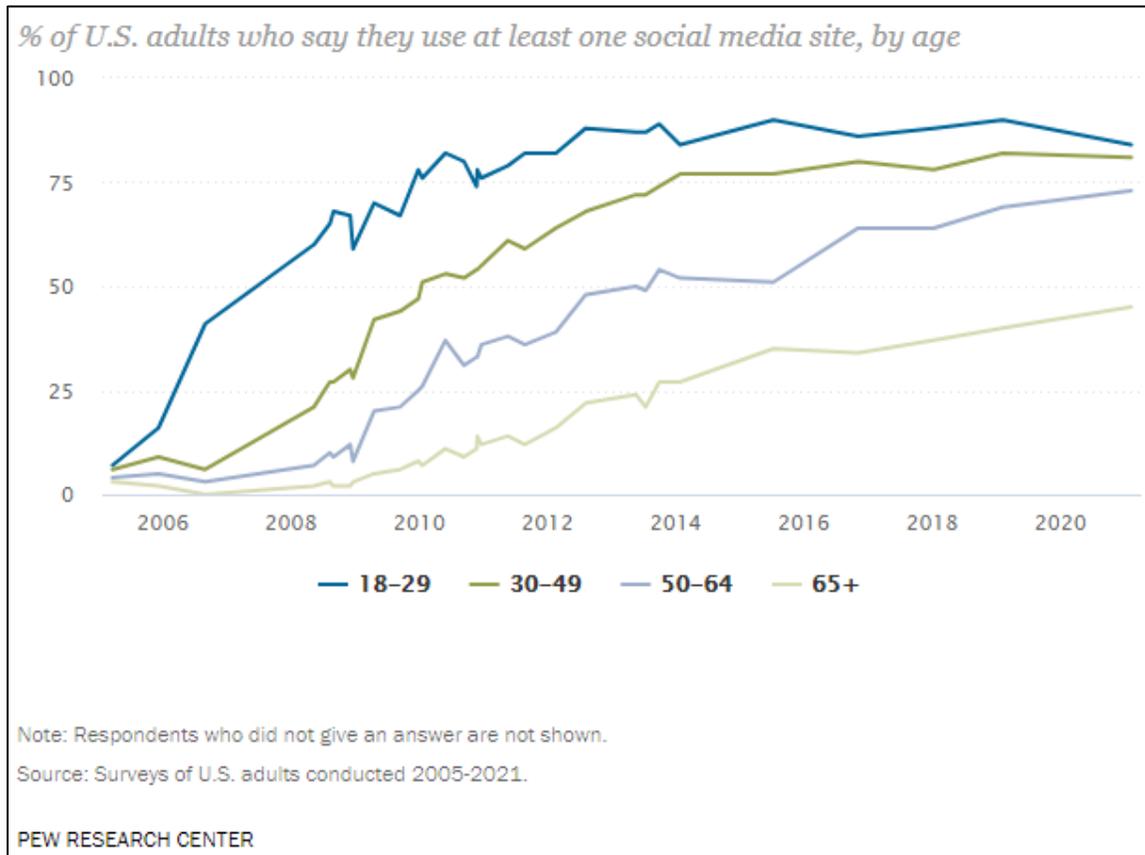
Social media usage among American young adults, and globally, has steadily risen since 2005, and this expansion does not show signs of lessening with the increase of newer social media platforms emerging during the global pandemic from 2020 to present (Pew Research Center, 2021). 84% of those aged 18-29 were found to be active social media users in 2021, with an average time spent on social media being 2.25 hours a day (Mohsin, 2021). There has been a steady increase in social media use since 2006 to the present, with the current trends showing little variation for demographics such as gender and race (Pew Research Center, 2021). Age has been shown to demonstrate that people 18-29 have gone from using social media 16% in 2005, to 84% in 2021. In 2005, only 5% of Americans said they used social media, and in 2021 this percentage has increased to 72% of all age groups of Americans. Facebook has held a steady following from 54% in 2005 to 70% in 2021 of users saying they actively use the platform, and due to the pandemic presumably, YouTube has become a major platform of use starting in 2018 at

73%, to now in 2021 there are 83% of US adults that say they have actively used YouTube for social media reasons (Pew Research Center, 2021). Pinterest, LinkedIn, Snapchat, and Twitter have held a steady 25% of US users saying they have used the platforms from 2013 until 2021, and WhatsApp, Snapchat, TikTok, and Reddit starting in 2019 in conjunction with the pandemic are being used steadily daily by around 20% of all Americans. 70% of all Facebook users visit the site at least once a day, and 60% of all Snapchat and Instagram users say they visit the site at least once daily (Pew Research Center, 2021).

Globally, social media use is reported at 59% (4.70 billion people). This means over half of the world's population is using social media regularly, and these users are reported to access 7.4 different social media sites a month (Chaffey, 2022). It is reported that 227 million people have started using social media in the last 12 months. Globally, over 70% of the populations of first world countries use social media regularly, and 10-40% of the population in third world countries utilize social media daily. In the UK in 2021, 44% of children aged 8-11 said they use social media regularly, and this was seen to be 87% in 12-15 year olds (Chaffey, 2022). Social media use by teenagers has been seen to lead to inadequate sleep patterns, increased cyberbullying experiences, and decreased physical activities, and it was discovered that teens reported only meeting real friends in person 24% of the time with the rest of the time friends are interacted with online via social media (Newport Academy, 2021).

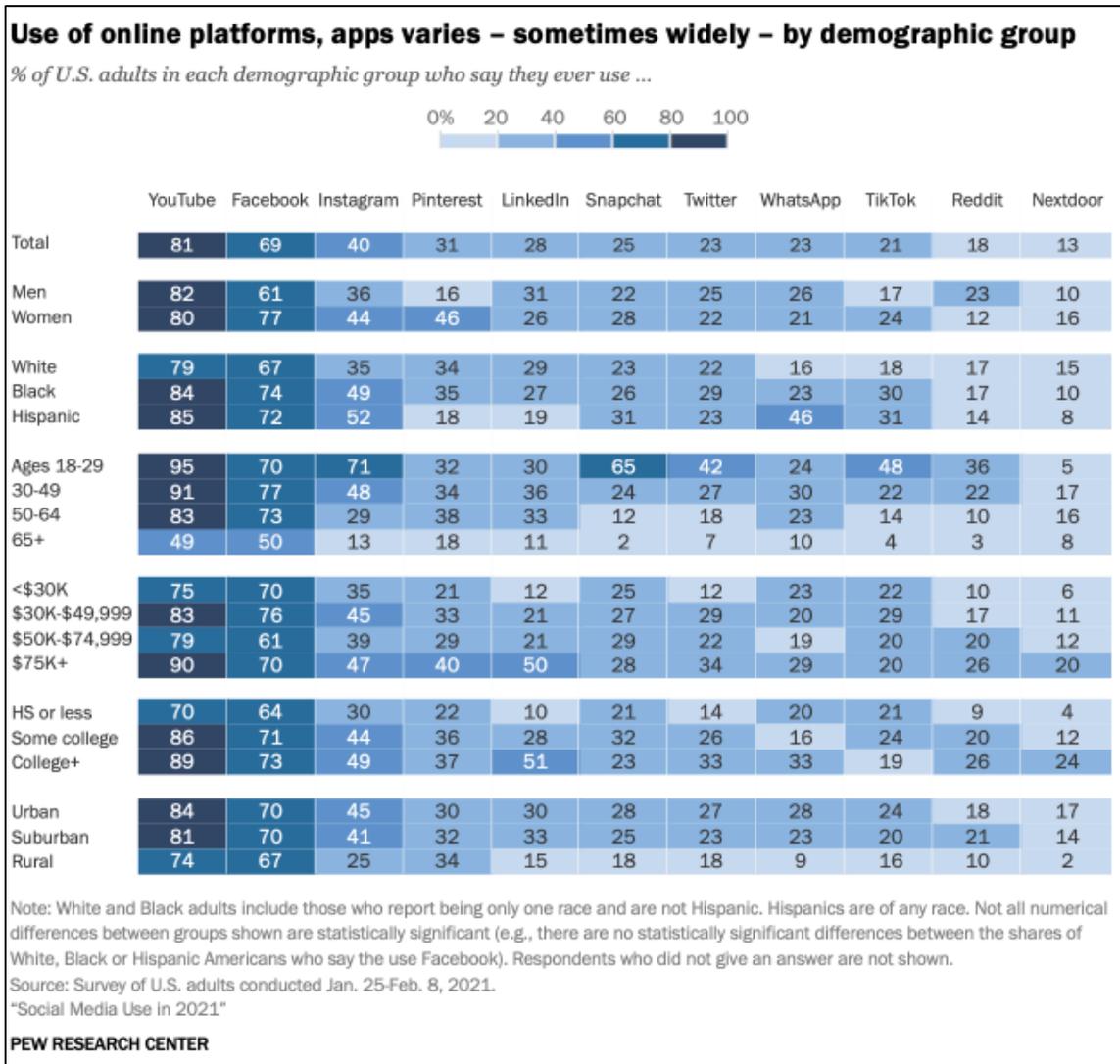
**Table 1:**

*Social Media Site Usage by Age, 2005-2021* (Pew Research Center, 2021)



**Table 2:**

*Social Media Platforms and 2021 USA Usage (Pew Research Center, 2021)*



### **Background**

Research has consistently demonstrated the level of insecure attachment a person presents with is positively correlated with the levels of excessive non-problematic social media usage a person has or the level of problematic social media usage a person has (Abbasi & Drouin, 2019; Demircioglu & Kose, 2020). Throughout this research, either an anxious or an avoidant insecure attachment style to parents and peers has been related to high yet non-problematic high social media use in people (Abbasi & Drouin, 2019; Ballarotto et al., 2018; Hart et al., 2015; Kim et al., 2019; Sohn et al., 2019; Young et al., 2020), and problematic social media use impairing a person's daily functioning has been associated with either anxious or avoidant attachment styles in people (Chen, 2019; Demircioglu & Kose, 2020; Lan & Wang, 2020; Pednekar & Tung, 2017; Reiner et al., 2017). Additionally, in a few studies, an insecure spiritual attachment style to God has been associated with increased problematic social media use patterns (Barry et al., 2012; Homan, 2012).

Research has demonstrated the problematic posting of images and text on social media positively correlated with either anxious or avoidant attachment styles (Coyne et al., 2018; Orehek & Human, 2017), excessive smart phone and app usage positively related with high levels of either anxious or avoidant attachment styles (Arpaci et al., 2017; Eichenberg et al., 2019; Stockdale et al., 2018), and the level of Fear of Missing Out syndrome of social media use was positively associated with either increased anxious or avoidant attachment styles (Alt, 2018; Liu & Ma, 2019a). Fortunately, research results indicated therapeutic interventions could reduce the negative relationship between these insecure attachment styles and the problematic social media usage found enacted by these

people (Benoit & DiTommaso, 2020; Liu & Ma, 2019b). Therapeutic interventions designed to decrease problematic social media usage to increase secure attachment might be developed to assist in decreasing the levels of loneliness young adults feel as a result of peer comparisons, social unfulfilled expectations, poor family upbringings, and lack of social support (Heshmati et al., 2021; Sohn et al., 2019; Thomas et al., 2020; Zhao et al., 2019). Biblically, it has been shown people who are more securely attached to God tend to use social media in a more positive manner (Barry et al., 2012).

### **Problem Statement**

Two gaps in research literature that needed examination related to exploring the relationship between the current attachment style young adults aged 18-24 now presented with and their previous social media usage patterns back when they were children. The first gap concerned how there had been research looking at the current attachment styles and the current social media usage patterns found in people (Ballarotto et al., 2018; Chen, 2019), without examination of how this use related to the person longitudinally. This study filled the gap in existing research by examining how the current attachment style of young adults aged 18-24 related with the past patterns of childhood social media use these now young adults had, to see how past social media use patterns from childhood related with the secular attachment styles now presently formed in these young adults. The second gap that needed exploration beyond the current research literature concerned how these young adult's spiritual attachment style to God was associated with the two variables of the current young adult's present secular attachment style to other people and to the now young adult's previous childhood social media use patterns in the past. Even though there had been research examining the association between current social media

usage and current secular attachment style using current time participants in the same time frame (Ballarotto et al., 2018; Kim et al., 2019), there had not been research done examining the relationship over the course of time between how prior childhood social media usage patterns by young adults related to the current secular and spiritual attachment styles these young adults currently present with. There had not been research done that looked into these young adult's spiritual attachment style to God and these young adult's past childhood social media usage decades ago when they were children. This study filled another gap in current research and examined the variable of loneliness and how it related to secular and spiritual attachment style and to prior childhood social media use.

This research study was imperative to develop interventions in childhood social media usage patterns to positively impact the developed secular and spiritual attachment styles of these children years later when they would be grown up into young adults. It was important to understand a person's spiritual attachment to God in this matter because it elucidated how the spiritual factor of attachment was associated with a young adult's childhood years of social media use patterns, and how this spiritual attachment style to God now related with the developed young adult's current secular attachment style to the world around them. It was vital to understand how these two variables interrelated with a young adult's sense of loneliness to determine interventions to decrease this negative life influence. The current results of this study might help explain how our decrease in spirituality as a society today is related to increasing childhood social media issues and positively relating years later with young adult who present with insecure attachment styles and increased loneliness, which is becoming more prevalent and making the lives

of young adults more dysfunctional. These research results could illuminate possible issues in the lives of children and be used to create more positive interactions between them and social media. It was crucial to investigate both the secular and the spiritual aspects of attachment style in order to get the full overall picture of the young adult. Otherwise, the research would only get a partial glimpse into the lives of these young adults; namely, current research was only looking at one side of the coin. This study examined the issue of social media usage by people as a whole entity, looking at the secular and the spiritual aspects of attachment in them, while past studies have only examined half of the person by looking at the person from merely a secular standpoint in the current time frame.

Young adults suffer from severe mental health, interpersonal, relationship, and life skill issues, such as self-presentation and academic success, attributable to excessive social media use, and this use is making their lives dysfunctional (Chen, 2019; Demircioglu & Kose, 2020; Lan & Wang, 2020; Pednekar & Tung, 2017). The results obtained by this current study were critical to discovering relationships between these variables to develop future interventions to impact the lives of children and young adults. The results could be used to prevent children and young adults from developing more severe anxious or avoidant insecure secular attachment styles to parents and peers, from developing increased senses of loneliness, and from developing more severe anxious or avoidant insecure spiritual attachment styles to God. The results of this study could reduce the amount of increased or dysfunctional social media use these children and young adults experience.

The results of this cross-sectional research study are critical to assisting in developing future parent/child attachment interventions to possibly decrease the negative associations discovered between social media usage and these children's secular and spiritual attachment styles when they grow into young adults. These results could lead to the development of interventions to increase the positive impacts of social media usage upon the future young adult population who are children social media users now. These findings could lead to interventions to decrease loneliness and increase connectedness in these young adults, and these results could assist science in understanding how the sometimes problematic and dysfunctional attachment styles current young adults have relate to social media usage patterns from their youth. "Send out your light and your truth; let them lead me; let them bring me to your holy hill and to your dwelling!" (Psalm, 43:3, ESV), so that we may "no more return to corruption" (Acts, 13:34, ESV). This study could be the light of truth illuminating the darkness of social media usage that will lead God's children into a brighter future of more secure secular and spiritual attachment styles, as they develop into young adults with less loneliness in decades to come.

### **Purpose of the Study**

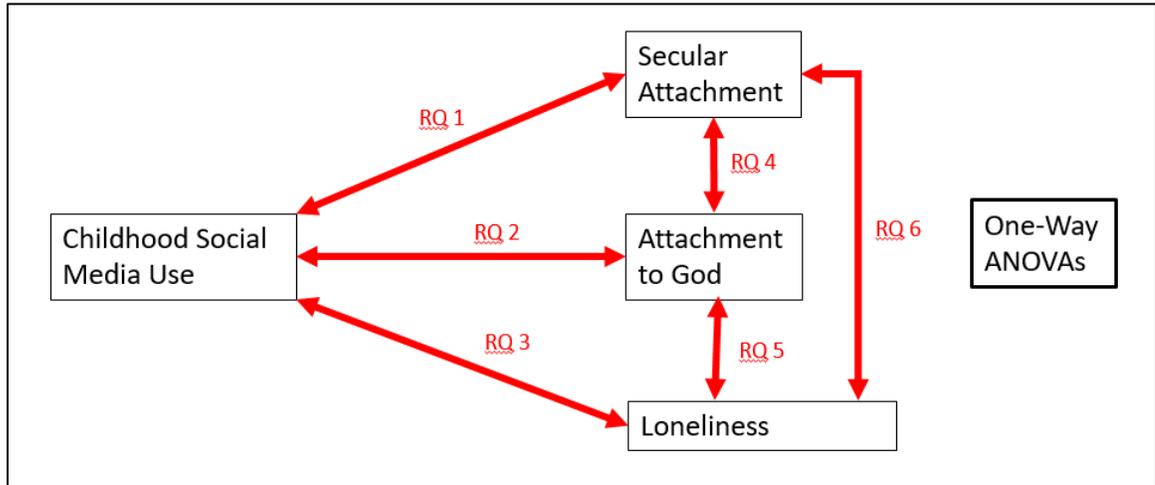
The purpose of this proposed quantitative, cross-sectional, relational research study was to examine the relationship between current secular and spiritual attachment styles and past childhood social media usage patterns among young adults aged 18-24, as well as how the loneliness factor related with these variables. Spiritual attachment style and secular attachment style were both examined to get the entire picture of the individual. The study of social media use for the sake of this proposed study engulfed all

aspects of social media use from texting, to smart phone use, to selfies, to social media sites like Facebook, to blogs, and beyond.

### Research Questions

**Figure 1**

*Concept Map of Research Questions One-Way ANOVAs*



RQ 1: What is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011)?

RQ 2: What is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)?

RQ 3: What is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

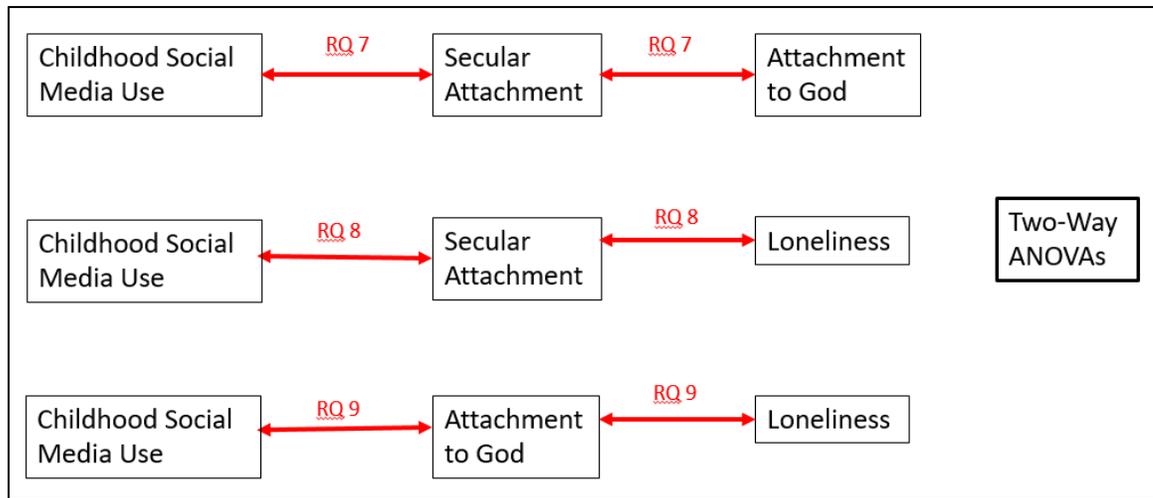
RQ 4: What is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)?

RQ 5: What is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

RQ 6: What is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

**Figure 2**

*Concept Map of Research Questions Two-Way ANOVAs*



RQ 7: What is the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), the secular attachment style they now have as young adults as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), and a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)?

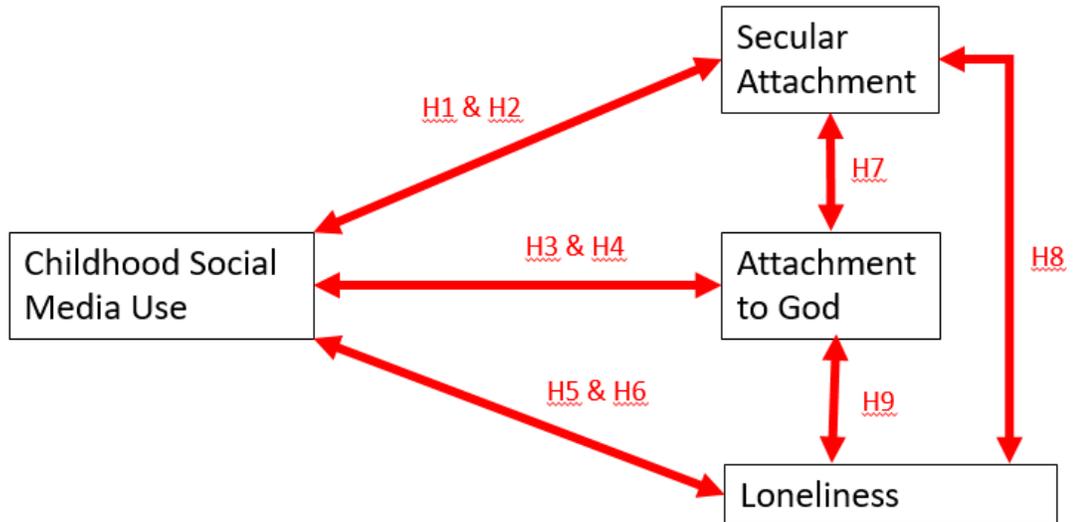
RQ 8: What is the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), the secular attachment style they now have as young adults as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

RQ 9: What is the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004), and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

**Hypotheses**

**Figure 3:**

*Concept Map of Hypotheses*



H1: It is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with higher levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011).

H2: It is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a more secure secular attachment style to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011).

H3: It is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004).

H4: It is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with lower levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004).

H5: It is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a higher self-reported sense of loneliness.

H6: It is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a lower self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022).

H7: It is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004).

H8: It is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022).

H9: It is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God

Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022).

### **Limitations and Challenges of the Study**

Based on the literature reviews included with this dissertation, there are several limitations that needed to be addressed within this current study. Due to the convenience sample done remotely through recruitment using the Liberty University Psychology campus wide research page, there were no excluded categories of participants except for age range and US citizenship, there was no researcher control over the participant taking the exam to ensure it was actually them taking it and not a BOT, and there was no control over the quality of the environment in which the questionnaires were taken by the participant. This relationship research study did not allow for the drawing of conclusions to see which variable impacted the other variables in what ways through cause and effect. Only a comparative relationship between the variables could be obtained. Selection bias might have been present, since the participants were only drawn from the Christian Liberty University, and this might not have been a true generalized sample of the world's population. There might have been confounding variables impacting a participant's ability to complete the questionnaires, access the questionnaires, or to understand the wording in the questionnaires that could possibly have impacted the resultant raw data results. This study relied on the quality of the assessments used to collect the raw data, and even though they were very well vetted, validity tested, and reliability tested, there always remains a possibility they were not of high quality. Another limitation was how

some participants might not have completed all five questionnaires, and thus invalidated their results from the study and from the credit given.

There were several challenges resulting from the data collection method used in this study. Possibly, the data might not have been transferred via Qualtrics to the researcher correctly, Qualtrics might have deleted or corrupted some of the raw data, or possibly the internet connection of the participant might not have allowed them to access all five questionnaires because of a glitch in their system or the internet protocol. These challenges were proactively guarded against through the researcher testing the data collection protocol personally to ensure Qualtrics could receive the data appropriately and access the questionnaires efficiently. The internet going down or a participant's computer glitch were not situations this research study was able to guard against.

The recruitment of the participants might also have posed challenges to this study. Using the Liberty University Psychology campus wide research page, this study had no control over who signs on and takes the questionnaires. Therefore, a person might have used several different accounts and names and taken the questionnaires several times, or BOTs might have taken the questionnaires. Thus, these results might have been skewed. The participants took the surveys online through Qualtrics, and this population might not be a generalizable representation of the whole world population. Participants from non-religious ways of life might not have wished to answer a questionnaire about their spiritual attachment style to God, and thus the data could be skewed towards a more religious participant baseline.

### **Advantages of the Study**

Even though there were challenges and limitations to this study, there were many advantages. Overall, the data collection and recruitment methods were rather inexpensive compared to conducting a true experimental design, the participant population was easy to recruit and resulted in a relatively diverse sample base, and the online assessments through Qualtrics were simple to access and answer for the participants. There was a quick turnaround time between the starting of the study and getting the aggregate overall raw data returned back to the researcher. The results were all collected in one central Qualtrics repository for ease of access by the researcher and for added security reasons. Through collecting data online, the participants had the flexibility of completing the questionnaires when they had the time, in an environment they were comfortable with, and using their own obtained equipment. Through recruiting participants through the Liberty University Psychology department, a sampling of a large and diverse population was obtained who would not be as easily obtained in an experimental research study. Even though cause and effect could not be measured between the variables, this study determined the strength and direction of the relationships between these many variables. Through using a real world population sampling, a true and natural understanding of the variables in a non-manipulated manner was obtained.

### **Theoretical Foundations of the Study**

Attachment theory, as founded by Ainsworth and Bowlby, was the cornerstone forming the foundation of this current research study. Ainsworth defined attachment as an emotional bond between a mother and child existing within and beyond any specific situations over time, and the behavior of attachment is something maintained through

proximity with the mother figure (Ainsworth, 2015). This concept of attachment was further elucidated by Schaffer and Emerson who defined it as the inclination of a young member of a species to initiate and seek the closeness of other members of his/her species (Schaffer & Emerson, 1964). Originally, the concept of attachment was developed by Bowlby who defined it as a sense of security developed through close bonding with another person on an emotional level, and this attachment was solidified and strengthened through a person having their needs met by another. Failure to form trusted attachments could lead to anxious and avoidant emotional reactions in a person, and a trusted attachment led to a person who had self-confidence and a sense they are worthy of being loved (Bowlby, 1969). The insecure attachment of a person can lead to loneliness (Heshmati et al., 2021). From a Biblical standpoint, attachment to God reflects a person's inner sense of how they can rely on and trust in God to be there for them in times of need and danger, to provide them with security, and how God can comfort them in troubled times (Kirkpatrick, 1992).

### **Definition of Terms**

**Term One: Attachment to God** – Attachment to God was defined as “a perceived emotional bond between God and believer that, much like the relationship between caregiver and infant, or other adults, operates as a gauge of safety and comfort” (Kirkpatrick, 1992, p. 17).

**Term Two: Loneliness** – Loneliness was defined as “a person's subjective feelings of loneliness, level of social isolation, and other related factors” (SSCI) (Taber, 2022, p. 57). Loneliness was defined as “a distressing experience that occurs when a person's social

relationships are perceived by that person to be less in quantity, and especially in quality, than desired” (Hawkley, 2018).

**Term Three: Outside Social Media Usage** – Outside Social Media Usage was defined as “daily engagements with different social media outside of the school context”, and therefore social media use not related to school courses or schoolwork (Lu et al., 2019, p. 1125).

**Term Four: Relationship** – Relationship was defined as “the way in which you mentally represent important people in your life” (Fraley et al., 2011, p. 615) and as “the way in which two or more people, groups, countries, etc., talk to, behave toward, and deal with each other” (Merriam-Webster, 2021).

**Term Five: Secure Attachment** – A positive emotional bond with another person demonstrating a person can rely on another person in times of stress (Bowlby, 1969).

**Term Six: Insecure Attachment** – A negative emotional bond with another person or people in general demonstrating how a person does not feel positively attached to others or can rely on others during times of stress (Bowlby, 1969).

**Term Seven: Anxious Attachment** – A person who shows a deep need for approval from their caregivers, was clingy around their caregiver, and demonstrated insecurity with their own self and ideas (Bowlby, 1969).

**Term Eight: Avoidant Attachment** – A person who showed no preference to bonding with or interacting with a caregiver versus a complete stranger, had difficulty forming close relationships with others, and tended to be distant emotionally and physically from others (Bowlby, 1969).

**Term Nine: Non-problematic Social Media Usage** – Social media usage not interfering with productive daily activities or was associated with mental or behavioral issues (Lane, 2020).

**Term Ten: Problematic Social Media Usage** – Social media usage interfering with productive daily activities and/or was associated with mental or behavioral issues (Demircioglu & Kose, 2018).

### **Significance of the Study**

The significance of this study was first to examine the relationship between the variables of previous childhood social media use, as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), and the current adult's secular attachment style, specifically examining the subscales of best friend, parents/care givers, dating or marital partner, and peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), that had developed now as a young adult aged 18-24. This research study also examined how a young adult's spiritual attachment style to God related to their current secular attachment style to best friend, parents/care givers, dating or marital partner, and peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), and to their past social media use as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019). It was a study examining how the amount of loneliness reported now by young adults aged 18-24 on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) related to their current adult secular and spiritual attachment styles and their past childhood social media usage patterns. These areas were significant because they elucidated factors in

development interacting with each other, in order to devise interventions to mitigate against the serious issues social media was shown to be associated with in the developmental lives of young adult's attachment styles (Demircioglu & Kose, 2020). "I was the first to say to Zion, 'Behold, here they are!' and I give to Jerusalem a herald of good news" (Isiah, 41:27, ESV).

This research study opened the field to further studies into how the secular attachment of young adults related to their past childhood social media practices, and it developed an understanding to assist in the creation of future studies examining how a young adult's spiritual attachment style to God related with their secular attachment style and past social media use. This study assisted in the future study of how loneliness related to and possibly was impacted by or impacted adult attachment styles and past childhood social media usage. This research study allowed the field of psychology to start examining a person as a whole Gestalt entity, instead of just examining the secular side of a person.

Through the discoveries made by this research study, relationship connections from a religious and a secular direction can now be illuminated to increase secure attachment styles in children and young adults to lessen the influence of their increased or problematic social media use patterns on the functionality of their lives. This might decrease problematic and increased social media use patterns from manifesting later on in the young adult by developing more secure secular and spiritual attachment styles, and this could lead to a more thorough understanding of the intertwining relationship existing between attachment styles and social media use in children and young adults. Interventions derived from these results might also be developed to reduce the impact

social media use has on the loneliness experienced by young adults. Up to now, the research in this area was and is still scant, it did not examine the person as a whole, and it only looked at the person in one glimpse of current time instead of over the course of development from childhood to adulthood. This research study filled these voids.

For future longitudinal studies, a more scientific experimental design on the instruments investigated herein could be implemented to see the cause and effect impacts of previous social media usage in childhood by young adults and its effects on secular and spiritual attachment styles when they are aged 18-24, to see which one impacts the other to a greater degree so interventions can be more specifically tailored to achieve the greatest positive impact. Another future experimental study could examine whether interventions to increase the secure spiritual attachment style to God or the secure secular attachment style to society decreases a child's problematic or increased social media usage more. Another experimental study could examine the directional impact existing between childhood social media usage and current adult loneliness levels.

### **Summary**

Even though there were several limitations to this study, the overall productive insights gleaned from the results of this research study far outweighed them. As with all research, uncontrollable factors existed, however this study maintained a very structured and precise measurement system, data collection strategy, and data analysis protocol ensuring data was collected in the safest and most insightful way possible and analyzed using strict processes to sift out false surveys and deeply analyze from many aspects the substantial raw data. This study focused not only on the secular aspects of attachment, it also delved into how the spiritual attachment of a person related to past childhood social

media usage, attachment, and loneliness. Basing this study upon attachment theory, this researcher was able to discover results having a major impact upon the lives of everyone growing up within this new media rich cosmos now engulfing all of us.

## Chapter 2: Literature Review

### **Overview**

This section is composed of the background work done in order to create the context of this study and to set the foundation upon which the research study was based. This study was the first to explore attachment from a longitudinal perspective comparing it with childhood social media usage, and it is the first to utilize the variables of attachment to God and of loneliness as major associative factors. This literature review was done chiefly using Liberty University library resources, and it built off of over a decade of past research into the areas of social media, God, loneliness, and attachment. As you will see, much had been done in these areas, however none explored them the way this study did.

### **Description of Search Strategy**

The strategy of this research study to search for relevant information was conducted using the Jerry Falwell Library online data search engine and accessible catalog of research journal article sites. The search terms were attachment, anxious, avoidant, loneliness, social media, God, Bowlby, Ainsworth, Kirkpatrick, and other prominent researchers in the field. The results were parsed by examining only peer reviewed journal articles from the last five or so years, with the exception of articles and texts from Bowlby, Ainsworth, and Kirkpatrick; pioneers in the field whose works I searched for from any time frame. I conducted religious searching by looking for articles sharing both God and attachment.

## **Review of Literature**

### **General Social Media Usage and Attachment Style**

Throughout the course of childhood, it was mainly thought we developed either secure or insecure attachment styles based upon our rearing. Research has shown these attachment styles, particularly the insecure ones of avoidant and anxious attachment, could be correlated with a person's development of social media usage patterns (Ballarotto et al., 2018). In several studies, insecure attachment (IV) was associated with a person's social media usage (DV) and the negative impact this has had on their lives was demonstrated (Demircioglu & Kose, 2020). The main results of these research studies were how anxious and avoidant attachment styles correlated with increased and sometimes problematic social media use (Ballarotto et al., 2018; Chen, 2019), and how secure attached participants used social media yet not to a problematic level (Sohn et al., 2019). These results indicated need satisfaction was the driving force behind anxious attachment correlated with increased social media use (Hart et al., 2015; Lin, 2016). A further study showed social media was a method people with avoidant attachment style used to mitigate the stressors of daily conflict, and this use did not assist them in raising their sense of attachment or self-esteem (Peterson et al., 2017).

Anxious and avoidant attachment was demonstrated by Sherrell and Lambie (2018) and Lane (2020) to relate to higher usage of social media, and this use resulted in lower levels of life and relationship satisfaction. It was discovered insecure attachment overall related to increased social media use, and this use played a significant correlational role in the development of interpersonal issues among young adults (Muzi et al., 2021). The level of avoidant attachment a person had was positively associated with

the amount of negative social media bonding and social resources they made use of, the amount of time they spent on social media, and the less likely they were to make helpful comments to other social media users (Kim et al., 2019).

Attachment style and social media use have been demonstrated to coexist with several psychological factors. One study investigated the correlation between insecure attachment styles and social media usage patterns, and it was discovered this usage was shown to result in a lower sense of well-being within the participant (Young et al., 2020). Neuroticism, a tendency to see things in a negative manner, was shown to lead to increased social media use by insecure attachment people, and this led to a decrease in positive mood and more social issues due to an increase in feelings of inadequacy in social situations (Abbasi & Drouin, 2019). Emotional attachment was shown to increase social media use by people, and the positive and negative impacts of this use was shown to correlate with secure and insecure attachment styles, respectively (Wang et al., 2016). Preoccupied and Fearful Avoidant attachment were linked to negative daydreaming and a significantly large increase in social media usage by a person (Costanzo et al., 2021). On a positive note, one study demonstrated the level of secure attachment a person had increased their positive use of social media because of the higher level of confidence they felt in themselves, and this resulted in their social media usage behavior increasing in a positive and productive manner (Teo et al., 2017).

Secure and insecure attachment to parents and peers has been the subject of research to assist in child rearing in this digital age of social media. One study examined the relationship between parental attachment and an adolescent's excessive internet (namely social media) use. It was discovered through all stages of adolescence, secure

attachment to the mother related to lower social media use issues. It was discovered in all stages of adolescence girls developed social media use issues more than boys did, and early adolescence developed excessive social media use more often than the other groups (Ballarotto et al., 2018). Positively, one study showed a secure attachment to peers online within the realm of social media led to a more secure transition of people from the college to the work environment (Sohn et al., 2019). The amount of secure attachment to caregivers was demonstrated to positively correlated with family traditions of cooperative use of social media by children and parents, and this was shown to lead to an increase in the child's sense of well-being and secure attachment to the parent (Coyne et al., 2014; Przybylski & Weinstein, 2019). The amount of insecure attachment with their parents was discovered to positively correlate with the amount of time a child spent on social media and the development of excessive social media use leading to behavioral issues (Sampasa-Kanyinga et al., 2020). The mothers' amount of comparing themselves to other mothers on social media was positively correlated with lower levels of secure attachment with their children (Coyne et al., 2017).

### **Problematic Internet Use and Attachment Style**

Problematic social media use was and still is a relatively new issue. It is constantly growing in society because social media use is constantly morphing in new ways, and it appears people with anxious and avoidant attachment styles, and people with poor peer and parental relationships, tend to develop a problematic use of social media at a far greater rate and impairment. Research demonstrated people with avoidant attachment styles who came from family situations where trust and unmet needs existed were significantly more likely to develop problematic social media use patterns than

people who grew up in secure family structured households with positive role models and supportive caregivers (Lan & Wang, 2020; Pedneker & Tung, 2017; Senormanci et al., 2014). Anxious attached people were shown to develop problematic social media use more significantly than secure attached people did when this was associated with childhood abuse and dysfunctional family environments (Cacioppo et al., 2019; Worsley et al., 2018). Peer alienation factors associated with insecure attachment styles related to peer interactions were shown to significantly relate to problematic social media use, due to a person's lack of ability to modify their moods, navigate sexual situations, create meaningful emotional connections with peers online, and control their tolerance of negative situations in these online peer relationships (Assuncao et al., 2017; Badenes-Ribera et al., 2019; Reiner et al., 2017).

The following research studies discovered people with anxious and avoidant attachment styles were significantly more at risk of developing problematic social media usage patterns than securely attached people, due in force to a striving to get their unmet social and relationship needs fulfilled, the intrusive nature of social media upon them, and their need to manage their social impressions online. The fulfillment of these needs was shown not to occur with their use of social media, and hence these insecurely attached individuals began to suffer from more serious psychological issues as a result or they became obsessed with the false positive feedback they received on social media and became more reliant upon a medium not satisfying their needs (Chen, 2019; Flynn et al., 2018; Schimmenti et al., 2014). Research demonstrated people with Fearful/Dismissive Avoidant and Anxious Preoccupied attachment styles became more at risk of developing problematic social media use patterns than securely attached people, and through the

increasing of self-esteem, relationship satisfaction, and secure attachment style factors it was shown how this could decrease problematic use in these insecurely attached people (Demircioglu & Kose, 2018; Demircioglu & Kose, 2020; Monacis et al., 2017; Odacı & Cikrikci, 2014). Research showed people with anxious ambivalent attachment styles presented with inadequate interpersonal skills leading to increased problematic social media use patterns; such as increased web chats and forum discussion participation due to their desire for anonymity, social compensation for their lack of social encounters, and the need to escape from their current sense of self (Eichenberg et al., 2017).

### **Posting Images and Text on Social Media and Attachment Style**

A person's attachment style was shown to correlate with their methods and usage patterns when using social media to post images of themselves and texts to other social media users. Through the examination of Tweets on social media, researchers were able to discover the use of words and the interactions engaged in were significant predictors of the attachment style of the tweeter, and this demonstrated how attachment style is an accurate factor pervading social media use and is normally not capable of being changed or hidden by the user (Orehek & Human, 2017). Anxious attachment style was linked to an excessive use and significant modification of selfies people posted on social media, due to a need to improve their sense of self-worth to an online group of observers (Yue & Stefanone, 2021). Anxious attachment style was correlated with a person's need to bodily compare themselves with other social media user's posted pictures more significantly than securely attached people, and this correlated to a greater sense of dissatisfaction in their bodies (Powell et al., 2018). A person's insecure attachment to their father was correlated with extensive social media texting use, and this correlated with greater

aggression tendencies in relationships and increased depression in the person (Coyne et al., 2018). People with insecure attachment styles were shown to present on social media with obsessive tendencies to over-analyze the social media communications of others, require excessive personal feedback to maintain equilibrium on social media, and had problematic increased social comparison activities (Venta et al., 2019).

### **Smart Phone/App use and Attachment Style**

With the release of the iPhone in 2007, the constant availability and usage of social media on these smart phones has led to many interpersonal and internal psychological issues related to a person's attachment style. Research showed people with anxious attachment styles became increasingly attached to their smart phones due to the use of social media apps and social interactions they performed on them, and these people could suffer from separation anxiety when they were not connected to the internet or were away from their phones and could not be constantly attached to others through social media (Eichenberg et al., 2019; Konok et al., 2016; Yuchang et al., 2017). Anxious and avoidant attached females were found to suffer from smart phone social media use separation anxiety more significantly than securely attached people and insecurely attached men, and this was correlated to the factors of an increased relationship dependency and a craving of close attention stemming from their insecure attachment styles (Arpaci et al., 2017).

A mother's maternal insecure attachment style to their child was discovered to appear in mothers who routinely used smart phones to stay in touch with social media interactions while caring for their child. This smart phone usage correlated with increased child behavior issues during mealtimes, lower emotional support and interaction with

their child, and a decrease in the mother's rating of herself as a good mother (Radesky et al., 2018). The impact of using social media on technology platforms during parental interactions with their children was associated with increased insecure attachment style formations developing between the child and parent. This formation led to a great sense of agitation between co-parents in relation to the attachment they felt to their child, and it led to less sensitive parent-child interactions being developed because of the disturbances caused by the parent's need to be constantly on social media during the family interactions (McDaniel & Coyne, 2016; Stockdale et al., 2018). Anxious attached people who felt a great sense of social isolation were shown to correlate with increased excessive attachment to social media app use. This app use related to a deep need for interpersonal satisfaction feedback and a relieving of the psychological angst they felt due to the situation they were in because of their insecure attachment style (Zhang et al., 2019).

### **Fear Of Missing Out (FOMO), Social Media Use, and Attachment Style**

The Fear of Missing Out (FOMO) syndrome was when there was a pervasive and intrusive sense of not belonging or not being continually socially involved online with other people, and this need led a person to develop excessive social media use patterns often causing distress and pain when the online social media was not accessible. FOMO had been correlated to show an increase when a person had an anxious attachment style and to decrease when they had an avoidant attachment style. People with an anxious attachment style presented with increased tendencies to problematic social media usage and to developing more severe FOMO issues, due to their deep inner drive to stay socially connected through digital devices to other social media users (Alt, 2018; Blackwell et al., 2017; Liu & Ma, 2019a). Stepping aside from the strictly social

ramifications of social media use, the use of social media has been shown to scientifically impact the physical workings of the brains of people. It was demonstrated how the right middle temporal gyrus was extremely active for anxiously attached people during a social inclusion phase of testing utilizing social media than when social exclusion was active in the social media. This indicated people with anxious attachment styles were more likely to suffer from the adverse effects of social media use and FOMO because they felt drawn into the online interactions instead of being negatively affected by them (Lai et al., 2016).

### **Social Support and Positive Aspects of Social Media and Attachment Style**

It was shown through much of the previously discussed research studies how social media usage when related with insecure attachment led to many problematic situations for people. However, there was research done demonstrating a saving grace aspect of social media usage and attachment style. Even though people with anxious attachment styles were associated with significantly increased social media use patterns, researchers discovered therapeutic interventions geared towards emotional regulation skills demonstrated they could reduce this problematic social media need in anxiously attached people (Liu & Ma, 2019b). People with insecure attachment styles were discovered to suffer from excessive social media use when it was correlated with a sense of loneliness and social isolation, and researchers discovered through online social media support groups and therapy how inclination to excessive social media use could be curbed and a more positive personal support experience when using social media could be developed (Benoit & DiTommaso, 2020). When researchers implemented a task for participants to smile for a certain amount of time while engaged within social media interactions, they discovered the problematic levels of anxious and avoidant insecure

attachment styles decreased in people. These results indicated how attachment styles in online environments could be modified to become more positive for a person, to reduce the addictive nature of social media's impact upon them, and the results could increase the positive experiences a person had on social media (Lin et al., 2020).

### **Attachment to God and Social Media Use**

Although there has been some research conducted upon how a person's attachment style to God related to their social media usage, this research vein has not been active for about a decade. A few research studies have been done into how attachment to God and religious faith related to a person's social media use patterns (Barry et al., 2012; Homan, 2012). Research showed when a woman had a secure attachment style to God this could mitigate against the negative influences their social media use had upon their sense of body satisfaction through distress reduction, and a woman's insecure attachment to God related to an increased body image dissatisfaction level while using social media (Homan, 2012). Researchers demonstrated there existed a relationship between a secure maternal attachment style and a high level of religiosity, and then they demonstrated increased religiosity related to an increase in positive social media use ramifications. Therefore, a secure maternal related attachment style could be inferred through religiosity to be related to a more positive interaction with social media (Barry et al., 2012). For "he who has clean hands and a pure heart, who does not lift up his soul to what is false and does not swear deceitfully" (Psalm, 24:4, ESV), "I am the door. If anyone enters by me, he will be saved and will go in and out and find pasture" (John, 10:9, ESV). Since before becoming securely attached to God, people "were

straying like sheep, but have now returned to the Shepherd and Overseer of [their] souls” (1 Peter, 2:25, ESV).

### **Loneliness**

Loneliness was defined as a disconnect between what a person expected from social interactions and what they actually experienced in the number of social friends or in the number of quality of relationships (Zhao et al., 2019). There were many factors influencing a developing sense of loneliness in teenagers as they grew into young adulthood. It was observed in Thomas et al. (2020) how social media created an environment around a college student leading to decreased loneliness when they were actively searching for information and were part of an active community of peers, and increased loneliness when they felt they had to limit who they truly were and consider themselves lacking when they compared their lives to the lives of others they perceived to be real people online (Thomas et al., 2020). Before getting to young adulthood in college, it was shown through research by Heshmati et al. (2021) the all-encompassing unified structure of the family relationship played a major role in a developing person’s interconnectedness and sense of loneliness, where if a child felt part of a unified family unit their sense of loneliness was lessened and if they felt as if the unit was not cohesive they tended to grow up with a deep inner sense of loneliness (Heshmati et al., 2021). Perception of how we are viewed by others was demonstrated in Zhao et al. (2019) to greatly influence the level of loneliness a person felt, with a sense of strong social support and likeability decreasing loneliness and a sense of being distanced and not as good as others leading to feelings of increased loneliness (Zhao et al., 2019). It was noted by Sohn et al. (2019) when strong interpersonal bonds existed between college friends,

social media could be used to continue this bond onward after college and to decrease the amount of loneliness experienced by these people (Sohn et al., 2019). Therefore, it could be seen when a secure attachment bond existed, social media could possibly assist in the continuation of these bonds, and when an insecure bond existed social media could be used as a substitute actually leading to a greater sense of loneliness in the person.

### **Synthesis of the Variable Concepts**

Taking all of this research into Social Media Usage, Loneliness, Attachment to God, and Secular Attachment Styles into account, it could be synthesized that a relationship existed between all of these variables. Descriptive, ANOVA, and some Regression analyses were used to examine the relationship Childhood Social Media Usage had with a person's sense of Loneliness, and how this relationship was associated with that person's development of attachment to peers and family over the course of their childhood and into young adulthood. The predictor variable of Childhood Social Media Use interacted and coincided with a state in the response variables of Attachment and Loneliness. ANOVAs were used to examine how Childhood Social Media Usage related to a person's developed spiritual attachment style, loneliness, and their attachment to peers and family in young adulthood aged 18-24. ANOVAs were used to examine how Childhood Social Media Usage related to a person's Attachment to God, and how this associated with the person's development of an attachment style to peers and family. The predictor variables of Childhood Social Media Use and Attachment to God interacted and coincided with a state in the response variable of Attachment. The relationship's causal impact was not a focus of this study, since it would require a more experimental study to discover this relationship. It could not be determined which variable caused the

fluctuations in the other variable, however the level of one variable was discovered to be a predictor of a level in another variable; e.g. that increased Childhood Social Media Usage predicted Insecure Attachment having formed in the young adult. It cannot be said that one caused the other, just that a relationship existed between the two. The relationships and the strength of the relationships between these variables was the focus of this study.

### **Biblical Foundations of the Study**

The Biblical perspective of this study derived from the concept of the reverse conjecture between a person's attachment style as developed through social interactions and the person's attachment to God. It was shown people who suffer from insecure attachments have statistically been shown to compensate for this lack of human attachment by becoming very securely attached to God, who thus provides the comfort and security the person lacks in their mundane social lives (Leman et al., 2018). Biblically, it has been discovered how more securely attached a person is to God, the more they tend to use social media in a productive manner (Barry et al., 2012).

“Now may our Lord Jesus Christ himself, and God our Father, who loved us and gave us eternal comfort and good hope through grace, comfort your hearts and establish them in every good work and word” (2 Thessalonians, 2:16, ESV). “For as we share abundantly in Christ's sufferings, so through Christ we share abundantly in comfort too” (2 Corinthians, 1:5, ESV). “As one whom his mother comforts, so I will comfort you; you shall be comforted in Jerusalem” (Isaiah, 66:13, ESV). “You will say in that day: ‘I will give thanks to you, O LORD, for though you were angry with me, your anger turned away, that you might comfort me’” (Isaiah, 12:1, ESV). “Even though I walk through the

valley of the shadow of death, I will fear no evil, for you are with me; your rod and your staff, they comfort me” (Psalm, 23:4, ESV).

### **Summary**

Through the review of this literature on attachment style and social media usage, it was seen how important this current study was to discover how childhood social media usage had now developed into and was associated with certain attachment styles and loneliness factors in young adults. This research study created a foundation for the creation of interventions to assist children to develop more secure attachment styles and to assist young adults to modify and work with their current attachment styles that might have been impacted by childhood social media use.

## CHAPTER 3: RESEARCH METHOD

### Overview

In this section, this research study was explained from the start of the research question and hypotheses building blocks that steered this study, to the actual dimensions of the research study's recruitment of participants, to the collection of data, and on to how the analysis of the resultant data was achieved. All five instruments used in this study were discussed, and the procedures and methodology to implement the study was presented.

### Research Questions

RQ 1: What is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011)?

RQ 2: What is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)?

RQ 3: What is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the level of loneliness experienced by these young

adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

RQ 4: What is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)?

RQ 5: What is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

RQ 6: What is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

RQ 7: What is the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), the secular attachment style they now have as young adults as measured by the subscales of best friend,

parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), and a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)?

RQ 8: What is the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), the secular attachment style they now have as young adults as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)?

RQ 9: What is the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004), and a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)?

### **Hypotheses**

H1: It is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with higher levels of insecure secular attachment styles to their best friend, parents/care

givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011).

H2: It is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a more secure secular attachment style to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011).

H3: It is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004).

H4: It is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with lower levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004).

H5: It is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a higher self-reported sense of loneliness.

H6: It is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a lower self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022).

H7: It is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004).

H8: It is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022).

H9: It is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022).

### **Research Design**

This was a quantitative, cross-sectional, relational research study whose results were analyzed to give an account over the course of decades of time of a participant's self-reported and remembered childhood social media usage and how this related to their current young adult secular attachment style to the world around them, their spiritual attachment style to God, and their current loneliness level. This was an analysis of variance (ANOVA) study examining the variables of: previous social media usage as a child; current secular attachment style as a young adult aged 18-24 focusing on the subscales of best friend, parents/care givers, dating or marital partner, and peers; the participant's spiritual attachment style to God; and the participant's loneliness level.

### **Participants**

A non-random, convenience sample population of strictly 18-24 year old young adults who were US citizens was obtained through recruitment through emails sent to graduate and undergraduate Psychology student pools at Liberty University and in Psychology class announcements steering them towards the Liberty University Psychology research page to access this study's survey on Qualtrics. This method provided this researcher with a voluntary and very diverse population for study results. This researcher "compensated" the Liberty University students aged 18-24 with a chance to win one of four \$50 Amazon gift cards and possibly to get course research requirement fulfillment credit for taking the 5 surveys covering their demographics, their previous childhood social media use, their current secular attachment styles, their spiritual attachment style to God, and their current loneliness level. The Liberty University students between 18-24 years of age were entered to win one of four \$50 Amazon gift

cards paid for by this researcher, and they might have received course credit for their participation or it might have fulfilled a requirement for participation in a research study by the psychology course they were in.

This study's population goal attainment of 149 useable participants allowed for the achievement of a sample size that had statistically significant power as rated by the G\*Power tool, a program that calculated the number of participants required to achieve significance in a study. This researcher sifted out participants who did not finish the survey or who simply filled out random answers, discovered through the use of reverse question techniques and answer comparison and measurement techniques. This study used the  $p < .05$  significance level, since this was a unique and first time study and the researcher wished to obtain as many results as possible. In the future, a  $p < .01$  could be the next step in a further study.

### **Study Procedures**

A convenience sample was taken of students from graduate and undergraduate Liberty University (LU) Psychology courses through professor recruitment steering these psychology students to the Liberty University Psychology research page where they could find a link to this study and could then access the five online surveys in one document within the Qualtrics system. Emails were also sent out to all online Psychology students informing them of the study and the way to enter it. All participants accessed the surveys individually via their own obtained computer device with internet access from their own chosen location. The raw data was collected via the Qualtrics system. All results were stored in a secure file on the Qualtrics system for only this researcher's retrieval. All data was removed from Liberty University's Qualtrics once this researcher

had obtained it. The data was stored on a separate password secured storage device owned by this researcher, and it was stored in a locked file cabinet at a secure location by this researcher.

Each included participant in the study individually completed all five questionnaires infused into one document, and it took each participant approximately 15-20 minutes to complete all the questionnaires. Consent forms were administered via the Qualtrics system as the first page the participants saw after clicking on the survey link. This Consent was obtained from each participant via a check box digitally accessed before the survey was presented, which acknowledged they had read and agreed to the consent information, thus showing how each participant had agreed to have their raw data be part of this study's results. If they did not check the Consent box, they were not linked to the questionnaires to complete them. Each participant was informed their resulting data was anonymous, no personal ID information was collected, and the raw data was not to be shared outside of this researcher. The only identifiable information was obtained when the Liberty University student decided to email this researcher directly through their own Liberty University email the survey completion generic password, thus allowing them to be entered into the drawing to win one of four \$50 Amazon gift cards. Other than the individual's name, no other data from the surveys was conveyed as identifiable to them. Otherwise, this researcher had no knowledge of the participants. The consent forms were not linked to the raw data. All raw data stored on the secure storage device was only accessible by this researcher, and the storage drive will be purged through reformatting after three years.

This researcher obtained IRB approval via the Liberty University IRB Board before beginning this study. This was a minimal risk study, the participants were not manipulated, and there were no adverse conditions administered. Participants were informed they could stop taking the questionnaires at any time without incurring any penalty, except they would not be able to enter to win the gift card or receive course credit if they stopped taking the survey.

### **Instrumentation and Measurement**

Four validated and reliability tested assessments and one demographic questionnaire were used to measure the participants, and each participant had to complete all five online questionnaires sections to be part of the results of the study and to be able to enter to receive credit/gift cards. This study used a four question, researcher developed demographic survey asking about age, gender, US citizenship, and living conditions. This study used the Outside School Social Media Behavior (OSSMB) Scale developed by Lu et al. (2019) to measure the level of previous social media usage patterns the young adults aged 18-24 experienced as children across the four different subscales of Consuming, Communicating, Creating, and Sharing. The OSSMB assessment was a twenty-one question 5-point option Likert scale measured as 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always. This study used the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR-RS) (Fraley et al., 2011) to measure the secular Attachment Style these young adults aged 18-24 currently had. The ECR-RS assessment was a 9 question survey measuring a person's attachment style across the four different subscales of best friend, parents/care givers, dating or marital partner, and peers using a 7 point Likert scale rating system, for a total of 36 question areas being measured.

To measure a participant's spiritual attachment style to God, this study used the Attachment to God Inventory (AGI) Questionnaire developed by Beck and McDonald (2004). The AGI was a 28 question survey using a 7 point Likert scale rating system measuring a person's spiritual attachment style to God. This study used the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) consisting of a 24 question Likert scaled survey investigating a person's current loneliness level.

### **Operationalization of Variables**

**Variable One** – Variable one was an ordinal variable and was measured by total score on the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR-RS) (Fraley et al., 2011).

**Variable Two** – Variable Two was an ordinal variable and was measured by total score on the Outside School Social Media Behavior Scale (Lu et al., 2019).

**Variable Three** – Variable Three was an ordinal variable and was measured by total score on the Attachment to God Inventory (Beck and McDonald, 2004).

**Variable Four** – Variable Four was an ordinal variable and was measured by total score on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022).

### **Data Analysis**

The accumulated data was analyzed using IBM SPSS Statistics GradPack and EXCEL, and several statistical tests were utilized for the data analysis. The central data analysis method for this study was the use of ANOVAs to discover relationships between the variables. Regression multivariate, bivariate, and univariate analyses were performed as a means of strengthening the validity and power of the ANOVA results, yet these regressions were not the central data analysis method of this study.

ANOVAs were used to see whether a relationship existed between: the variables of the level of previous childhood social media usage a young adult aged 18-24 had as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and their secular attachment style as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), present now in current time in these young adults; between the level of previous childhood social media usage a young adult aged 18-24 had as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the young adult's spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004); the young adult's spiritual attachment style to God and their secular Attachment Style as measured by the subscales best friend, parents/care givers, dating or marital partner, and peers of the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) present now in these young adults; and the relationship of loneliness reported now by young adults aged 18-24 on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) to the other three variables involved. This data analysis showed how many relationships, patterns, and tendencies existed between the four variables, and several pieces of the data were considered statistically significant as they fell below the  $p < 0.05$  level of probability. Descriptive statistics were also utilized to examine each variable.

### **Delimitations, Assumptions, and Limitations**

Throughout this research study, certain boundaries had been placed and certain decisions about the focus of the study had been made. This researcher decided only

participants between the ages of 18 and 24 who were US citizens living in the United States would be accepted into this study. This was decided upon because this population was the first to grow up surrounded by a pervasive and easily accessible social media environment. By examining them at this stage of their development, this research could shed light upon how their experiences and childhood social media usage patterns related to their attachment styles and loneliness factors at their current young adult stage of life. The only other boundary placed upon this study was in order for the participant data to be used, the participant had to complete all five of the surveys infused into one single online survey document. It was decided by this researcher to examine how previous childhood social media usage patterns related to attachment styles to parents, partners, friends, peers, God, and the level of loneliness a participant currently had because this was a new situation in our society shown to cause serious depression, anxiety, and suicidal ideations in the young adult population (Assuncao et al., 2017; Badenes-Ribera et al., 2019; Reiner et al., 2017; Young et al., 2020). Through the examining of this focus area, this research was able to delve into an aspect of living not yet fully explored by current research.

### **Summary**

The purpose of this proposed research study was to discover the relationship between current secular and spiritual attachment styles and loneliness levels young adults aged 18-24 present with in the present time and their previous childhood social media usage patterns. With social media usage now an integrated part of our everyday lives, this research study was of vital importance to assist science in understanding how a young adult's childhood social media use patterns related to the young adult's secular and spiritual attachment styles they currently presented with, as well as their current

loneliness levels. This needed to be investigated so future interventions could be developed and implemented to mediate against the relationships negatively associated with insecure attachment in young adults and their increased or problematic social media usage as a child. Social media had been demonstrated to relate to serious issues in the development of attachment styles in children and young adults (Pednekar & Tung, 2017; Young et al., 2020), and this study was uniquely designed to enlighten psychology as to the relationship aspect of this development over time and to increase science's understanding of how these many variables intertwined in a way that was not studied before.

This study opened the door to an area of studying social media, loneliness, and attachment style that led to an increased understanding of the human psyche as whole, not just as its parts. After reflecting on the limitations of this and previous studies into attachment, this study was designed to mitigate against as many limitations and increase as many advantages as possible. The quantitative methodology design of this study provided objective results leading to relational discoveries and provided a baseline and justification for future relational and experimental studies into this topic area. "Wisdom gives strength to the wise man more than ten rulers who are in a city" (Ecclesiastes, 7:19, ESV). This study provided the wisdom concerning spiritual attachment and social media use in people that secular studies alone could not achieve. Through the results of this study, we can now start to develop childhood interventions to contradict the negative and increase the positive aspects of social media usage by children, either through social media use interventions or interventions to increase secure attachment styles. This could be done so when these children grow up into young adults they hopefully will present

with more secure secular and spiritual attachment styles and less severe loneliness factors, allowing them to lead a more functional life and reduce the problematic social media use patterns that have led previous generations to dysfunctional living.

## CHAPTER 4: RESULTS

**Overview**

The findings of this study are reported in this chapter. All statistical analysis was run using a significance level of  $p < .05$ , SPSS and EXCEL were used for data analysis, and a division of each variable into three categories was implemented (Low 0-33.3%, Moderate 33.4-66.6%, and High 66.7-100% of the participant's raw score on that measurement tool). All four measurement instruments (OSSMB (childhood social media use level), ECR (secular attachment level), AGI (spiritual attachment level), and SSCI (loneliness level)) were used in the analysis of this study. Descriptive statistics were run in SPSS on the demographic variables of Gender and Living, and descriptive statistics were run on each research variable that demonstrated at least  $p < .05$  significance. One-way ANOVAs and two-way ANOVAs were used to analyze the variables and the relationship(s) between the variables.

The first section of Chapter 4 describes the overall demographic dynamics of the study participants. The Second section of Chapter 4 presents the cross-sectional analysis findings of the unimodal, one-way, two-tailed ANOVAs where everything was between variables and were run on the three levels (Low, Moderate, High) using a significance value of  $p < .05$  for each variable in relation to the other variables. The study's research questions and hypotheses were used as the basis for the logical flow of the presentation of information in this section. Tukey's Post Hoc analysis was used for all significant variables from the ANOVA comparisons to protect against making Type 1 errors (finding significance when there was none) by examining the  $p$ -value significance of each of the three levels of the independent variable to the continuous raw scores of the dependent

variable. Two-way ANOVAs where everything was between variables were run on the interconnectedness of the variables, however none of the results were significant at the  $p < .05$  level (the interaction effects were non-significant). The last section of Chapter 4 summarizes the key findings from the results of this research. An Alpha level of  $p < .05$  was used for all analysis, and the participant base for each variable was  $N = 149$ . Each level of each variable (Low, Moderate, High) attained a sample size of between 47 and 52, with the exception of the levels for Relationship Anxiety to Parents that were skewed to approximately 75 participants for the Low level group and 37 for both Moderate and High levels because 75 participants scored a 3 on the measurement tool.

The purpose of this research study was to examine the longitudinal relationship between Childhood Social Media Use and a young adult's (aged 18-24) current levels of Secular Attachment, Spiritual Attachment, and Loneliness. This study was designed to examine: the relationships between the levels of Childhood Social Media Use and the levels of secure/insecure secular attachment the young adult now experienced; to examine the relationships between childhood social media use levels and the levels of secure/insecure spiritual attachment to God the young adult now experienced; to examine the relationships between childhood social media use levels and the levels of loneliness the young adult now experienced; to examine the relationships between all of these variables to see if one could be a predictor of the other; and to examine if two of the variables inter-relating would produce a statistically significant interaction effect upon a third variable (see Figures 1, 2, and 3).

The option of 33% cut off scores for each variable (Low 0-33.3%, Moderate 33.4-66.6%, and High 66.7-100% of the participant's raw score on that measurement tool) was

chosen by this researcher to create the three levels of Low, Moderate, and High to meet the assumption of parametric tests (which is an  $N$  of at least 30 per sample), instead of the 10-80-10% or the 25-50-25% cut off parameters. All of the data in this study was run using all three cut off levels, and the better option of 33% cut off scores was chosen to be used after reviewing the data analysis from the 10%, 25%, and 33% cut off scores. The 33% was this researcher's personal choice because it made the most logical statistical sense. This researcher came to the conclusion that 33% gave the right amount of participants per group for statistical power. If a 2000 participant sample size was obtained, this researcher might have used 10% or 25%. However, this study's participant base of 149 did not have the sample size within the bottom 10% or 25% to meet the assumptions of parametric tests. This method of division of a variable has been a widely accepted cut off score for a long time, and it can be seen as the desired method in the DSM5-TR for dividing up a continuous data variable that was derived from their assessment of mental health, and converting these scores to the levels of mild, moderate, and severe to make a quicker data analysis decision making tool (American Psychiatric Association, 2013). Low, Moderate, and High levels were desired for use in this study for the non-precise data collected; since the data collected in this study was not a specific score like temperature and blood pressure, but a relative score where the difference between 33 and 35 was subjective.

The data analysis at 33% told a very clear message about childhood social media use and how this related to attachment and possibly loneliness in current young adults. This 33% cut off score was done to simplify what was a very complex way of looking at this research topic. This 33% cut off score was not unique to this researcher, since it has

been used repeatedly in scientific research studies (American Psychiatric Association, 2013). This cut off score is only arbitrary to the extent that this researcher decided to use it instead of 10% and 25%. Given these variables were based on subjective measurement instruments and were not particularly objective, this researcher decided 33% was the best cut off score after examining all the data through ANOVAs run on all the variables at the 10%, 25%, and 33% cut off score ranges.

ANOVAs were chosen by this researcher to analyze the data instead of regression analysis. ANOVA Analysis and Tukey Post Hoc tests were chosen instead of Multiple Regression (multivariate) followed by Linear Regression (bivariate) analysis after closely examining how the data of this research study was outputted by each method. ANOVA Analysis was used by many researchers (Ballarotto et al., 2018; Blackwell, 2017; Ceyhan et al., 2019; Eichenberg, 2017) and was decided on by this researcher to give the clearest picture of how the variables related to each other on the Low, Moderate, and High levels. The General Linear Model looking at ANOVAs was chosen because this researcher wanted to see if Low, Moderate, and High levels had an impact upon this study's ability to see a relationship between and within these variables. It made more sense to break these variables down into the categories of Low, Moderate, and High levels because they were not as precise as other scientific measures (such as temperature, blood pressure), and they were subjective in scoring because they were based on self-reflection of the participant and not on a fixed scientific measurement tool administered by one scientist. Multivariate analysis lends itself to be used on more precise data and less subjective variables, wherein one point is significant and sensitive from another. One point is not so significant and sensitive in this data, which is somewhat abstract and arbitrary, and it was

believed by this researcher that ANOVAs allowed for the interpretation of that variance much better. The measurement tools used in this research study were not sensitive enough to say a 3 is significantly different than a 4, therefore it made more statistical and logical sense to partition out these variable scores into Low, Moderate, and High categorical levels. This was this researcher's logical reasoning early on to make this an ANOVA analysis versus a regression analysis.

This researcher chose ANOVAS over regression analysis because ANOVAs simplified the ability to speak to big effects due to the lack of precision in the measures. The statistical result differences that might have been found by using the Regression method would not have been substantial enough to go that route. These variables and data have the subjective factor that blood sugar levels and temperature do not have. The study's population was rather small, and in order to meet the assumption of parametric tests, larger groups at the 33% cut off parameter were more logical. The ANOVAs were done and not regression analysis because of these factors, and this researcher personally knows this was the better route after seeing the results of the data analysis.

The variables of Male and Female Gender were decided to be combined by this researcher into one variable, and the variable of On and Off Campus Living was also combined into one variable, instead of using two separate levels for each of these variables. This decision to combine the variable of Gender together and the variable of Living together was made after t-tests were done and ANOVAs were examined. The levels of these variables by themselves were not significant, the males only made up 24% of the participants, and Off campus only made of 34% of participants. Although these slightly reached power, this researcher did not think the skew of the participant base

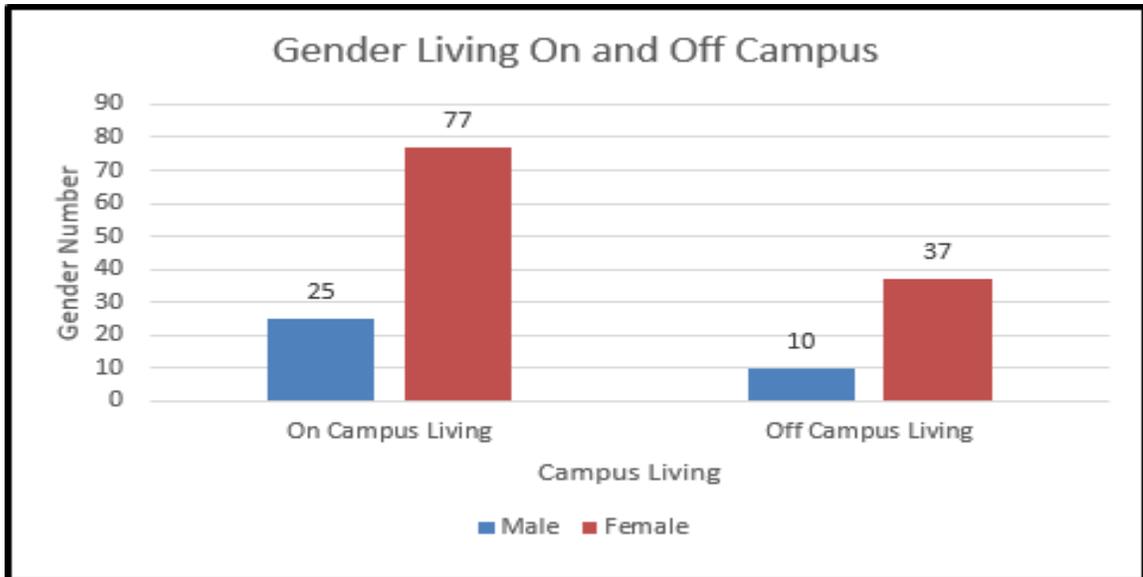
would make for a reliable statistical analysis. The whole participant base was used, however in none of the ANOVAs or t-tests were the variable of Gender or the variable of Living statistically significant at the  $p < .05$  level. Therefore, only the descriptive statistics on these two variables were included in the results.

### **Descriptive Results**

The following results were from a convenience sample taken from Psychology students at Liberty University, a Christian University in Virginia, USA. The total population of usable scores was 149, wherein 23.5% ( $N = 35$ ) were male and 76.5% ( $N = 114$ ) were female. Of the participants, 68.5% ( $N = 102$ ) lived on campus and 31.5% ( $N = 47$ ) lived off campus. No further demographic statistics were gathered. Participant t-tests and ANOVAs showed that there were no statistically significant relationships between either of these two variables and the other variables in the study. Figure 4 shows how the Gender variable is skewed to Female and the Living variable is skewed to On Campus, demonstrating that any significant results from these variables would be skeptical and would not create reliable statistical analysis based around this inequality within the results of the variables. The aspects of age, race, year of school, and other demographics were not collected in this study.

**Figure 4**

*Male and Female Numbers with On and Off Campus Living Status*



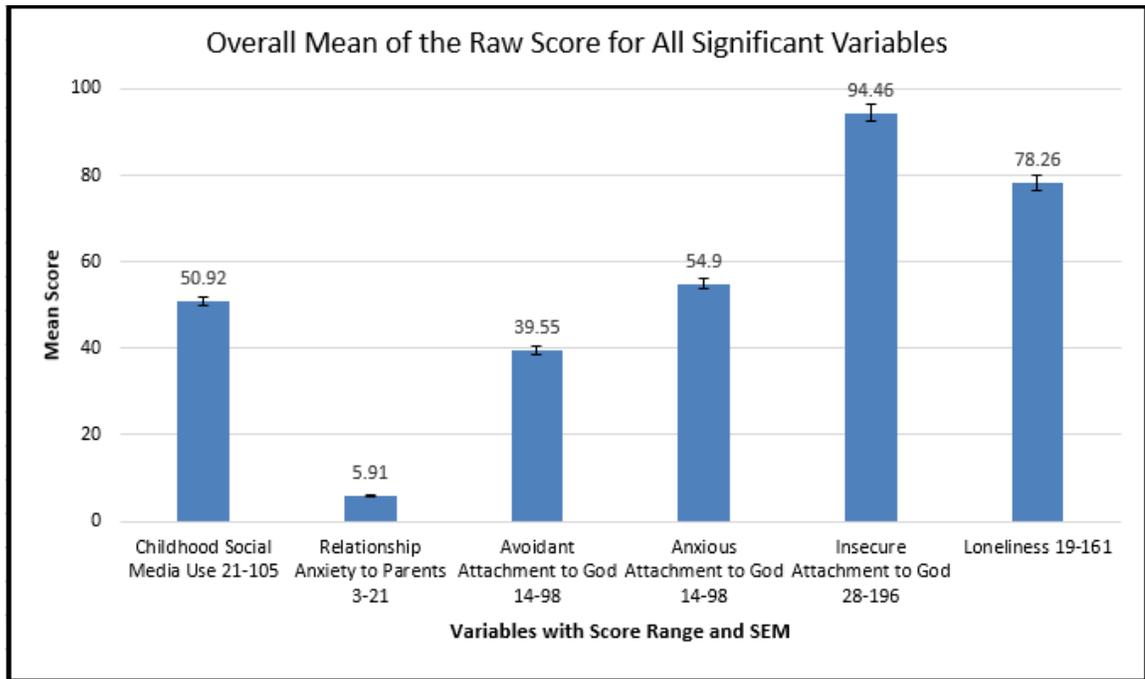
There were four main variables studied in this research (six when counting the Attachment to God (AGI) variable being broken into three distinct variables). Childhood Social Media Use level was measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), where a higher score meant a higher level of social media use as a child. Secular attachment level was measured by the Experiences in Close Relationships – Relationship Structures (ECR) Questionnaire (Fraley et al., 2011), where a higher score meant a higher level of insecure attachment, either avoidant or anxious. The nature of a person’s Spiritual Attachment to God was measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004), where a higher score meant a higher level of insecure attachment to God. The scores of the Attachment to God measurement tool were further divided up into three categories of Avoidant Attachment to God, Anxious Attachment to God, and Total Insecure Attachment to God. The higher the score on the Attachment to God instrument related to a higher state of insecure attachment to God. The level of self-reported Loneliness was measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022), where a higher score meant a higher level of loneliness felt by the young adult.

These results were indicative of the population sampled, and the Low, Moderate, and High levels were derived from the attained raw scores of this population. Only the variables with significant results at the  $p < .05$  level were included in Chapter 4. Figure 5 shows that the population was relatively average within most score ranges for each variable, with the exception of lower than average for the Relationship Anxiety to Parents and a greater level of Anxious Attachment to God than Avoidant Attachment to God. Frequency Distribution Histograms for each variable (see Figures 6, 7, 8, 9, 10, and 11)

show the skew of the participant base towards either Low, Moderate, or High levels on the actual instrument. Figures 12 through 17 break each individual variable out into Low 0-33.3%, Moderate 33.4-66.6%, and High 66.7-100% levels, showing the Mean, the score range for each level, and the Standard Error of the Mean. There were between 47 and 52 participants per level for each variable, with the exception of the Relationship Anxiety to Parents variable which had a disproportionate amount of 3 score results and hence 75 participants in the Low Level for that variable; since a score of 3 could not be differentiated from a score of 3.

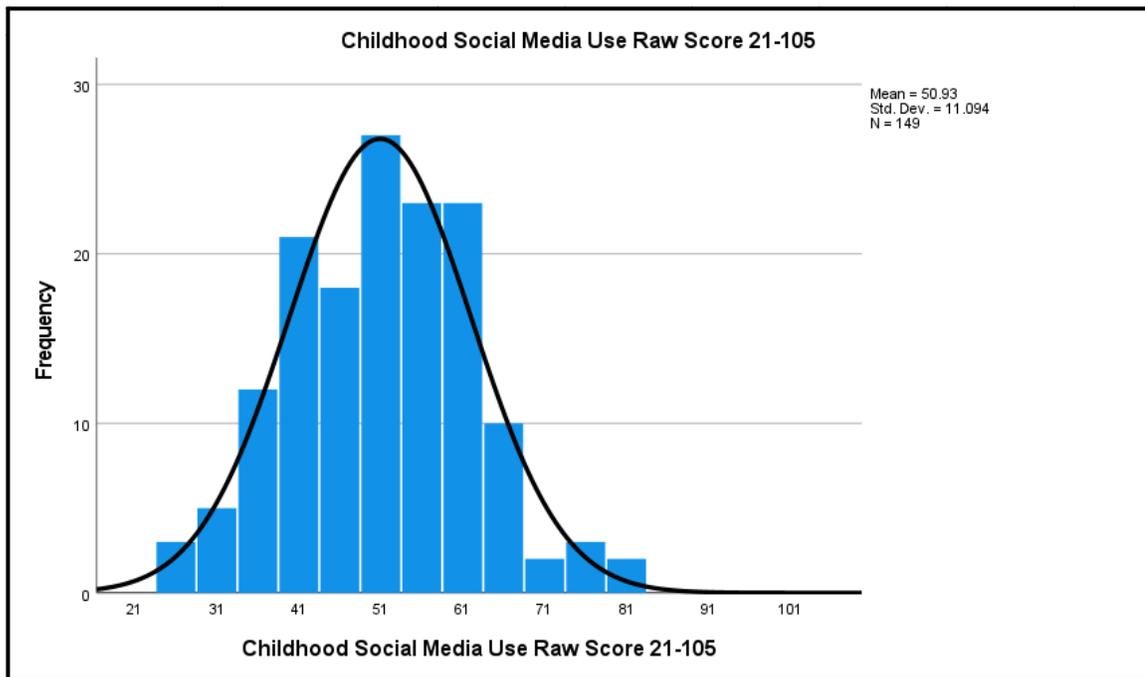
**Figure 5**

*Overall Score Mean, Score Range, and Standard Error of the Mean for All Significant Variables in the Study*



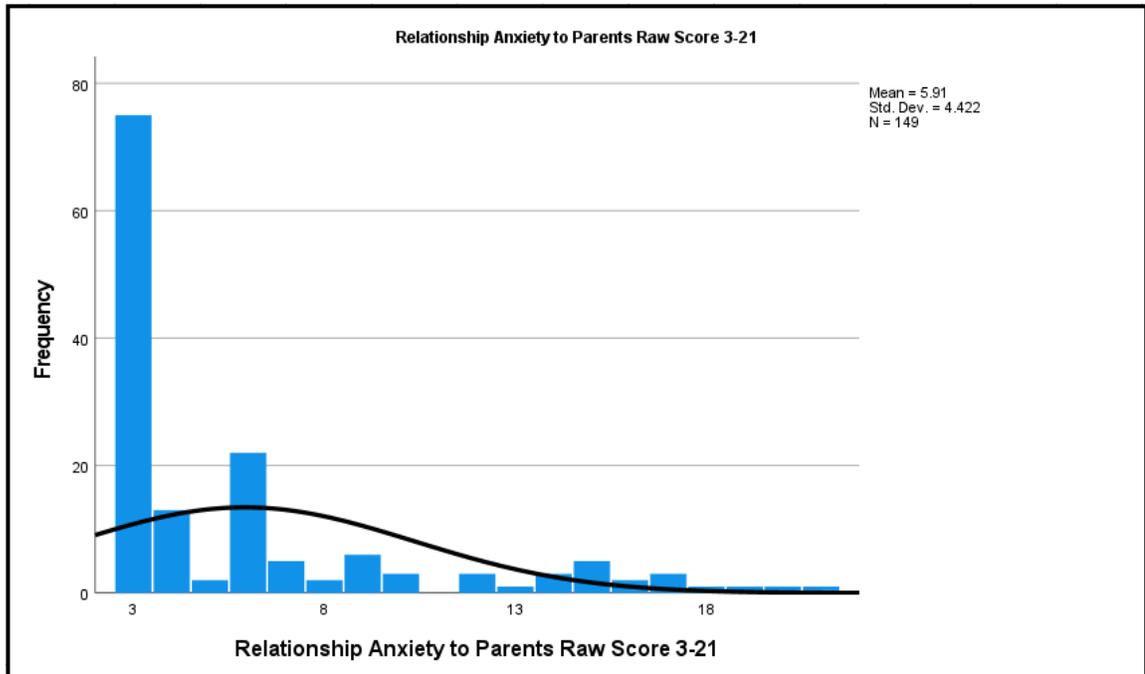
**Figure 6**

*Frequency Distribution Histogram of the True Level/Amount of Childhood Social Media Use with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness*



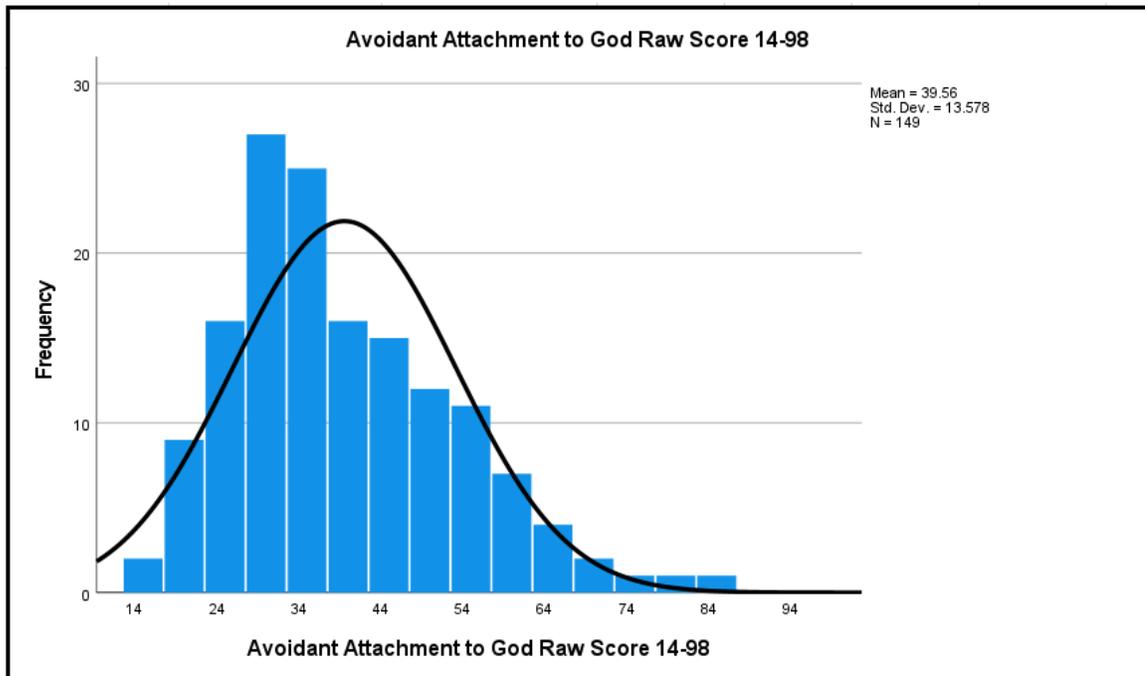
**Figure 7**

*Frequency Distribution Histogram of the True Level/Amount of Relationship Anxiety to Parents with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness*



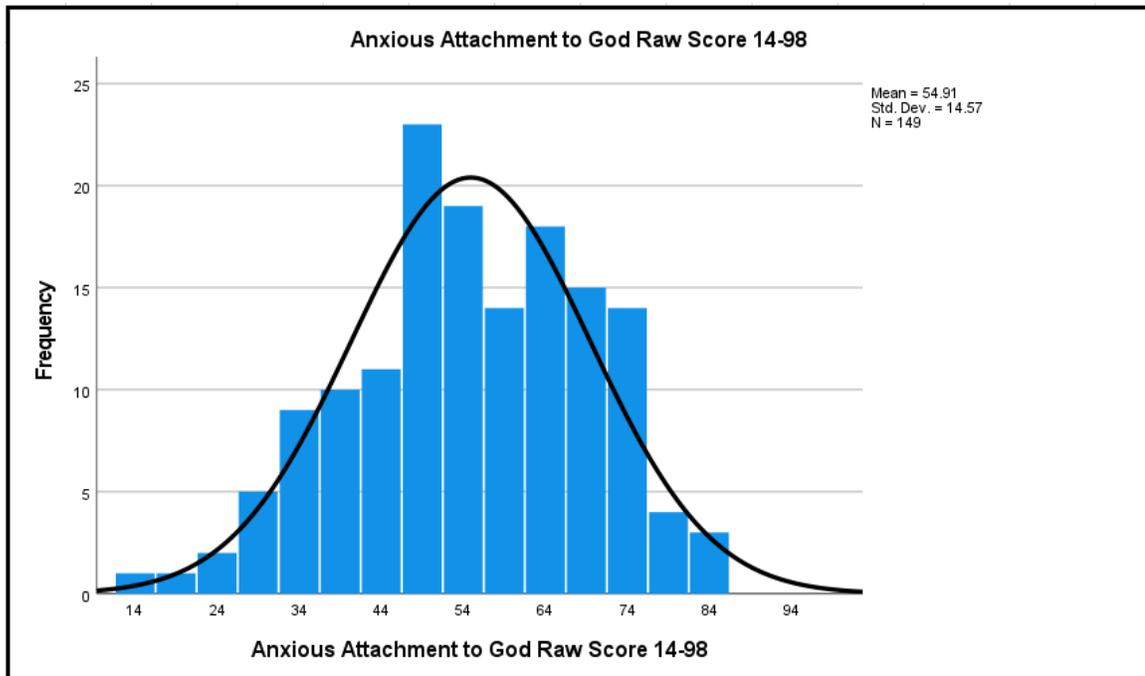
**Figure 8**

*Frequency Distribution Histogram of the True Level/Amount of Avoidant Attachment to God with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness*



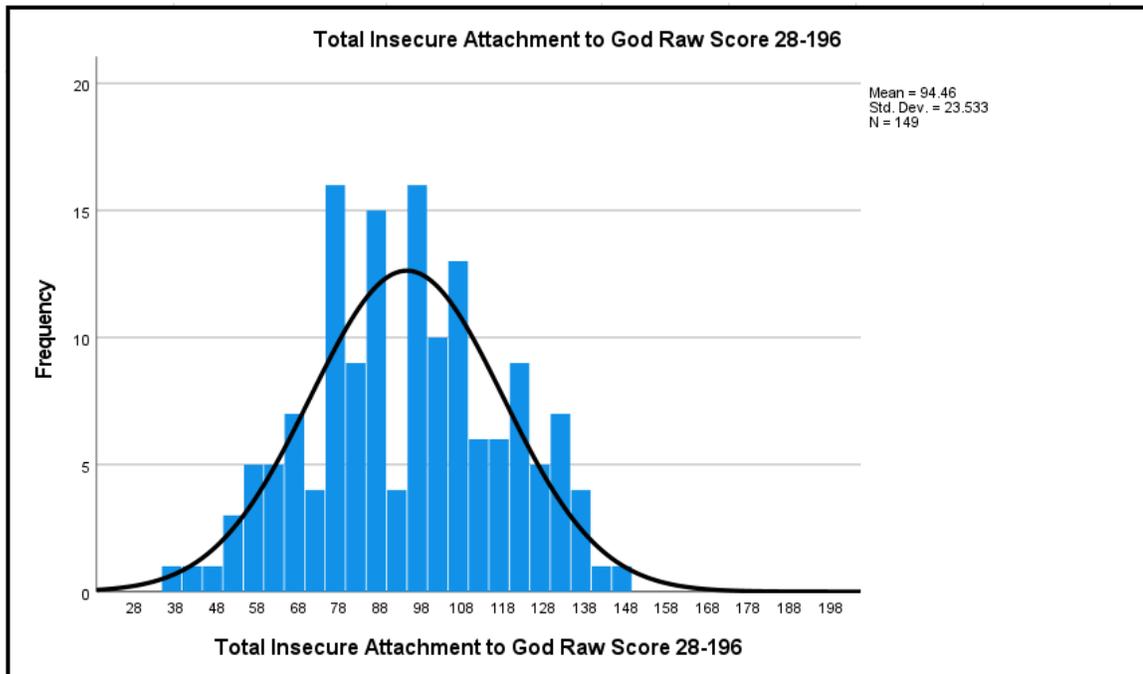
**Figure 9**

*Frequency Distribution Histogram of the True Level/Amount of Anxious Attachment to God with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness*



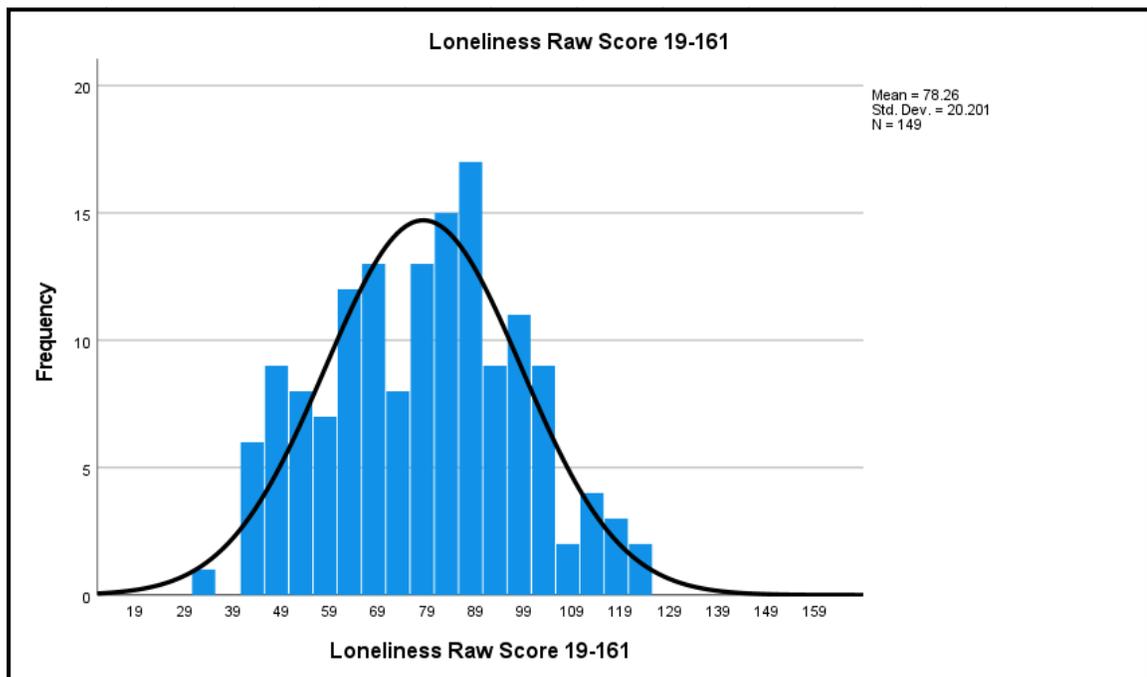
**Figure 10**

*Frequency Distribution Histogram of the True Level/Amount of Total Insecure Attachment to God with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness*



**Figure 11**

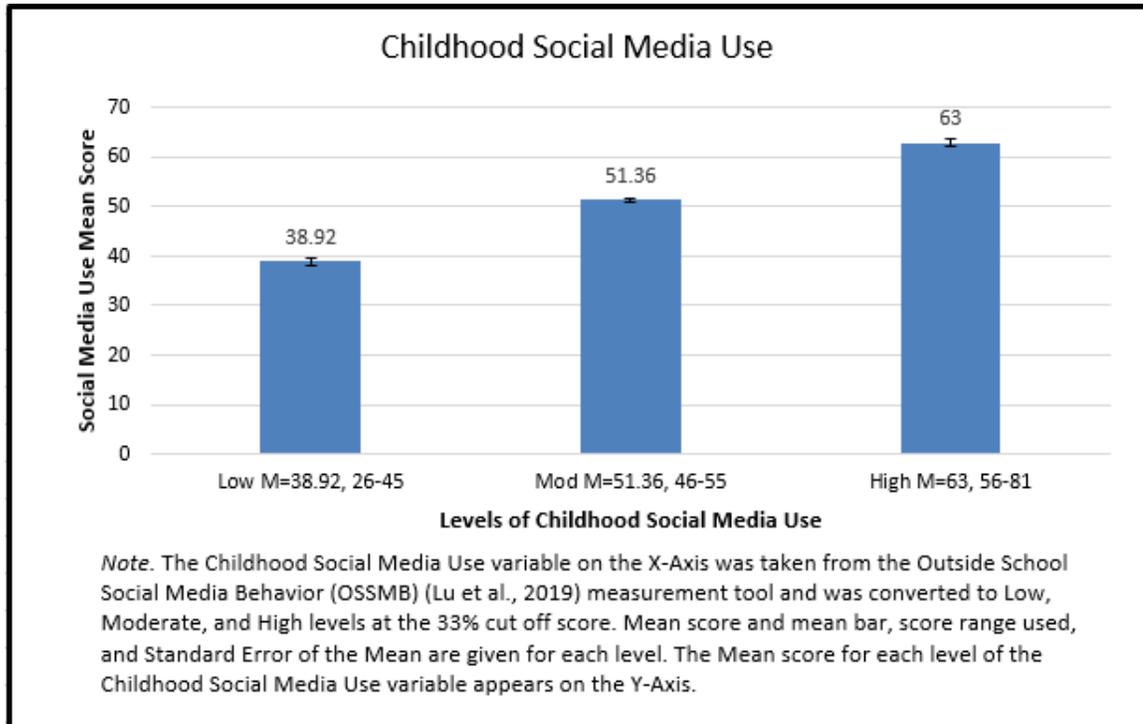
*Frequency Distribution Histogram of the True Level/Amount of Loneliness with Respect to the Number of Total Participants and Their Raw Scores to Show Skewness*



**Figure 12**

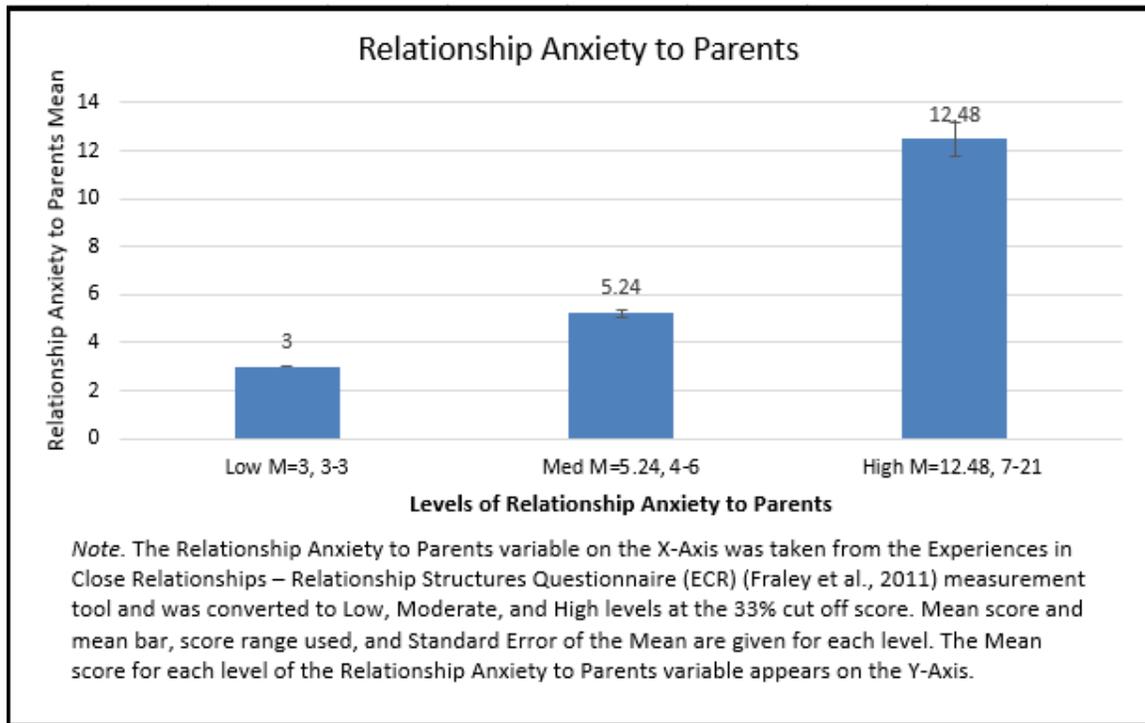
*Childhood Social Media Use as Measured by the Outside School Social Media Behavior*

*(OSSMB) Scale (Lu et al., 2019)*



**Figure 13**

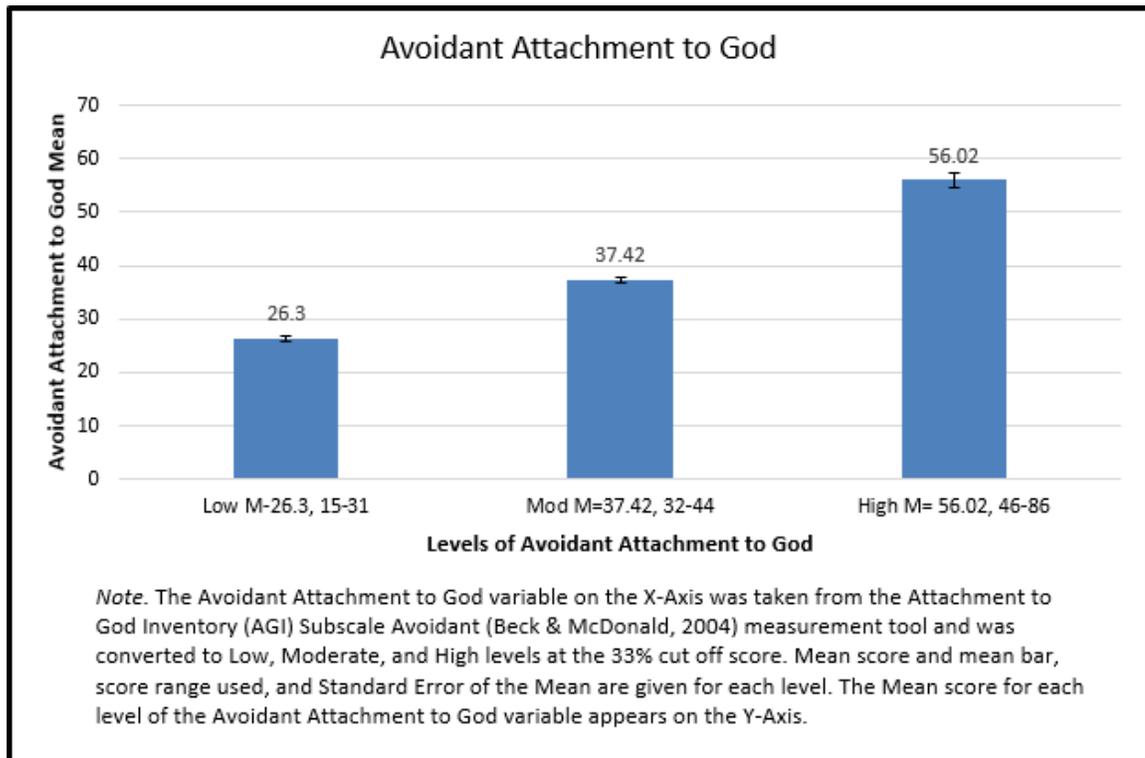
*Relationship Anxiety to Parents as Measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011)*



**Figure 14**

*Avoidant Attachment to God as Measured by the Attachment to God Inventory (AGI)*

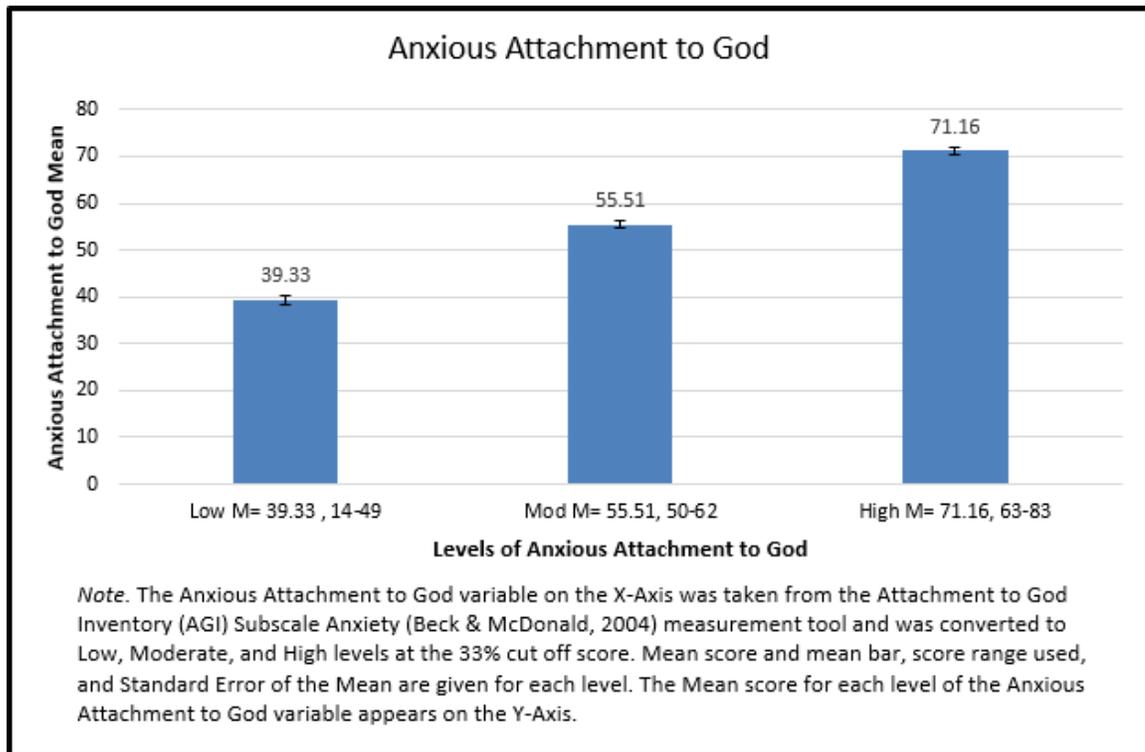
*Subscale Avoidant (Beck & McDonald, 2004)*



**Figure 15**

*Anxious Attachment to God as Measured by the Attachment to God Inventory (AGI)*

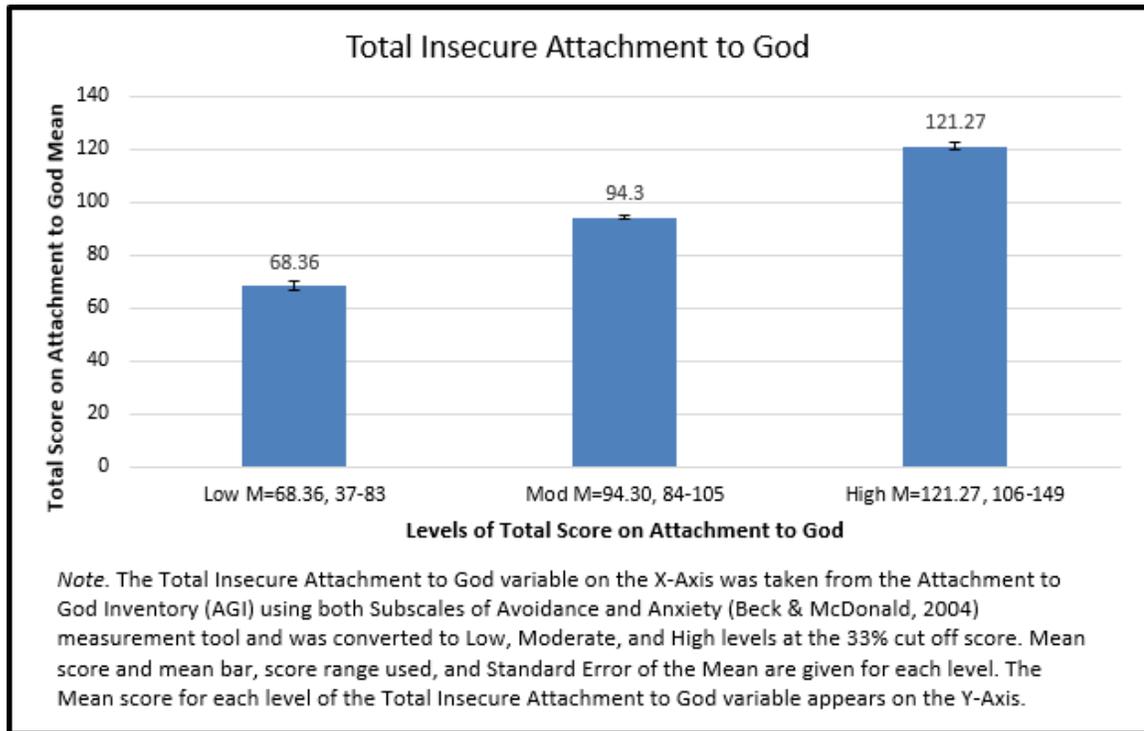
*Subscale Anxiety (Beck & McDonald, 2004)*



**Figure 16**

*Total Insecure Attachment to God as Measured by the Attachment to God Inventory*

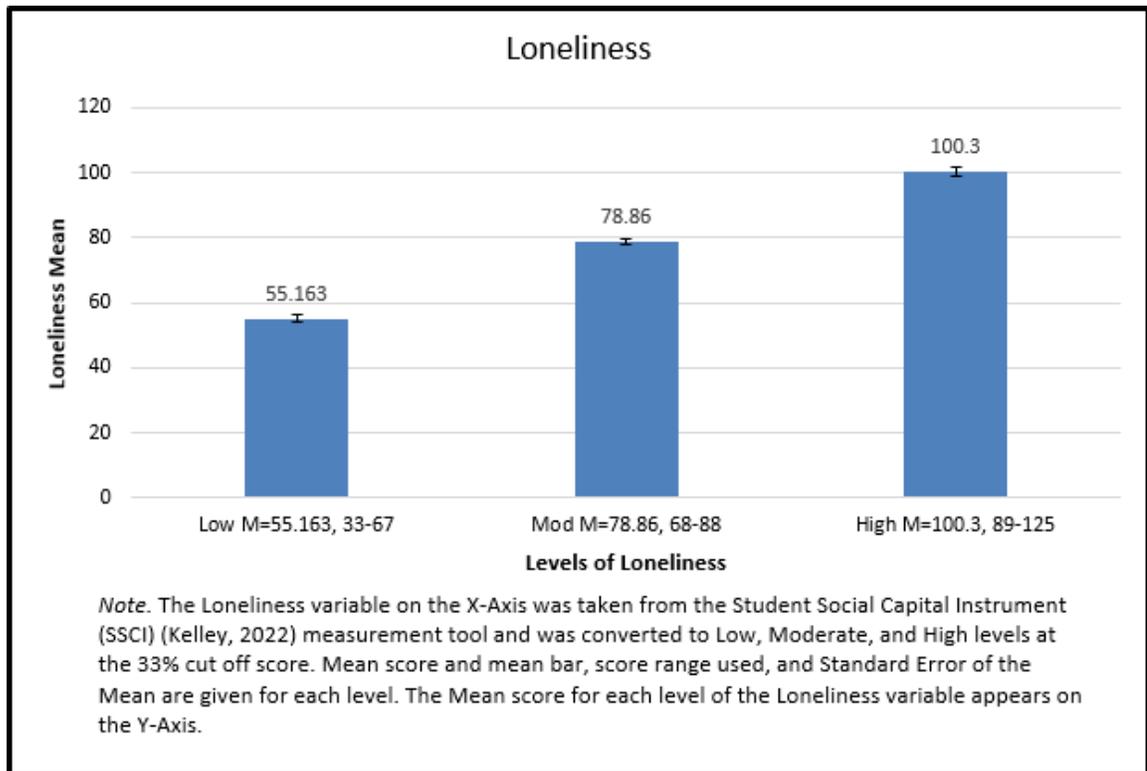
*(AGI) using both Subscales of Avoidance and Anxiety (Beck & McDonald, 2004)*



**Figure 17**

*Loneliness as Measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022;*

*Taber, 2022)*



### **Study Findings**

In this section, the resultant findings of the unimodal, one-way, two-tailed Analysis of Variances (ANOVAs) where everything was between variables that were run on all of the research variables were presented. Only those ANOVAs that were statistically significant at the  $p < .05$  level were reported. A figure is given for each statistically significant ANOVA followed by a descriptive note of the results in the figure. None of the two-way ANOVAs run on these variables were statistically significant at the  $p < .05$  level, so none were herein reported.

**Figure 18**

*One-way ANOVA between Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (DV)*

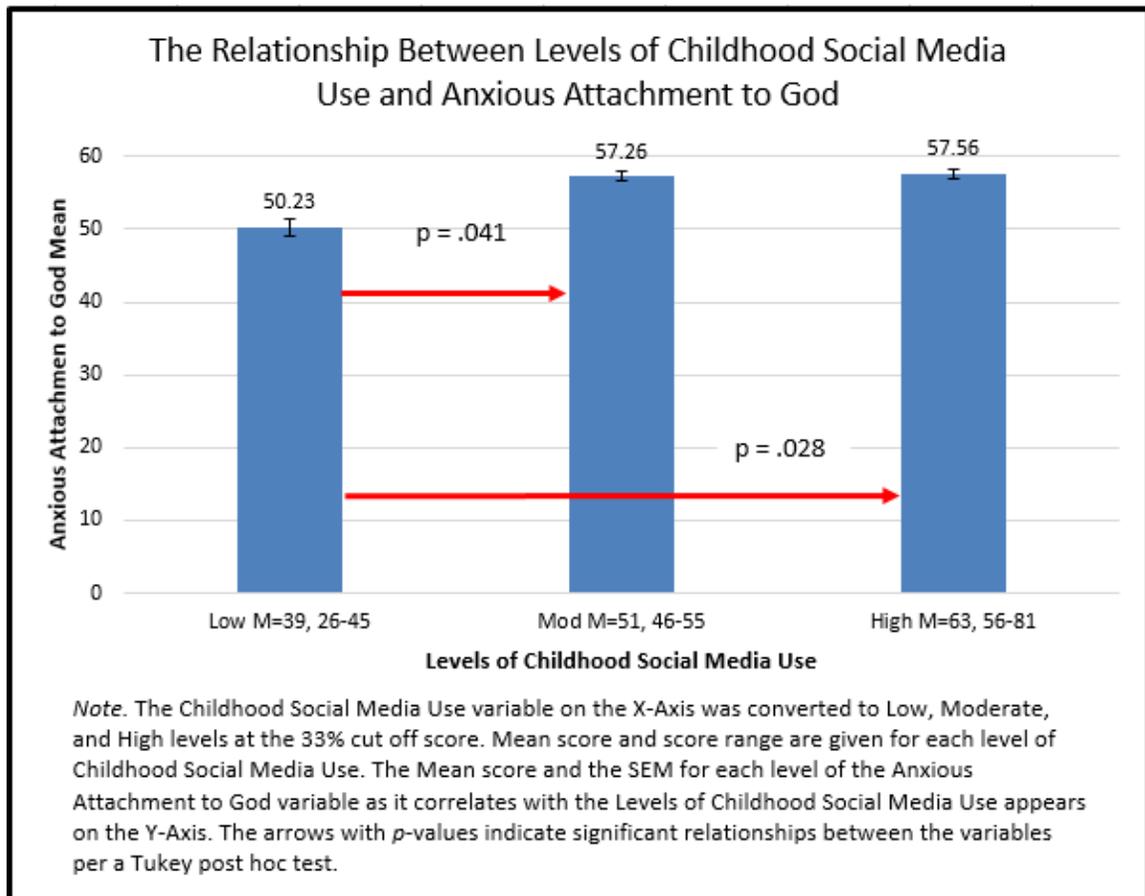


Figure 18 helped to answer Research Question 2, which asked what is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)? Figure 18 supported the prediction of Hypothesis 3, which stated it is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004), and the prediction of Hypothesis 4 which stated it is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with lower levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (see Figures 1 and 3).

Figure 18 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) (IV). The independent variable was split into three different levels of the OSSMB: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent

variable was the students' total raw score on the Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004). See Figures 12 and 15 in this paper for the mean, score range, and standard error of the mean for each of the three groups of these variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 0.216, p = .806$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 4.301, p = .015$ . The  $n^2 = .056$  indicated that approximately 5% of the variation in Anxious Attachment to God level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/Mod ( $p = .041$ ) and Low/High ( $p = .028$ ) groups were statistically significantly more anxiously attached to God than the Mod/High group as the reported level of childhood social media use increased. There was no statistically significant difference between the Mod/High grouping ( $p = .994$ ) (see Figure 18). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p = .006$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Childhood

Social Media Use by the participant related to higher levels of Anxious Attachment to God as a young adult.

**Figure 19**

*One-way ANOVA between Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) (IV) and Total Scores on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV)*

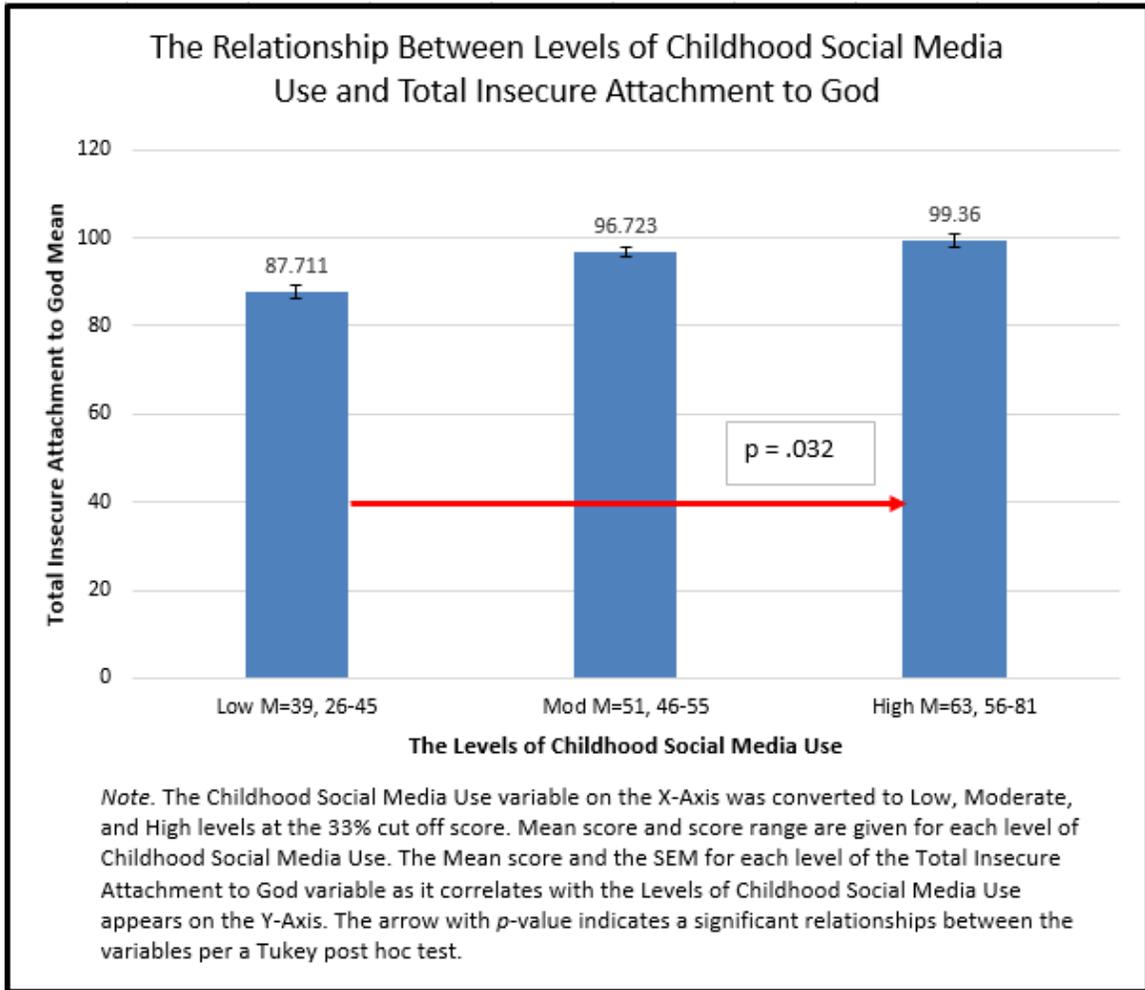


Figure 19 helped to answer Research Question 2, which asked what is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)? Figure xxx supported the prediction of Hypothesis 3, which stated it is hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004), and the prediction of Hypothesis 4 which stated it is hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with lower levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (see Figures 1 and 3).

Figure 19 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) (IV). The independent variable was split into three different levels of the OSSMB: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent

variable was the students' total raw score on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004). See Figures 12 and 16 in this paper for the mean and standard error of the mean for each of the three groups of these variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 0.220, p = .803$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 3.558, p = .031$ . The  $n^2 = .046$  indicated that approximately 4% of the variation in total insecure attachment to God was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p = .032$ ) group was statistically significantly more insecurely attached to God than the other pairings as the reported level of childhood social media use increased. There was no statistically significant difference between the Mod/High grouping ( $p = .841$ ) or the Mod/Low grouping ( $p = .132$ ) (see Figure 19). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p = .005$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an

increase of Childhood Social Media Use by the participant related to higher levels of Total Insecure Attachment to God as a young adult.

**Figure 20**

*One-way ANOVA between Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (Fraley et al., 2011) (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (DV)*

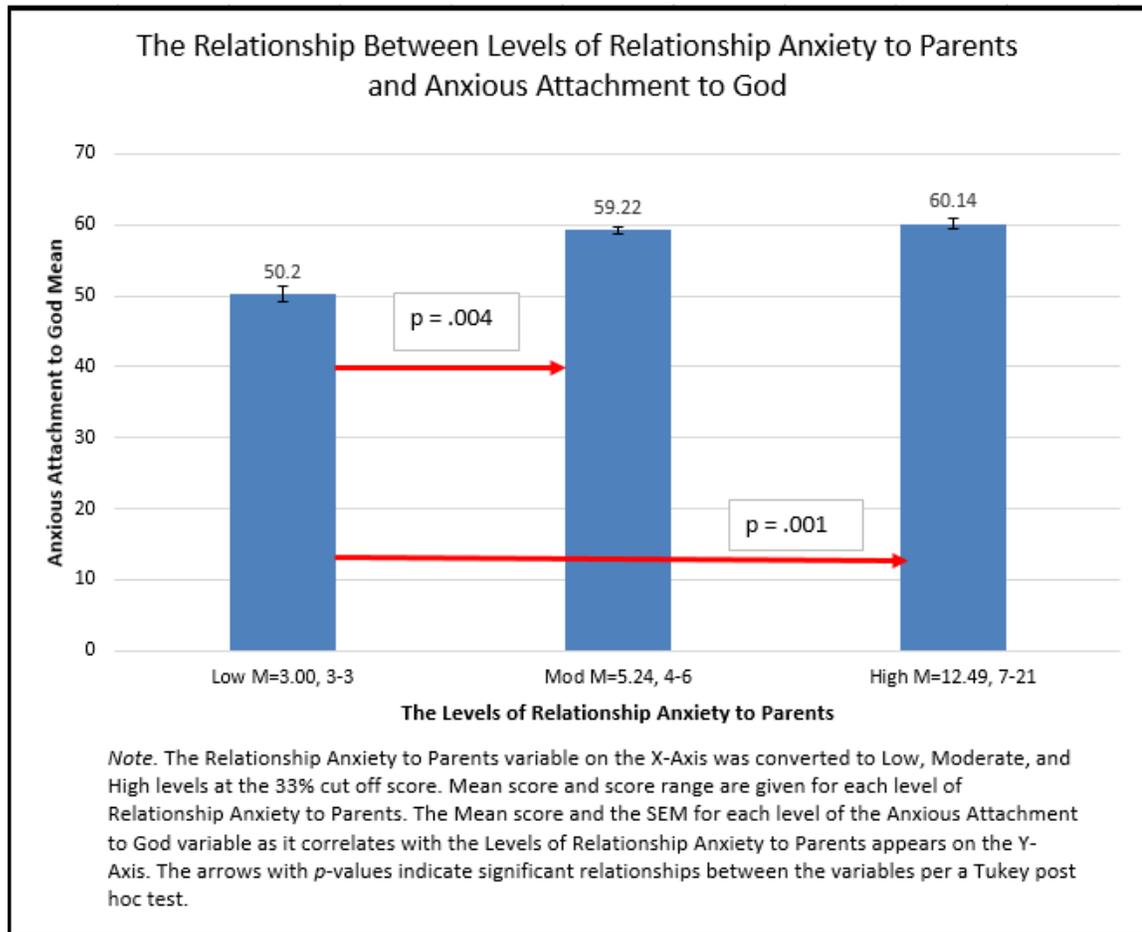


Figure 20 helped to answer Research Question 4, which asked what is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)? Figure 20 supported the prediction of Hypothesis 7, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (see Figures 1 and 3).

Figure 20 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) (IV). The independent variable was split into three different levels of the ECR subcategory Relationship Anxiety to Parents: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Attachment to God Inventory (AGI) (Beck & McDonald,

2004). See Figures 13 and 15 in this paper for the mean and standard error of the mean for each of the three groups of these variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 0.104, p = .901$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 8.742, p < .001$ . The  $n^2 = .107$  indicated that approximately 10% of the variation in anxious attachment to God was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/Mod ( $p = .004$ ) and Low/High ( $p = .001$ ) groups were statistically significantly more anxiously attached to God than the Mod/High group as the anxious relationship level to parents increased. There was no statistically significant difference between the Mod/High grouping ( $p = .956$ ) (see Figure 20). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p = .008$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Relationship Anxiety to Parents by the participant related to higher levels of Anxious Attachment to God as a young adult.

**Figure 21**

*One-way ANOVA between Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (Fraley et al., 2011) (IV) and Total Scores on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV)*

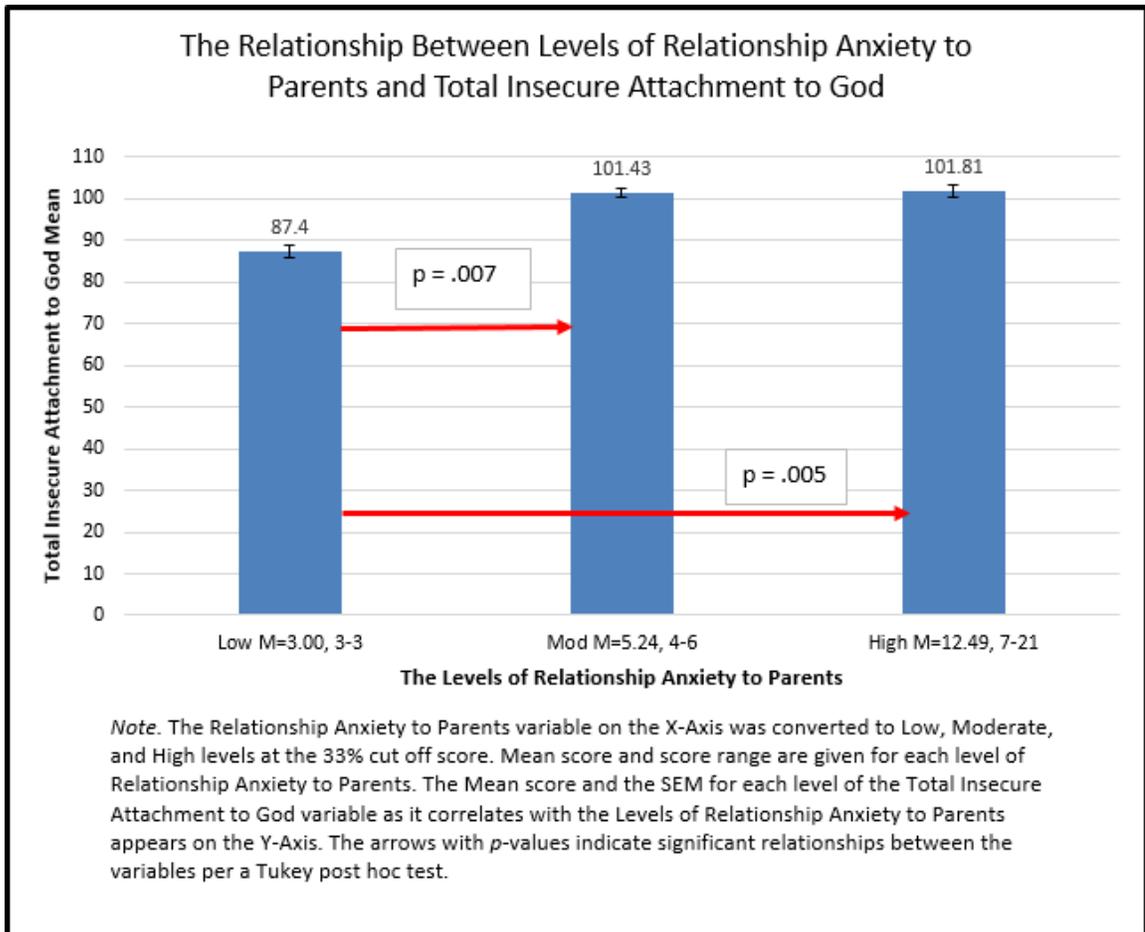


Figure 21 helped to answer Research Question 4, which asked what is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)? Figure 21 supported the prediction of Hypothesis 7, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (see Figures 1 and 3).

Figure 21 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) (IV). The independent variable was split into three different levels of the ECR subcategory Relationship Anxiety to Parents: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Attachment to God Inventory (AGI) (Beck & McDonald,

2004). See Figures 13 and 16 in this paper for the mean and standard error of the mean for each of the three groups of these variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 1.122, p = .328$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 7.392, p = .001$ . The  $\eta^2 = .092$  indicated that approximately 9% of the variation in insecure attachment to God was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/Mod ( $p = .007$ ) and Low/High ( $p = .005$ ) groups were statistically significantly more insecurely attached to God than the Mod/High group as the anxious relationship level to parents increased. There was no statistically significant difference between the Mod/High grouping ( $p = .997$ ) (see Figure 21). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p = .012$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Relationship Anxiety to Parents by the participant related to higher levels of Total Insecure Attachment to God as a young adult.

**Figure 22**

*One-way ANOVA between Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (Fraley et al., 2011) (IV) and Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (DV)*

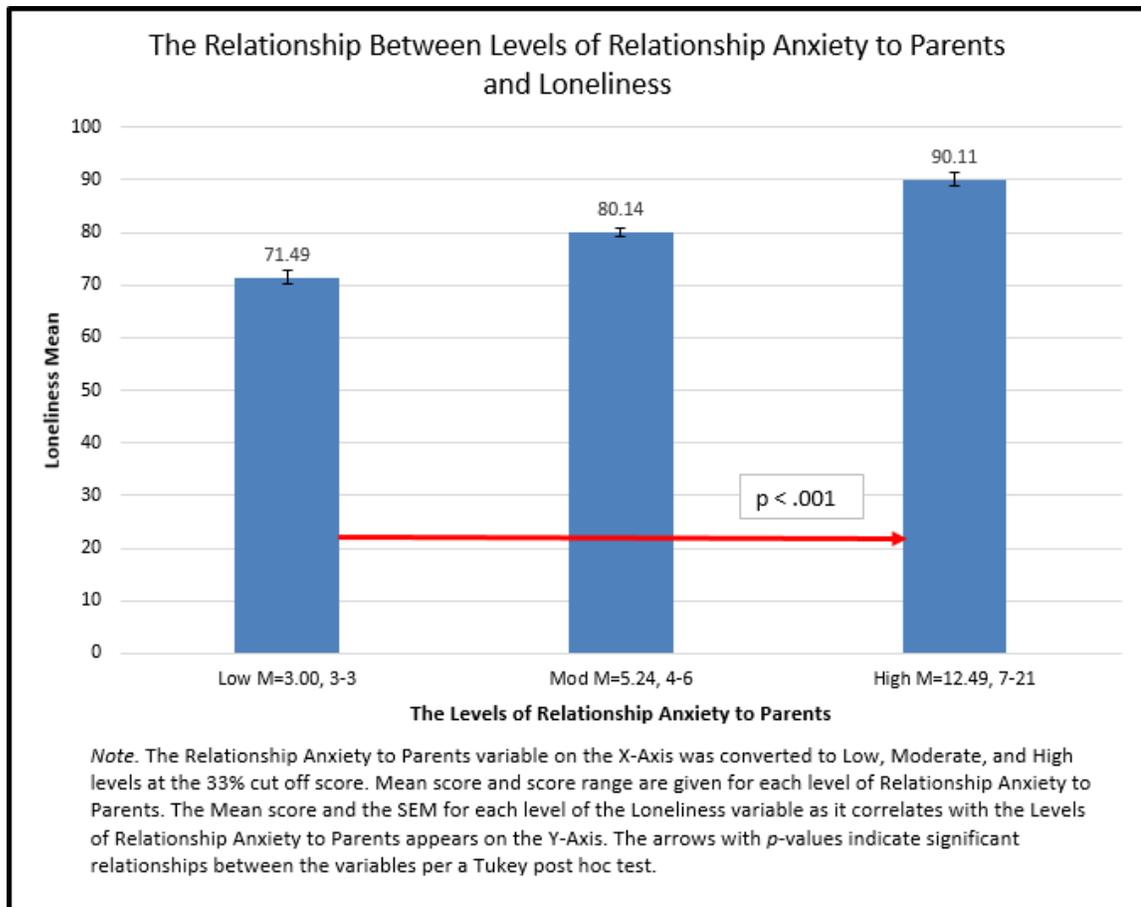


Figure 22 helped to answer Research Question 6, which asked what is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? Figure 22 supported the prediction of Hypothesis 8, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

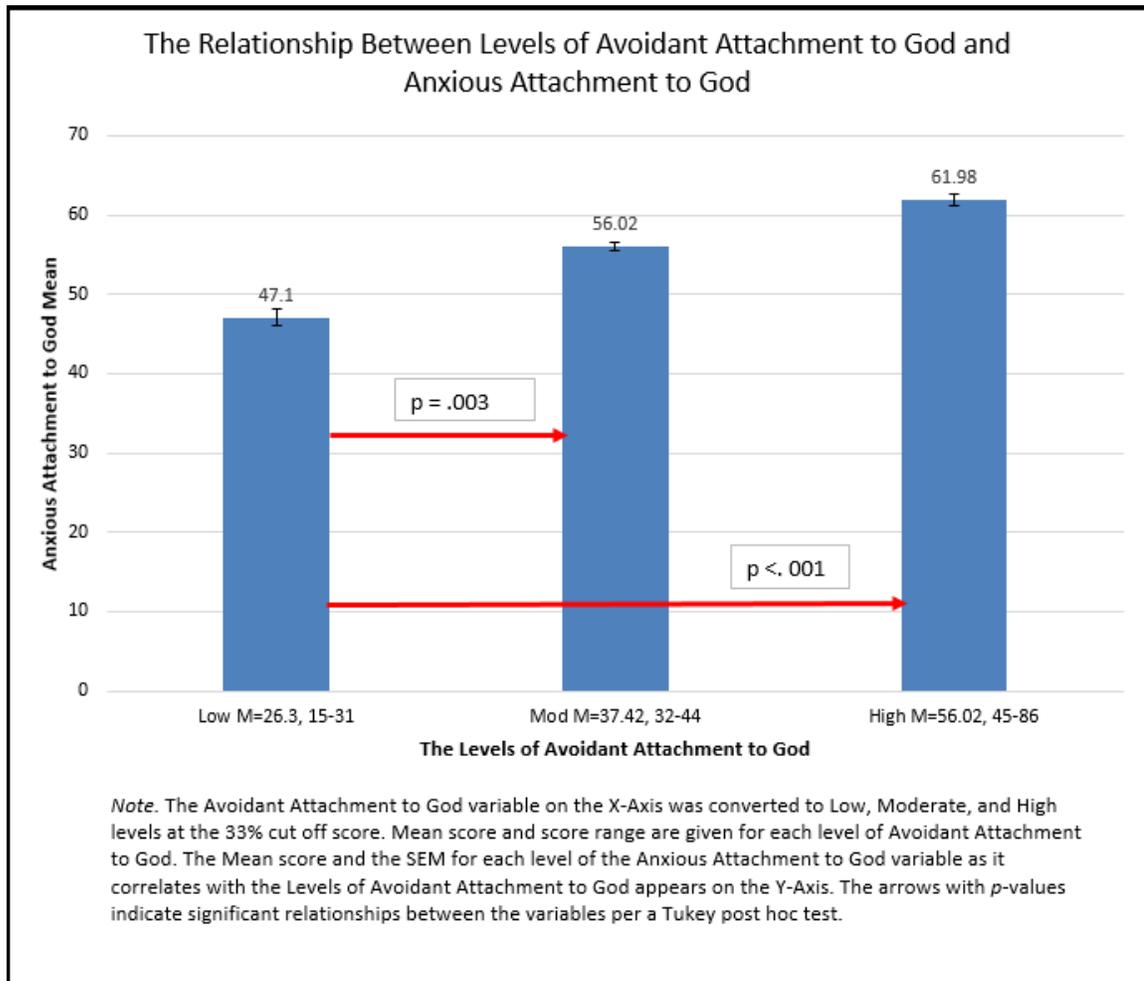
Figure 22 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Student Social Capital Instrument (SSCI) (DV) and students' scores made into a categorical variable on the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) (IV). The independent variable was split into three different levels of the ECR subcategory Relationship Anxiety to Parents: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022). See Figures 13 and 17 in this paper for the mean and standard error of the mean for each of the three

groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 2.860, p = .060$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 12.381, p < .001$ . The  $n^2 = .145$  indicated that approximately 14% of the variation in loneliness level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High  $p < .001$  group was statistically significantly more Lonely than the other pairings as the anxious relationship level to parents increased. There was no statistically significant difference between the Mod/High grouping ( $p = .062$ ) or the Mod/Low grouping ( $p = .061$ ) (see Figure 22). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Relationship Anxiety to Parents by the participant related to higher levels perceived Loneliness as a young adult.

**Figure 23**

*One-way ANOVA between Attachment to God Inventory (AGI) Subscale Avoidance (Beck & McDonald, 2004) (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (DV)*



The above analysis was not related to any Research Question or Hypothesis developed for this research study (see Figure 23). It came about through the data analysis process, and it showed credibility for this researcher's rationale to divide the Attachment To God variable into two subscales of Avoidance and Anxiety because it proved significant. Figure 23 refers to a unimodal, One-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' total scores on the Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Attachment to God Inventory (AGI) Subscale Avoidance (Beck & McDonald, 2004) (IV). The independent variable was split into three different levels of the AGI Subscale Avoidance: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004). See Figures 14 and 15 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 1.062, p = .349$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 15.362, p < .001$ . The  $n^2 = .174$  indicated that approximately 17% of the variation in the anxious attachment to God level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and

the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group and the Low/Mod ( $p = .003$ ) group were statistically significantly more anxiously attached to God than the Mod/High group as the insecure avoidant attachment level to God increased. There was no statistically significant difference between the Mod/High grouping ( $p = .071$ ) (see Figure 23). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Avoidant Attachment to God by the participant related to higher levels of Anxious Attachment to God in the young adult.

**Figure 24**

*One-way ANOVA between Attachment to God Inventory (AGI) Subscale Avoidant (Beck & McDonald, 2004) (IV) and Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (DV)*

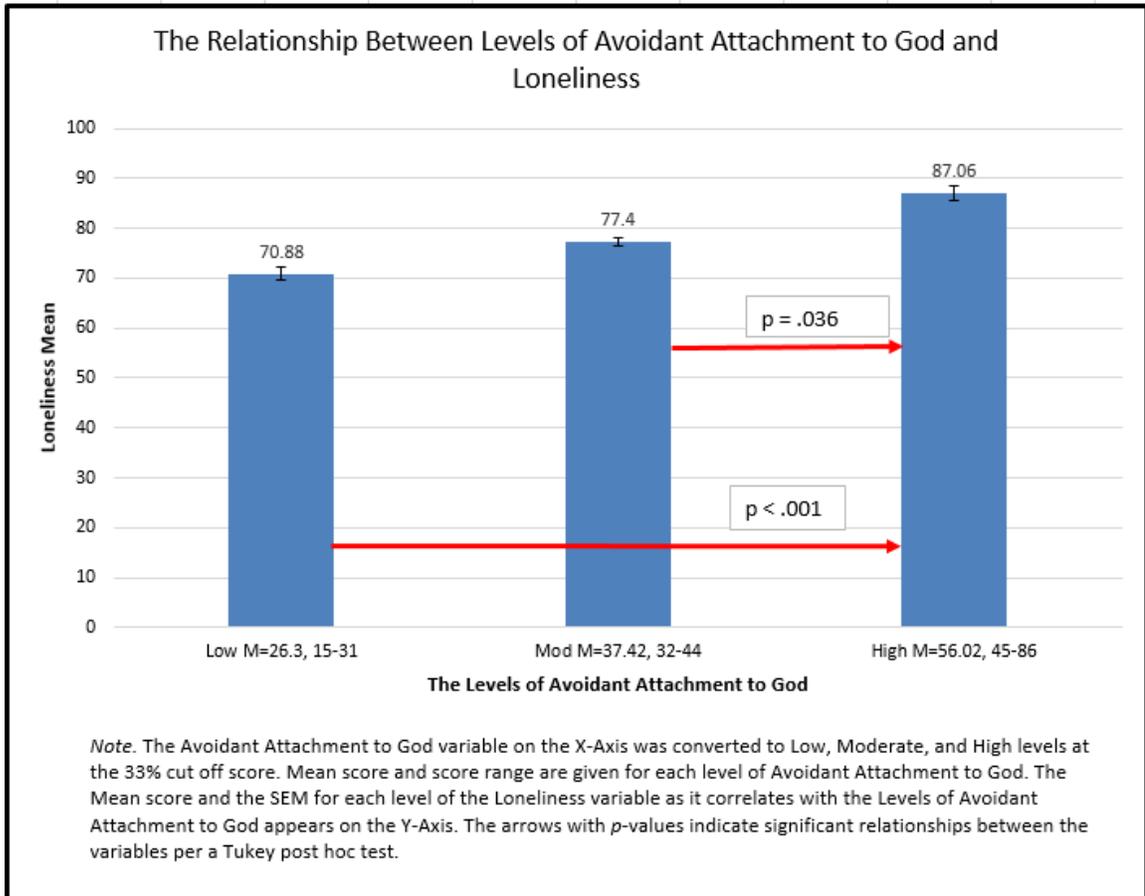


Figure 24 helped to answer Research Question 5, which asked what is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI)? Figure 24 supported the prediction of Hypothesis 9, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

Figure 24 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (DV) and students' scores made into a categorical variable on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (IV). The independent variable was split into three different levels of the AGI subcategory Avoidant Attachment to God: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022). See Figures 14 and Figure 17 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 1.847, p = .161$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 8.658, p < .001$ . The  $n^2 = .106$  indicated that approximately 10% of the variation in loneliness level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group and the Mod/High ( $p = .036$ ) group were statistically significantly more Lonely than the other pairing as the insecure avoidant attachment level to God increased. There was no statistically significant difference between the Low/Mod grouping ( $p = .204$ ) (see Figure 24). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Avoidant Attachment to God by the participant related to higher levels of perceived Loneliness as a young adult.

**Figure 25**

*One-way ANOVA between Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (IV) and Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents (Fraley et al., 2011) (DV)*

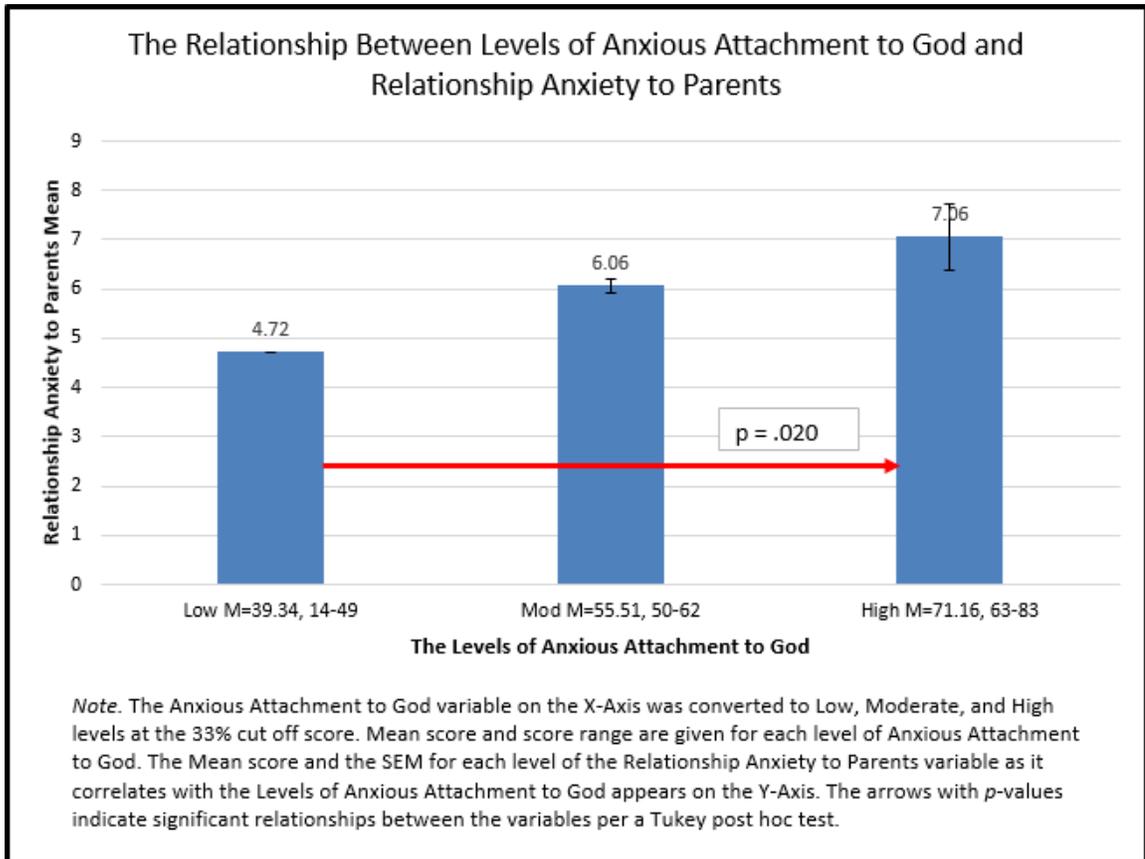


Figure 25 helped to answer Research Question 4, which asked what is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)? Figure 25 supported the prediction of Hypothesis 7, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with higher levels of insecure spiritual attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (see Figures 1 and 3).

Figure 25 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) (DV) and students' scores made into a categorical variable on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (IV). The independent variable was split into three different levels of the AGI subcategory Anxious Attachment to God: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Experiences in Close Relationships – Relationship Structures

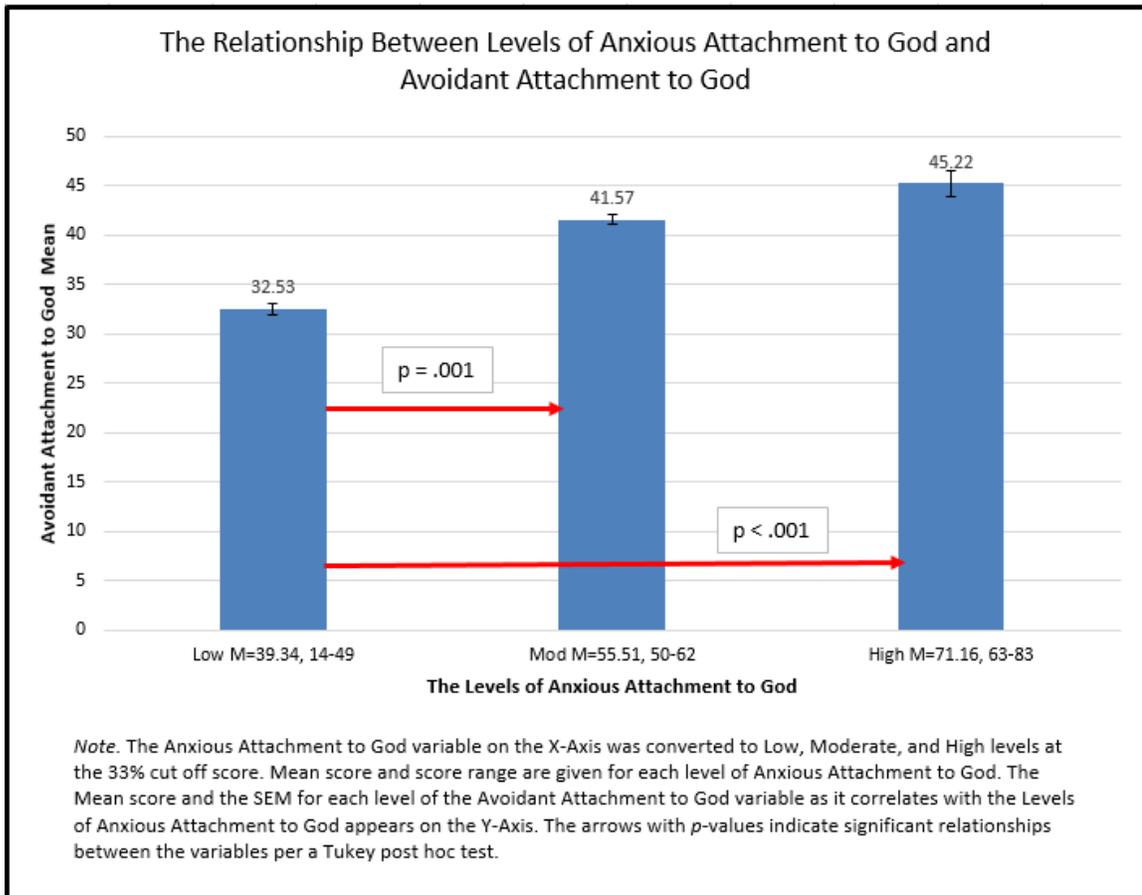
Questionnaire (ECR) subscale Relationship Anxiety to Parents (Fraley et al., 2011). See Figures 15 and 13 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 2.973, p = .054$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2,146) = 3.753, p = .026$ . The  $\eta^2 = .049$  indicated that approximately 4% of the variation in the anxious relationship to the parent figure was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p = .020$ ) group was statistically significantly more anxiously related with their parents than the other pairings as the insecure avoidant attachment level to God increased. There was no statistically significant difference between the Mod/High grouping ( $p = .500$ ) or the Mod/Low grouping ( $p = .272$ ) (see Figure 25). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p = .008$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an

increase of Anxious Attachment to God by the participant related to higher levels of Relationship Anxiety to Parents as a young adult.

**Figure 26**

*One-way ANOVA between Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (IV) and Attachment to God Inventory (AGI) Subscale Avoidance (Beck & McDonald, 2004) (DV)*



The above analysis was not related to any Research Question or Hypothesis developed for this research study (see Figure 26). It came about through the data analysis process, and it showed credibility for this researcher's rationale to divide the Attachment To God variable into two subscales of Avoidance and Anxiety because it proved significant. Figure 26 refers to a unimodal, One-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' total scores on the Attachment to God Inventory (AGI) Subscale Avoidance (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (IV). The independent variable was split into three different levels of the AGI Subscale Anxiety: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Attachment to God Inventory (AGI) Subscale Avoidance (Beck & McDonald, 2004). See Figures 15 and 14 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 2.162, p = .119$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 13.973, p < .001$ . The  $n^2 = .161$  indicated that approximately 16% of the variation in the avoidant attachment to God level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and

the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group and the Low/Mod ( $p = .001$ ) group were statistically significantly more Avoidantly Attached to God than the other pairing as the level of anxious attachment to God increased. There was no statistically significant difference between the Mod/High grouping ( $p = .330$ ) (see Figure 26). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Anxious Attachment to God by the participant related to higher levels of Avoidant Attachment to God in the young adult.

**Figure 27**

*One-way ANOVA between Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (IV) and Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (DV)*

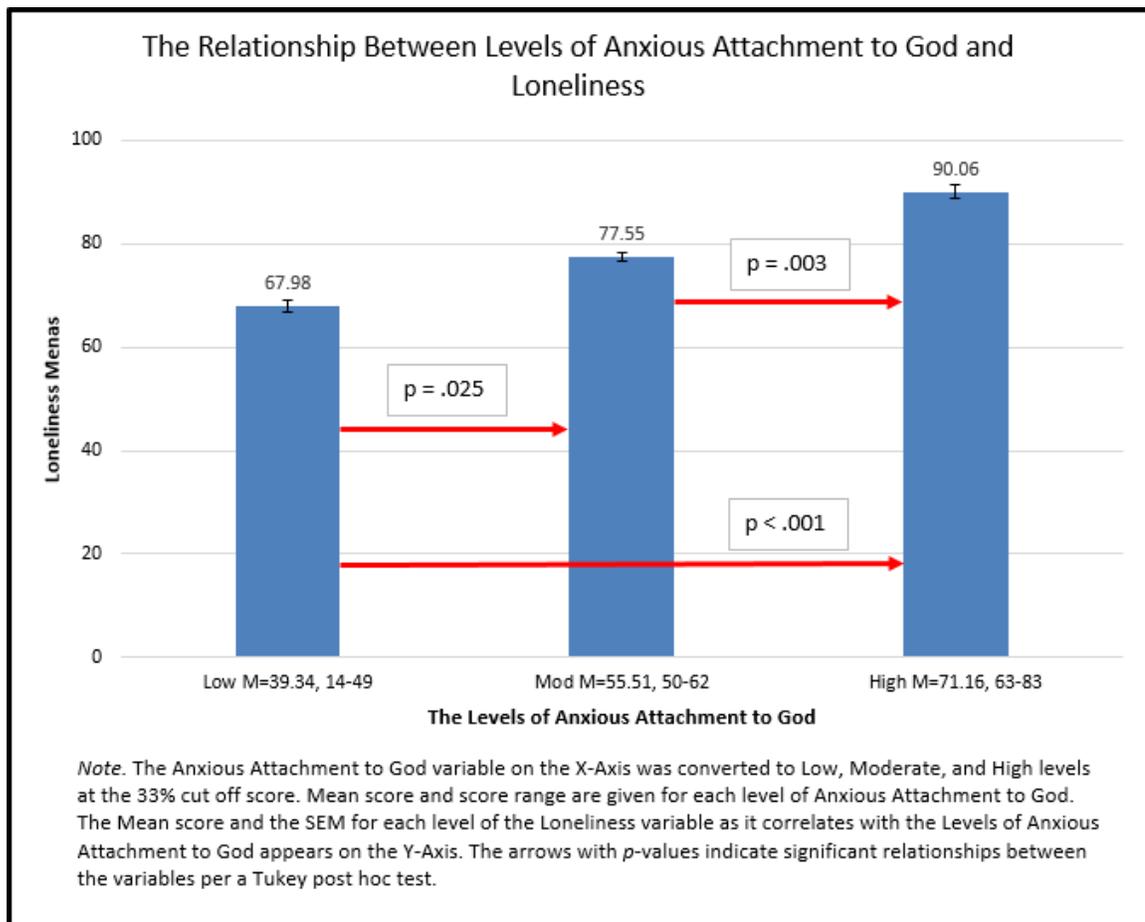


Figure 27 helped to answer Research Question 5, which asked what is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? Figure 27 supported the prediction of Hypothesis 9, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

Figure 27 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (DV) and students' scores made into a categorical variable on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (IV). The independent variable was split into three different levels of the AGI subcategory Anxious Attachment to God: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022). See Figures 15 and 17 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 0.883, p = .416$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 18.950, p < .001$ . The  $\eta^2 = .206$  indicated that approximately 20% of the variation in loneliness level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group, the Mod/High ( $p < .003$ ) group, and the Low/Mod ( $p < .025$ ) group were more statistically significantly Lonely as the level of anxious attachment to God increased (see Figure 27). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Anxious Attachment to God by the participant related to higher levels perceived Loneliness as a young adult.

**Figure 28**

*One-way ANOVA between Total Score on Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (IV) and Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (DV)*

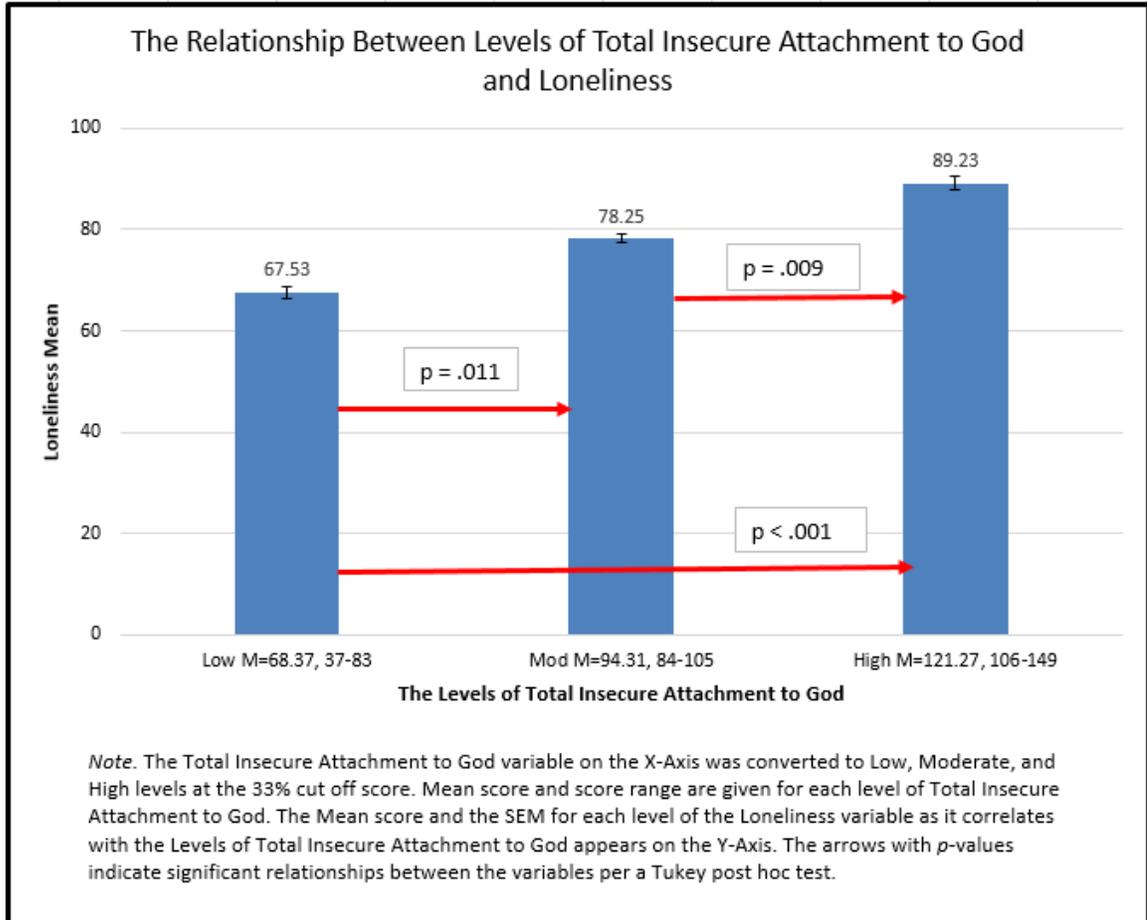


Figure 28 helped to answer Research Question 5, which asked what is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? Figure 28 supported the prediction of Hypothesis 9, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

Figure 28 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (DV) and students' scores made into a categorical variable on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (IV). The independent variable was split into three different levels of the AGI Total Scores: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022). See Figures 16 and 17 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene F*(2, 146) = 0.322, *p* = .725] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 17.014, p < .001$ . The  $\eta^2 = .189$  indicated that approximately 19% of the variation in loneliness level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group, the Mod/High ( $p < .009$ ) group, and the Low/Mod ( $p < .011$ ) group were statistically significantly more Lonely as the level of insecure attachment to God overall increased (see Figure 28). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of Total Insecure Attachment to God by the participant related to higher levels perceived Loneliness as a young adult.

**Figure 29**

*One-way ANOVA between Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV) and Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) Subscale Relationship Anxiety to Parents (DV)*

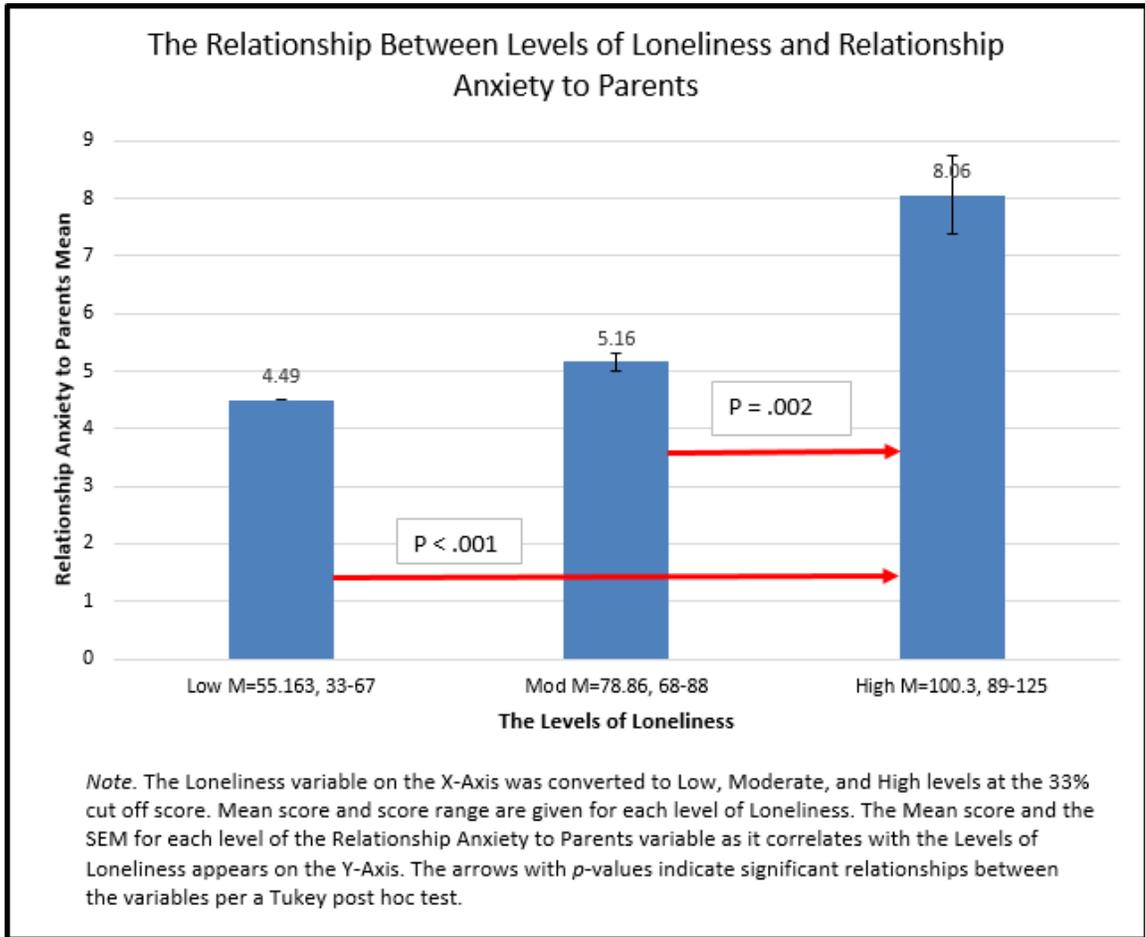


Figure 29 helped to answer Research Question 6, which asked what is the relationship between the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? Figure 29 supported the prediction of Hypothesis 8, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

Figure 29 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011) (DV) and students' scores made into a categorical variable on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV). The independent variable was split into three different levels of the SSCI: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) Subscale Relationship Anxiety to Parents. See Figures 17 and 13 in this paper for the

mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was significant [*Levene*  $F(2, 146) = 17.062, p < .001$ ] invalidating the ANOVA assumption that variance was equal across all groups. This invalidation can be attributed to the participant score base having 50% of the scores being a 3 and skewing the normalcy to the left.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 10.308, p < .001$ . The  $n^2 = .124$  indicated that approximately 12% of the variation in the Anxious Relationship to their Parents level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group and the Mod/High ( $p = .002$ ) group were statistically significantly more Anxiously Related to their Parents than the other pairing as their Loneliness level increased. There was no statistically significant difference between the Low/Mod grouping ( $p = .704$ ) (see Figure 29). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an

increase of self-reported perceived Loneliness by the participant related to higher levels perceived Relationship Anxiety to Parents as a young adult.

**Figure 30**

*One-way ANOVA between Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV) and Attachment to God Inventory (AGI) Subscale Avoidance (Beck & McDonald, 2004) (DV)*

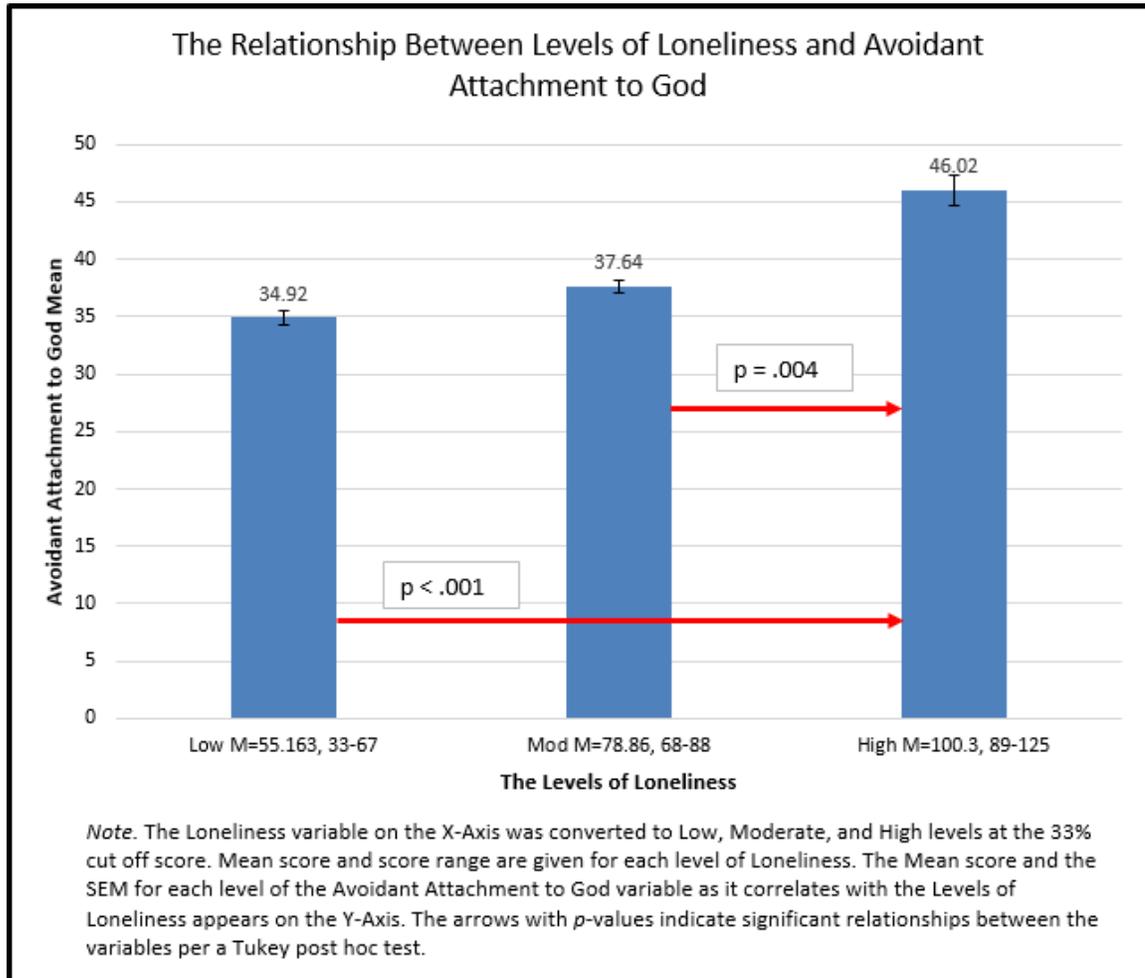


Figure 30 helped to answer Research Question 5, which asked what is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? Figure 30 supported the prediction of Hypothesis 9, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

Figure 30 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Attachment to God Inventory (AGI) subscale Avoidance (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV). The independent variable was split into three different levels of the SSCI: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Attachment to God Inventory (AGI) subscale Avoidance (Beck & McDonald, 2004). See Figures 17 and 14 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 0.976, p = .379$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 10.136, p < .001$ . The  $n^2 = .122$  indicated that approximately 12% of the variation in the insecure avoidant attachment to God level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group and the Mod/High ( $p = .004$ ) group were statistically significantly more Avoidantly Attached to God than the other pairing as their Loneliness level increased. There was no statistically significant difference between the Low/Mod grouping ( $p = .542$ ) (see Figure 30). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of perceived Loneliness by the participant related to higher levels of Avoidant Attachment to God as a young adult.

**Figure 31**

*One-way ANOVA between Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV) and Attachment to God Inventory (AGI) Subscale Anxiety (Beck & McDonald, 2004) (DV)*

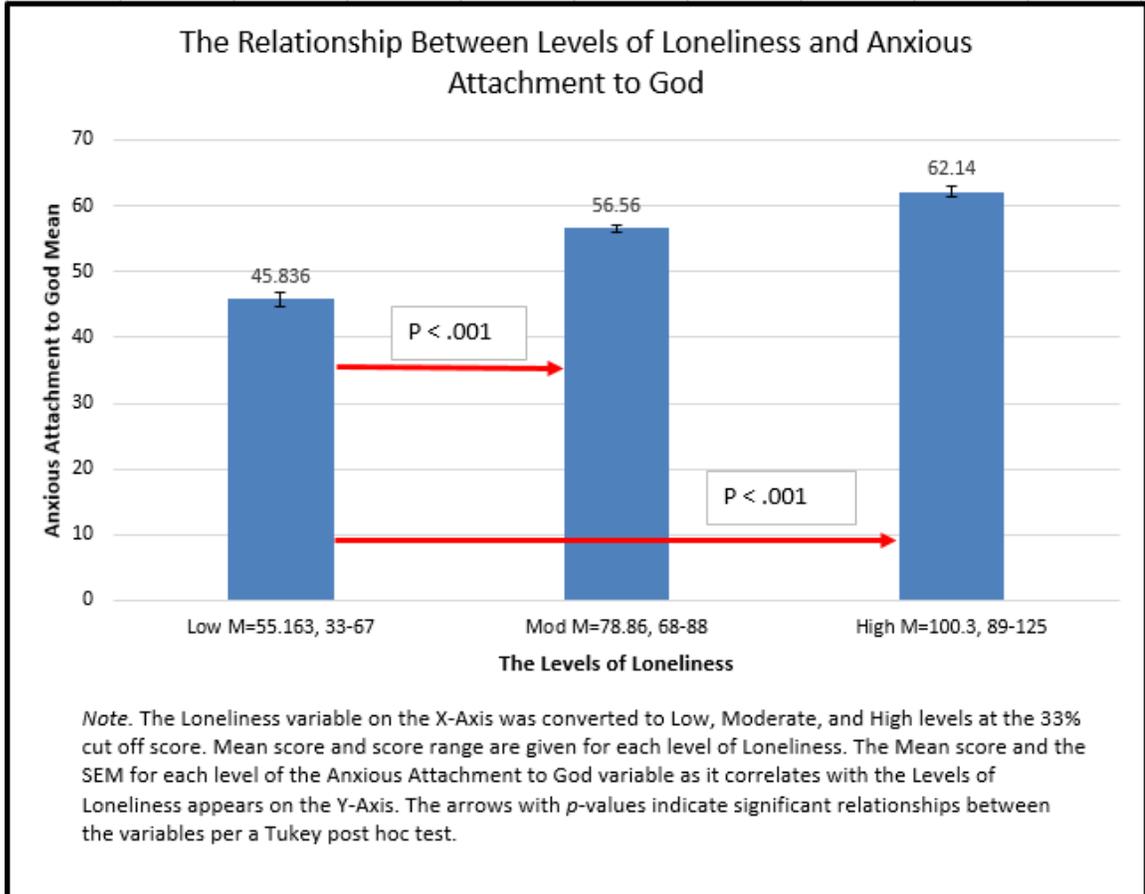


Figure 31 helped to answer Research Question 5, which asked what is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? Figure 31 supported the prediction of Hypothesis 9, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

Figure 31 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' scores on the Attachment to God Inventory (AGI) subscale Anxiety (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV). The independent variable was split into three different levels of the SSCI: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Attachment to God Inventory (AGI) subscale Anxiety (Beck & McDonald, 2004). See Figures 17 and Figure 15 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 0.387, p = .680$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 20.102, p < .001$ . The  $n^2 = .216$  indicated that approximately 21% of the variation in the insecure anxious attachment to God level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group and the Low/Mod ( $p < .001$ ) group were statistically significantly more Anxiously Attached to God than the other pairing as their Loneliness level increased. There was no statistically significant difference between the Mod/High grouping ( $p = .084$ ) (see Figure 31). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of perceived Loneliness by the participant related to higher levels of Anxious Attachment to God as a young adult.

**Figure 32**

*One-way ANOVA between Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV) and Total Score on Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV)*

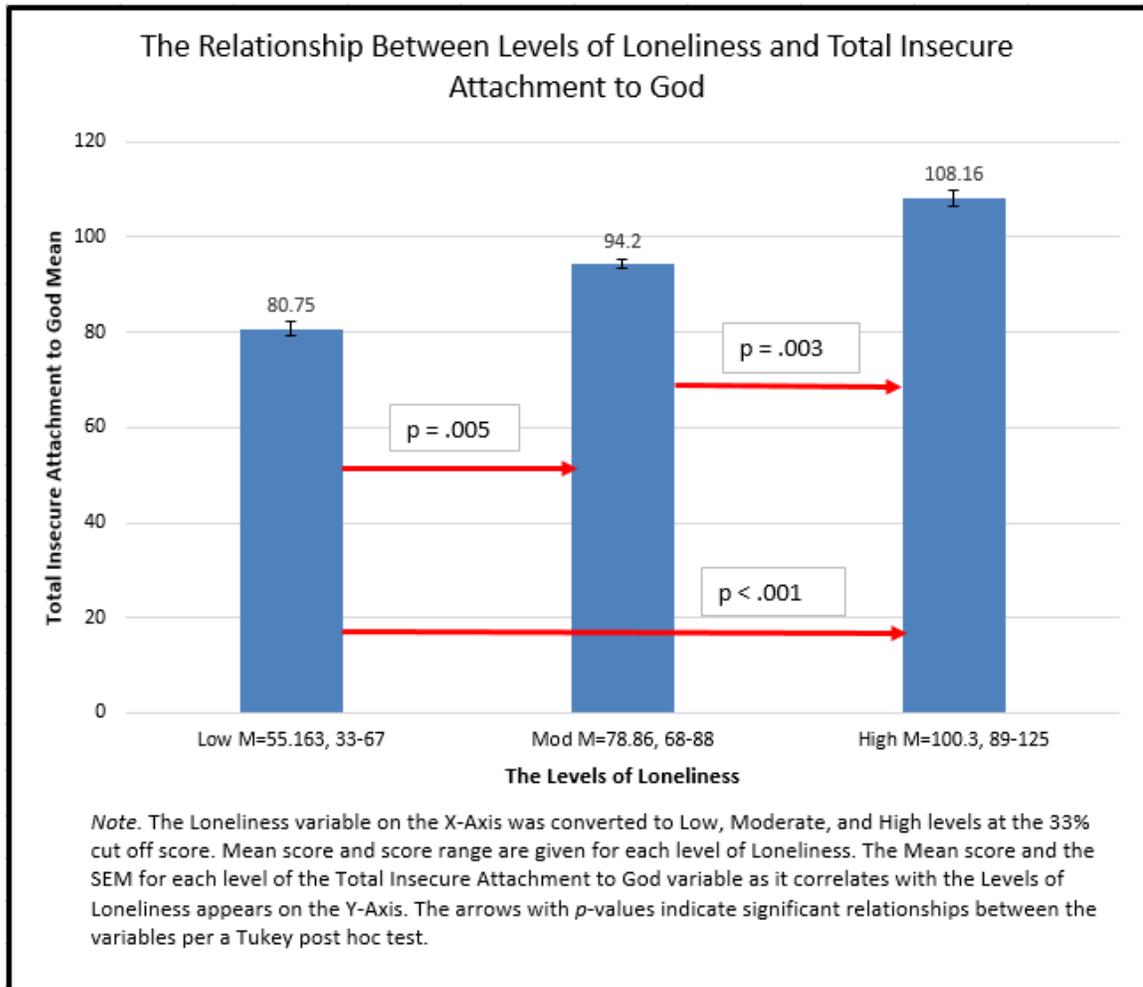


Figure 32 helped to answer Research Question 5, which asked what is the relationship between the spiritual attachment style these young adults aged 18-24 now present with as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? Figure 32 supported the prediction of Hypothesis 9, which stated it is hypothesized young adults aged 18-24 presenting with increased levels of insecure secular attachment styles to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) will also present with a higher self-reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (see Figures 1 and 3).

Figure 32 refers to a unimodal, one-way, two-tailed Analysis of Variance (ANOVA) where everything was between variables that was used to examine the relationship between students' total scores on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004) (DV) and students' scores made into a categorical variable on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022) (IV). The independent variable was split into three different levels of the SSCI: 1) Low 1%-33.3%; 2) Medium 33.4%-66.6%; and 3) High 66.7%-100%. The continuous dependent variable was the students' total raw score on the Attachment to God Inventory (AGI) (Beck & McDonald, 2004). See Figures 17 and 16 in this paper for the mean and standard error of the mean for each of the three groups of variables. An alpha significance level of .05 was used for all analyses. The Levene test for homogeneity of variance was not significant [*Levene*  $F(2, 146) = 0.156, p = .856$ ] validating the ANOVA assumption that variance was equal across all groups.

There was a statistically significant difference between the three groups as demonstrated by a one-way ANOVA,  $F(2, 146) = 21.416, p < .001$ . The  $n^2 = .227$  indicated that approximately 23% of the variation in the insecure attachment to God level was attributable to differences between the three groups. This resulted in the rejection of the Null Hypothesis that there was no significant relationship between the variables and the population Means were equal. A Tukey post hoc test showed that the Low/High ( $p < .001$ ) group, the Mod/High ( $p = .003$ ) group, and the Low/Mod ( $p = .005$ ) group were statistically significantly more insecurely attached to God as their level of Loneliness increased (see Figure 32). To note, in addition to their being statistically significant differences discovered through Analysis of Variance and Tukey Post hoc tests between these variables, these results were further supported by a simple correlational analysis of the raw scores with a Pearson  $p$ -value of  $p < .001$ . This demonstrated that even without the Low, Moderate, and High levels being artificially created within this study, the bivariate correlation of the raw scores of these variables showed a meaningful correlation. These statistical findings can be explained by an increase of perceived Loneliness by the participant related to higher levels of Total Insecure Attachment to God as a young adult.

### Summary

As demonstrated in the previous section through figures and explanations, there were many statistically significant relationships between these variables. There was a statistically significant positive relationship between increased Childhood Social Media Use and increased Anxious Attachment to God,  $F(2, 146) = 4.301, p = .015$  (see Figure 18). There was a statistically significant positive relationship between increased

Childhood Social Media Use and increased Total Insecure Attachment to God,  $F(2, 146) = 3.558, p = .031$  (see Figure 19). This validated Hypotheses 3 and 4 which state that increased Childhood Social Media Use levels would be related to increased young adult Insecure Attachment levels (see Figure 3).

There were several result findings in this research study that did not include Childhood Social Media Use. These results showed increased Loneliness was related to increased insecure secular and spiritual attachment (see Figure 29,  $F(2, 146) = 10.308, p < .001$ ; see Figure 30,  $F(2, 146) = 10.136, p < .001$ ; see Figure 31,  $F(2, 146) = 20.102, p < .001$ ; see Figure 32,  $F(2, 146) = 21.416, p < .001$ ; see Figure 3). These results showed increased insecure attachment levels were related to increased loneliness levels (see Figure 22,  $F(2, 146) = 12.381, p < .001$ ; see Figure 24,  $F(2, 146) = 8.658, p < .001$ ; see Figure 27,  $F(2, 146) = 18.950, p < .001$ ; see 28,  $F(2, 146) = 17.014, p < .001$ ). These results were bi-directional with each other and support Hypotheses 8 and 9 which state that as Loneliness increases so too does secular and spiritual insecure attachment in the participant.

One unexpected result from the data analysis of results of this study was how increased Anxious Attachment levels in one of the variables was associated with increased Anxious Attachment levels in another variable (see Figure 20,  $F(2, 146) = 8.742, p < .001$ ; see Figure 25,  $F(2, 146) = 3.753, p = .026$ ; see Figure 3). These bi-directional results support Hypothesis 7 which stated that insecure attachment in secular areas would relate to insecure attachment in spiritual areas. The unexpected result was how the subscales of anxious attachment in the secular variable related significantly with anxious attachment in the spiritual area. This showed a connection between the secular

and the spiritual variables based around the subcategory of anxiety that was not previously anticipated or reported on in previous research studies.

Throughout this research analysis, there were two Research Questions that were analyzed with one-way ANOVAs and did not prove to have significant results at the  $p < .05$  level. There were no statistically significant results found for Research Question 1, which asked what is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the secular attachment style these young adults aged 18-24 now present with as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011)? There were no statistically significant results found for Research Question 3, which asked what is the relationship between previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? These non-significant results were not reported in this paper.

Throughout this research analysis, there were three Research Questions that were analyzed with two-way ANOVAs and did not prove to have significant results at the  $p < .05$  level. There were no statistically significant results found for Research Question 7, which asked what was the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), the secular attachment

style they now have as young adults as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), and a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)? There were no statistically significant results found for Research Question 8, which asked what was the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), the secular attachment style they now have as young adults as measured by the subscales of best friend, parents/care givers, dating or marital partner, and peers on the Experiences in Close Relationships – Relationship Structures Questionnaire (Fraley et al., 2011), and the level of loneliness experienced by these young adults now as measured by the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022)? There were no statistically significant results found for Research Question 9, which asked what was the two-way ANOVA relationship between the level of previous social media usage a young adult aged 18-24 had as a child as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019), a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004), and a young adult’s spiritual attachment style to God as measured by the Attachment to God Inventory (AGI) (Beck & McDonald, 2004)? These non-significant results were not reported in this paper.

Throughout this research analysis, there were four Hypotheses that were analyzed with one-way ANOVAs and did not prove to have significant results at the  $p < .05$  level.

There were no statistically significant results that supported the prediction of Hypotheses 1, which stated it was hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with higher levels of insecure secular attachment styles to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011). There were no statistically significant results that supported the prediction of Hypotheses 2, which stated it was hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a more secure secular attachment style to their best friend, parents/care givers, dating or marital partner, and/or peers as measured by the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR) (Fraley et al., 2011).

There were no statistically significant results that supported the prediction of Hypotheses 5, which stated it was hypothesized a higher amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a higher self-reported sense of loneliness. There were no statistically significant results that supported the prediction of Hypotheses 6, which stated it was hypothesized the lower the amount of past social media usage as a child by current young adults as measured by the Outside School Social Media Behavior (OSSMB) Scale (Lu et al., 2019) will relate to these young adults aged 18-24 presenting with a lower self-

reported sense of loneliness as self-reported on the Student Social Capital Instrument (SSCI) (Fraser, 2022; Taber, 2022). These non-significant results were not reported in this paper.

The results of this research study answered many of the study's Research Questions and demonstrated positive results to back up several of the study's Hypotheses. Even though the desired  $N$  of 2000 was not reached, the achieving of an  $N$  of 149 and using the 33% cut off scores were enough to allow this study to reach power. Considering this study was conducted in the middle of a worldwide pandemic, and it was examining college students, these limitations created a lot of issues getting to the sample size this researcher would have liked. However, even amidst these limitations, this researcher's overarching finding is that the results of this research study demonstrate that it is a potent predictor if children spend High amounts of time using Social Media they will run a greater risk of growing up into young adults suffering from High levels of insecure attachment to God. It can be seen in the results that increased levels of Insecure Attachment to God related to increased levels of Relationship Anxiety to Parents and to Loneliness. Therefore, logically, one can conclude that if this study's  $N$  was around 2000, a stronger  $p$ -value might have been obtained for the relationship between increased levels of Childhood Social Media Use and Relationship Anxiety to Parents and to Loneliness. These relationships came close in this study to the  $p < .05$  significance level, yet they did not meet the desired threshold in this study.

## CHAPTER 5: DISCUSSION

### **Overview**

The main purpose of this study was to conduct a quantitative, cross-sectional, relational research study using descriptive analysis and ANOVAs to examine the relationships between past childhood social media usage patterns and current young adult attachment styles and loneliness levels among young adults aged 18-24. Spiritual attachment style and secular attachment style were both examined in this study. In this chapter, the results of this study will be explained more broadly, explained in relation to the other research out there, the limitations and confounding issues will be explained, and ideas of how this study could benefit future research will be explained. Throughout the course of growing up, children develop attachment styles based upon their rearing and the world around them. Some of these are secure attachments, while others are insecure attachments. This research study examined how a person's attachment style as a young adult, namely looking more closely at the insecure ones of avoidant and anxious attachment both secularly and spiritually, related to that person's childhood social media use levels.

### **Summary of Findings**

The main problem with past research in the area of social media use and attachment was that none of the previous studies found examined this issue from a longitudinal perspective; looking at the relationship from childhood through to adulthood. Another issue of previous studies was no study found examined how a person's spiritual attachment to God related to their past childhood social media use or their current secular attachment style. A third issue in the literature of previous research was that no study

longitudinally examined a person's past social media use and their current loneliness levels. This study hypothesized that as a person's past childhood social media use levels increased, so too would their current young adult insecure attachment levels and loneliness levels. As predicted, this study demonstrated that there was a positive relationship between the level of childhood social media use and the level of insecure attachment as young adults. The main take away from the results of this research study is that there is a significant positive relationship between the amount of childhood social media use a person had and their current anxious attachment level to God, wherein when one shows an increase so too does the other. This can be further elucidated by saying that as childhood social media use increases, a person's secure attachment to God as a young adult, the spiritual side of themselves, decreases. Hence, it can be stated that generations of children are probably destroying their religious attachment to God if they spend too much time on social media.

One note to clarify in these results was that there was a significant positive relationship between the amount of Childhood Social Media Use a person had and their current Total Insecure Attachment to God level. This relationship could be a result of the finding that the Attachment to God Inventory subscale of Anxiety was significant and in turn this relationship could have influenced the Total Insecure Attachment to God level score. So, it can be said that Total Insecure Attachment to God positively related to increased social media use in childhood, yet it would be more specific to go into the subscale and report the significant ANOVA that demonstrated how Anxious Attachment to God positively related to increased Childhood Social Media Use. The only caveat to this concerns the amount that the Avoidant Attachment to God level results could have

added to the Total Insecure Attachment to God significant relationship. Therefore, the significance of both Anxious Attachment to God and Total Insecure Attachment to God were reported in this paper to avoid possibly missing out on a connection that Avoidant Attachment to God might have added to the Total Insecure Attachment to God level to make it significant.

There were several main results this study discovered. First, the results of this current study supported Hypothesis 3 which stated that increased levels of childhood social media use would relate to increased levels of anxious and total insecure spiritual attachment when the child reached young adulthood (see Figures 1 and 3), and in reverse supported Hypothesis 4 which stated that lower levels of childhood social media use related to lower levels of anxious and total insecure spiritual attachment when the child reached young adulthood (see Figures 1 and 3). These results indicated that the amount of social media a child used would most likely increase the insecure nature of their relationship with God when they reached young adulthood. Second, this study demonstrated results backing up Hypotheses 7 which stated that increased levels of insecure secular attachment would relate to increased levels insecure anxious attachment to God and total insecure attachment to God (see Figures 1 and 3). Third, this study demonstrated results backing up Hypothesis 8 which stated that increased levels of insecure secular attachment would relate to increased levels of perceived loneliness (see Figures 1 and 3). These results showed that secular insecure attachment was positively related to loneliness levels and to the level of insecure attachment to God a person experienced. Fourth, these results supported Hypothesis 9 which stated there was a significant relationship between increased levels of avoidant, anxious, and total insecure

attachment to God and increased levels of perceived loneliness (see Figures 1 and 3). Fifth, there was a significant relationship that supported Hypothesis 7 showing how increased levels of avoidant, anxious, and total insecure attachment to God related to increased levels of anxious secular attachment (see Figures 1 and 3). These results demonstrated that as a person's insecure attachment levels to God increased, there was a similar increase seen in secular attachment and in loneliness.

Even though these results did not significantly show this, most likely because of the small sample population, there was enough analysis that nearly met the significance threshold of  $p < .05$  that it can be logically inferred that a larger population of say 2000 could have demonstrated a significant relationship showing how increased levels of childhood social media use related to increased levels of loneliness and increased levels of anxious secular attachment as a young adult. This was further supported by the significant relationship that existed between increased levels of childhood social media use and increased anxious and total insecure attachment to God, and between increased anxious and total insecure attachment to God and increased loneliness and increased secular insecure attachment. The educated logical leap to connect increased childhood social media use and increased loneliness and increased secular insecure attachment is not very large.

Unanticipated interesting relationships were discovered between how increased secular anxiety related to increased levels of spiritual anxiety. This is important because the vast majority of research studies only examine one side of this attachment coin, the secular side, and these results show a positive relationship between secular and spiritual attachment that is missing from most studies. Hence, only one side of the Gestalt whole

of a person is investigated in the majority of previous research studies. Therefore, the discovered results of this study demonstrated that many current research studies into attachment are missing out on a key aspect of the individual by not examining the spiritual side of the participant.

Another interesting discovery from this research study was the information derived from the histograms created for each variable (see Figures 6, 7, 8, 9, 10, and 11). The histograms presented in this study put into context how these participants related to what was “normal” for each variable, so we can see if they are High or Low or Moderate in relation to the actual raw scores on the variable. These histograms show if the participants in each variable are really let’s say highly lonely or just moderately lonely with High Lonely scores because of the 33% division of the participant base. In the overall aspect of the possible scores on these variables, the scores for most participants can be seen as being Moderate, even though through 33% cut off scores this population might have been scored in the High category. Therefore, the High scores in the variable’s category for these participants in reality are not that High. These histograms show that Loneliness is not a major life issue for these participants, since most of them scores around mid-range on the measurement instrument. However, even given this Moderate actuality of the variable, this variable still has been shown to be a major piece in understanding the variables of social media use and attachment. This shows how important these variables are when we connect them together and examine them in histograms, since if these mostly Moderate measurement scores seen for most of the variables in relation to the actual measurement tool ratings showed many significant

results, it can be logically concluded that an even greater amount of relationships between these variables would exist if the participant base was larger and more diverse.

### **Discussion of Findings**

The main overarching results from this research study in relation to the main hypotheses and the chief research questions that initiated this study are that Childhood Social Media Use and Insecure Attachment to God was the most significant relationship in this participant sample. Namely, it was discovered through ANOVAs that as Childhood Social Media Use levels increased, so too increased the participant's current Anxious Attachment to God level and Total Insecure Attachment to God level. A lower amount of Childhood Social Media Use related to a lower amount of Anxious Attachment to God and Total Insecure Attachment to God. Therefore, it can be seen that the more time a child spent on social media, the more likely they were to have an insecure attachment to God when they were young adults aged 18-24. This related to Homan (2012) who discovered that a person's current insecure attachment to God related to current increased problematic social media use, and to the results finding how current increased secure attachment to God related to more positive current use of social media (Barry, Padilla-Walker, & Nelson, 2012). Therefore, the results of these other researchers mirror the findings in this study, although not longitudinally like this current study did, that the level of social media use coincided with a person's amount of insecure attachment to God.

This result is even more important because it was demonstrated through this study that an increase in either of the two variables of Anxious Attachment to God or Total Insecure Attachment to God related to an increase in secular insecure attachment to

parents and to increased loneliness in young adults. Therefore, it can be inferred, if this sample size was larger, that increased Childhood Social Media Use levels should be associated with increased levels of secular insecure attachment to parents and to increased levels of loneliness in young adults, as well. These were results that would have mirrored the results found by Thomas et al. (2020) who discovered that increased improper use of social media where one has to create a false self was seen to lead to increased loneliness levels. This researcher expected to discover a significant relationship between Childhood Social Media Use and young adult secular attachment, however the significance of the data was not strong enough to validate this hypothesis. This would have coincided with Costanzo et al. (2021) who discovered that increased insecure secular attachment correlated with increased social media use, and to Sampasa-Kanyinga et al. (2020) who discovered that the larger the level of insecure attachment to a person's parents was the greater the amount the person used social media.

Besides the standard descriptive statistics that most studies run, ANOVAs were used in this current study as the chief method for analyzing the relationships between these variables. This method of using ANOVAs to examine these variables was used by many other researchers who investigated these variables (Ballarotto et al. 2018; Eichenberg et al., 2017; Heshmati et al., 2021). Therefore, ANOVAs can be seen as accepted practice in the field of Psychology for analyzing the variables investigated in this study. In addition to ANOVAs, multi-variate and bi-variate correlational analyses were also run on these variables (Assunção et al., 2017; Badenes-Ribera et al., 2019; Eroglu, 2015; Lin, 2016; Marino et al., 2019; Monacis et al., 2017b; Peterson et al., 2017; Worsley, 2018) with the *p*-values for each significant ANOVA relationship found being

given in the Results section description under the ANOVA figure. This correlational analysis added validity and strength to the ANOVA findings, since the correlations were run on the raw scores of the data before they were artificially divided into Low, Moderate, and High levels by this researcher. These significant correlational findings show that even without the Low, Moderate, High separation being artificially created by this researcher on the data, within the raw score data there still existed a meaningful correlation. Even with using the raw scores and not the levels, these variables were highly correlated and still showed a meaningful correlation with the Pearson coefficient being significant for that relationship.

Looking at the results from this study more in-depth and how they relate to previous research, it needs to be understood that this was the first study to examine Childhood Social Media Use and Attachment/Loneliness from a longitudinal perspective. Some studies examined pairs of these variables and their relationships in current static time frames. These studies were used as comparisons in in this section, since no comparisons to the unique nature of this study could be found. This lack of connection between this study and other research centers around how there existed very few studies examining Attachment to God or any religious aspects when looking at participants in their respective studies. This is the first lengthy study to examine Attachment to God, secular attachment, and loneliness interrelated in a current time frame, and the longitudinal relationship between Attachment to God, secular attachment, and loneliness to Childhood Social Media Use. However, based upon the strong significant relationships discovered through this research study, it would be highly beneficial to the scientific field if Attachment to God became an aspect of all psychological studies from now on, in order

to gain a complete understanding of the participant and the way these variables interrelate.

The results from Childhood Social Media Use were unexpected and not as broad as this researcher initially expected. It was discovered through ANOVAs that increased Childhood Social Media Use had a positive relationship with the two variables of Anxious Attachment to God and Total Insecure Attachment to God. This significant relationship showed that as the amount of Childhood Social Media Use increased, the level of the two variables of insecure attachment to God (Avoidant and Anxious) increased, as well. This demonstrated that when a child used social media to a great extent it negatively impacted their attachment levels to God spiritually when they grew up into young adults. These results are similar to Eichenberg et al. (2017) who discovered that increased levels of social media use led to increased anxious secular attachment and serious interpersonal skill deficits. Anxious secular attachment has been correlated with increased problematic internet use (Cacioppo et al., 2019). The results in this study indicate that interventions need to be developed and implemented with children to limit their social media use in order to prevent the negative attachment to God issues that have been shown through this research to develop in their lives when they grow up.

In the secondary hypotheses and research question arena (see Figures 1 and 3), ANOVAs revealed significant individual relationships for the variable of Relationship Anxiety to Parents in relation to the three variables of Anxious Attachment to God, Total Insecure Attachment to God, and Loneliness. It was discovered that as the level of Relationship Anxiety to Parents increased so too did the levels increase in all of the other three variables. This relationship was extremely important because it showed that there

existed a significant relationship between the secular insecure relationship level and the spiritual anxious and total relationship level, indicating a connection between a participant's secular experiences and their spiritual ones. In previous research, insecure family relationships were correlated with increased social media use (Lan, & Wang, 2020; Pedneker, & Tung, 2017), and anxious family attachments were shown to increase social media usage in young adults aged 17-25 (Worsley et al., 2018). Although this anticipated relationship that was found in these other studies was not discovered here, the results of this study are very important because they show that insecure attachment to parents related to many insecure and lonely situations in life. The results of this current study contradict the findings of Leman et al. (2018) who reported that as insecure secular attachment increased a person's secure attachment to God increased. These results demonstrate the opposite relationship existed.

There was a significant relationship between how when the levels of Anxious Attachment to God increased so too did the participant's Relationship Anxiety to Parents. This supports this researcher's recommendations that future psychological research should include both aspects of a person, the secular and the spiritual. Interventions should be developed that incorporate measures to both increase the participant's secure relationship to their parents and to increase their secure relationship to God, since they both have been shown in this research study to relate with each other. These results show when a participant's Relationship Anxiety to Parents increased so too did their Loneliness levels, and these results showed bi-directionally a significant relationship between how when a participant's Loneliness level increased so too did their Relationship Anxiety to Parents. This bi-directional relationship indicated a need to work on interventions to

increase secular secure relationship levels to hopefully lower loneliness levels in these young adults, and interventions to decrease loneliness levels to increase parental secure attachment bonds.

These research findings supported another secondary hypothesis (Hypothesis 9) (see Figure 3) and research question (Research Question 5) (see Figure 1). ANOVA results indicated a very strong relationship between Loneliness and all three variables of the Attachment to God Inventory. It was discovered that as Loneliness increased, so too did the level of insecure attachment to God on all three levels of the variable; Avoidant, Anxious, and Total. It was discovered that as the levels of Avoidant Attachment to God increased the levels of Loneliness increased, as the levels of Anxious Attachment to God increased the levels of Loneliness increased, and furthermore as the levels of Total Insecure Attachment to God increased the levels of Loneliness increased. This clearly indicated these variables of loneliness and attachment to God are highly intertwined with each other, and as such we need to develop interventions to increase a person's secure Attachment to God in order to decrease the person's level of Loneliness. This religious increase could protect the person from the negative impacts Loneliness has on the person; such as suicidal ideation, suicide, drug use and abuse, failed relationships, and depression (Muzi et al., 2021). These results show that as a person becomes more lonely they tend to develop a more insecure attachment to God in an avoidant and anxious manner. This related to several secular studies that discovered increased levels of insecure secular attachment were related to increased levels of loneliness (Heshmati et al., 2021; Zhao et al., 2019). As people become more lonely in life, they also become more lonely spiritually through the loss of their secure relationship with God. This can be seen as a

perpetual downward spiral of loneliness and loss of spiritual connectedness. The inverse results that were demonstrated in this study give hope for this situation, in that the lower levels of Loneliness related to higher levels of secure Attachment to God, and the higher the level of secure Attachment to God was associated with lower levels of Loneliness.

An unexpected result was discovered while examining these results concerning the division of the Total Insecure Attachment to God variable as measured by the AGI into three distinct variables of Avoidant Attachment to God, Anxious Attachment to God, and Total Insecure Attachment to God. As expected, when Avoidant or Anxious levels increased so too did the overall Total Insecure Attachment to God level. However, through ANOVA analysis, it was interestingly discovered that a bi-directional relationship existed between Avoidant Attachment to God levels and Anxious Attachment to God levels. It was discovered significantly that as Avoidant Attachment to God levels increased so too did Anxious Attachment to God levels, and as Anxious Attachment to God levels increased so too did Avoidant Attachment to God levels. The reverse relationship existed where the lower the level of one variable related to the lower level of the other variable. This relationship indicated that when it comes to spiritual attachment Avoidance and Anxiety appear to directly relate to each other. This is important because these two variables of avoidance and anxiety were previously thought to be completely distinct from one another (Bowlby, 1969). These results demonstrate that even though they might be distinct, they are still very intertwined with each other and not completely independent variables.

It was surprising to this researcher how Attachment to God played a part in all of the significant findings of this study, with the exception of two of the fifteen significant

ANOVA relationships. This could have been the result of the participant base being from a Christian University, or it could be indicative that more research into the Attachment to God variable needs to be incorporated into many different research studies to show the true overall Gestaltish picture of the participant. The vast majority of studies use a secular participant base (Assuncao, 2017; Lane, 2020; Muzi et al., 2021; Sherrell & Lambie, 2018). This is the first time Childhood Social Media Use and current young adult Attachment to God levels were compared in a research study, and to find a significant relationship is amazing.

It is interesting to see how Attachment to God related to secular anxiety issues and Loneliness factors in young adults. This is an area that has not been investigated before, however these results demonstrated that it is definitely an area future psychological researchers need to examine. This study extended the current research volume into Attachment to God, Loneliness, Secular Attachment, and Childhood Social Media Use. These results showed that there was a greater influence and interaction of Attachment to God upon a person's behavior and feelings than was previously anticipated by this researcher and as previously discovered by psychological research overall. Hence, these results emphasized that it would greatly benefit science and humanity to include Attachment to God in most future research studies, in order to get the fullest picture of the participant and the most accurate results of how many of these variables interact.

### **Implications**

These results lend themselves to the following practical and theoretical implications and interventions. These results demonstrated the need to develop interventions aimed at reducing the amount of social media use children personally chose

to interact with and are socially exposed to, in order to hopefully reduce the amount of anxious attachment relationships to God these children will most likely experience as young adults, in accordance with the results of this study. Interventions such as these could possibly reduce the overall insecure secular attachments social media has been shown to be associated with, and they could possibly reduce the levels of adult loneliness. Methods designed to decrease anxious attachment in adults in order to decrease the levels of loneliness and anxious attachment, factors that could lead to suicide or poor life conditions, need to be developed. With social media and technology advancing exponentially on a daily basis around the world (Pew Research Center, 2021), it is imperative that we act now to decrease children's dependence on and use of social media to improve the quality of their lives and their secure attachment relationships when they get older.

This study longitudinally investigated childhood social media use as a predictor of young adult insecure attachment and loneliness. This opened the door to future researchers to re-examine these variables using varied populations, to examine these variables from different demographic statistics, and to add other variables that impact young adults to see how these relate to childhood social media use. Future researchers could utilize the findings of this study as a baseline to conduct similar studies and to compare new studies on childhood social media use to. They could develop interventions and test how the interventions developed from this research study's findings impacted the effects of childhood social media use on attachment and loneliness, or they could develop interventions that mitigated the negative impacts childhood social media use has already had on current young adults. This is a study that could assist elementary and middle

schools develop better computer science and instructional courses, designed to warn children of the impacts social media use could have on them when they get older. The results of this research study could be used as a reference in instructional classes for parents to inspire them to pay closer attention to their children's social media use, to pay closer attention to their own social media use and how it could be negatively influencing their children now and in the future, and to develop materials in Churches to increase secure attachment to God by lowering the amount of social media use their younger followers are experiencing.

The main concern over the findings in this study revolves around the 149 sample participant base. Although this was sufficient for statistical power and significant results, it was still not enough to truly be indicative of the general population of people as a whole. This study did not reach the sample population of several other studies on attachment and social media use like Monacis et al. (2017) with 712 participants, Demircioglu (2020) with 455 participants, and Badenes-Ribera et al. (2019) with 598 participants. However, it came close to other studies concerning attachment and social media use like Blackwell et al. (2017) with 207 participants, Peterson et al. (2017) with 133 participants, and Young (2020) with 124 participants. This shows that many significant studies had a sample size that was similar to this study's sample size, and how other studies were able to recruit many more. Thus, the sample size in this study of 149 could be a point to refute these findings, although with many studies having similar sample sizes, it should not be a very effective refutation. The limitations of this sample size of 149 was mitigated for by using four different measurement instruments and a 33% cut off score. Future studies could increase this sample base size to make the results more

powerful and more accepted as being indicative of the overall population. This is a future goal of this researcher to increase the sample size in future similar research studies, and it is hoped other researchers will do this as well. This larger participant base would increase the knowledge of childhood social media use and attachment in order to advance the knowledge of this issue in the field of Psychology.

This study examined the child/young adult as a Gestaltish whole entity, instead of looking at simply the parts of the person. This longitudinal research study expanded the theory of psychological research to include the person as a whole instead of just looking at one or two aspects of the person in a static one-moment window. This study accomplished this by looking not only at the secular side of a person, it examined the spiritual side as well. This spiritual side is regularly overlooked by psychology and science when conducting experiments and doing research. However, without this spiritual side, a true picture of the person is not truly found. This study examined the person from the aspects of feelings, behaviors, and thoughts. This study allowed future researchers to expand upon what was found and investigated herein, and to look further into how spiritual and secular attachment coincide and relate with each other and social media usage, as well as with loneliness. These and future results could allow for interventions and mitigations aimed at increasing secular and spiritual attachment, decreasing loneliness in this ever increasing segmented computerized world, and seeing how the whole person is influenced by a myriad of factors surrounding social media that need to be investigated together to get the full picture.

Therapists can use the findings of this study to better relate to this generation of clients in order to lessen the impact social media use has and will have upon their

attachments and feelings of loneliness now and later in life. Therapists can address the issue of the amount of social media a person uses and explain to them how this could be negatively impacting the security of their relationships and their internal feelings. Social media use amount in turn could be a factor contributing to certain behaviors the client is concerned about.

### **Limitations**

This study found many statistically significant results. However, as with all studies, there were several limitations that impacted the generalizability and the scope of these results. This study did not replicate past research because this study was the first study to examine longitudinally the levels of childhood social media use and the levels of attachment (spiritual and secular) and loneliness in young adults, and it was the first attempt to address these issues and examine their relationships. Some research examined current social media use and current attachment (Chen, 2019; Demircioglu & Kose, 2020; Flynn et al., 2018; Monacis et al., 2017), yet none of these past research studies looked at the variables from a longitudinal or spiritual standpoint. This new concept investigated here in this current study could allow for interventions to be devised to mitigate the negative impact of high levels of childhood social media use and the current issues the young adult has with spiritual and secular attachment, as well as with loneliness.

The generalizability of these results was limited by the use of strictly Psychology students from Liberty University, a Christian university in Virginia, USA. This selection bias limitation occurred because Liberty University students were not a publically normal population, since being highly religious they were most likely more secure in their thoughts, relationships, and emotions. This is different than Lin (2016) who used 1109

Taiwanese Facebook users from the internet general population to study attachment styles and social media use patterns. There was no exclusion of candidates, except that only those aged 18-24 and US citizens were accepted into the study, and this might have allowed for a more diverse participant base to be obtained than had more constraints been placed on the participant base. Thomas et al. (2020) used a more restrictive participant base of only UK Freshman university students between the age of 18-24, and this could have limited the diversity and size of their participant base. Hence, even though the criteria for this study was restrictive, it was not as restrictive as others. This study using a religious sample could be seen as a strength, since because there was a statistically significant finding here with a very spiritual participant base, one can logically conclude that in the general, more diverse population with a greater  $N$  there would be an even greater relationship strength between Social Media Use and insecure attachment than was found in these results, and possibly a significant result for Social Media Use and Loneliness might have been discovered at a significant level.

Generalizability was further limited by the number of participants being 149, instead of the desired 2000 this study hoped for. Therefore, the conclusions drawn from these results need to be tampered around these limitations. The conducting of this study during a global pandemic most likely impacted the amount of participants, as well. If this study was redone with 2000 participants from a more diverse population, of possibly secular college students or from all college courses, it is logical to conclude that it would find even more significant differences and more results that demonstrate the relationship between high Childhood Social Media Use and increased insecure attachment and loneliness in young adulthood. This can be expected since the population used was of a

very moral and spiritual nature, and if these findings were found significant within this population, then a participant base taken from the general public should most likely produce even more significant results. However, with the population chosen, the generalizability of the findings can only be limited to this population, especially with regards to the resultant data concerning Attachment to God that might not be attainable or accurate from the secular population at large.

The extent to which the levels of each variable could be divided up into, to show significant results and reach power, was limited in this study. If an *N* of 2000 was achieved with a more general population, then the groupings for each variable could be further broken up into 5-7 levels instead of the 3 levels created here, since this would most likely achieve the *N* of assumption of parametric tests for each of the 5-7 levels. The research could then delve deeper into the intricate relationships that exist between these six variables with more levels. However, in the end, the conclusion and educated guesses derived from this current research study would most likely still be the same when expanded to an *N* of 2000: namely, that high Childhood Social Media Use was related to increased levels of insecure Attachment to God as a young adult, and possibly to increased levels of insecure secular attachment and Loneliness as a young adult. These increases in the levels of these variables are a contributing factor to a number of negative issues presenting in the child's future that come about as a result of the increase in insecure attachment. By dividing these variables up into even more subcategories, a more precise picture of how they interact within the person might be achieved.

Most dissertations and research studies are known to be underpowered. This study was able to overcome this inherent issue and achieve significant power with the limited

population it was able to recruit. It was underpowered in the manner that factors outside of this researcher's control that steered the analysis and limited the amount of depth this researcher could go into with the variables. The analysis itself however achieved significant power. This researcher wanted to have the largest possible sample size per category, which turned out to logically achieved through using a 33% cut off score. The primary focus of this study was on the High and Low categories of each variable, with not so much focus on the Moderate center group. This researcher artificially, logically, and scientifically created High and Low levels to see the differences between High and Low levels in the variables; such as High versus Low Loneliness, Low Childhood Social Media Use versus High Childhood Social Media Use, and the relationship between these levels and the levels of the other variables.

This study's 33% cut off score maximized the ability to have between 47 and 52 participants in each level of these variables. The fact that all these significant findings were achieved in this study means that this rationale worked, and it made logical sense to divide the variables in this manner. However, even though this population was very accurate and powerful at demonstrating how Childhood Social Media Use was associated with current anxious and insecure levels of Attachment to God, future research could use a more public and diverse population to make the results more generalizable and in-depth.

A second limitation to this study was the use of the rather new and underused measurement instruments the AGI (Beck & McDonald, 2004) and the SSCI (Fraser, 2022; Taber, 2022). The SSCI was a relatively new measurement instrument used to measure the level of self-reported perceived loneliness. This was chosen over the UCLA

loneliness scale because the SSCI asked deeper questions, was more comprehensive, and addressed the aspect of media use by the participant. The UCLA scale was not comprehensive enough, did not address media use, and used very simple and generic questions (Thomas et al., 2020). An ANOVA was run on the results comparing the participant's results on the SSCI media questions with the participant's results on the OSSMB, a well-used instrument that this study used to obtain past childhood social media use levels (Lu et al., 2019). Media related questions 12, 21, and 22 on the SSCI came out with a near significant relationship to the OSSMB at  $p = .084$ . The results of a bivariate correlation between the OSSMB and question 21 on the SSCI resulted in a Pearson coefficient score of  $p = .012$ . This demonstrated a significant correlation between the OSSMB and the main media questions on the SSCI. Several other questions came close to the  $p < .05$  significance level, and if the population had been larger, they might have achieved significance. This validated my reasoning decision to use the SSCI over the UCLA loneliness scale.

The AGI is the most used and validated instrument to measure the variable Attachment to God (Beck & McDonald, 2004). The AGI has been validated and reliability tested to become a prime tool in the measurement of Attachment to God in several studies (Barry et al., 2012; Homan, 2012). This researcher found that it was the most comprehensive, most validated and used, and that it was detailed enough that it was able to divide its resultant data up into Avoidant and Anxious Insecure Attachment to God subcategories. However, the amount of research studies measuring Attachment to God has been very scant over the decades. Hence, although the instrument has been

validated, it is still a relatively new measurement tool that does not have an enormous result base and hence could have unseen flaws in it.

The limitations of these two instruments were attempted to be controlled for by using the ECR (Fraley et al., 2011) and the OSSMB (Lu et al., 2019) in the study; two tools that have been validated in countless studies and have been proven reliable. The ECR has been used by many studies, and this researcher decided it best captured questions relating to relationships young adults 18-24 experienced (Blackwell, 2017; Ceyhan et al., 2019; Chen, 2019; Flynn et al., 2018; Hart et al., 2015; Liu & Ma, 2019; Liu & Ma, 2019b; Peterson, Giguere, & Sherman, 2017; Worsley, 2018; Young, Kolubinski, & Frings, 2020). The OSSMB was decided on by this researcher to present the best questions of reflections on Childhood Social Media Use outside of school, as opposed to Social Media Use right now as seen in the Bergen Social Media Addiction Scale used by several studies (Blackwell, 2017; Liu & Ma, 2019; Liu & Ma, 2019b; Monacis et al., 2017; Monacis et al., 2017b; Worsley, 2018). These two instruments' results were compared with the results on the SSCI and the AGI to ensure accuracy and continuity of participant responses from these newer measurement instruments.

A third limitation of this study was the information attained in this study was all done through self-reports by the participant. This could have led to inaccurate answers based upon faulty recollection, although it is a method that many research studies employ for economic, time, and practicality reasons (Assunção et al., 2017; Blackwell et al., 2017; Eroglu, 2015; Marino et al., 2019; Monacis et al., 2017; Peterson et al., 2017; Worsley, 2018; Zhao et al., 2019). This limitation was attempted to be controlled for by using several instruments that measured similar concepts. After data collection,

examination of the results was able to remove participants whose answers failed the reverse scoring of the instrument or the comparison between instruments' answers to ensure continuity. This method attempted to control for inaccurate recollections of participants or those that simply just checked boxes. Future research might follow a single participant from early childhood through young adulthood, in order to try to alleviate this self-report issue.

A fourth limitation was that females made up 76% of the participant base. This could have skewed the results. In the future, a larger population where the ratio of male to female could be more even would be preferred. Even though this was uncontrollable, since the researcher could not control who participated in the study, it was not seen as a limiting factor in the validity or the reliability of the results of this study. Some studies do not even report the descriptive statistic of male and female numbers (Przybylski & Weinstein, 2019), and some studies had similar issues with too many of one gender like Abbasi and Drouin (2019) with 268 males and 474 females, Benoit and DiTommaso (2020) with 113 males and 269 females, and Lane (2020) with 142 males and 348 females. Therefore, even though this study was predominantly female, this can be seen as a normal trend in psychological research. Ways to mitigate against this would be to put a sample number cap on each gender and collect data until each number is reached, even though this might be seen as a skewing of the possible results, or the *N* could be increased in the hopes of getting a more uniform spread of gender.

A fifth limitation area of this study concerned the participant's taking of the actual surveys. The researcher had no control over the quality of the environment the surveys were taken in, whether the participant fully understood the questions, whether the

participant could access the surveys on their computer and stay connected, and whether the participant decided to give up and leave the study before finishing all the surveys. This could have impacted the amount of useable participants for the study, however the only way around this would have been to bring each participant in individually to a secure site to take the surveys. This was not economically feasible or logical timewise. Because of this limitation, there was no control over whether a BOT took the surveys. However, this was controlled for by examining the results and removing participants who answered reverse questions differently, who answered questions in a one number increase or decrease over the length of the answers, or who answered the same response more than four times in a row. Although this was a limitation, the ease of access and availability for the participant was believed to be more beneficial than an in person survey taking process might have been, and it was seen as more economical and designed to achieve the greatest sample size. As stated previously, all of the studies this researcher could find on these variables used online survey taking. Therefore, there might be a research study out there that did the survey taking in person, however with it being so rare and not economical, I believe that this study's use of online survey taking was validated as the best method.

A sixth limitation of this study was the collection of data using Qualtrics and the transfer of it to this researcher without corruption. This was mitigated by this researcher taking the survey ten times and checking to ensure that all data was transferred correctly. This method of data collection was inexpensive, allowed for participants to take the surveys on their time which could have increased the sample size, the data was stored in one place and the access was quick and secure, and it allowed for a more natural non-

manipulated result base that provided a more natural understanding of the variables in the real world. This researcher has yet to find a study that does not use a system like Qualtrics to gather and store the quantitative data scores from the surveys administered on these variables.

A seventh limitation was that this relationship research study did not allow for the drawing of conclusions to see which variable impacted the other variables in what ways through cause and effect. Only a relationship strength between the variables could be obtained. Even though cause and effect could not be measured between the variables, this study determined the strength and direction of the relationships between these many variables. An experimental design manipulating the amount of time a young child spends using social media herein would have been unethical and immoral, since the results of high social media use was shown to greatly negatively relate to insecure attachment and possibly increased levels of loneliness in young adulthood.

Even though limitations did exist within this study, the method of data collection went as planned and the analysis was very well performed using EXCEL and SPSS. Even with these limitations, the results found were valid for supporting this researcher's hypotheses and answering this researcher's research questions (see Figures 1, 2, and 3). The solution to the main issue of the low amount of participants could be mitigated with more time and a broader population pool to draw from, and this could greatly remove many of the possible limitations that occurred within this study. This study developed an understanding between childhood social media use and attachment and loneliness that was not explored in research before. Hopefully, this study will entice others to perform similar and more in-depth research into the relationships of these variables.

### **Recommendations for Future Research**

This research study was an excellent beginning to the examination of how childhood social media use related to attachment and loneliness levels as a child became a young adult. However, much more in-depth research still needs to be performed exploring the relationships that exist between the variables used in this current research study. This researcher has several ideas concerning how future research can accomplish this task of exploring childhood social media use and how it is associated with secular and spiritual attachment and with loneliness. This expanded research by others could start to fill the gaps that exist in the study of this topic.

To improve the generalizability and the ability to dig deeper into each variable and to be able to divide each variable up into possibly 5 or 7 different levels instead of 3 like this study did, a more diverse and larger population should be gathered using many different universities, students in and out of psychology courses, young adults who are in and never been to college, and participants from other countries. Assuncao et al. (2017) used high school students in Portugal, Blackwell et al. (2017) recruited from USA social media sites, Demircioglu and Kose (2020) used Turkish college students aged 18-24, Lin (2016) used Taiwanese Facebook users with an average age of 22, and Monacis et al. (2017) used Italian high school students. A diverse participant base such as these researchers used would allow for the variables to be demographically compared upon the variables of race, culture, college major, work role, creed, income level, year in school or workforce, and age. This would allow for research to shed light on the relationship childhood social media use has upon the majority of the population around the world, and this would allow interventions at the young adult and the childhood level to be developed

and implemented to assist everyone develop stronger attachments and lower their levels of loneliness and insecure relationships and reduce the negative impacts these have upon a person's quality of life and social interactions.

Future studies might incorporate more or different measurement instruments to see how these impact the results. The UCLA used by Thomas et al. (2020) and the SSCI (Fraser, 2022; Taber, 2022) might be used together to see if one is a better predictor than the other. The Bielefelder Partnership Expectations Questionnaire for attachment used by Eichenberg et al. (2017), the Hazan and Shaver relatedness questionnaire used by Lin (2016), the PROMIS Questionnaire (SPQ) modified for Italian speakers for discovering problematic social media use and the Inventory of Parent and Peer Attachment (IPPA) to determine attachment used by Ballarotto et al. (2018), and the Bergen Social Media Addiction Scale and the online Attachment Style Questionnaire used by Monacis et al. (2017) are several alternative measurement instruments that could be used within the framework of this current study. However, the measurement instruments chosen for this study were decided on because they were seen as more comprehensive, related better to social media use or attachment, and were chosen because the reliability of the instruments added to the validity of this study's results. Therefore, even if these measurement instruments this researcher choose were not the greatest out there, logically this study's results would be even greater if a greater instrument to measure these variables was utilized, since if significance was found with these instruments, then logically more significance would be discovered with a more sensitive instrument. This shows this research study was on the correct track with the instruments that were chosen.

The issue with self-reporting could be controlled for by using a longitudinal method that follows participants from the age of about 10 until the age of 24, with testing of the participants being conducted every four to five years. This would remove the self-report errors that could have resulted from doing the research study the way this one was done. This type of longitudinal work has not been done so far on these variables. However, if done, this would open the study up to participant fallout, would cost a lot of money and time and effort, and would require a constant stream of support from an institution to continually meet with each participant. Therefore, the sample size would likely be rather small, the researcher would be locked into one area for several decades, and the participants would have to either be paid or volunteer their time for the study. This is not a logical way to conduct this study. Another work around could be to conduct a longitudinal following of participants from childhood to young adulthood online. However, this would open up the validity of the data collected in this study to many negative variables that this study could not mitigate for; such as BOTs, the participant actually not being the one taking the survey, and various computer issues. Hence, the way this research study was conducted using past recollections and self-reports made the most logical sense.

A larger population sample could alleviate the 76% female skew that this study experienced. This was discussed earlier how many research studies attained a much greater participant base. However, it must also be seen from the earlier discussion many studies achieved a similar participant base to this study's 149 participants. It was shown that many studies in this area of examination showed a female skew to their results, even

with a larger participant base. Therefore, even though this skew might be a limitation, it can be seen as an acceptable limitation in this field.

Although this would not be time or monetarily economical, there are a few ways that the limitation of the conditions surrounding the taking of the surveys might be better controlled. The researchers could have each participant come into a designated research lab's computer facility to take the surveys. This would allow for the researchers to make the conditions when taking the surveys relatively similar, would prevent BOTs, would allow the participant to ask questions for clarity, and would assist the researcher to see if the participant was just clicking answers and not really taking the surveys. This type of in-person study has not been seen in this type of research yet, most likely due to the monetary and time constraints it would impose on the researchers, and so no comparisons can be made between the limitations of this study's method of data collection and other studies.

The use of Qualtrics was the best economically efficient method for gathering data this researcher found, and it was the method supported and used by this researcher's university. Other researchers have used this and other database collection methods. A solution to using someone else's database would be if this researcher had their own server and collection platform that was free from bugs and system glitches and maintained by a team of computer techs. This then could have been a more secure method for gathering, storing, and retrieving the data. This was not possible for this researcher, and it is not a method seen in any research studies found. SPSS was used to analyze the data in this study. This is a common practice to use SPSS to analyze results, and this method of SPSS

use was utilized by Ballarotto et al. (2018), Lin (2016), Demircioglu and Kose (2020), and Heshmati (2021) in their research, as well.

A limitation of this study was that it was a relationship study and not an experimental one. An experimental design could show cause and effect for the variables, however it would require researchers to manipulate children into different levels of social media use. This would be very prone to error, would cost a fortune, and would not be moral or ethical seeing as increased levels of social media use have been demonstrated in this research study to relate to increased insecure attachment and possible increased loneliness levels. Therefore, the relationship method for examining these variables makes the most ethical and logical sense.

Further studies into Attachment to God and how this relates to Childhood Social Media Use levels, secular attachment, and Loneliness should be conducted to further examine this issue and develop interventions to increase spiritual attachment to hopefully decrease insecure secular attachment and loneliness levels. Such research has been few and far between, with the only recent studies this researcher could find concerning Attachment to God and current social media use were from 2012 (Barry et al., 2012; Homan, 2012).

Additional questions were generated from this research study. If the variable of childhood social media use was broken down into five to seven separate levels, could the research demonstrate at which point the variable starts to be associated with increased levels of insecure attachment and loneliness? This determination would allow interventions to target children who fall into that bracket more intensely to try and prevent the insecure attachment and loneliness increases that have been shown in this

research to be related to high childhood social media use. With an increased participant base, the variable of insecure secular attachment from the ECR might possibly produce more significant results for the other sub-scales of the ECR variable. These subscales could then be further broken down and interrelated to see if one aspect of insecure secular attachment has a relationship with another, and to see if these have relationships with the levels of the other variables in this study. This would allow for a more Gestaltish look at the individual to see what other relationships childhood social media use has on secular attachment, and it could be used to steer future research into these variables and direct interventions designed to reduce insecure attachment.

### **Summary**

This research study indicated that indeed there does exist a positive relationship between the increased amount of past childhood social media use and the amount of Insecure Attachment to God in current young adults, especially dealing with Anxious Attachment levels. These results indicated non-significantly that there could be a connection between increased amount of past childhood social media use and the level of insecure secular attachment to parents and a higher level of loneliness now seen as adults aged 18-24. Although the data could have been influenced by artifacts, the final recommendation of this researcher is that even though this researcher did not see significance of Childhood Social Media Use at the  $p < .05$  for all the comparisons, enough results were seen that were significant that this researcher feels completely comfortable saying as an expert on this topic that there needs to be limitations to childhood social media use exposure on our children to prevent issues with their secure

attachment and loneliness levels later in life. All of the results of this study trended in a negative associative direction.

Even though the small sample size might have influenced these results, and this occurred even more so in the smaller comparisons, this researcher would rather make the Type 1 error of saying we need to have our children stay off social media, versus making the type 2 error of saying childhood social media use has no association with insecure secular attachment and loneliness when it actually does. Type 1 does less harm than type 2 could. According to these results, there does not appear to be many positives related to high amounts of early Childhood Social Media Use. It is better to err on the side of caution when it has been shown in this research study that moderate to high levels of childhood social media use related to young adults who presented with high insecure attachment to God, young adults who possibly presented with insecure attachment to parents, and who were very lonely.

This research can be used as a model to conduct further research into childhood social media use and attachment/loneliness, and this is necessary to ensure the safe mental development of our children in this age of ever growing social media influence and opportunities (Pew Research Center, 2021). This study was the first to show a relationship between moderate to high levels of childhood social media use and current moderate to high levels of insecure attachment in young adulthood. If we do not start implementing interventions and modifications to our children's amount of social media use, according to the results of this study, we run a great risk of allowing another generation of children to develop into insecure and lonely young adults. This study demonstrated that increased childhood social media use related to increased levels of

insecure anxious attachment to God. We need to curb social media use in our children to ensure the continuance of a moral, spiritual, and God attached young adult population, especially in this ever growing anti-spiritual, anti-family, and anti-moral society in which we now find ourselves living.

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## APPENDIX

## Complete 114 Question Survey

**Procedures:** Since you agreed to participate in this study by clicking consent on the consent form, please provide the following demographic information:

**Is your current age between 18 and 24?**

Yes      No

**Are you currently a United States citizen living in the United States?**

Yes      No

**Do you live ON campus or OFF campus?**

ON College Campus      OFF College Campus

**What is your Gender?**

Male      Female      Non-Binary/Third Gender      Prefer not to answer

**Procedure:** Please fill out the Outside School Social Media Behavior Scale Concerning your Childhood: (Lu et al., 2019)

Below is a collection of the types of social media behavior that describe adolescent students' daily engagements with different social media outside of the school context.

Participants please **indicate the frequency of your daily engagement with the following activities when you were under the age of 18**. All items are measured on a 5-point Likert scale (1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always).

1. View others' personal information (e.g., profiles, photo albums).
2. Read friends' news posts (e.g., Facebook feed stories, WeChat moments).
3. Read comments on friends' or one's own posts.
4. Listen to music or watch soap operas or movies.
5. Initiate online entertainment events (e.g., team video game, online singing contest).
6. Initiate online interest-based events (e.g., sports, music, politics).
7. Send invitations of online entertainment events (e.g., team video game, online singing contest).
8. Send invitations of online interest-based events (e.g., sports, music, politics).
9. Write comments under topics of your interest (e.g., sports, music, politics).
10. Interact with members in interest-based discussion groups (e.g., sports, music, politics).
11. Remix, mash-up, or add to one another's works in ongoing media-enabled conversations.
12. Modify others' works (e.g., video spoofs from imitating).
13. Create audio or video or photographs (e.g., on YouTube).
14. Create or modify computer or video games.
15. Create digital art content (e.g., designing virtual clothing or furniture items) in virtual social worlds (e.g., on Second Life).

16. Write on topics of personal interest or experience (e.g., game-playing, traveling, arts, photography).
17. Repost friends' posts on social networking sites.
18. Forward entertainment information (e.g., entertainment news, video spoofs).
19. Forward public promotion information (e.g., events information, activity publicity, product advertisement).
20. Share content of topics in my interest areas (e.g., sports, music, politics).
21. Share links or video from knowledge collaborative communities or interest-based groups (e.g., on Quora).

**Procedure:** Please fill out the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR-RS) (Fraley et al., 2011)

This questionnaire is designed to assess the way in which you mentally represent important people in your life. You'll be asked to answer questions about your parents, your romantic partners, your peers, and your best friend. Please indicate the extent to which you agree or disagree with each statement by circling a number for each item.

**Please answer the following questions about your best friend**

1. It helps to turn to this person in times of need.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
2. I usually discuss my problems and concerns with this person.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
3. I talk things over with this person.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
4. I find it easy to depend on this person.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
5. I don't feel comfortable opening up to this person.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
6. I prefer not to show this person how I feel deep down.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
7. I often worry that this person doesn't really care for me.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
8. I'm afraid that this person may abandon me.  
strongly disagree   1   2   3   4   5   6   7   strongly agree
9. I worry that this person won't care about me as much as I care about him or her.  
strongly disagree   1   2   3   4   5   6   7   strongly agree

**Please answer the following questions about your parents/care givers**

1. It helps to turn to this person in times of need.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
2. I usually discuss my problems and concerns with this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
3. I talk things over with this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
4. I find it easy to depend on this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
5. I don't feel comfortable opening up to this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
6. I prefer not to show this person how I feel deep down.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
7. I often worry that this person doesn't really care for me.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
8. I'm afraid that this person may abandon me.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
9. I worry that this person won't care about me as much as I care about him or her.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

**Please answer the following questions about Please answer the following questions  
about your dating or marital partner.**

**Note:** If you are not currently in a dating or marital relationship with someone, answer these questions with respect to a former partner or a relationship that you would like to have with someone.

1. It helps to turn to this person in times of need.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
2. I usually discuss my problems and concerns with this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
3. I talk things over with this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree
4. I find it easy to depend on this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

**Please answer the following questions about your peers**

1. It helps to turn to my peers in times of need.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with peers.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with peers.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on peers.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to peers.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show peers how I feel deep down.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that peers do not really care for me.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that peers may abandon me.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that peers won't care about me as much as I care about my peers.  
strongly disagree 1 2 3 4 5 6 7 strongly agree

**Procedure:** Please fill out the Attachment to God Inventory (Beck & McDonald, 2004) The following statements concern how you feel about your relationship with God. Indicate how you generally experience your relationship with God, from early childhood until now, not just in what is happening in that relationship currently. Respond to each statement by indicating how much you agree or disagree with it using the following rating scale:

1                    2                    3                    4                    5                    6                    7  
Disagree Strongly                    Neutral/Mixed                    Agree Strongly

- \_\_\_\_\_ 1. I worry a lot about my relationship with God.  
 \_\_\_\_\_ 2. I just do not feel a deep need to be close to God.  
 \_\_\_\_\_ 3. If I cannot see God working in my life, I get upset or angry.  
 \_\_\_\_\_ 4. I am totally dependent upon God for everything in my life.  
 \_\_\_\_\_ 5. I am jealous at how God seems to care more for others than for me.  
 \_\_\_\_\_ 6. It is uncommon for me to cry when sharing with God.  
 \_\_\_\_\_ 7. Sometimes I feel that God loves others more than me.  
 \_\_\_\_\_ 8. My experiences with God are very intimate and emotional.  
 \_\_\_\_\_ 9. I am jealous at how close some people are to God.  
 \_\_\_\_\_ 10. I prefer not to depend too much on God.  
 \_\_\_\_\_ 11. I often worry about whether God is pleased with me.  
 \_\_\_\_\_ 12. I am uncomfortable being emotional in my communication with God.  
 \_\_\_\_\_ 13. Even if I fail, I never question that God is pleased with me.  
 \_\_\_\_\_ 14. My prayers to God are often matter-of-fact and not very personal.  
 \_\_\_\_\_ 15. Almost daily I feel that my relationship with God goes back and forth from “hot” to “cold.”  
 \_\_\_\_\_ 16. I am uncomfortable with emotional displays of affection to God.  
 \_\_\_\_\_ 17. I fear God does not accept me when I do wrong.  
 \_\_\_\_\_ 18. Without God I could not function at all.  
 \_\_\_\_\_ 19. I often feel angry with God for not responding to me when I want.  
 \_\_\_\_\_ 20. I believe people should not depend on God for things they should do for themselves.  
 \_\_\_\_\_ 21. I crave reassurance from God that God loves me.  
 \_\_\_\_\_ 22. Daily I discuss all of my problems and concerns with God.  
 \_\_\_\_\_ 23. I am jealous when others feel God’s presence when I cannot.  
 \_\_\_\_\_ 24. I am uncomfortable allowing God to control every aspect of my life.  
 \_\_\_\_\_ 25. I worry a lot about damaging my relationship with God.  
 \_\_\_\_\_ 26. My prayers to God are very emotional.  
 \_\_\_\_\_ 27. I get upset when I feel God helps others, but forgets about me.  
 \_\_\_\_\_ 28. I let God make most of the decisions in my life.

**Procedure:** Please fill out the Student Social Capital Instrument (Fraser, 2022; Taber, 2022)

Select the response that most accurately describes you or your current situation. Scale consists of 1-7:

1=Never    2=Very Rarely    3=Rarely    4=Sometimes    5=Often    6=Very Often  
7=Always

1.        Where I live inhibits my ability to have consistent social interactions.

2. Drastic or unexpected life changes have hurt my relationships.
3. My health concerns make it difficult for me to connect with others.
4. I avoid conversations with others because I am afraid of messing up and embarrassing myself.
5. I am afraid people will reject me.
6. I have anxiety when in social situations.
7. I am afraid of being treated poorly in my relationships.
8. I have little motivation or energy to invest in relationships.
9. I change how I act around people to fit in.
10. My interests, desires, or hobbies are not shared by the people around me.
11. I feel intentionally excluded by others.
12. I connect easier with people online rather than face-to-face.
13. Right now, it is not a priority for me to make deep and meaningful connections with others.
14. I have withdrawn from others since experiencing a significant loss.
15. I invest the majority of my time with a romantic partner, leaving little time to spend with others.
16. I lack valuable social abilities and feel like I won't be welcomed.
17. I frequently have negative thoughts about myself.
18. My life is not very good, and I do not think it will get much better.

Report the most accurate number on a scale of 0-5.

0=0 1=1 2=2 3=3 4=4 5=5 or more

19. How many meaningful conversations do you have each day?
20. How many meaningful relationships do you have?
21. How many hours a day do you generally spend watching television or movies?
22. How many hours a day do you normally spend playing videogames by yourself (e.g., phone, tablet, laptop, or console)?
23. How many social events do you decline a week that result in you being alone (not because of studying, sleeping, or self-care)?

Select the response that most accurately describes you or your situation. Scale consists of

1-10:

1=Not at all lonely; 10=Very Lonely

24. How lonely do you feel right now? 1 2 3 4 5 6 7 8 9 10

**Figure 33**

*Research Design Flowchart*

