Age Differences in Mental Health During the COVID-19 Pandemic: Assessing the Moderating Role of Attachment to God

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Abstract

Objectives: This study examined age differences in mental health problems (depression and anxiety) during the COVID-19 pandemic using nationally representative data from the United States. Drawing from a life course perspective, we also assessed if a secure attachment to God conditioned the relationship between age and mental health. **Methods:** Data were from the 2021 Values and Beliefs of the American Public Study (*N* = 1168), collected roughly 1 year into the pandemic. **Results:** Older adults (61 years and over) reported lower depression and anxiety than respondents 18–30 years of age. However, stronger perceptions of attachment to God significantly closed the age gap in anxiety between these age groups. **Discussion:** Though absolute levels of religiosity tend to be higher for older adults, secure attachment to God was more protective of the mental health of younger adults during the pandemic. We reflect on our findings through a life course lens.

Keywords

Depression, anxiety, COVID-19, age differences, attachment to god, religion

Introduction

Since its outbreak in December 2019, the coronavirus (COVID-19) pandemic has drastically altered lives across the world. As of the end of 2021, there have been over 263 million confirmed cases of the virus, including upwards of 5 million deaths globally (World Health Organization [WHO], 2021) and over 4.3 million cases of infections with more than 73,000 deaths in the United States (Centers for Disease Control and Prevention, 2021). The COVID-19 pandemic has not only brought severe threats to people's physical health but also greatly impacted mental well-being, due in large part to social distancing protocols, extended periods of lockdown, and disruptions of normal routines (Banerjee & Rai, 2020; Torales et al., 2020; Tull et al., 2020). Indeed, a growing body of work has shown that prevalence rates of depression, anxiety, and psychological stress increased significantly in the general population during the pandemic (Daly & Robinson, 2021; Ettman et al., 2020; Twenge & Joiner, 2020). Several correlates underlie these disturbing spikes in mental health problems, including fear and uncertainty about the future and a loss of control over life, as well as social isolation, loneliness, job loss, and exposure to conflicting information about the virus (Holingue et al., 2020; Holman et al., 2020; Xiong et al., 2020).

One sociodemographic characteristic which has received increasing attention with respect to mental health during the pandemic is age. Some early evidence revealed that younger adults tended to report higher levels of depression, anxiety, and suicidal thoughts than older adults (O'Connor et al., 2021; Huang & Zhao, 2020; Wang et al., 2020). Though many factors likely underlie these age differences, scholars have noted that younger adults are more prone to life changes, increased loneliness, job instability, and economic hardships during the pandemic, all significant predictors of lower mental well-being (Birditt et al., 2021; De Bruin, 2021; Hawes et al., 2021; Lee et al., 2021; Loades et al., 2020). At the other end of the spectrum, older adults may have at their disposal more effective coping strategies facing the challenging times during the pandemic (Lind et al., 2021; Minahan et al., 2021; Young et al., 2021). While crucial to building a collective body of knowledge, these studies on the age differences in mental health draw on data collected at the beginning of the pandemic, many from outside the United States, and thus may underestimate the longer-term effects of the pandemic on mental well-being. As a first study objective, therefore, we seek to overcome this limitation by using

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nationally representative data from the United States collected roughly 1 year into the COVID-19 pandemic.

As a second study objective, we focus on whether one coping resource found within the auspices of religion, *secure attachment to God*, might moderate the age-based mental health differences observed during the pandemic. Based on Bowlby's (1969) seminal work on attachment theory, God may be the object of human attachment, a secure, supportive base through which to explore the world and handle hardship. We center in on the religious/spiritual realm because as Pargament (1997, pg. 310) asserts: "we may be pushed beyond our immediate resources, exposing our basic vulnerability to ourselves and the world. To this most basic of existential crises, religion holds out solutions." Religiosity, defined broadly, has long been known to be beneficial for mental well-being (Krause, 2003). Specifically, secure attachment to God has consistently been found to be linked with lower levels of depression and anxiety (Ellison et al., 2014; Kirkpatrick & Shaver, 1992; Leman et al., 2018) and has played a crucial buffering role against negative effects of stressful life events on mental health (Ellison et al., 2012). Given that religious involvement and attachment to God vary across different life stages (Argue et al., 1999; Hayward & Krause, 2015; Wink & Dillon, 2002), it is possible that attachment to God may moderate the association between age and mental health outcomes in the pandemic, as we outline below. Drawing on research at the intersection of religion and the life course, we focus on the role of this attachment to God and whether this resource widens or narrows the gap in mental health outcomes at two opposing ends of the age spectrum: older adults (61 years and over) and young adults (18–30).

Literature Review

Age Differences in Mental Health during the COVID-19 Pandemic

Before turning to a specific consideration of age, we review general population-based research which has signaled an increase in mental health problems and psychological distress since the early months of 2020. In the United States, Twenge and Joiner (2020) found that adults were more than three times as likely to have depression or anxiety disorders in April and May of 2020 compared to the 6 months leading up to the pandemic in 2019. Using two nationally representative samples, Ettman et al. (2020) found that the prevalence of depression symptoms in the U.S. was substantially higher in every category (mild, moderate, moderately severe, and severe) during the pandemic than before the COVID-19 pandemic. Similarly, Daly and Robinson (2021) reported that the prevalence rate of anxiety in the U.S. increased significantly during the onset of the pandemic and began to peak when lockdowns and mandatory stay-at-home orders were issued. Even though there was some degree of mental health recovery from May to December 2020 after the initial sharp rise, anxiety levels have not returned to the pre-pandemic levels (Daly & Robinson, 2021). As Hossain et al. (2020) have suggested, a "psychiatric epidemic" is concurring with the COVID-19 pandemic, characterized by elevated rates of various mental health problems.

The mental health consequences of the pandemic have not been evenly felt across members of the population, however. When it comes to age, existing research has documented some surprising findings. Despite being warned of their higher risk of serious infection or death from the coronavirus, evidence from several countries suggest that older adults have typically fared better psychologically and mentally compared to their younger counterparts. For example, a longitudinal analysis of adults in the UK showed that during the pandemic, younger adults aged 18–29 reported higher levels of loneliness, depression symptoms, anxiety symptoms, and suicidal thoughts than those who are aged 30–59 and those 60 and over (O'Connor et al., 2021). Two studies based on the Chinese population also indicated that younger adults had higher risks of anxiety disorders and depressive symptoms (Huang & Zhao, 2020; Wang et al., 2020). In the United States, Daly and Robinson (2021) found that anxiety symptoms increased most sharply in young adults aged 18–39 between 2019 and April 2020, and in contrast, the smallest increase was found among older adults aged 60 or above.

Why might current cohorts of older adults be at a mental health advantage during the pandemic? Some evidence suggests that middle-aged and older adults may be better at regulating negative emotions produced by the stressors of the pandemic (e.g., Carney et al., 2021). A few studies have examined the coping strategies utilized and psychosocial outcomes across different age groups during the pandemic. They found that older adults tend to use more problem-focused coping and less avoidant coping strategies than younger adults. Problem-focused coping (e.g., seeking out social support) tends to be linked to lower depression, anxiety, loneliness, and other emotional well-being outcomes in these studies (Minahan et al., 2021; Young et al., 2021).

Another approach to understanding these age-related mental health differences during the pandemic is to consider the disproportionate amount of stress experienced by younger people. Several studies have found that perceived life changes, social isolation, risk of running out of money, and employment insecurity are especially detrimental to mental health during the pandemic, and these risks are disproportionately prevalent among the younger population (Birditt et al., 2021; De Bruin, 2021; Lee et al., 2021). Another group of studies centered on young adults suggested that school concerns, home confinement, and perceived loneliness were significant predictors of the in-person increase of mental health problems among younger people (Hawes et al., 2021; Loades et al., 2020).

To date, however, most studies regarding mental health consequences and the age differences are based on data collected from the early stage of the pandemic. With the

pandemic's persistence, however, government policies and public responses have been changing. It is therefore important for researchers to understand age differences in mental health outcomes as the pandemic unfolds. Based on the research reviewed above, we would propose the following study hypotheses with nationally representative data collected 1 year after the pandemic hit:

Hypothesis 1. Older adults will report significantly lower depression and anxiety relative to younger cohorts.

Attachment to God and Mental Health

Religious/spiritual domains have been identified as housing key coping mechanisms to deal with adversity (Pargament et al., 2000). Religion can influence how people understand the world and make sense of life events because it provides both social support and resources to help individuals re-appraise difficult life circumstances (Krause, 2006). With restrictions imposed on formal religious gatherings during the pandemic, some forms of religiosity might be more helpful than others (Lee et al., 2021; Schnabel & Schieman, 2021). Though many churches provided virtual services, which could help people maintain some semblance of a social connection, we focus on the potential age contingent role of a personal dimension of religiosity, *attachment to God*. While many dimensions of religiosity could be considered for their utility to help people cope with stress, a secure attachment to God may be particularly helpful in fostering a sense of hope and wholeness for believers during periods of trial and tribulation. As Exline and colleagues note (2017, pg.507), "when people see God as all-powerful but benevolent in intention toward people (e.g., suffers with us, helps us to overcome suffering), such beliefs could help promote positive thoughts and feelings." Recent research has illustrated that attachment to God is often a more robust predictor of distress than other dimensions of religiosity (Leman et al., 2018; Stulp et al., 2019), including during the COVID-19 pandemic (Schwaiger et al., 2021). Moreover, the benevolent support and kindness of a divine being may be especially pertinent during the pandemic, when public dimensions of religiosity (e.g., attendance at religious services) were shut down to curb the spread of the virus. In what follows, we outline two competing possibilities below: (1) secure attachment to God may be more beneficial for the mental health of the youngest cohorts of respondents; (2) secure attachment might be more beneficial for the oldest cohort of respondents.

Brief Overview of Attachment Theory. The theoretical propositions of an attachment to God derive from the framework of attachment theory that originally took as its focus parent-child relationships. According to broader tenets of attachment theory, infants develop an attachment to their caregiver and gain important comfort and support from that attachment figure (usually the mother) in this process (Bowlby, 1969;

Sroufe & Fleeson, 1986). Over time, the idea of a projection of attachment to early childhood caregivers has been extended to encompass other intimate relationships, such as those between close friends, romantic partners, and relationship between human and God (Hazan & Shaver, 1987; Kirkpatrick, 1992). Many religious traditions portray God as a personal being who cares deeply about people and their well-being (Jung, 2015). Though humans form an attachment with God, an unseen entity (Cicirelli, 2004), the attachment to God is just as real as attachment to a physical or personal object. Based on perceptions of relationships with God, Kirkpatrick and Shaver (1992) proposed three distinct attachment categories—secure, avoidant and anxious. A secure attachment to God entails the perception that God is warm, responsive, supportive, and protective, whereas avoidant attachment to God is indicative of perceptions that God is distant, impersonal, and have little interest in one's personal affairs. Lastly, anxious attachment to God refers to beliefs that God is inconsistent in reactions to human affairs.

Various studies have examined the connection between attachment to God and mental health. For example, in a national sample of Presbyterians in the United States, Bradshaw et al. (2010) found that secure attachment to God was related to lower psychological distress, while anxious attachment to God was related to higher psychological distress. As for depression and anxiety, a growing number of studies have suggested that secure attachment to God is linked to lower depression and anxiety levels (Ellison et al., 2014; Kirkpatrick & Shaver, 1992; Leman et al., 2018). Leman and colleagues (2018) further illustrated that attachment to God explains unique variance in well-being over and above other measures of personal and public religiosity. This suggests that an individual's perception of their relationship with God could play a significant role in mental health outcomes during this global health crisis.

Based on the research reviewed above, religious/spiritual coping can be seen as an element behind seeking out attachment figures. Religious coping refers to how people use their religious ideas, beliefs, and rituals to cope with life events (Pargament, 1997). One aspect of religious coping may involve finding a secure base in a divine being in the face of threat. Empirical evidence supports this assertion: Belavich and Pargament (2002) found that secure attachment to God were predictive of the use of spiritual coping methods, which went on to predict better adjustment to stress. Moreover, a longitudinal study of Presbyterian adults by Ellison and colleagues (2012) showed that secure attachment to God buffered against the deleterious effects of stressful life events on mental health outcomes. Taken together, spiritual forms of coping have been shown to play an important role in protecting mental health in the face of challenging circumstances (Pargament et al., 1998). Securely attached individuals typically view God as a source of strength in coping with life difficulties. This may empower them to mitigate their distress by positively re-framing their

problems or deriving comfort through their spirituality (e.g., Parenteau et al., 2019).

Yet, despite having received a fair amount of attention in the mental health literature, no existing study has examined attachment to God as a predictor of mental health outcomes during the COVID-19 pandemic. One study from a sample of 419 American Orthodox Jews found that trust in God and intrinsic religiosity were strongly associated with less stress during the initial peak of the pandemic (Pirutinsky et al., 2020). More germane to the current study, a study based on a sample of 183 Christian minorities in Pakistan found that attachment to God was a strong predictor of perceived stress in the early stage of the pandemic (Schwaiger et al., 2021). These studies are limited, however, because they covered only the early stages of the pandemic or used a small sample of religious minorities to examine an outcome only tangential to mental health. To our knowledge, our study is among the first to examine the role of attachment to God in the pandemic's influences on mental health with a nationally representative population sample. Based on previous literature, we would expect the following:

Hypothesis 2. Stronger perceptions of a secure attachment to God will be associated with lower depression and anxiety roughly 1 year into the pandemic.

Attachment to God as a Moderator of the Age-Mental Health Association

In this section, we outline how attachment to God may narrow or widen the predicted mental health gap between older adults and the youngest cohort of emerging adults. It is important to note at the outset of this discussion that we make no attempt to disentangle age from cohort effects in levels of religiosity reported by our respondents, a feat rendered impossible with cross-sectional data. We also recognize that more recent generations of Americans would likely have received less religious socialization than older cohorts (Schwadel, 2011), though this is most likely to affect patterns of formal religious attendance rather than one's personal relationship with God, still considered an important facet of religious life for current generations of youth and emerging adults (Denton & Flory, 2020). We therefore seek only to establish whether secure attachment to God widens or narrows the expected gap in depression and anxiety between younger and older adults during the pandemic.

A vibrant interdisciplinary literature on religiosity over the life course has shown that people become more religious as they grow older, both in terms of organizational religious involvement (Hayward & Krause, 2015) and higher levels of personal spirituality (Bengtson et al., 2015; Wink & Dillon, 2002). However, health declines that may occur in later life could pose significant challenges to attending services (Kelley-Moore & Ferraro, 2001), so a person's relationship with God may be more central to the religious experience in later life. In addition, older adults typically tend to experience a decline in the size of their social networks (Ajrouch et al., 2001). As a response to this deficit in social connection, older adults may be more likely to turn to God as a substitute attachment figure (Cicirelli, 2004). Therefore, the first possibility is that older adults with a stronger attachment to God will weather the storms of the COVID-19 pandemic better than their younger counterparts.

Results from numerous studies have linked a secure attachment to God to many salubrious outcomes in later life, including self-esteem and optimism (Bradshaw & Kent, 2018). Perceiving a secure attachment to God has also been found to strengthen the positive association between divine forgiveness and psychological well-being among older adults (Kent et al., 2018). Some theoretical perspectives suggest that the utility of holding a secure attachment to God may be most deeply felt in later life. Indeed, in Fowler's (1991) developmental theory of religion, older adults possess the most mature faith because of the wisdom and experience gained by progressing through the peaks and valleys of a human life course. Additionally, older adults may be better versed in using methods of religious coping. As the finitude of human life becomes more salient at the latter stages of life, older adults typically tend to draw from the reservoirs of religious belief systems as a means of buffering against death anxiety (Vail et al., 2010). Other research has explicitly found a link between a secure attachment to God and lower death anxiety (Jung, 2018). For these reasons, older adults, equipped with spiritual wisdom and with a more pressing need to draw on religion to deal with the hardships of daily life, might benefit more from holding a secure attachment to God than their younger counterparts during the pandemic.

Hypothesis 3. The gap in depression and anxiety between older cohorts (71 years and older) and the youngest cohort (18–30) will be wider at higher levels of attachment to God.

However, while older adults may have a stronger impetus to report stronger attachment to God, a competing possibility is that younger individuals may benefit more from this type of positive, intimate relationship with a divine being. Broadly speaking, the young adult years (from 18 until 30) represent an important life stage in terms of religious involvement and psychological well-being. While many of the changes inherent in emerging adulthood can be exhilarating (e.g., going to college, moving, changing jobs, revising life plans), they can also produce a great deal of anxiety (Arnett, 2000). Disrupted by the transitions and other distractions in their lines, many emerging adults generally experience a decrease in religious commitments and practices that defined their early years, including in religious attendance (Uecker et al., 2007) and religiosity (Chan et al., 2015). During this period of the life course, individuals form distinct spiritual relationships as they undergo processes of identity development (Barry et al., 2010). As Bryant and Astin (2008) argue, the experiences inherent in emerging adulthood also foster spiritual awareness.

Young adults are prone to search for ways to individualize their spiritual beliefs, and attachment to God appears to be one important component of this process (Arnett, 2000; Arnett & Jensen, 2002). As Smith (2005) argued, emerging adults tend to view God as a combination of "Divine Butler and Cosmic Therapist," on call and available to supply things that will enhance personal well-being. In a qualitative study of undergraduates, some young adults spoke most frequently of their personal spiritual experiences of God as their source of intimacy, which allowed them to see themselves as "worthy of love" (Kimball et al., 2013). This same study also revealed that many young adults also view God as "stronger and wiser" than themselves, and a good source to turn to when coping with stress (Pargament, 1997). Recent research has also found that more recent cohorts of American youth, more so than their older counterparts, tend to emphasize having a personal connection with God more so than attending church or engaging in other religious practices (Denton & Flory, 2020). The view of God as an imminent, involved higher power is indeed much more common among recent cohorts of younger adults (Bengtson et al., 2015). Though fewer in number, some studies also suggest that attachment to God associates with a higher sense of purpose in life and lower depression for emerging adults, associations which have shown to persist over a 5-year period (Culver & Denton, 2017; Upenieks, 2021). Therefore, to the extent that younger adults hold a stronger attachment to God, the expected disadvantage with regards to depression and anxiety relative to their older counterparts during the pandemic should be minimized. This leads us to our final study hypothesis:

Hypothesis 4. The gap in depression and anxiety between the youngest cohort (18–30) and the oldest cohort (71 years and older) will be minimized (narrower) at higher levels of attachment to God.

Compared to emerging adults and older adults, there have been relatively fewer empirical studies on religious participation in middle adulthood. Religious belief and involvement are generally more stable in midlife compared to in early adulthood or later life (Hayward & Krause, 2013; Shand, 2000), with some increase in religiosity after individuals get married and have children (Uecker et al., 2016). However, we refrain from offering hypothesis on the relationship between secure attachment to God and mental health among these middle cohorts to place a sharper focus on the early and later stages of the life course.

Data and Methods

Sample

Data for this study come from the Values and Beliefs of the American Public Study, also known as the Baylor Religion Survey Wave 6 (BRS 6). The BRS 6 is a nationally representative survey conducted by the Gallup Organization at the height of the COVID-19 pandemic from January to March of 2021. Respondents had the opportunity to take the survey via web or paper. An address-based sample (ABS) methodology and simple stratified sampling design were used to select survey takers from an address database generated by the Marketing Systems Group. A total of 11,000 surveys were sent out, of which 1336 were returned, resulting in a final response rate of 11.3%. Since the survey was fielded during the COVID-19 pandemic, many areas in the United States experienced significant postal delays related to the pandemic. This likely had an impact on response rates, and Gallup did see a significant decline in response rates on other mail surveys fielded during the pandemic, potentially creating bias by making respondents in some areas of the country more likely to not have returned the survey.

The BRS data were weighted to match national demographics of age, gender, education, race, ethnicity, and Census region, which compare favorably to the 2020 American Community Survey. The BRS 6 oversampled high-density Hispanic, African American, and younger populations to account for typically lower than average response rates from these groups and to ensure adequate coverage of these subpopulations in the sample. Weighting was carried out to adjust for the probability of selection and to account for non-response. In the first stage, base weights were constructed to account for the probability of selection. The base weight assigned to each respondent in each stratum was equal to the inverse of the probability of selection (or the sampling fraction) for that stratum and also accounted for the number of adults in the household. In the next stage, the weights were then adjusted for non-response by a non-response weight adjustment factor equal to the ratio of the sample size and the number of completed surveys in each stratum. The final step involved post-stratification weighting to restore proportionality among groups of the population that may have been overrepresented or underrepresented in the survey due to differential non-response or representation on the sample frame. This sampling weight was applied in all analyses.

Dependent Variables

Depression. Depressive symptoms were calculated based on an average of two measures derived from the CES-D 11-item scale of depression (Radloff, 1977). Respondents were asked, "In the past week, how often have you had the following feelings?", followed by two statements—"I felt depressed," and "I felt sad." Answer categories included (1) "never," (2) "hardly ever," (3) "some of the time," and (4) "most of the time." A higher score indicates a higher level of depression. This index has an alpha reliability coefficient of .85.

Anxiety. We use three measures to assess the respondents' anxiety level. Respondents were asked, "In the past week, how often have you had the following feelings?" Subsequent

statements included "I worried a lot about little things," "I felt tense and anxious," and "I felt restless." Again, the answer categories were (1) "never," (2) "hardly ever," (3) "some of the time," and (4) "most of the time." A higher score corresponds with a higher anxiety level. This anxiety scale has an alpha reliability coefficient of .83.

Main Independent Variables

Age. Respondents in the sample were aged 18 and over. We recoded age into six categories in roughly 10-year increments to ensure adequate cell size across age groups (see De Bruin, 2021 for a very similar approach). Our age categories therefore include 18–30 years, 31–40 years, 41–50 years, 51–60 years, 61–70 years, and 71+ years, the latter group which serves as our reference category, since older individuals tend to have better mental health than younger people and because we examine whether a secure attachment to God is associated with a widening or narrowing of this age gap in mental health. Results are also consistent if age is top coded at 60 or 65 years and over. A full distribution of the age groups is shown in Table 1.

Attachment to God. Attachment to God was measured by the respondents' agreement with each of the following four items: (1) "God seems impersonal to me" (reverse-coded), (2) "God seems to have little or no interest in my personal problems" (reverse-coded), (3) "God knows when I need support," and (4) "I feel that God is generally responsive to me." Answers range from (1) "strongly disagree" to (4) "strongly agree." The four items come from Rowatt and Kirkpatrick's (2002) nine-item, multidimensional measure and have been used widely in previous studies (Bradshaw et al., 2010; Ellison et al., 2012). All measures were coded so that a higher score indicates a higher level of secure attachment to God. The scale shows high internal consistency with an alpha reliability coefficient of .85.

Control Variables

To ensure that any association between age and mental health was not confounded by other variables that could reasonably be associated with mental health, we controlled for respondents' demographics, including gender (male and female), race and ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, Asian, and Other race), marital status (single, married, divorced or separated, widowed, and in cohabitation), and education (no high school degree, high school degree, some college, bachelor's degree, and postgraduate). Respondents also reported on their total household income last year (before taxes) from 1 = $10.000 or less, 2 = $10,001–$20,000, 3 = $20,001–$35,000, 4 = $35,001–$50,000, 5 = $50,001–$100,000, 6 = $100,001–$150,000, and 7 = $150,001 or more. We recoded household income using the mid-point of each income category as follows: 1 = $5000, 2 =

$15,000, 3 = $27,500, 4 = $42,500, 5 = $75,000, 6 = $125,000, 7 = $175,000. Household income is therefore treated as a continuous variable in all analyses. Supplemental analyses also adjusted for the number of children under the age of 18 the respondent had, and respondents' employment status during the pandemic. We ultimately excluded these variables from our final models because the latter was highly collinear with household income and the former was highly correlated with marital status and age. Results did not substantively differ, however, if these additional variables were included in our statistical models. In addition, supplemental analyses also adjusted for geography and political measures, which could impact religiosity as well as public health responses to the pandemic. Additional models included controls for the region of the United States a respondent lived in (Northeast, South, Midwest, and South), political identification (from 1 = extremely conservative to 7 = extremely liberal) and political affiliation (from 1 = Strong Republican to 7 = Strong Democrat). Main results again remain unchanged, so we did not include these controls in our final models.

We also adjust for a series of health and religion covariates. Respondents were asked to report their general health by answering the following question: "In general, would you say your health is…" Answer categories included (1) "excellent," (2) "very good," (3) "good," (4) "fair," and (5) "poor." In addition, respondents were asked if (a) they themselves or (b) any of their close relatives or friends had been infected by COVID-19. The answers to these questions are coded as a binary (1 = yes, 0 = no).

Finally, to examine the associations of attachment to God with mental health more specifically, net of other dimensions of religiosity, we included three other religion indicators in our control variables. Religious attendance was assessed by the question, "how often do you attend religious services at a place of worship?" We recoded this into a binary variable (0 = less than weekly, 1 = weekly or more) for the sake of parsimony after verifying that the results were similar with the use of the full scale. Personal religiosity was assessed by the question, "How religious do you consider yourself to be?" Answer categories included "not religious," "slightly religious," "moderately religious," and "very religious." Finally, we adjust for religious tradition following the RELTRAD scheme proposed by Steensland et al. (2000), which categorizes individuals into Evangelical Protestants (reference group), Mainline Protestants, Black Protestants, Catholic, Jewish, Other religion, and the non-affiliated.

Plan of Analysis

We estimate a series of ordinary least squares (OLS) regression models to assess the associations of age and attachment to God on mental health outcomes. All regression models use weighted data to enhance representativeness of parameter estimates. We use multiple imputation with chained equations (m = 20) to deal with missing data in all

Table 1. Weighted Descriptive Statistics, Baylor Religion Survey Wave 6 (*N* = 1168).

	Mean / %	SD	Min	Max
Depression	2.21	.86	1	4
Anxiety	2.46	.81	1	4
Age				
18–30	18.39			
31–40	18.54			
41–50	15.53			
51–60	18.34			
61–70	15.73			
71+	13.47			
Attachment to god	2.45	1.40	0	4
Gender				
Female	52.56			
Male	47.44			
Race and ethnicity				
White	64.41			
Black	11.30			
Hispanic	16.77			
Asian	4.78			
Other	2.74			
Marital status				
Single	21.31			
Married	51.40			
Divorced or separated	13.21			
Widowed	6.85			
Cohabitation	7.23			
Education				
No high school	9.13			
High school	26.14			
Some college	28.47			
4-year college	16.85			
Postgraduate	19.40			
Household income	73,828	53,946	5000	175,000
General health				
Poor	3.43			
Fair	15.10			
Good	35.28			
Very good	35.04			
Excellent	11.16			
COVID-19 infection (self)				
Yes	19.07			
No	80.93			
COVID-19 infection (family and friends)				
Yes	68.02			
No	31.98			
Religious attendance				
Less than weekly	75.42			
Weekly or more	24.58			
Personal religiosity				
Not religious	25.60			
Slightly religious	22.43			
Moderately religious	34.32			
Very religious	17.65			
Religious affiliation				
Evangelical protestant	27.73			
Mainline protestant	11.97			
Black protestant	8.54			
Catholic	23.23			
Jewish	1.58			
Other	7.28			
Non-affiliated	19.67			

Note. Standard deviations are omitted for categorical variables.

analyses to preserve statistical power (Royston, 2005). Following Von Hippel (2007), we dropped the cases that have missing values on the dependent variables (depression and anxiety). This procedure yields a final sample of 1168 individuals across all models. All analyses are conducted in Stata 16.

Results

Descriptive Statistics

Table 1 presents the weighted descriptive statistics. As shown there, BRS respondents have relatively low to medium levels of depression and anxiety, with an average score of 2.21 on depression and 2.46 for anxiety. Respondents fell into the six age groups quite evenly, with 18.39% of them aged 18–30, 18.54% aged 31–40, 15.53% aged 41–50, 18.34% aged 51–60, 15.73% aged 61–70, and 13.47% aged 71 or older. It is also noteworthy that older adults reported stronger perceptions of attachment to God, with those in the 61–70 age category reporting average attachment scores of 2.76, those 70 or older reporting average scores of 2.68, and those in our youngest age category, 18–30, having the lowest secure attachment to God scores of any age group (1.95) (analyses not shown).

Multivariable Results for Depression

Table 2 shows results from a series of models predicting depression as the outcome. Model 1 in Table 2 reports age differences in depression among the respondents. Results suggest that age is generally negatively associated with depression during the pandemic, after controlling for the demographics, health, and religious covariates. Compared with those who are 71 and older, respondents who are 18–30 report higher depression scores by .31, on average ($p < .05$), while those who are 41–50 report .25 higher depression scores than the oldest group ($p < .05$), and those who are 51–60 report higher depression scores by .34. ($p < .01$). Respondents aged 61–70 were the only group to report depression scores that did not differ significantly from the 71+ group. Figure 1 shows these age differences in depression levels visually, with 95% confidence intervals shown to facilitate comparisons among all age groups beyond the 71+ reference category we chose. We therefore find support for Hypothesis 1: older adults (61 years and older) do indeed report lower depression compared to younger cohorts.

Model 2 introduces attachment to God in the analysis. The same pattern of age differences is retained from Model 1, where the 18–30 age group and the 41–60 age group are still found to have significantly higher levels of depression than those who are 71 and older. However, attachment to God is not significantly related to respondents' depression, which fails to support Hypothesis 2. Model 3 tests an interaction term between age and attachment to God. Results show that

Table 2. Ordinary Least Squares Regression Results Predicting Depression, Baylor Religion Survey Wave 6 (N = 1168).

	Model 1		Model 2		Model 3	
	b	SE	b	SE	b	SE
Age (ref. = 71+)						
18–30	.31*	(.13)	.31*	(.13)	.52*	(.21)
31–40	.25	(.13)	.25	(.13)	.28	(.21)
41–50	.25*	(.12)	.26*	(.12)	.40	(.23)
51–60	.34**	(.13)	.35**	(.13)	.36	(.21)
61–70	−.001	(.11)	.002	(.11)	.33	(.19)
Attachment to god			−.02	(.03)	.02	(.07)
Age × Attachment to God						
18–30					−.09	(.09)
31–40					−.004	(.08)
41–50					−.05	(.09)
51–60					−.01	(.08)
61–70					−.12	(.08)
Gender						
Female	.12	(.06)	.13*	(.06)	.12	(.06)
Race and ethnicity (ref. = white)						
Black	−.27	(.15)	−.27	(.15)	−.26	(.14)
Hispanic	−.15	(.09)	−.15	(.09)	−.14	(.09)
Asian	−.14	(.16)	−.14	(.16)	−.15	(.16)
Other	.27	(.14)	.28	(.14)	.27	(.14)
Marital status (ref. = never married)						
Married	−.14	(.10)	−.14	(.10)	−.14	(.10)
Divorced or separated	−.07	(.11)	−.07	(.11)	−.07	(.11)
Widowed	.08	(.14)	.09	(.14)	.09	(.14)
Cohabitation	.05	(.14)	.05	(.14)	.08	(.14)
Education (ref. = less than high school)						
High school	−.21	(.18)	−.22	(.18)	−.21	(.18)
Some college	−.11	(.17)	−.12	(.17)	−.10	(.17)
4-year college	−.09	(.17)	−.10	(.17)	−.07	(.17)
Postgraduate	−.08	(.18)	−.09	(.18)	−.08	(.18)
Household income	−.00	.00	−.00	(.00)	−.00	(.00)
General health (ref. = poor health)						
Fair	−.24	(.19)	−.25	(.19)	−.29	(.19)
Good	−.56**	(.18)	−.56**	(.17)	−.60**	(.17)
Very good	−.92***	(.18)	−.92***	(.18)	−.95***	(.17)
Excellent	−1.18***	(.19)	−1.17***	(.18)	−1.21***	(.18)
COVID-19 infection (self)						
No	.05	(.08)	.04	(.08)	.04	(.08)
COVID-19 infection (family and friends)						
No	−.06	(.07)	−.06	(.07)	−.05	(.07)
Religious attendance						
Weekly or more	.06	(.09)	.06	(.09)	.06	(.09)
Personal religiosity (ref. = not religious)						
Slightly religious	.16	(.09)	.18	(.10)	.18	(.10)
Moderately religious	−.03	(.10)	.003	(.11)	.005	(.11)
Very religious	−.05	(.12)	−.01	(.14)	−.004	(.14)
Religious affiliation (ref. = evangelical Protestant)						
Mainline protestant	.14	(.10)	.12	(.10)	.12	(.10)
Black protestant	.22	(.18)	.22	(.19)	.23	(.18)
Catholic	.19*	(.09)	.19*	(.09)	.18*	(.09)
Jewish	.38*	(.15)	.36*	(.16)	.30	(.16)
Other	.22*	(.11)	.21*	(.11)	.20	(.11)
Non-affiliated	.20	(.11)	.17	(.11)	.16	(.11)
Constant	2.78***	(.26)	2.82***	(.27)	2.72***	(.28)
Adjusted R-Square	.20		.20		.21	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$.
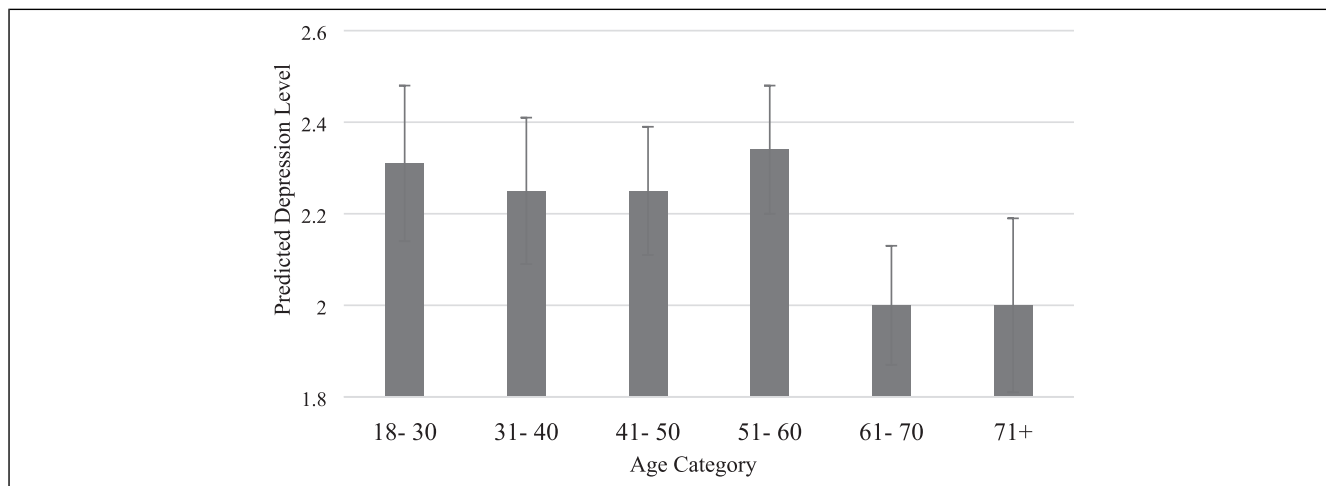Standard errors in parentheses. All Results Weighted.

Figure 1. Predicted depression scores by age groups (95% confidence intervals shown).
Note. Estimates are derived from Model 1 of Table 2. All other covariates are held at their respective means.

there is no significant interaction between the two variables, suggesting that the association between age group and depression does not vary by attachment to God (b = .02, p > .05). This null finding is inconsistent with the tenets of Hypothesis 3 and 4, at least for the outcome of depression.

Multivariable Results for Anxiety

Table 3 presents an identical series of models as shown in Table 2, this time taking anxiety as the outcome variable. Model 1 in Table 3 examines the association between the different age groups and anxiety, net of all study covariates. Results suggest that, as for depression, age was again generally negatively associated anxiety among the respondents. Compared with the oldest group, the 18–30, 31–40, 41–50, and 51–60 age groups all reported significantly higher levels of anxiety (b = .57, .60, .51, and .46 respectively, all ps < .001). Once again, mirroring the pattern for depression, respondents in the 61–70 age groups do not have significantly higher anxiety scores than the 71+ age group. Figure 2 shows the age difference in anxiety levels visually with 95% confidence intervals displayed to allow for comparisons between all sample age groups. This pattern of results again displays support for Hypothesis 1: older adults (61 and over) report lower anxiety than all younger age groups.

Model 2 of Table 3 introduces attachment to God in the analysis. Similar to our results for depression, attachment to God was not significantly associated with respondents' anxiety. This does not support Hypothesis 2. Moreover, all associations between age and anxiety reported in Model 1 remain identical. Lastly, Model 3 tests an interaction term between age group and attachment to God to examine whether the gap in anxiety between older and younger age groups is narrowed or widened by differing levels of attachment to God. Results show that the interaction between the youngest age group and

attachment to God produced a significant negative coefficient (b = −.19, p < .05) for the 18–30 group. This indicates that the association between being 18–30 years of age and higher anxiety is weaker relative to the 71+ group (i.e., the gap in anxiety is narrowed between groups), but only for younger respondents who report a strong sense of attachment to God.

This moderation pattern can be more clearly seen in Figure 3, which illustrates age group differences in predicted anxiety scores by different levels of attachment to God, graphed at the mean, one standard deviation below the mean, and one standard deviation above the mean of attachment to God scores. All other respective covariates are held at their mean. We would draw attention to the first set of bars observed Figure 3 (18–30 age groups) and the last set of bars (71+) shown in the graph. For respondents with low attachment to God, respondents 18–30 reported an average anxiety level of 2.74, compared to only 1.96 for those 71+. This represents .78 higher anxiety scores for the 18–30 age groups, which corresponds to nearly a 1-standard deviation difference in anxiety between the youngest and oldest cohort (standard deviation anxiety = .81). However, for respondents holding high attachment to God, the 18–30 groups had average anxiety scores of only 2.38, while the 71+ group had average scores of 2.11, corresponding to only a .27 difference between groups and representing just around 1/3 of the gap in anxiety scores between these groups at low levels of attachment to God. We therefore observe support for Hypothesis 4: the gap in anxiety between the youngest cohort (18–30) and the oldest cohort (71 years and older) is minimized at higher levels of attachment to God.

Discussion

This study examined the age differences in mental health outcomes during the COVID-19 pandemic in the United States.

Table 3. Ordinary Least Squares Regression Results Predicting Anxiety Baylor Religion Survey Wave 6, (*N* = 1168).

	Model 1		Model 2		Model 3	
	b	SE	b	SE	b	SE
Age (ref. = 71+)						
18–30	.57***	(.13)	.57***	(.13)	.98***	(.18)
31–40	.60***	(.13)	.61***	(.13)	.70***	(.19)
41–50	.51***	(.12)	.52***	(.12)	.58**	(.22)
51–60	.46***	(.12)	.46***	(.12)	.66***	(.18)
61–70	.17	(.11)	.17	(.11)	.46*	(.19)
Attachment to god			−.02	(.03)	.05	(.07)
Age × Attachment to god						
18–30					−.19*	(.08)
31–40					−.03	(.08)
41–50					−.02	(.08)
51–60					−.07	(.07)
61–70					−.11	(.07)
Gender						
Female	.17**	(.06)	.18**	(.06)	.17**	(.06)
Race and ethnicity (ref. = white)						
Black	−.27	(.14)	−.27	(.14)	−.26	(.14)
Hispanic	−.12	(.10)	−.11	(.10)	−.09	(.09)
Asian	−.03	(.10)	−.03	(.10)	−.06	(.09)
Other	−.13	(.19)	−.13	(.19)	−.15	(.18)
Marital status (ref. = never married)						
Married	−.05	(.10)	−.05	(.10)	−.05	(.09)
Divorced or separated	−.13	(.11)	−.13	(.11)	−.13	(.10)
Widowed	−.16	(.14)	−.16	(.14)	−.17	(.14)
Cohabitation	−.07	(.12)	−.07	(.12)	−.05	(.11)
Education (ref. = less than high school)						
High school	−.21	(.16)	−.21	(.16)	−.19	(.16)
Some college	−.17	(.15)	−.17	(.15)	−.15	(.15)
4-year college	−.15	(.15)	−.16	(.15)	−.12	(.16)
Postgraduate	−.10	(.15)	−.11	(.15)	−.08	(.16)
Household income	−.00	.00	−.00	(.00)	−.00	(.00)
General health (ref. = poor health)						
Fair	−.15	(.15)	−.16	(.15)	−.22	(.16)
Good	−.28	(.14)	−.27	(.14)	−.33*	(.15)
Very good	−.74***	(.14)	−.74***	(.14)	−.77***	(.15)
Excellent	−.93***	(.16)	−.93***	(.16)	−.96***	(.16)
COVID-19 infection (self)						
No	.05	(.08)	.04	(.08)	.05	(.08)
COVID-19 infection (family and friends)						
No	−.01	(.07)	−.01	(.07)	−.01	(.07)
Religious attendance						
Weekly or more	−.001	(.09)	.002	(.09)	−.01	(.09)
Personal religiosity (ref. = not religious)						
Slightly religious	.05	(.09)	.07	(.09)	.06	(.09)
Moderately religious	−.05	(.09)	−.01	(.11)	−.02	(.11)
Very religious	−.08	(.12)	−.03	(.14)	−.03	(.14)
Religious affiliation (ref. = evangelical Protestant)						
Mainline protestant	.22**	(.09)	.21*	(.08)	.21*	(.09)
Black protestant	.22	(.18)	.22	(.18)	.23	(.18)
Catholic	.19*	(.08)	.18*	(.09)	.18*	(.08)
Jewish	.24	(.13)	.22	(.13)	.14	(.13)
Other	.18	(.10)	.17	(.10)	.16	(.10)
Non-affiliated	.15	(.10)	.13	(.10)	.11	(.10)
Constant	2.59***	(.25)	2.63***	(.25)	2.45***	(.26)
Adjusted R-Square	.20		.20		.22	

Note: *** *p* < .001, ** *p* < .01, * *p* < .05.
Standard errors in parentheses. All results weighted.

Using nationally representative data collected roughly 1 year into the pandemic, the results of our study yielded several important findings. First, we found that older adults 61 years old or older had significantly lower levels of depression and anxiety compared to the younger adults. These results are consistent with previous work on the differential impact of the pandemic, which suggests that older adults may be at a mental health advantage in response to the pandemic (O'Connor et al., 2021; Wang et al., 2020). Though older adults were at a considerably higher risk of serious infection or death from COVID-19 (Shahid et al., 2020), younger adults faced significant stressors that rapidly altered the course of their daily lives. For instance, the seismic disruptions in work and home routines coupled with higher unemployment rates between 2020 and 2021 heavily affected young adults (Lee et al., 2021). Young adults also tend to have fewer coping resources at their disposal compared to their older counterparts, placing them at a relative disadvantage when it comes to using life experiences to develop effective coping and emotion regulation (Carstensen et al., 2020; Minahan et al., 2021; Settersten et al., 2020). We show in this study, for the first time using nationally representative data from the United States, that the mental health of younger Americans (ages 18–30) more greatly suffered during the pandemic compared to older adults 61 years of age and older.

Our more central objective was to investigate how an important religious coping resource—secure attachment to God—may modify the relationship between age and mental health problems. Our results indicate that although secure attachment to God was not itself associated with respondents' depression or anxiety during the pandemic, it significantly moderated the age differences in anxiety between the oldest and youngest cohorts. Indeed, emerging adults (18–30) who reported a more secure attachment to God experienced lower levels of anxiety during the pandemic than their counterparts who reported lower attachment to God scores. This result fits squarely into research which has considered variations in religiosity over the life course (Hayward & Krause, 2013). Though older adults tend to exhibit higher levels of intrinsic religiosity and religious attendance (Chan et al., 2015; Uecker et al., 2007; Wink & Dillon, 2002), we find that religiosity may have had greater utility for younger adults. Descriptively, our findings corroborate previous research that older adults (61 years and over in our sample) reported being more securely attached to God (see also Cicirelli, 2004). However, the relative benefits of perceiving a secure attachment were more salient for the youngest cohort of respondents (18–30 years of age). Indeed, respondents aged 18–30 who reported high attachment to God had average anxiety scores that were .36 units lower than their same-age counterparts who reported low attachment to God, corresponding to nearly 1/2 of a standard difference between these groups. More secure attachment to God among the 18–30 groups also minimized the differences in anxiety between those 71+ and those 18–30.

Why might stronger perceptions of secure attachment to God be a particularly useful resource to younger cohorts of Americans during the COVID-19 pandemic? Many pandemic-related stressors affected younger adults at a pivotal time in their lives, including employment insecurity, and concerns about one's future (Hawes et al., 2021). The belief in God as an attachment figure might help to enhance self-esteem by offering a sense of security and predictability (Cicirelli, 2004). In his initial conceptions of attachment theory, Bowlby (1969) observed that infants engaged in proximity-seeking behavior to their caregiver when they needed a "safe haven" of protection in an uncertain or dangerous environment. A secure attachment to God may also provide support in times of stress (Ellison et al., 2012) and enhances emotion regulation (Rowatt & Kirkpatrick, 2002), perhaps aiding younger Americans to see that they are worthy of love from a divine power (Kimball et al., 2013). Compared to these younger cohorts of Americans, it is possible that the stress of the first year of the pandemic may not have affected older adults to a similar extent. Equipped with more established coping resources and with the release of an effective vaccine, older adults may not have felt as much insecurity, translating into less mental anguish with or without a secure attachment to God.

It also deserves mention that these age contingent associations between secure attachment to God and mental health was only observed for anxiety and not depression. For young adults, a secure attachment to God seems to quell anxious tendencies rather than affecting depression. While more work is certainly needed to ascertain these patterns of moderation across these two mental health indicators, we put forth one possible explanation. A secure attachment to God, and the accompanying beliefs that God will protect one from harm, may specifically stifle perceptions of anxiety by inhibiting threats about the danger or uncertainty of the world (Ellison et al., 2014). We propose that perceptions of God as warm, caring, and supportive—hallmarks of a secure attachment—might make the world of younger adults seem less threatening and dangerous in the aftermath of the pandemic. This would more closely align with reducing anxiety and threat-related symptoms, perhaps to a greater extent than extinguishing sadness or hopelessness, hallmarks of depression.

Like all studies, our work is characterized by several limitations. First, the Baylor Religion Survey is cross-sectional. Therefore, we could not establish the temporal order among variables in our models and cannot make any firm claims about causality. It is conceivable that those who are more depressed and anxious might be more likely to hold different levels of secure attachment to God. Moving forward, longitudinal data can also provide researchers the opportunity to track any long-term effects of the pandemic on mental health and examine the role of religion/spiritual coping resources as the pandemic evolves.
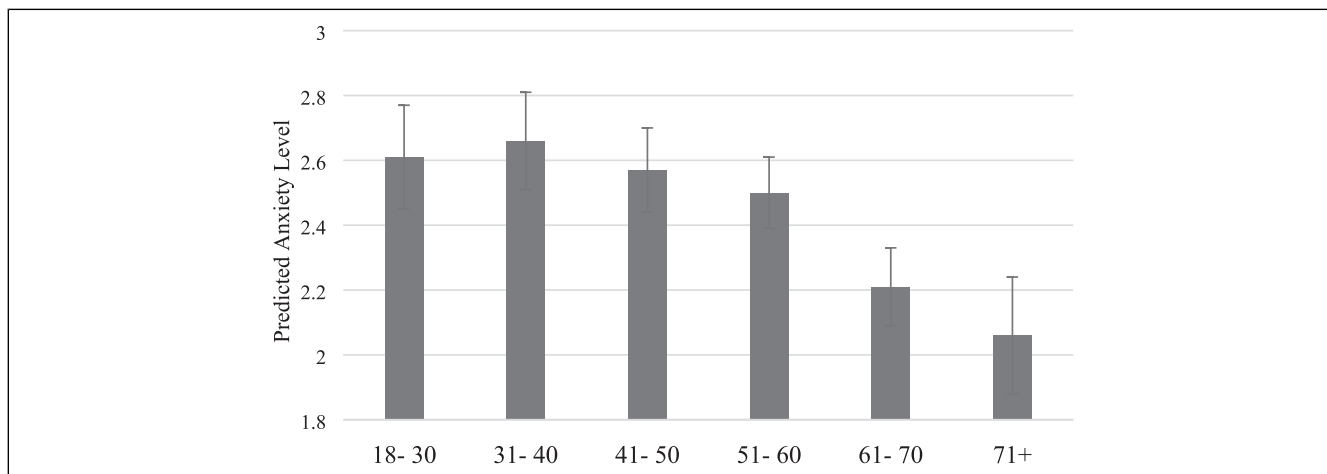
Figure 2. Predicted anxiety scores by age groups (95% confidence intervals shown).
Note. Estimates are derived from Model 1 of Table 3. All other covariates are held at their respective means.
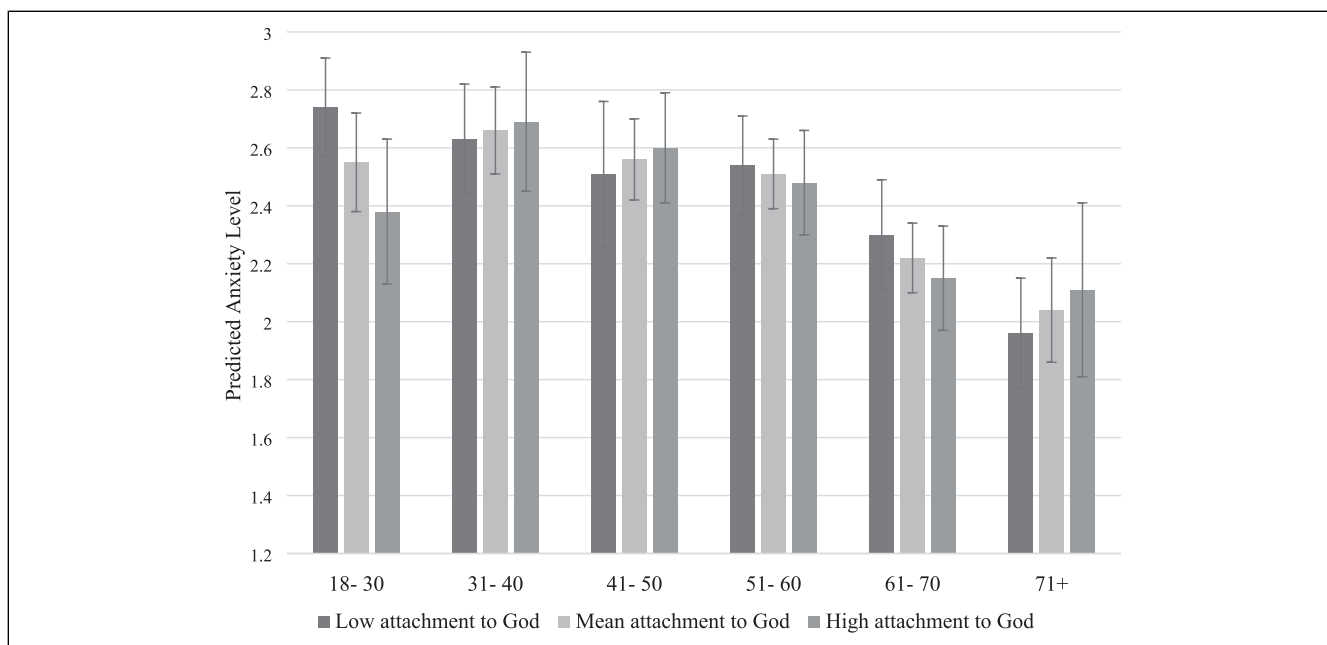

Figure 3. Age differences in anxiety: The moderating role of secure attachment to god.
Note. Estimates are derived from Model 3 of Table 3. All other covariates are held at their respective means.

Second, the use of cross-sectional data also prohibits us from disentangling age from cohort effects in the analysis, especially with regards to religiosity. In other words, we could not adequately adjust for differential socialization of respondents of different ages based on the religious context in the United States at the time (Schwadel, 2011). This is less of a concern for our study, however, since we made no attempt to put forth any substantive conclusions about absolute levels of religiosity according to age group. Rather, we assessed whether, at similar levels of attachment to God, which age group might serve to benefit more from this belief. Still,

future research with longitudinal data could help to address differences in various domains of religiosity and health across cohorts of Americans socialized during very different religious contexts.

Third, we would note that our findings might not be generalizable beyond the United States and Christian religious denominations. Most existing work on attachment to God has been conducted in the Christian context, and it is possible that the relevance of this attachment relationship varies in other religious cultures (Granqvist, 2014). However, given that we drew from nationally representative data, the

results of our study may be generalizable to other populations with respondents of similar religious backgrounds. Lastly, our study focused on depression and anxiety as mental health indicators. More components of health and well-being could be assessed in the future to investigate the impact of the pandemic on a broader range of health outcomes and their distribution across different age groups, such as stress, cognitive function, eating and sleeping disorders, physical health, and social well-being.

Despite its limitations, we believe our study has made an original contribution to the literature on age and mental health differences by also considering the moderating role of attachment to God during the COVID-19 pandemic. While broader narratives suggest younger cohorts of Americans are detaching themselves from religious institutions and formal religious involvement (Voas & Chaves, 2016), the results from our study show that a positive relationship with God still has practical utility for the well-being of younger adults. As we begin to emerge from the pandemic, we hope future research continues to assess how various forms of religion/ spirituality may be helpful coping resources for people at different life course stages, serving to diminish the COVID-19 pandemic's far-reaching impact on mental health.

Declaration of Conflicting Interests

Funding

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