

RELIGION AND AGING: EXPLORING THE EFFECTS OF RELIGIOSITY ON
MENTAL WELL-BEING ACROSS AGE COHORTS

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The following faculty members have examined the final copy of this thesis for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Arts with a major in Sociology.

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ABSTRACT

The relationships between mental health and various aspects of religiosity are well studied. Religion, as a social institution, provides support to many. Findings indicate a positive relationship between religious participation and indicators of mental health, but few studies focus on age difference. Incorporating age and age cohort differences when studying mental well-being and religion is important because research has found that religious practices and the conceptualization of religiosity vary by age cohort. While it may appear the United States is drastically less religious, practices of religiosity still provides emotional and social support to many. This study fills a gap in the literature by using data from Wave III of the Survey of Midlife in the United States (MIDUS) to conduct a quantitative analysis of the relationship between religiosity and mental well-being with respect to age cohorts.

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CHAPTER 1

INTRODUCTION

This research examines the relationship between mental health and religiosity across age cohorts. Research on mental health is of growing importance. Lake and Turner (2017) go as far as discussing mental illness as the “pandemic of the 21st century (para.1)”. According to the American Foundation for Suicide Prevention (n.d.), suicide is the tenth leading cause of death in the United States. In 2017, nearly 50,000 Americans died by suicide. As mental health is a major concern in the U.S. and religiosity has been a major part of American culture, we must look at how these two interact with one another. The purpose of this study is to provide an update and fill the gaps in existing research by using data from the Survey of Midlife in the United States to examine the effects of religiosity on mental well-being with respect to age cohort. More specifically, this research examines how mental health may be impacted by age cohort related differences in religiosity.

An age cohort analysis of religiosity must examine how religiosity has changed throughout the years. Although it may seem as if the United States is becoming drastically less religious, that is not entirely true. While, people are less likely to be raised religiously than previously (Schwadel, 2010), the meaning of religiosity and spirituality vary by age cohort (Bengtson, Silverstein, Putney, and Harris, 2015). Findings also indicate that religious attendance remains the same throughout the aging process, but religious intensity increases as people get older (Bengtson et al., 2015). Few studies examine the impact of religiosity on well-being in terms of age cohorts. There are a number of reasons why it is important to incorporate age cohort differences in analyses of religiosity and mental health. Circumstances such as times of war and economic depressions can shape the lives of age groups differently (Moody and Sasser, 2015).

Most notably, researchers have found that the Baby Boomer cohort is very different than previous age groups. Moody and Sasser (2015) state that Boomers are much more educated and tolerant than their parents. This study reviews the prior research on various predictors of mental health and incorporates a quantitative analysis of the MIDUS data to answer these questions. First, this paper provides an overview of mental health in the U.S. Next, religiosity within the U.S. is addressed. Then, the literature pertaining to mental well-being/health with religiosity, demographic characteristics, and other indicators of health is reviewed.

CHAPTER 2

LITERATURE REVIEW

2.1 Persistence of Mental Illness in the U.S.

Aside from the startling suicide numbers, mental health is a major issue in the United States. According to 2016 findings from the National Institute of Mental Health (n.d.), nearly 20 percent of all Americans live with a mental illness. That is approximately 45 million people that experience some type of mental ailment. One reason for the persistence of mental illness in America may be the culturally constructed views on mental health and mental illness. As Furman (2010) discusses, many people, particularly men, view mental illness as a form of “weakness”. One prime example is “shell shock”, where soldiers with PTSD were diagnosed with shell shock to avoid the negative connotation of the word mental illness.

According to Corrigan and Shapiro (2010), the social stigma that is placed on mental illness causes discrimination. The stigma around mental illness often causes people to question the competency of individuals with mental illnesses. It is a widely held belief that people with mental illnesses are unsafe or violent (Perry et al. 2007). Corrigan and Shapiro (2010) also find that people with mental illness experience homelessness, workforce discrimination, and more limited housing opportunities as compared to people that do not experience a mental illness. The public stigma around mental health may be part of the reason why mental illness is so prevalent. Banishing or ridiculing those with mental illnesses limits their access to healthcare because it may cause them to avoid acknowledging their mental illness. In reality, mental illness could affect anyone. By contributing to the research on mental health, this project helps shed light on these misconceptions and acts of discrimination. The discussion of the stigma around mental health is expanded in various segments of the literature review (e.g. Gender and Mental Health).

2.2 Religiosity in the U.S.

Scholars have observed that many western societies have shifted away from religion (Bruce, 2013; Chaves, 2011). Bengtson et al. (2015) found that overall religiosity in the United States has decreased over the last 35 years. Decreased levels of religiosity suggest that this shift may be the result of more and more people being raised with lower rates of religious participation. Schwadel's (2010) study reports that each cohort born after the 1950 to 1954 cohort is more likely to be raised without a religious affiliation than the preceding cohort. However, religious attendance significantly increases in the early years of old age (Hayward and Krause, 2013).

Being raised without a religious affiliation does not necessarily mean that the individual will not become religious. People that are raised without any religious affiliation are likely to adopt a religious affiliation in adulthood, unless they are able to make successful social ties without religion (Fenelon and Danielson, 2016). The decrease in the overall religiosity of United States may indicate that people are able to establish meaningful social ties without religion. It should be noted that whether or not an individual is affiliated with a religion may not affect health as much as we might think. According to Fenelon and Danielson (2016), "...simply having no religion does not imply poor health (p. 60)."

As ideas about religion/religiosity and God vary across the age cohorts (Bengtson et al., 2015), age cohort differences may be partially responsible for the perceived secularization of the United States. Again, we may be looking for religiosity in younger age cohorts to be the same as it has been practiced by older age cohorts. According to Bengtson et al. (2015), people born in the WWI/ Great Depression, commonly referred to as the Greatest Generation, age cohort are most likely to describe their God as omnipotent and distant, while those of the Silent Generation

identify with a more intimate God. Millennials and Generation Xers are more likely to “set aside” religion when life becomes more difficult. However, the overall findings suggests that we may be interpreting new practices and contexts as secularization. “Religion is still highly relevant to individuals and there may be more continuity than change (Bengtson et al., 2015, p. 377).”

This phenomenon should also be viewed from a micro-sociological perspective. As parents often indoctrinate their children with the same religious affiliation, it is appropriate to view religion within a generational context. In one sample, Cragun, Hammer, Nielsen, and Autz (2018) found that children are significantly less religious and less spiritual than their parents. Although their data was not nationally representative, it does indicate that the transmission of religious identity from parent/caregiver to children may not be as successful as previously believed. Cragun et al. (2018) notes that the significant differences in religious behaviors between parents and children could be due to age differences.

Several studies have associated older age with higher levels of religious activity (e.g. Bengtson et al., 2015; Hayward and Krause, 2013). For example, prayer is seen as a prominent indicator of religious activity. Hayward and Krause (2013) looks at the relationship between prayer and age from a life course perspective. As age increased, so too did frequency of prayer. Also, prayer frequency was strongly related to public worship attendance. Therefore, Hayward and Krause (2013) suggest that, overall, adults are the most religious in old age. Granqvist and Kirkpatrick’s (2013) findings suggest that people pursue a more secure relationship with God as they grow older. It is important to look at possible theoretical explanations for the age related differences in religious participation and religious activity. The theories of disengagement and gerotranscendence can possibly explain the discrepancies in religiosity across age groups.

It is entirely plausible that the underlying reason behind the relationship between aging and religiosity is due to time availability. The elderly are more likely to be retired, so we might assume that they have more time to devote to religion. This train of thought is akin to disengagement theory. Disengagement theory posits that it is natural for people to gradually disengage from some aspects of society as they grow older (Cumming and Henry, 1961). There is evidence to support disengagement theory. Bengtson et al. (2015) found a “retirement surge” in religious participation. In a sample of later life adults, Silverstein and Bengtson (2018) found that 21 percent of the participants became more religious over a 10 year period. This finding indicated that upon retirement religious participation increased substantially.

However, many gerontologists have criticized disengagement theory. Furthermore, Silverstein and Bengtson (2018) found that people do not attribute increases in church attendance to time availability and retirement does not predict increases in religiosity. When asked, many people attributed their increased religiosity to age related phenomena. They find that increases in religiosity are related to individuals becoming more aware of the end of life, losing a family member, or pursuing personal growth that may lead increased religiosity in the elderly. The transitions of late life can be very stressful, many people find that religion can provide solace and a “social outlet” for support. Furthermore, Silverstein and Bengtson’s (2018) results suggest that increased religiousness, as it relates to age, is an internal process that allows many people to find new meaning in their life.

While disengagement theory may not be supported by Silverstein and Bengtson (2018), Gerotranscendence is supported as a possible theoretical explanation for the variance in religiosity between the young and old. According to Tornstam (1989) gerotranscendence theorizes that aging constitutes “a shift in metaperspective from a materialistic and pragmatic

view of the world to a more cosmic and transcendent one” (p.55). This transition is often related to life events that force the individual to come face-to-face with the fleeting nature of life.

Therefore, elderly people may be more likely to turn to religion because they have experienced loss or have become aware of their own mortality.

2.3 Religiosity and Mental Health

For the purposes of this research I explore how different factors of religiosity may affect mental health and mental well-being. It is possible that both the private and public aspects of religiosity provide different benefit to mental health. Attending religious services may provide a social benefit because it allows people to build relationships, thus higher levels of social connectedness. Prayer and worship may provide more personal benefits. People that pray may feel like they are not alone and that someone is there to help them through their hardships, thus stimulating some sort of mental release.

Many studies have found that religious involvement has led to better mental health. Idler, McLaughlin, and Kasl (2009) found that quality of life was higher for individuals with religious involvement. Also, more religious people experience depressive symptoms less often than their less religious counterparts. One explanation may be that organized religion can offer a higher level of social connectedness. Social ties are related to better mental health (Umberson and Montez, 2010). Hayward and Krause (2013) hypothesize that membership in a religious community (e.g. congregations) may play an important role in maintaining functional health in later life. They find that disabilities increase at slower rates for those that receive support from their religious community. The emotional and social support of a congregation may be very beneficial to mental health. A study by Edgell, Tranby, and Mather (2013) found that more church attendance is indicative of higher levels of emotional support. On the other hand, Krause

and Hayward (2012) found that people who attend religious services are more likely to provide emotional support to others. These findings indicate a reciprocal effect. Not only are you more likely to receive more support for being a member to a religious community, but you are also more likely to provide support for others. Disaffiliation, the act of removing oneself from the religion that they were raised with, can also be harmful to mental health if the person is unable to make successful relationships outside of religion (Fenelon and Danielson, 2016).

Aside from the social benefits, research has found private acts of religiosity (i.e. prayer and reading religious texts) to be beneficial to mental health. Prayer is linked to higher levels of well-being. Whittington and Scher (2010) found that the type of prayer can be indicative of well-being. For example, prayers of thanks and reception are indicative of higher levels of self-esteem. Also, for those that identify with a religion, higher frequency of private prayer moderates the effects of stress (Rainville, 2018). In addition to the private benefits of prayers, religion may provide a “surrogate attachment” that allows people to cope with stress and gives them some notion of security (Granqvist and Kirkpatrick, 2013).

Although research has shown religiosity to be advantageous to mental health, the inverse may not be completely true. According to Fenelon and Danielson (2016), those raised without a religion are not at a disadvantage in well-being or health. However, disaffiliates, those who no longer affiliate with the religion that they were raised with, are different from people raised without a religion. Fenelon and Danielson (2016) suggests that disaffiliates who no longer participate at all sometimes find it harder to make strong social connection. Thus, they may have weaker social connections. Individuals who disaffiliate from their religion, but still attend a religious service do not experience disadvantages to health and well-being. This result indicated that religious service attendance has provided social benefits to those that disaffiliate. However,

disaffiliates rarely attend religious services. Furthermore, people that disaffiliate may attend religious services because they struggle to find secular social networks. It should also be noted that those who disaffiliate are quite different from those who are raised and remain religious. For those who disaffiliate from the religion that they were raised with, “They have higher educational attainment, higher incomes, are more geographically mobile, and are more likely to come from well-educated parents (Fenelon and Danielson, 2016, p. 54).”

2.4 Demographic Factors and Mental Health

Demographic variables are also likely to play a major role in an individual’s mental health. This section of the literature focuses on literature about aging, gender, education, income, and marital status with respect to mental health. I hypothesize that each of these will be important to mental health because they affect personal identity. The expectation is that that the older people, those with higher income, and married people will have better mental health because they are likely to experience fewer amounts of stressors. For example, people with higher incomes are less likely to experience financial stress. The first portion of this section focuses on the relationship between aging and mental health. In the next segment, an overview of gender and mental health research is provided. The third segment discusses education and mental health. The fourth reviews income and mental health. Finally, the fifth section discusses marital status and mental health.

2.4.1 Aging and Mental Health

There are age related differences in mental health. Midlife, in particular, can be a mentally taxing period because it is hard to navigate. Carl Jung (1933) describes midlife as the “afternoon of life”, it is the critical connection between adolescence and late adulthood. Midlife can be a time of stress and change. According to data from the U.S. Census Bureau (2017),

approximately 60 percent of Americans were between the ages of 18 and 65 in 2017. With the majority being religiously affiliated (Cox and Jones, 2017), the need for more research on these intersecting identities is apparent. As found with studies focusing on those in late life, religion can be helpful for coping with the hardships of old age (Hayward and Krause, 2013). People in midlife can experience the hardships of divorce, marriage, the death of a parent, or a number of other life altering events. However, much of the research on aging and mental health compares old age and early adulthood.

Despite having lower levels of physical and cognitive functioning than younger adults, older adults have a better mental health (Keyes and Westerhof, 2012; Thomas, Kaufmann, Palmer, Depp, Martin, Glorioso, Thompson, and Jeste, 2016). One possible explanation may be age differences in stress as it relates to social commitments. Ta, Gesselman, Perry, Fisher, and Garcia (2017) find that younger respondents report having higher level of stress from social commitments. For the purpose of the Ta et al. (2017) research, social commitment was defined as the interactions between individuals or an individual and a group that are necessary to maintain the relationship. Westerhof and Keyes (2009) argue that the relationship between mental health and age is mixed. They divide mental well-being into three categories; emotional, psychological, and social well-being. Emotional well-being includes emotional satisfaction, happiness, and “interest in life”. Psychological well-being is defined as positive mental functioning. Social well-being include things like social contribution, social acceptance of others, and feeling of belonging to a group. When looking at age groups, older adults had higher levels of emotional well-being, but lower levels of psychological and social well-being than younger adults. When looking at age linearly, age is positively associated with emotional well-being, but negatively associated with psychological well-being and not significantly related to social well-

being. In other words, as people grow older their emotional well-being gets better, but their psychological well-being gets worse.

Depression/depressive symptoms are commonly used to calculate mental health. Research suggests the depression may be linked to age/aging. Research found age differences in both the severity and onset of depression. Although the relationship is small, Keyes and Westerhof's (2012) cross-sectional analysis found that age was inversely related to experiencing major depressive episodes. Therefore, older adults were less likely to experience major depressive episodes than younger adults. They also found that age was positively related to flourishing mental health. In short, younger age cohorts had higher frequencies of major depressive episodes and lower frequencies of flourishing mental health than older age cohort. Keyes and Westerhof (2012) have defined flourishing mental health using a positive affect scale and a measure for life satisfaction. As such, those with high levels of positive affect and a high grade for life satisfaction are considered to have flourishing mental health.

2.4.2 Gender and Mental Health

Men may use mental health services less often than women (Rosenfield and Smith, 2010). However, suicide rates may provide evidence for worse mental health in men than in women. According to the American Foundation for Suicide Prevention (n.d.), suicide is 3.53 times higher in men than in women. Despite these gender differences, men and women experience similar rates of mental disorder (Rosenfield and Smith, 2010). Findings from Rosenfield and Smith (2010) conclude that there are gender differences in types of diagnoses. Women are more likely than men to be diagnosed with depression and anxiety. Men are more likely to be diagnosed with substance abuse and antisocial disorders. Of course, "gender differences are largely caused by something other than gender" (Rosenfield and Smith, 2010,

p. 267). To understand gender differences in mental illness and help-seeking behavior, we must look at societal factors like socialization and stigmatization.

Stigmatization of mental illness may account for some of the gendered differences in mental health diagnoses. Men are often socialized to be self-reliant and to avoid admissions of weakness (Furman, 2010). Therefore, seeking help for mental illness may not align with masculine socialization. Also, Rochlen et al (2010) reports that men may not seek help for their mental health because depression and anxiety are seen as normal aspects of being a man. Many men feel that they may be misunderstood or undesirable clients for therapy because of the way they discuss their emotional concerns. Again, men are socialized to not be emotional or open about weaknesses (Furman, 2010). Additionally, men have lied about having mental health issues even after they see a mental health professional, so that they can avoid treatment (Rochlen et al, 2010). The avoidance of stigmatization could cause men to find alternative means of coping with mental illness. According to Addis (2008), men may experience depression and anxiety at similar rates as women, but they may use violence and substance abuse to mask these mental issues. This could mean that stigmatization and socialization coerce men away from mental health treatment and towards harmful behaviors, which may result in the gender related discrepancies in suicide.

2.4.3 Education and Mental Health

Education is also related to mental health. Findings from Halpern-Manners, Schnabel, Hernandez, Silberg, and Eaves (2016) indicate that education level is negatively associated with poor mental health. In other words, people with higher levels of education experience better mental health. Although the relationship between educational attainment and mental health exists, we cannot determine which factor is dependent on the other. On one hand, mental issues

may prohibit or minimize someone's participation in the education system. On the other hand, people with higher levels of education may have access to better health care or have more mental health literacy. For example, Mirowsky and Ross (2005) found that people with higher levels of educational attainment obtain skills that allow them to cope with stressors that may otherwise negatively affect their mental health. As for the skills and habits that education can help form, "they make individuals better at identifying and avoiding risky situations or habits, quicker to exit the risky situations or correct the risky ways, and better able to manage health problems that occur, minimize the damage, and return to health as fully and quickly as possible (Mirowsky and Ross, 2005, p.218)."

2.4.4 Income and Mental Health

It is somewhat obvious that people with higher incomes are more likely to have access to better mental health care and are less likely to experience financially-related stressors. This section of the literature review focuses primarily on the financially insecure and the reciprocal nature of the relationship between mental health and income. According to the U.S. Census Bureau (2017), the poverty rate was 12.3 percent. However, it should be noted that this number does not represent all of the poor people in the U.S. because it is deflated by how the poverty threshold is calculated.

Financial hardships affect mental health. Previous research has shown that poverty is linked to poorer mental health outcomes. According to the World Health Organization (2014), the majority (70%) of the literature on low-income and middle-income countries found a positive relationship between mental disorders and poverty indicators. In other words, the likelihood of having a mental disorder increases with the severity of poverty that the individual experiences.

Income affects mental health at each stage in the lifespan. For children, household income is positively associated with opportunity and access to basic resources, which are in turn related to the likelihood and severity of mental health issues (McLaughlin et al., 2011). Also, experiencing financial hardships in childhood increases the likelihood of being classified as having a severe mental disorder for individuals that have a mental disorder. Furthermore, children from lower socioeconomic backgrounds are more likely to have parents with mental health issues and experience things such as abuse and family violence than children from higher socioeconomic backgrounds (Tracy, Zimmerman, Galea, McCauley, and Stoep, 2008).

Not only is it true that income level is associated with mental health, but the inverse may also be true. The relationship between income level and mental health may be more interdependent. Rather than one causing the other, they may reinforce one another. Those with mental health issues may find it more difficult to find a job, or keep the job they have. As Olesen, Butterworth, and Rodgers (2012) report, poor mental health increases the likelihood of early retirement and departure from the workforce. It would appear that mental illness may cause people to have less time in the workforce, therefore they have less opportunities to earn an income.

2.4.5 Marital Status and Mental Health

Studies have shown that being married is associated with better mental health and well-being (Helms, 2013). The relationship between mental health and marital status may have multiple explanations. Marital status may impact how others perceive you. Greitemeyer (2009) studied the effect of the “single stereotype”. This research concluded that single people are viewed as less sociable, having lower self-esteem, and less physically attractive as compared to people with a partner. Being single was also associated with loneliness for many participants in

the study. However, Ta et al. (2017) find that married people self-report lower levels of stress associated with social commitments. Respondents were also asked about how family commitment, loneliness, and financial stressors impact their daily stress levels. Marital status also predicted overall stress as it related to loneliness. More specifically, married people experience less loneliness-related stress than their single counterparts. The relationship between marital status and mental health could also be related to financial security because single people often have less income than married couples. Ta et al. (2017) found that married couples did have higher incomes. Income did partially mediate the relationships for marital status and financial stress. However, research on mental health and divorce found an initial decrease in mental health, but a return to normal mental health after some time (Leopold, 2018). Although much of the literature supports the notion that married people have better mental health, it should be noted that poor mental health could make it harder for some people to find partners. Therefore, people with preexisting mental health issues may be underrepresented in findings for research involving mental health and changes in marital status.

2.5 Health Indicators and Mental Health

In this final section, this literature review focuses on the relationship between indicators of health and mental health. This study specifically focuses on physical health and BMI. I hypothesize that people with better physical health will also have better mental health. However, that is not to say that one leads to the other. For example, poor mental health may cause someone to use over or under eating as a coping mechanism when they face hardships. On the other hand, being over/underweight may cause someone to degrade their self-worth.

2.5.1 Physical Health and Mental Health

The link between mental health and physical health has been studied across many different disciplines. Friedman and Kern (2014) find that mental health is positively associated with physical health. More specifically, research found that mental and physical health are directly and indirectly dependent on one another (Ohrnberger, Fichera, and Sutton, 2017). For the purposes of this research, body weight and self-rated physical health as indicators of physical health are the primary concern.

Body weight, specifically the presence of excessive body weight (obesity), is commonly used as a measure of physical health. The Centers for Disease Control and Prevention (n.d.) reports that in 39.8 percent of U.S. adults were obese in 2015-2016. According to Pi-Sunyer (2009), obesity can increase risks for multiple disease such as diabetes and cardiovascular disease. Being classified as obese can also be detrimental to an individual's emotional and mental health. The effects of obesity on mental health can be seen as early as adolescence. A psychological study by Halfon, Larson, and Slusser (2013) found that childhood obesity increased the odds of having poorer psychosocial functioning. Mental health issues such as experiencing depression, learning disabilities and developmental delay are also more common for obese children. A study of English children found that obesity increased the risk of having an emotional disorder (Tiffin, Arnott, Moore, and Summerbell, 2011). Body weight is also related to mental health in adults. De Wit, Van Straten, Van Herten, Penninx, and Cujipers (2009) find a curvilinear relationship between weight and depression. Being obese or underweight increases the likelihood of experiencing depressive symptoms. Body Mass Index is positively associated with anxiety and the prevalence of personality disorders (Petry, Barry, Pietrzak, and Wagner, 2008).

Mental health is also related to self-rated physical health. Read, Porter, and Gorman (2016) find positive, cyclical relationship between self-rated physical health and mental health. More specifically, they find that the relationships creates a cycle “whereby mental health comes back to affect future levels of mental health through physical health and physical health comes back to affect future levels of physical health through mental health (Read, Porter, and Gorman, 2016, p.1119).” While both affect one another, the effect of mental health on self-rated physical health is stronger than the effect of self-rated physical health on mental health. Han’s longitudinal (2001) research has similar findings. Over time, depression positively correlates with poorer scores in self-rated physical health. As time passes, depression is related to worse self-rated physical health.

2.6 Summary

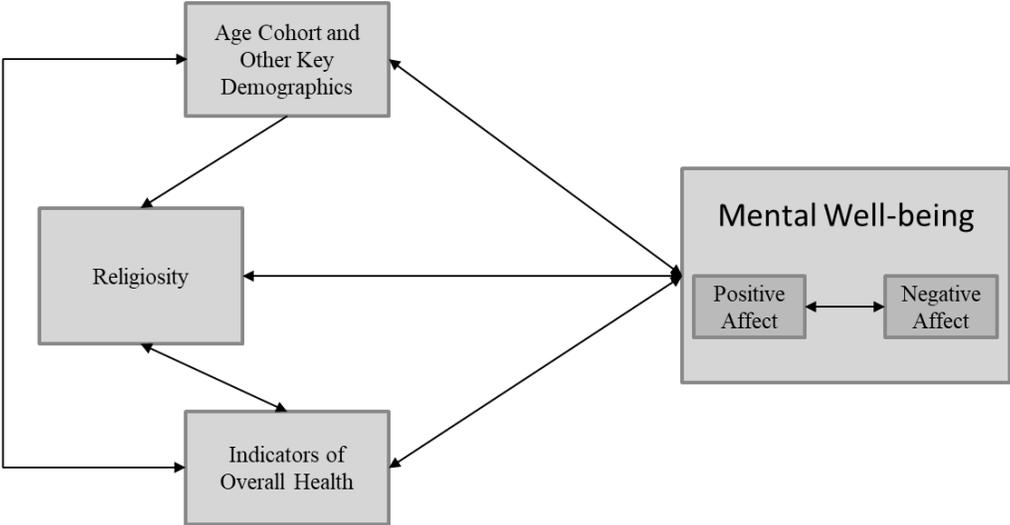
Research has shown that mental health is associated with religiosity, individual characteristics, and other aspects of health. For religiosity, aspect of mental health are positively associated with religious service attendance (Edgell, Tranby, Mather, 2013) and prayer (Rainville, 2018; Whittington and Scher, 2010). Individual characteristics may also affect mental health. For age and mental health, the elderly generally have better cognitive health than younger adults (Keyes and Westerhof, 2012). Those with high levels of education are less likely to experience poor mental health. People in poverty often experience worse mental health (McLaughlin et al, 2011). Married people are likely to have better mental health than non-married people (Helms, 2013). Overall health is also important for mental health. Those with higher levels of physical health are more likely to experience better mental health than those with lower levels of physical health (Freidman and Kern, 2014). In conclusion, mental health is a multifaceted issue that should be viewed from as many angles as possible.

As religiosity, demographic characteristics, and physical health affect mental health and mental health is a major issue in the U.S., it is important that we look at each of these as possible areas of focus for improving mental health. This research refocuses the literature on mental well-being to look at the effect that religiosity has on mental health. In this quantitative analysis, I specifically focus on the impact that religiosity has on mental health with respect to respondents' age cohort.

2.6.1 Hypotheses

- I. Mental well-being will be multifaceted, therefore it will be affected by a combination of factors concerning religiosity, age cohort differences, a variety of demographic characteristics, and overall health.
- II. More religious people will have higher levels of mental well-being.
- III. Individuals with higher levels of overall health (self-rated physical, self-rated mental health, BMI) will also have high levels of mental well-being.
- IV. The mental well-being of older age cohorts will be better than that of the younger age cohorts after controlling for other factors.
- V. Religiosity affects mental well-being even after controlling for age cohort differences, demographics, and health indicators.

2.6.2 Logic Model



CHAPTER 3

METHODS

The data for this project is from Wave III of the survey of Midlife Development in the United States (Ryff et. al, 2017). This survey uses a national probability, over-sampling in some metropolitan cities, a national sample of twins, and a sample of main respondents' siblings. The initial wave for this survey was conducted in 1994/95 and contains a sample of over 7,000 Americans between the ages of 25 and 74. The Wave III survey was acquired in 2013/14 via phone interviews and self-administered questionnaires. The sample size for Wave III is 3,294 and the age range of participants is now 39 to 93.

The purpose of the MIDUS survey is to explore age variations in the effects of psychological, behavioral, and social factors on physical and mental health. The MIDUS data is appropriate for this research because it contains extensive information concerning respondents' health and religiosity. An advantage of the MIDUS data is the large number of midlife and elderly respondents.

3.1 Sample

This dataset does not include a weight. The sample restrictions for this study remove cases that are missing data on any used variable. This restriction includes those cases missing data on any variables including: six variables used to positive mental affect and the six variables used to measure negative mental affect over the past thirty days, frequency of prayer, frequency of religious service attendance, membership to a congregation/religious community, strength of religious belief, strength of spirituality, age, sex, education level, income, marital status, self-rate mental health, self-rated physical health, and BMI. With the sample restrictions the final sample size is 2276.

3.2 Variables

Dependent Variables

The dependent variables used to measure mental well-being in this analysis are positive and negative mental affect. For positive affect there are 6 items that ask about respondents' feelings over the past thirty days. The questions include frequency of feeling cheerful, in good spirits, extremely happy, calm and peaceful, satisfied, and full of life. The original coding of these 6 variables assigns 1 to "all of the time", 2 to "most of the time", 3 to "some of the time", 4 to "a little of the time", and 5 to "none of the time". These variables were reverse coded so that a higher value would indicate that the respondent experienced a feeling more often than a lower value. Values for the new variable range from 0 to 4 so that a 0 indicates that the respondent did not experience the given positive feeling over the past 30 days. A Cronbach's alpha was computed to determine consistency across all six variables for positive affect. An alpha of .910 determined that these questions consistently measured the same thing. A higher score on any of the positive affect variable indicated better mental well-being. The variables were then combined into a scale to measure respondents' positive affect over the past 30 days. The minimum score of 0 indicated that over the past 30 days the respondent did not experience any of the positive feelings. The maximum score of 24 indicated that over the past 30 days the respondent experienced each positive feeling "all the time".

For negative affect there are 6 items that ask about respondents' feelings over the past thirty days. The questions include frequency of feeling so sad nothing could cheer the respondent up, nervous, restless or fidgety, hopeless, that everything was effort, and worthless. The original coding of these 6 variables assigns 1 to "all of the time", 2 to "most of the time", 3 to "some of the time", 4 to "a little of the time", and 5 to "none of the time". These variables were reverse

coded so that a higher value would indicate that the respondent experienced a feeling more often than a lower value. Values for the new variable range from 0 to 4 so that a 0 indicates that the respondent did not experience the given negative feeling over the past 30 days. A Cronbach's alpha was computed to determine consistency across all six variables for negative affect. An alpha of .839 determined that these questions consistently measured the same thing. A higher score on any of the negative affect variable indicated worse mental well-being. The variables were then combined into a scale to measure respondents' positive affect over the past 30 days. The minimum score of 0 indicated that over the past 30 days the respondent did not experience any of the negative feelings. The maximum score of 24 would have indicated that over the past 30 days the respondent experienced each negative feeling "all the time", but 19 was the maximum value in the sample.

Key Independent Variables

There are multiple items in the data regarding religiosity. The data contains information about respondents' attendance at religious and spiritual services. This variable assigns a 1 to "once a day or more", 2 to "a few times a week", 3 to "once a week", 4 to "1-3 times per month", 5 to "less than once a month", and 6 to "never". This item was reverse coded so that a higher score would mean that the respondent attended religious/ spiritual services more often.

The data also include an item that measures the frequency of prayer and other forms of private spiritual worship over the last twelve months. In this variable a 1 is assigned to "a lot", 2 to "often", 3 to "sometimes", 4 to "rarely", and 5 to "never". I reverse coded this item so that a higher score would mean that the respondent engaged in prayer or another form of spiritual worship more often than the respondent with a lower score.

Two other items examine how spiritual and how religious the respondents feel. In these variables 1 is assigned to “a lot”, 2 to “somewhat”, 3 to “not very”, 4 to “not at all”. Both of these variables were reverse coded so that a higher score would mean that the respondent felt more religious or more spiritual.

The variable for membership to a religious community congregation was coded as a binary. In the new binary variable, 1 indicates that the respondent is a member of a religious community/congregation, 0 indicates that they are not a member.

The data also includes a question about respondents’ birth years. This variable was recoded to create a variable for age cohorts. The new variable assigns 1 to the Greatest Generation (1900 to 1931), 2 to the Silent Generation (1932 to 1945), 3 to the Early Baby Boomers (1946 to 1954), 4 to the Late Baby Boomers (1955 to 1964), and 5 to Generation X (1965 to 1979). Age cohort is a focal independent variable for this analysis.

Controls

Several demographic and health indicator variables as controls are used for this data analysis. The demographic variables I use are sex, marital status, income, and education. The original sex variable assigns 1 to “male” and 2 to “female”. This sex variable is transformed into a dummy variable for female. In the new variable a 1 is assigned to “female” and a zero is assigned to “male”.

The original coding of the marital status variable includes values for married, separated, divorced, widowed, never married, ‘don’t know’, and those that ‘refused’ to answer. A new marital status variable was created that includes the married and never married variables; but combines separated, widowed, and divorced, into a new ‘previously married’ category.

The data includes one variable for education level. The original variable for education level had many small categories, such as no school and only eighth grade education. This education variable was recoded into a four-level ordinal variable for education level. The values for the new education level variable assign 1 to 'high school or less', 2 to 'some college', 3 to 'bachelor's degree', and 4 to 'graduate degree'.

The dataset includes a variable for each respondent's total income. With some respondents reporting \$0 as total income and others reporting over \$300,000, this income variable was recoded into quintiles. By recoding this income into quintiles, effects of the outliers are limited.

Three health indicators are used as control variables; self-rated mental health, self-rated physical health, and Body Mass Index. The variable for respondents' self-rated mental health includes codes 1 for 'excellent', 2 for 'very good', 3 for 'good', 4 for 'fair', and 5 for 'poor'. This variable was reverse coded so that a higher score indicates better self-rated mental health.

The variable for respondents' self-rated physical health includes codes 1 for 'excellent', 2 for 'very good', 3 for 'good', 4 for 'fair', and 5 for 'poor'. This variable was reverse coded so that a higher score indicates better physical health. The dataset also includes a variable for Body Mass Index (BMI). The BMI variable is interval ratio. The BMI variable was not changed.

CHAPTER 4

RESULTS

4.1 Univariate Statistics

Mental Well-Being

The positive affect scale ranges from 0 to 24, with 24 representing the best possible mental well-being. The mean score for positive affect is 14.71. The standard deviation of this variable is 4.28.

The negative affect scale ranges from 0 to 19, with 0 representing the best possible mental well-being. The mean score for negative affect is 2.63. The standard deviation of this variable is 3.22.

Religiosity

The frequency of religious service attendance variable ranges from 1 to 6, with higher values meaning more frequent religious service attendance than lower values. The sample's mean score for religious service attendance is 2.81. The mean indicates that the average respondent attends religious services approximately one to three times per month. The median for this variable is 3. The standard deviation for this variable is 1.49.

Strength of spirituality ranges from 1 to 4, with higher values indicating higher levels of strength of spirituality than lower values. The mean score of 3.16 for strength of spirituality indicates that the average respondent scores slightly higher than somewhat spiritual (3). The median for this variable is 3. The standard deviation for strength of spirituality is 0.82.

The strength of religious belief value ranges from 1 to 4, with higher values indicating more strength of religious belief than lower values. For strength of religious belief the mean

score of 2.80 indicates that the average respondent scores slightly lower than somewhat religious (3). The median for this variable is 3. The standard deviation for this variable is .94.

Frequency of prayer ranges from 1 to 6, with higher values meaning more frequency prayer than lower values. For the frequency of prayer variable, the mean score of 4.48 indicates that the average respondent prays somewhere between once and a few times per week. The median for this variable is 5. The standard deviation for prayer frequency is 1.88.

Membership in a religious community/congregation is measured as a binary variable. For this sample, the majority of respondent (57.2) percent reported that they were a member of a religious community.

Demographics

The sample is 46.2 percent male and 53.8 percent female. The age cohort variable was created using the respondents' birth years. For the division of age cohorts, 6.1 percent of the sample are in the Greatest Generation (1900-1931), 30.4 percent are in the Silent Generation (1932-1945), 30.4 percent are Early Baby Boomers (1946-1954), 25.0 percent are Late Baby Boomers (1955-1964), and 8.0 percent are in Generation X (1965-1979).

The majority of the respondents in the sample are married (67.6%), 25.0 percent were previously married, and 7.3 percent have never been married.

The education levels of respondents are fairly equally dispersed. In the sample 26.8 has up to a high school education, 29.0 percent have completed some college, 25.0 percent have a bachelor's degree, and 19.2 percent have a graduate degree.

Health Indicators

Self-rated mental health ranges from 1 to 5. A mean score of 3.69 indicates that the average respondent rates their mental health somewhere between good and very good. The

median for this variable is 4. The self-rated mental health variable has a standard deviation of .94.

Self-rated physical health ranges from 1 to 5. A mean score of 3.50 indicates that the average respondent rates their physical health somewhere between good and very good. The median for self-rated physical health is 4. The standard deviation of the self-rated physical health variable is 1.01.

Values on the BMI variable range from the minimum of 16.14 to the maximum of 79.04. The mean BMI for the sample is 28.27 with a standard deviation of 6.15. For reference, the Center for Disease Control and Prevention (n.d.) identifies the BMI range from 25 to 30 as overweight.

4.2 Bivariate Analyses

Positive and Negative Affect

A correlation was ran to test the relationship between the two dependent variables, positive affect and negative affect (Table 7). Positive affect and negative affect are strongly and negatively correlated with one another ($-.598, p<.001$). However, this correlation is not high enough to suggest multicollinearity.

Religiosity - Positive Affect

Correlations were run to test the relationships between positive affect, negative affect religious service attendance, strength of spirituality, strength of religious belief, and frequency of prayer (Table 7). Positive affect scores are positively but weakly correlated with religious service attendance ($.165, p<.001$). Therefore, mental well-being is slightly higher for people that attend religious services more frequently. The correlation between strength of spirituality and positive affect is weak but positive ($.115, p<.001$). Those with stronger feelings of spirituality tend to

have better mental well-being. The correlation between positive affect and strength of religious belief is weak but positive (.168, $p < .001$). People with stronger religious beliefs tend to have slightly better mental well-being. The correlation between frequency of prayer and positive affect is also weak but positive (.102, $p < .001$).

Independent samples t-tests were conducted to test if positive affect varies with respect to membership in a religious community (Table 8). For membership in a religious community, members ($\bar{x} = 15.28$) have higher average positive affect scores than non-members ($\bar{x} = 13.94$). Therefore, members tend to have better mental health than non-members. The difference in positive affect between members of religious communities and non-members is statistically significant ($p < .001$) and meaningful according to a Cohen's D test ($d > .20$).

Religiosity - Negative Affect

For negative affect the correlation with religious service attendance is weak but negative (-.100, $p < .001$). Therefore, mental well-being is slightly higher for those that attend religious services more often. The correlation between strength of spirituality and negative affect is not significant. The correlation between negative affect and strength of religious belief is very weak but negative (-.057, $p < .01$). People with stronger religious beliefs tend to have slightly better mental well-being. The correlation between frequency of prayer and negative affect is not significant.

Independent samples t-tests were conducted to test if negative affect varies with respect to membership in a religious community (Table 8). For membership in a religious community, members ($\bar{x} = 2.33$) have lower average negative affect scores than non-members ($\bar{x} = 3.03$). Therefore, members tend to have better mental health than non-members. The difference in

negative affect between members of religious communities and non-members is statistically significant ($p < .001$), but it is not meaningful according to a Cohen's D test ($d < .20$).

Demographics - Positive Affect

A one-way analysis of variance was conducted to test the relationship between positive affect and age cohort (Table 9). The Silent Generation cohort has the highest average positive affect scores, followed by the Greatest Generation, Early Baby Boomers, the Late Baby Boomers, and lastly those of the Generation X cohort. Some differences in positive affect by age cohort are significant ($p < .05$). More specifically, the mean positive affect scores of the Greatest Generation is significantly different from Generation X ($p < .01$), but not the other age cohorts. Furthermore, Generation X is significantly different from the Greatest Generation ($p < .05$), the Silent Generation ($p < .001$), Early Baby Boomers ($p < .05$), but not Late Baby Boomers. Early Baby Boomers' average mental well-being is significantly different from members of the Silent Generation cohort ($p < .01$) and the Generation X cohort ($p < .05$), but is not significantly different from Late Baby Boomers or the Greatest Generation. The relationship between mental positive affect and age cohort is strong ($F = 13.089$, $p < .001$), and it can be generalized to the population.

Independent samples t-tests were conducted to test if positive affect varies with respect to sex (Table 10). Females' mean positive affect score (14.68) is lower than males (14.74), but the difference is not statistically significant.

Correlations were run to test the relationships between mental positive affect and income quintile, and positive affect and education level. Income quintile is weakly but positively associated with positive affect ($.092$, $p < .01$) (Table 7). Those in higher income quintiles tend to have slightly better mental well-being. There is not a significant correlation between mental well-being and education level.

A one-way analysis of variance was conducted to test the relationship between marital status and positive affect (see Table 11). Married people average the highest positive affect scores (\bar{x} =15.01). People that were previously married are a close second (\bar{x} =14.27). The lowest mental well-being is found in people that have never been married (\bar{x} =13.43). The never married group ($p < .001$) and previously married group ($p < .01$) are statistically significantly different from the married group in terms of positive affect. The relationship between marital status and mental health appears to be strong ($F = 14.519$, $p < .001$), and it can be generalized to the population.

Demographics - Negative Affect

A one-way analysis of variance was conducted to test the relationship between negative affect and age cohort (see Table 9). The members of the Generation X cohort has the highest average negative affect scores, followed by the Late Baby Boomers, Early Baby Boomers, the Greatest Generation, and lastly those of the Silent Generation cohort. As higher negative affect is indicative of poor mental well-being, the Silent Generation has the best mental well-being when looking at negative affect. Only a few of the differences in negative affect by age cohort are significant ($p < .05$). More specifically, the mean negative affect of the Greatest Generation is not significantly different from the other age cohorts. The mean negative affect of the Silent Generation is significantly different from Late Baby Boomers ($p < .001$) and members of Generation X ($p < .001$). Early Baby Boomers' mean negative affect is not significantly different from members of the Greatest Generation cohort ($p = .05$). The relationship between negative affect and age cohort is strong ($F = 8.492$, $p < .001$), and it can be generalized to the population.

Independent samples t-tests were conducted to test if negative affect varies with respect to sex (Table 10). Females' mean negative affect score (2.79) is higher than males (2.45) and the

difference is statistically significant. However, a Cohen's D test determined that sex differences in negative affect are not meaningful ($d < .20$).

Correlations were run to test the relationships between mental negative affect and income quintile, and negative affect and education level. Income quintile is weakly but negatively associated with negative affect ($r = -.169, p < .01$) (Table 7). Those in higher income quintiles tend to have slightly better mental well-being than those in lower income quintiles. The correlation between negative affect and education level is negative but weak ($r = -.100, p < .01$). Therefore, people with higher levels of educational attainment tend to have lower levels of negative affect.

A one-way analysis of variance was conducted to test the relationship between marital status and positive affect (see Table 11). Married people average the lowest negative affect scores ($\bar{x} = 2.34$). People that were previously married are a close second ($\bar{x} = 3.20$). The highest mean negative affect is found in people that have never been married ($\bar{x} = 3.38$). The never married group ($p < .001$) and previously married group ($p < .001$) are statistically significantly different from the married group in terms of negative affect. The relationship between marital status and mental well-being appears to be strong ($F = 19.998, p < .001$), and it can be generalized to the population.

Health Indicators - Positive Affect

The correlation between positive affect and self-rated mental health is positive and moderate ($r = .477, p < .001$) (Table 7). Therefore, those with higher positive affect scores tend to have better self-rated mental health. Positive affect and self-rated physical health are positively correlated, and this relationship is moderate ($r = .328, p < .001$). Better mental well-being tends to have better self-rated physical health. There does not appear to be a significant correlation between mental well-being score and BMI level.

Health Indicators - Negative Affect

The correlation between negative affect and self-rated mental health is negative and moderate ($-.480, p < .001$) (Table 7). Therefore, those with lower negative affect scores tend to have better self-rated mental health. Mental health and self-rated physical health are positively correlated, this relationship is also moderate ($-.337, p < .001$). People with lower levels of negative affect tend to have better self-rated physical health. The correlation between negative affect and BMI is significant, but very weak ($.061, p < .01$). Individual with higher BMIs tend to experience more negative affect.

4.3 Multivariate Analyses

OLS Regression - Positive Affect

Although the dependent variables were not normally distributed, there are more than 2,000 cases. Furthermore, tests of the residuals suggested that this was not problematic. None of the independent variables were correlated too highly (all correlations are less than .70) with any of the other independent variables. Tests for outliers found that the maximum in the Mahalanobis Distance Test for the positive affect scale was 91.027, but the maximum for Cook's Distance Test was less than 1. Outliers accounted for less than 0.5 percent of the sample. The outliers were not removed from the sample to maintain sample size and consistency across all regressions.

I ran a series of hierarchical ordinary least squares regressions for positive affect (Table 12). The first model evaluates how well factors of religiosity predict positive affect. For each one unit increase in religious service attendance, positive affect increase by .196 units. Strength of religious belief was measured in a five-level ordinal variable. For each one unit increase in strength of religious belief, positive affect increases by .483 units. Strength of spirituality,

frequency of prayer, and membership to a religious congregation/community are not significant predictors of positive affect. The adjusted R^2 of this model is .035.

The second ordinary least squares regression model evaluates how well factors of religiosity and demographics predict positive affect. For factors of religiosity, only strength of religious belief was significant. Strength of religious belief was measured in a five-level ordinal variable. For each on unit increase in strength of religious belief, positive affect increases by .416 units. Religious service attendance, strength of spirituality, frequency of prayer, and membership to a religious community/congregation are not significant in this model. In this model, age cohort, marital status, and education level were significant predictors of positive affect. For age cohort differences, Early Baby Boomers' mean positive affect was .782 units lower than the Greatest Generations'. The mean positive affect for Late Baby Boomers' was 1.279 units lower than the mean positive affect of the Greatest Generation. Generation X's, mean positive affect is 1.912 units lower than for the Greatest Generation. As compared to married people, people that have never been married have a mean positive affect score that is .780 units lower. For each level-increase in income quintile, positive affect increases by .401 units. Belonging to the Silent Generation, sex differences, being previously married, and education level were not significant predictors in this model. The adjusted R^2 of this model is .069 and the change in R^2 from the first model is .037.

The third ordinary least squares regression model evaluates how well factors of religiosity, demographics, and health indicators predict positive affect. For factors of religiosity, strength of religious belief was significant. Strength of religious belief was measured in a five-level ordinal variable. For each on unit increase in strength of religious belief, positive affect increases by .344 units. Religious service attendance, strength of spirituality, frequency of

prayer, and membership to a religious community/congregation are not significant in this model. For age cohort differences, Early Baby Boomers' mean positive affect was 1.010 units lower than the Greatest Generations'. The mean positive affect for Late Baby Boomers' was 1.238 units lower than the mean positive affect of the Greatest Generation. Generation X's, mean positive affect is 1.887 units lower than for the Greatest Generation. Education level was measured using a four-level ordinal variable. For each level-increase in education level, positive affect decreases by .263 units. Belonging to the Silent Generation, sex differences, marital status, and income quintile were not significant predictors in this model. For health indicators, self-rated mental health, self-rated physical health, and BMI are significant indicators of positive affect. Self-rated mental health was measured using a five-level ordinal variable. For each one unit increase in self-rated mental health, positive affect increases by 1.856 units. Self-rated physical health was measured using a five-level ordinal variable. For each one unit increase in self-rated physical health, positive affect increases by .492 units. For each one unit increase in BMI positive affect increases by .039 units. The adjusted R^2 of this model is .277 and the change in R^2 is .208.

The fourth and full model evaluates how well factors of religiosity, demographics, health indicators, and scores on the negative affect scale predict positive affect. For factors of religiosity, strength of spirituality and strength of religious belief were significant. Strength of spirituality was measured in a five-level ordinal variable. For each one unit increase in strength of spirituality, positive affect increases by .225 units. Strength of religious belief was measured in a five-level ordinal variable. For each on unit increase in strength of religious belief, positive affect increases by .259 units. Religious service attendance, frequency of prayer, and membership to a religious community/congregation are not significant in this model. One age

cohort and education level were the only significant demographic factors. Only Generation X was significantly different from the Greatest Gen. Generation X's, mean positive affect is .919 units lower than for the Greatest Generation. Education level was measured using a four-level ordinal variable. For each level-increase in education level, positive affect decreases by .224 units. Other cohort differences, sex differences, marital status, and income quintile were not significant predictors in this model. For health indicators, self-rated mental health, self-rated physical health, and BMI are all significant indicators of positive affect. Self-rated mental health was measured using a five-level ordinal variable. For each one unit increase in self-rated mental health, positive affect increases by 1.031 units. Self-rated physical health was measured using a five-level ordinal variable. For each one unit increase in self-rated physical health, positive affect increases by .293 units. For each one unit increase in BMI positive affect increases by .026 units. The negative affect scale was a significant predictor of positive affect. For each one unit increase in negative affect, positive affect decreases by .613 units. The adjusted R^2 of this model is .433 and the change in R^2 is .156.

Comparing the standardized betas, the negative affect scale had the largest standardized beta at -.461. Self-rated mental health had the second largest beta at .228. The third largest standardized beta was a .069 for self-rated physical health. The fourth largest standardized beta was a -.058 for Generation X. Strength of religious belief had the fifth largest standardized beta at .057. Education level had the sixth largest standardized beta at -.056. The seventh largest standardized beta was .043 for strength of spirituality. BMI had the eighth largest standardized beta at .038.

The adjusted R^2 of .433 suggests that the variables in this model predict approximately 43.3 percent of the variance in positive affect. The total unique variance of the full model is .198.

Religiosity factors only accounted for two percent of the total unique variance. Age cohort and demographic characteristics accounted for three percent of the unique variance in positive affect scores. Health indicators accounted 17 percent of the total unique variance. Negative affect accounted for 79 percent of the total unique variance in positive affect scores. Therefore the majority of the unique variance in positive affect scores can be contributed to negative affect scores.

The final model of the ordinary least squares regression for positive affect was ran separately by age cohort. The differences in adjusted R^2 suggest that these variables explain more of the variance in positive affect in some age cohorts than they do in other age cohorts. The adjusted R^2 was largest for Early Baby Boomers. The second largest adjusted R^2 was for Early Baby Boomers. Members of Generation X had the third largest adjusted R^2 . The fourth largest adjusted R^2 was for the Silent Generation. The Greatest Generation had the lowest adjusted R^2 .

Modified Chow tests were conducted on the only statistically significant coefficient, positive affect, using the Greatest Generation as the reference category (Table 16). Negative affect was a significant predictor for positive affect across all age cohorts. For each one unit increase in negative affect, the Greatest Generation's positive affect decreased by .890 units. With each one-unit increase in negative affect for the Silent Generation, positive affect decreased by .688 units. As for Early Baby Boomers, with each one-unit increase in negative affect, positive affect decreased by .558 units. With each one-unit increase in negative affect in Late Baby Boomers, positive affect decreased by .561 units. For each one-unit increase in negative affect for Generation X, positive affect decreased by .586 units. When using the Greatest Generation as the reference category, the Modified Chow Test determined that the effects of negative affect on positive affect were statistically significantly different for the Early Baby

Boomers, Late Baby Boomers, and Generation X at the .05 level. However, the effect on negative affect on positive affect for the Silent Generation was not statistically significantly different from the effect of negative affect on positive affect for the Greatest Generation.

OLS Regression - Negative Affect

Although the dependent variables were not normally distributed, there are more than 2,000 cases. Furthermore, tests of the residuals suggested that this was not problematic. None of the independent variables were correlated too highly (all correlations are less than .70) with any of the other independent variables. Tests for outliers found that the maximum in the Mahalanobis Distance Test for the positive affect scale was 90.657, but the maximum for Cook's Distance Test was less than 1. Outliers accounted for less than two percent of cases in the sample. They were not removed from the sample to maintain sample size and consistency across all models.

I ran a series of hierarchical ordinary least squares regressions for negative affect (Table 13). The first model evaluates how well factors of religiosity predict positive affect. For each one unit increase in religious service attendance, negative affect decreased by .195 units. Frequency of prayer was measured in a six-level ordinal variable. For each one unit increase in frequency of prayer, negative affect increases by .241 units. As compared to non-members, members of religious congregations/communities have a mean negative affect that is .562 units lower. Strength of spirituality and strength of religious belief are not significant predictors of negative affect. The adjusted R^2 of this model is .024.

The second ordinary least squares regression model evaluates how well factors of religiosity and demographics predict negative affect. For factors of religiosity, only frequency of religious service attendance and frequency of prayer were significant. Frequency of religious service attendance was measure with a six-level ordinal variable. For each level increase in

frequency of religious service attendance, negative affect decreased by .147 units. Frequency of prayer was measured using a six-level ordinal variable. For each level increase in frequency of prayer, negative affect increased by .146 units. Religious service attendance, strength of spirituality, strength of religious belief, and membership to a religious community/congregation are not significant in this model. In this model, age cohort, marital status, and income quintile were significant predictors of negative affect. For age cohort differences, Early Baby Boomers' mean negative affect was .660 units higher than that of the Greatest Generation. The mean positive affect for Late Baby Boomers' was 1.179 units higher than the mean negative affect of the Greatest Generation. Generation X's mean negative affect is 1.631 units higher than for the Greatest Generation. As compared to married people, people that were previously married have a mean negative affect score that is .448 units higher. For each unit increase in education level, negative affect decreases by .383 units. Belonging to the Silent Generation, sex differences, having never been married, and income level were not significant predictors of negative affect in this model. The adjusted R^2 of this model is .072 and the change in R^2 is .052.

The third model of the ordinary least squares regression evaluates how well factors of religiosity, demographics, and health indicators predict negative affect. For factors of religiosity, frequency of religious service attendance and frequency of prayer were significant predictors of negative affect. Frequency of religious service attendance was measured using a six-level ordinal variable. For each one unit increase in religious service attendance, negative affect decreased by .142 units. Frequency of prayer was measured using a six-level ordinal variable. For each one unit increase in frequency of prayer, negative affect increased by .117 units. Strength of spirituality, strength of religious belief, and membership to a religious community/congregation are not significant in this model. For age cohort differences, Early Baby Boomers' mean negative

affect was .792 units higher than the Greatest Generations'. The mean negative affect for Late Baby Boomers' was 1.119 units higher than the mean negative affect of the Greatest Generation. Generation X's, mean negative affect is 1.580 units higher than for the Greatest Generation. There are also significant differences in negative affect with respect to marital status and income. As compared to married people, people that were previously married have a mean negative affect that is .346 units lower. For each level-increase in income quintile, negative affect decreases by .165 units. Belonging to the Silent Generation, sex differences, having never been married, and education level were not significant predictors in this model. For health indicators, self-rated mental health, self-rated physical health, and BMI are significant indicators of negative affect. Self-rated mental health was measured using a five-level ordinal variable. For each one unit increase in self-rated mental health, negative affect decreases by 1.347 units. Self-rated physical health was measured using a five-level ordinal variable. For each one unit increase in self-rated physical health, negative affect decreases by .324 units. For each one unit increase in BMI, negative affect decreases by .020 units. The adjusted R^2 of this model is .261 and the change in R^2 is .188.

The fourth and full model evaluates how well factors of religiosity, demographics, health indicators, and scores on the positive affect scale predict negative affect. For factors of religiosity, strength of spirituality and frequency of prayer were significant. Strength of spirituality was measured in a five-level ordinal variable. For each one unit increase in strength of spirituality, negative affect increases by .198 units. Frequency of prayer was measured in a six-level ordinal variable. For each level increase in frequency of prayer, negative affect increases by .123 units. Religious service attendance, strength of religious belief, and membership to a religious community/congregation are not significant in this model. Two age

cohorts and income quintile were the only significant demographic factors. Only Late Baby Boomers and Generation X were significantly different from the Greatest Generation in terms of mean negative affect. Late Baby Boomers had a mean negative affect that was .680 units higher than that of the Greatest Generation. Generation X's, mean negative affect is .912 units higher than for the Greatest Generation. For each increase in income quintile, negative affect decreases by .131 units. Other cohort differences, sex differences, marital status differences, and education level were not significant in this model. For health indicators, self-rated mental health, self-rated physical health, were significant indicators of negative affect. Self-rated mental health was measured using a five-level ordinal variable. For each one unit increase in self-rated mental health, negative affect decreases by .690 units. Self-rated physical health was measured using a five-level ordinal variable. For each one unit increase in self-rated physical health, negative affect decreases by .150 units. BMI was not significant in this model. The positive affect scale was a significant predictor of negative affect. For each one unit increase in positive affect, negative affect decreases by .354 units. The adjusted R^2 of this model is .421 and the change in R^2 is .159.

Comparing the standardized betas of the full model, the positive affect scale had the largest standardized beta at -.471. Self-rated mental health had the second largest beta at -.203. The third largest standardized beta was a .092 for Late Baby Boomers. The fourth largest standardized beta was a .077 for Generation X. Frequency of prayer had the fifth largest standardized beta at .072. Income quintile had the sixth largest standardized beta at -.057. The seventh largest standardized beta was .051 for strength of spirituality. Self-rated physical health had the eighth largest standardized beta at -.047.

The adjusted R^2 of .421 suggests that the variables in this model predict approximately 42.1 percent of the variance in negative affect. The total unique variance of the full model is .197. The religiosity factors account for two percent of the total unique variance in negative affect scores. Age cohort and demographics account for four percent of the total unique variance in negative affect scores. Health indicators account for 12 percent of the total unique variance in negative affect scores. The majority, 81 percent, of the total unique variance in negative affect scores can be attributed to positive affect.

The final model of the ordinary least squares regression for negative affect was ran separately by age cohort. The differences in adjusted R^2 suggest that these variables explain more of the variance in negative affect in some age cohorts than they do in other age cohorts. The adjusted R^2 was largest for Late Baby Boomers. The second largest adjusted R^2 was for Early Baby Boomers. Members of Generation X had the third largest adjusted R^2 . The fourth largest adjusted R^2 was for the Silent Generation. The Greatest Generation had the lowest adjusted R^2 .

Modified Chow tests were conducted on statistically significant coefficients using the Greatest Generation as the reference category (Table 17). Positive affect was a significant indicator for negative affect in all age cohorts. For each one unit increase in positive affect, the Greatest Generation's negative affect decreased by .324 units. As for the Silent Generation, with each one-unit increase in positive affect, negative affect decreased by .346 units. With each one-unit increase in positive affect for Early Baby Boomers, negative affect decreased by .362 units. With each one-unit increase in positive affect for Late Baby Boomers, negative affect decreased by .345 units. For Generation X, with each one-unit increase in positive affect, negative affect decreased by .364 units. However, the Modified Chow Test determined that the effects of positive affect on negative affect for the Silent Generation, Early Baby Boomers, Late Baby

Boomers, and Generation X were not statistically significantly different from those effects on the Greatest Generation at the .05 level.

CHAPTER 5

DISCUSSION

Through using hierarchical ordinary least squares regression modeling, a number of hypotheses were tested. The first hypothesis was that, mental well-being is multifaceted and is influenced by a combination of religiosity, age cohort differences, a variety of demographic characteristics, and overall health. The analysis determined that some of the factors of religiosity, age cohort differences, demographic characteristics, and indicators of overall health were significant in predicting both positive and negative affect, net of the influence of one another. However, as I will expand and explain later, these factors have differing levels of impact on mental well-being.

As for the second hypothesis, there were some interesting results. For sub-hypothesis one, it was hypothesized that the more religious people would have higher level of mental well-being. This was not necessarily an accurate assumption. Some aspects of religiosity predicted better mental well-being, while others predicted worse mental well-being. After including all variables, there was not any support for research that suggests mental well-being is related to membership in a religious community (as in Hayward and Krause, 2013) or church attendance (as in Edgell, Tranby, and Mather, 2013). Respondents' strength of spirituality and strength of religious beliefs were positively related with positive affect. Therefore, it would seem that people with stronger spiritual and religious beliefs tend to have better mental well-being. However, strength of spirituality is positively related to negative affect and prayer is negatively associated with negative affect. It would appear that people who pray more and those that have stronger spiritual beliefs tend to have worse mental well-being. The positive association between prayer and negative affect run counters to Granqvist and Kirkpatrick's (2013) research and does not

fully support Rainville's (2018) notion that private prayer moderates the effects of stress. All in all, this suggests that the relationship between religiosity and mental well-being is complicated. Certain aspects of religiosity, like how strongly someone identifies with their religious beliefs, may suggest better mental well-being. Some aspects, such as frequency of prayer, may be related to worse mental well-being. Or, some aspects of religiosity could be positively related to both better and worse mental well-being, as seen with how strongly someone identifies with their spirituality.

The third hypothesis looked at mental well-being with respect to other health indicators. I hypothesized that better overall health would be related to better mental well-being. In the full model for positive affect, I found that self-rated physical health, self-rated mental health, and BMI were all positively related to positive affect. The connectedness of health indicators for positive affect supports Read, Porter, and Gorman's (2016) research, in which they found that physical and mental health were interrelated. As for the full model for negative affect, self-rated physical health and self-rated mental health were negatively related to negative affect. BMI was not a significant predictor of negative affect. BMI may not have been significant in this model because a low BMI does not necessarily mean better overall health. This may be related to findings from De Wit et al. (2009), who found a non-linear relationship between BMI and depression. High and low BMIs were both positively related to depression. Overall, it appears that people with better overall health tend to have higher levels of mental well-being.

The fourth hypothesis addresses age cohort differences in mental well-being. This hypothesis was that the oldest age cohorts would have better mental well-being than the younger age cohorts. Models one, two, and three, all provided partial support for this hypothesis. Across all models, the Greatest Generation and Silent Generation were not statistically significantly

different in terms of positive or negative affect. Models one, two, and three, find that Early Baby Boomers, Late Baby Boomers, and members of Generation X were statistically significantly different from the Greatest Generation in both positive and negative affect. Furthermore, this study found that the disparity in affect scores increased as the distance between the cohorts increased. For example, Early Baby Boomers were the most similar to the Greatest Generation in both the mean positive and mean negative affect scores. The mean positive and negative affect scores for Generation X were the farthest from those of the Greatest Generation. Positive affect was increasingly negatively related to the younger age cohorts. Negative affect was increasingly positively related to the younger age cohorts. Therefore, both indicators of mental well-being tend show better scores for older age cohorts than for younger age cohorts. However, model four minimized some of these result. By incorporating the other affect score as a dependent variable, the age cohort differences in positive and negative affect were minimalized. In the full model for positive affect, only the members of Generation X were statistically significant different from the Greatest Generation. As for negative affect, Late Baby Boomers and Generation X were still statistically significantly different from the Greatest Generation in the full model. Although a lot of the age cohort effects were mediated by the introduction of the other affect scales in the full model, these findings are still supportive of Keyes and Westerhof (2012). In their research, Keyes and Westerhof (2012) found that members of older age cohorts had better mental health than members of younger age cohorts.

For the fifth hypothesis, I expected that religiosity would affect mental well-being regardless of the other factors in this study. Unfortunately, this appears to only be somewhat true. Only strength of spirituality was significant for both full models. As per the partitioning of variance (see Table 14 and Table 15), religiosity factors explain only two percent of the unique

variance in positive and negative affect scores. As per the findings from Bengtson et al. (2015) on the differing conceptualizations of religion/religiosity by age cohort, it was also expected that there would be age cohort related differences in the effects of religiosity. The age cohort analysis determined that only a few aspects of religiosity were significant predictors of either positive or negative affect, but were not significant across age cohorts. Also, Age cohort differences and other key demographics only explain a small portion of the variance in each. Health indicators are slightly more important, but the majority of the variance in can be attributed to positive affect for the negative affect regression and negative affect for the positive affect regression.

Finally, the findings from age cohort analysis are very interesting. The results indicate that certain aspects of religiosity are more important for the mental well-being of some age cohorts than other. For example, the relationship between positive affect and prayer was not significant for any of the age cohorts, but prayer was a significant indicator of negative affect for the Late Baby Boomers and Generation X. The Modified Chow test found statistically significant differences in the effects of negative affect on positive for Early Baby Boomers, Late Baby Boomers, and Generation X, when compared to the Greatest Generation.

CHAPTER 6

CONCLUSION AND FUTURE RESEARCH

As per the literature reviewed and this current study, mental well-being is multifaceted. This study finds an explanation for less than half the variance in positive and negative affect score. Prior to adding the affect scales into one another's regressions, only about a quarter of the variance in affects were explained. This finding is really interesting because experiencing negative affect and experiencing positive affect are not mutually exclusive. I expected the experiences of negative and positive affect to be interrelated, but it was surprising that they were the most influential factors in these regressions. The expectation was that religiosity would be the most influential for both positive and negative affect scores.

Concurring with findings from Keyes and Westerhof (2012), this project finds some support for an age cohort-related discrepancy in mental well-being. Older age cohorts tend to have better mental well-being than younger age cohorts according to the analysis of this sample. There was support for research that suggests mental well-being and physical health reinforce one another (e.g. Friedman and Kern, 2014; Ohrnberger, Fichera, and Sutton, 2017). Some of these findings do not necessarily support previous research. Specifically, this research does not provide full support for Idler, McLaughlin, and Kasl's (2009) finding that quality of life is higher for people with higher levels of religious involvement. This study found that certain aspects of religiosity (i.e. prayer) are related to worse mental health. It seems that religiosity may be beneficial to mental well-being, but people that experience negative affect may be more likely to engage in religious activities like prayer. Also, the approach of using multiple indicators for religiosity and two dependent variables to study this relationship is possibly more holistic than many of the previous studies.

The lack of support for previous research could be caused by the limitations of this study. The sample used in this study was not representative in many ways. There was very little racial diversity in the sample. The sample was also more highly educated than the population. Most importantly, this research is limited in the fact that the negative and positive affect scales rely on self-reflection of the respondents experiences over the past 30 days. This could partially explain why the mean was so low on the negative affect scale. People may find it easier to remember being happy, or they may just want to appear more positive to the interviewers. Another limitation of this study is the lack of an accurate and objective measure for physical health.

There are a few strengths in this study. One strength of this study is the inclusion of an age cohort analysis. Whereas previous studies have primarily focused on the well-being of elderly populations, the age cohort analysis of mental well-being provides an opportunity to look at mental well-being in midlife. Another strength of this study is its take on mental well-being. Rather than focusing on one aspect of mental well-being, the inclusion of both positive and negative affect has allowed for a more holistic representation of mental well-being. Furthermore, I believe that using positive and negative affect over a 30 day period, as opposed to a clinical diagnosis, may remove some self-reporting biases.

This research has a few implications. First and foremost, this research suggests that studies concerning mental health and mental well-being should look at many different factors. The primary implication of this research is that experiences of positive affect should be promoted as a preventive health measure. This research suggests that an ameliorative approach to mental health may be flawed. Positive affect was negatively related to negative affect regardless of all other factors in the study. In promoting things like happiness and satisfaction, it is possible that

we can partially-circumvent negative affect. In practice, promoting experiences of positive affect could appear in any number of programs.

A second implication of this study is that a greater importance should be placed on physical health, or at least on the self-perceptions that people have about their own physical health. In practice, the promotion of physical health can be pretty simple. Some companies already incentivize their employees to exercise and stop smoking. On a national scale, there is a pending bill titled the Personal Health Investment Today Act (Congress, n.d.). This will allow for gym memberships and other exercise-related expenses to be tax deductible.

This study also implies support for age cohort related differences in mental well-being, although, some of these differences were explained away in the full model. Also, the findings of the age cohort analysis suggest that some aspects of religiosity may be more important for the mental well-being of some age cohorts than others. For example, prayer is significant for the Late Baby Boomers and Generation X, but not for the other age cohorts. Nonetheless, practices and policies addressing mental health and well-being should take into account religious and age cohort-related differences in needs. With different aspects of religiosity being important to mental well-being across age cohorts, as shown in this study, lower levels of religiosity in more recent age cohorts may be concerning. If Millennials and more recent age cohorts are less religious, they may have more difficulty coping with the hardships of adulthood and aging. Therefore, outlook for mental well-being appears bleak, especially if we do not invest in and implement more practices that promote mental health. As a country with a high rate of death by suicide (American Foundation of Suicide Prevention, n.d.), changing views on religiosity (e.g. Bengtson et al., 2015; Cragun et al., 2018), and worse mental well-being in the members of

younger age cohorts, we should either promote some religious practices or promote an alternative.

Future research should include a more robust measure for mental well-being and include younger age cohorts. Positive and negative affect are only two aspects of mental well-being. It may also be beneficial to combine the positive and negative affect scales. These scales were not combined for the purposes of this study because combining the two may have detracted from the value of one or both. This belief is based upon Larson, McGraw and Cacioppo's (2001) findings which indicate that positive and negative affect can co-occur and are not necessarily polar opposites. It would also be interesting to see how employment status may affect the relationship between mental well-being and religiosity.

TABLES

TABLE 1
UNIVARIATE ANALYSIS DESCRIPTIVES

Variables	N	Median	Mean	S.D.	Range
Positive Affect	2276	16	14.71	4.28	24
Negative Affect	2276	2	2.63	3.22	19
Religious Service Attendance	2276	3	2.81	1.49	5
Strength of Spirituality	2276	3	3.16	0.82	3
Strength of Religious Beliefs	2276	3	2.80	0.94	3
Prayer	2276	5	4.48	1.88	5
Income Quintiles	2276	3	3.00	1.41	4
Self-rated Mental Health	2276	4	3.69	0.94	4
Self-rated Physical Health	2276	4	3.50	1.01	4
BMI	2276	27.29	28.27	6.07	62.90

TABLE 2
UNIVARIATE ANALYSIS OF MEMBERSHIP TO RELIGIOUS
CONGREGATION/COMMUNITY

Variable	N	Percent
<i>Religious Membership</i>		
Members	1303	57.2%
Not Members	973	42.8%
<i>Total</i>	2276	100%

TABLE 3
UNIVARIATE ANALYSIS OF AGE COHORTS

Variable	N	Percent
Greatest Generation	139	6.1%
Silent Generation	692	30.4%
Early Baby Boomers	692	30.4%
Late Baby Boomers	570	25.0%
Generation X	183	8.0%
<i>Total</i>	2276	100%

TABLE 4
UNIVARIATE ANALYSIS OF SEX

Variable	N	Percent
<i>Sex</i>		
Male	1052	46.2%
Female	1224	53.8%
<i>Total</i>	2276	100%

TABLE 5
UNIVARIATE ANALYSIS OF MARITAL STATUS

Variable	N	Percent
<i>Marital Status</i>		
Married	1539	67.6%
Previously Married	570	25.0%
Never Married	167	7.3%
<i>Total</i>	2276	100%

TABLE 6
UNIVARIATE ANALYSIS OF EDUCATION LEVEL

Variable	N	Percent
<i>Education Level</i>		
HS or Less	611	26.8%
Some College	659	29.0%
Bachelor's Degree	570	25.0%
Graduate Degree	436	19.2%
<i>Total</i>	2276	100%

TABLE 7
CORRELATIONS

	Positive Affect	Negative Affect	Religious Service Attendance	Strength of Spirituality	Strength of Religious Belief	Frequency of Prayer	Income Quintile	Education Level	Self-rated Mental Health	Self-rated Physical Health
Negative Affect	-.598 ***									
Religious Service Attendance	.165 ***	-.100 ***								
Strength of Spirituality	.115 ***	.007	.442 ***							
Strength of Religious Belief	.168 ***	-.057 **	.627 ***	.562 ***						
Frequency of Prayer	.102 ***	.030	.546 ***	.589 ***	.638 ***					
Income Quintile	.092 ***	-.169 ***	-.042 *	-.101 ***	-.115 ***	-.175 ***				
Education Level	.025	-.100 ***	.044 *	-.045 *	-.121 ***	-.108 ***	.373 ***			
Self-rated Mental Health	.477 ***	-.480 ***	.049 *	.004	.013	-.038	.236 ***	.198 ***		
Self-rated Physical Health	.328 ***	-.377 ***	.032	.005	-.009	-.046 *	.275 ***	.231 ***	.584 ***	
BMI	-.033	.061 **	.005	.039	.041	.069 **	-.076 ***	-.116 ***	-.134 ***	-.294 ***

Note: *** p<.001, ** p<.01, * p<.05.

TABLE 8
T-TESTS FOR RELIGIOUS MEMBERSHIP

Variable		N	Mean	S.D.	T-Test
Positive Affect	Member of Religious Community	1303	15.28	3.99	-7.367 [^] ***
	Non-Member	973	13.94	4.54	
Negative Affect	Member of Religious Community	1303	2.33	3.59	5.025 ***
	Non-Member	973	3.03	4.19	

Note: * p<.05, ** p<.01, *** p<.001. [^] Cohen's D>.20.

TABLE 9
F-TESTS OF DIFFERENCES BY COHORT

Variable	Greatest Generation		Silent Generation		Early Boomers		Late Boomers		Generation X		F-Test
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
	139		692		692		570		183		
Positive Affect	15.12	4.10	15.52	4.10	14.56	4.32	14.22	4.20	13.42	4.68	13.089***
Negative Affect	2.35	2.52	2.18	2.95	2.62	3.32	2.99	3.33	3.44	3.64	8.492***

Note: * p<.05, ** p<.01, *** p<.001.

TABLE 10
T-TESTS FOR SEX

Variable		N	Mean	S.D.	T-Test
Positive Affect	Male	1052	14.74	4.31	.343
	Female	1224	14.68	4.26	
Negative Affect	Male	1052	2.45	3.07	-2.508 *
	Female	1224	2.79	3.34	

Note: * p<.05, ** p<.01, *** p<.001. [^] Cohen's D>.20.

TABLE 11
F-TESTS OF DIFFERENCES BY MARITAL STATUS

	Married		Previously Married		Never Married		
N	1539		570		167		
Variable	Mean	SD	Mean	SD	Mean	SD	F-Test
Positive Affect	15.01	4.03	14.27	4.61	13.43	5.00	14.519 ***
Negative Affect	2.34	2.95	3.20	3.67	3.38	3.63	19.998***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

TABLE 12
HIERARCHICAL ORDINARY LEAST SQUARES REGRESSION RESULTS FOR POSITIVE AFFECT

By model segment	Model 1			Model 2			Model 3			Full Model							
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β					
Constant	12.474	***	0.368	12.083	***	0.578	4.325	***	0.699	9.689	***	0.655					
Religiosity																	
Religious Service Attendance	0.196		0.096	0.068	*	0.148	0.095	0.052	0.143	0.084	0.049	0.056	0.075	0.019			
Strength of Spirituality	0.178		0.140	0.034		0.187	0.139	0.036	0.132	0.122	0.025	0.225	0.108	0.043	*		
Strength of Religious Belief	0.483		0.141	0.106	**	0.416	0.141	0.091	**	0.344	0.124	0.076	**	0.259	0.110	0.057	*
Frequency of Prayer	-0.116		0.067	-0.051		-0.021	0.068	-0.009	0.018	0.060	0.008	0.090	0.053	0.039			
Religious Group Membership	0.506		0.266	0.058		0.261	0.265	0.030	0.110	0.234	0.013	-0.008	0.207	-0.001			
Demographics																	
Silent Generation ¹				0.194		0.387	0.021	-0.247	0.344	-0.027	-0.032	0.304	-0.003				
Early Baby Boomers ¹				-0.782		0.397	-0.084	*	-1.010	0.354	-0.108	**	-0.525	0.314	-0.056		
Late Baby Boomers ¹				-1.279		0.409	-0.129	**	-1.238	0.364	-0.125	**	-0.552	0.323	-0.056		
Generation X ¹				-1.912		0.483	-0.121	***	-1.887	0.430	-0.120	***	-0.919	0.382	-0.058	*	
Female				0.044		0.187	0.005		0.137	0.165	0.016		0.054	0.146	0.006		
Previously Married ²				-0.428		0.224	-0.043		-0.289	0.198	-0.029		-0.077	0.175	-0.008		
Never Married ²				-0.780		0.350	-0.048	*	-0.458	0.309	-0.028		-0.349	0.274	-0.021		
Income (Quintiles)				0.401		0.075	0.132	***	0.097	0.068	0.032		-0.004	0.060	-0.001		
Education Level				-0.003		0.089	-0.001		-0.263	0.080	-0.066	**	-0.224	0.071	-0.056	**	
Health Indicators																	
Self-Rated Mental Health									1.856	0.102	0.410	***	1.031	0.096	0.288	***	
Self-Rated Physical Health									0.492	0.099	0.116	***	0.293	0.088	0.069	**	
BMI									0.039	0.013	0.055	**	0.026	0.012	0.038	*	
Negative Affect													-0.613	0.025	-0.461	***	
R ² (Adjusted)			0.035			0.069			0.277				0.433				
Change in R ²						0.037			0.208				0.156				
F			17.386			12.971			52.179				97.624				
N			2276			2276			2276				2276				

Note. *p<.05, **p<.01, ***p<.001. ¹Age cohort binaries use Greatest Generation as reference Category. ²Marital status binaries use married as reference category.

TABLE 13
HIERARCHICAL ORDINARY LEAST SQUARES REGRESSION RESULTS FOR NEGATIVE AFFECT

By model segment	Model 1				Model 2				Model 3				Full Model			
	B	SE B	β		B	SE B	β		B	SE B	β		B	SE B	β	
Constant	2.628	***	0.278		3.422	***	0.434		8.757	***	0.531		10.288	***	0.474	
Religiosity																
Religious Service Attendance	-0.195		0.073	-0.090	**	-0.147		0.072	-0.068	*	-0.142		0.064	-0.065	*	
Strength of Spirituality	0.106		0.106	0.027		0.113		0.104	0.029		0.151		0.093	0.039		
Strength of Religious Belief	-0.194		0.107	-0.057		-0.189		0.106	-0.055		-0.138		0.095	-0.040		
Frequency of Prayer	0.241		0.051	0.140	***	0.146		0.051	0.085	**	0.117		0.045	0.068	*	
Religious Group Membership	-0.562		0.201	-0.086	**	-0.299		0.199	-0.046		-0.194		0.178	-0.030		
Demographics																
Silent Generation ¹					0.056		0.291	0.008		0.351		0.261	0.05		0.264	
Early Baby Boomers ¹					0.660		0.298	0.094	*	0.792		0.269	0.113	**	0.435	
Late Baby Boomers ¹					1.179		0.307	0.159	***	1.119		0.277	0.150	***	0.680	
Generation X ¹					1.631		0.363	0.138	***	1.580		0.327	0.133	***	0.912	
Female					-0.072		0.140	-0.011		-0.134		0.125	-0.021		-0.086	
Previously Married ²					0.448		0.168	0.060	**	0.346		0.151	0.047	*	0.244	
Never Married ²					0.414		0.263	0.034		0.178		0.235	0.014		0.016	
Income (Quintiles)					-0.383		0.057	-0.168	***	-0.165		0.052	-0.073	**	-0.131	
Education Level					-0.124		0.067	-0.041		0.065		0.061	0.022		-0.028	
Health Indicators																
Self-Rated Mental Health										-1.347		0.077	-0.396	***	-0.690	
Self-Rated Physical Health										-0.324		0.075	-0.102	***	-0.150	
BMI										-0.020		0.010	-0.038	*	-0.006	
Positive Affect															-0.354	
R ² (Adjusted)			0.024				0.072					0.261			0.421	
Change in R ²							0.052					0.188			0.159	
F			12.120				13.588					48.147			92.763	
N			2276				2276					2276			2276	

Note: *p<.05, **p<.01, ***p<.001. ¹Age cohort binaries use Greatest Generation as reference Category. ²Marital status binaries use married as reference category.

TABLE 14
PARTITIONING UNIQUE VARIANCE IN
POSITIVE AFFECT SCORES

Predictors	b	beta	sig	part	sq part	per model segment	percent of total
<i>Religiosity</i>							
Religious Service Attendance	0.056	0.019		0.012	0.000144		
Strength of Spirituality	0.225	0.043	*	0.033	0.001089		
Strength of Religious Belief	0.259	0.057	*	0.037	0.001369		
Frequency of Member	0.09	0.039		0.027	0.000729		
Religious Membership	-0.008	-0.001		-0.001	0.000001	0.003332	2%
<i>Age Cohorts & Demographics</i>							
Silent Generation	-0.032	-0.003		-0.002	0.000004		
Early Baby Boomers	-0.525	-0.056		-0.026	0.000676		
Late Baby Boomers	-0.552	-0.056		-0.027	0.000729		
Generation X	-0.919	-0.058	*	-0.038	0.001444		
Female	0.054	0.006		0.006	0.000036		
Previously Married	-0.077	-0.008		-0.007	0.000049		
Never Married	-0.349	-0.021		-0.02	0.0004		
Income Quintile	-0.004	-0.001		-0.001	0.000001		
Education Level	-0.224	-0.056	**	-0.05	0.0025	0.005839	3%
<i>Health Indicators</i>							
Self-rated Mental Health	1.031	0.228	***	0.17	0.0289		
Self-rated Physical Health	0.293	0.069	**	0.053	0.002809		
BMI	0.026	0.038	*	0.036	0.001296	0.033005	17%
Negative affect	-0.613	-0.461	***	-0.395	0.156025	0.156025	79%
							100%
		Total Unique Variance		0.198201			
		Total Shared Variance		0.234799			
		Total Variance (R-Squared)		0.433			

Note: *p<.05, **p<.01, ***p<.001.

TABLE 15
PARTITIONING UNIQUE VARIANCE
NEGATIVE AFFECT SCORES

Predictors	b	beta	sig	part	sq part	per model segment	percent of total
<i>Religiosity</i>							
Religious Service Attendance	-0.091	-0.042		-0.026	0.000676		
Strength of Spirituality	0.198	-.51	*	0.038	0.001444		
Strength of Religious Belief	-0.017	-0.005		-0.003	0.000009		
Frequency of Member Religious Membership	0.123	0.072	**	0.049	0.002401		
	-0.155	-0.024		-0.016	0.000256	0.004786	2%
<i>Age Cohorts & Demographics</i>							
Silent Generation	0.264	0.038		0.018	0.000324		
Early Baby Boomers	0.435	0.062		0.029	0.000841		
Late Baby Boomers	0.68	0.092	**	0.044	0.001936		
Generation X	0.912	0.077	**	0.05	0.0025		
Female	-0.086	-0.013		-0.012	0.000144		
Previously Married	0.244	0.033		0.029	0.000841		
Never Married	0.016	0.001		0.001	0.000001		
Income Quintile	-0.131	-0.057	**	-0.046	0.002116		
Education Level	-0.028	-0.009		-0.008	0.000064	0.008767	4%
<i>Health Indicators</i>							
Self-rated Mental Health	-0.69	-0.203	***	-0.15	0.0225		
Self-rated Physical Health	-0.15	-0.047	*	-0.036	0.001296		
BMI	-0.006	-0.012		-0.011	0.000121	0.023917	12%
Positive affect	-0.354	-0.471	***	-0.399	0.159201	0.159201	81%
							100%
		Total Unique Variance		0.196671			
		Total Shared Variance		0.224329			
		Total Variance (R-Squared)		0.421			

Note: *p<.05, **p<.01, ***p<.001.

TABLE 16
MODIFIED CHOW FOR POSITIVE AFFECT

	Greatest Generation		Silent Generation		Early Boomers			Late Boomers		Generation X								
	B	SE	B	SE	B	SE		B	SE	B	SE							
Religiosity																		
Religious Service Attendance	0.339	0.268	0.203	0.136	-0.159	0.137		-0.125	0.152	0.343	0.333							
Strength of Spirituality	0.156	0.542	0.321	0.221	0.230	0.177		0.150	0.213	0.029	0.413							
Strength of Religious Belief	0.531	0.579	0.063	0.218	0.386	0.191	*	0.338	0.206	0.013	0.423							
Frequency of Prayer	-0.063	0.242	0.133	0.100	0.108	0.091		0.048	0.104	0.015	0.225							
Religious Group Membership	-1.527	0.835	-0.368	0.384	0.882	0.378	*	0.212	0.425	-1.035	0.768							
Characteristics																		
Female	0.461	0.739	-0.084	0.280	0.078	0.254		-0.009	0.280	0.789	0.596							
Previously Married	-0.439	0.715	-0.027	0.296	-0.211	0.316		0.578	0.396	-1.186	0.794							
Never Married	-1.375	1.549	-0.165	0.616	-0.792	0.519		-0.349	0.481	0.096	0.829							
Income (Quintiles)	-0.025	0.261	-0.034	0.106	0.081	0.107		0.052	0.121	-0.388	0.269							
Education Level	-0.543	0.292	-0.080	0.129	-0.289	0.126	*	-0.221	0.143	-0.242	0.295							
Health Indicators																		
Self-Rated Mental Health	0.442	0.392	0.874	0.172	***	1.174	0.173	***	1.135	0.194	***	1.334	0.411	**				
Self-Rated Physical Health	0.335	0.367	0.095	0.157		0.403	0.151	**	0.343	0.185		0.284	0.412					
BMI	-0.010	0.068	0.028	0.023		0.050	0.019	**	-0.005	0.024		0.034	0.045					
Negative Affect	-0.890	0.126	***	-0.688	0.047	***	-0.558	0.043	***	^	-0.561	0.049	***	^	-0.586	0.087	***	^
Adjusted R ²	0.334		0.369		0.478			0.438		0.408								

Note: *p<.05, **p<.01, ***p<.001. ^ z > 1.96 or z < -1.96

TABLE 17
MODIFIED CHOW FOR NEGATIVE AFFECT

	Greatest Generation		Silent Generation		Early Boomers		Late Boomers		Generation X						
	B	SE	B	SE	B	SE	B	SE	B	SE					
Religiosity															
Religious Service Attendance	-0.016	0.163	0.060	0.097	-0.169	0.110	-0.163	0.119	-0.447	0.261					
Strength of Spirituality	-0.037	0.327	0.363	0.156	*	0.155	0.143	-0.019	0.167	0.336	0.324				
Strength of Religious Belief	0.211	0.350	-0.219	0.154		0.227	0.154	-0.058	0.162	-0.399	0.332				
Frequency of Prayer	0.242	0.145	0.112	0.071		0.063	0.073	0.175	0.082	*	0.349	0.175	*		
Religious Group Membership	-1.110	0.501	*	-0.420	0.272	0.134	0.305	0.147	0.333	-0.116	0.608				
Characteristics															
Female	-0.237	0.446	0.273	0.198	-0.104	0.204	-0.232	0.219	-0.227	0.472					
Previously Married	0.014	0.432	-0.015	0.210	0.079	0.254	1.227	0.307	-0.225	0.629					
Never Married	-0.026	0.938	-0.343	0.437	-0.799	0.417	0.564	0.377	***	0.287	0.653				
Income (Quintiles)	-0.062	0.158	-0.069	0.075	-0.165	0.086	-0.158	0.095	-0.049	0.214					
Education Level	-0.360	0.176	*	0.100	0.091	-0.069	0.101	-0.049	0.113	0.062	0.233				
Health Indicators															
Self-Rated Mental Health	-0.162	0.238	-0.456	0.123	***	-0.973	0.139	***	-0.756	0.154	***	-0.813	0.328	*	
Self-Rated Physical Health	-0.362	0.220	-0.371	0.110	**	0.165	0.122	-0.190	0.145	-0.046	0.325				
BMI	-0.019	0.041	-0.001	0.017		0.007	0.015	-0.039	0.018	*	0.011	0.035			
Positive Affect	-0.324	0.046	***	-0.346	0.024	***	-0.362	0.028	***	-0.345	0.030	***	-0.364	0.054	***
Adjusted R ²	0.361		0.390		0.429		0.450		0.392						

Note: *p<.05, **p<.01, ***p<.001. ^ z> 1.96 or z<-1.96

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