The Prediction of Religion on Emotional, Social, and Psychological Well-Being in a Representative Sample of United States Citizens

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Abstract

Religion plays an important role in mental health, with research highlighting the impact of religious identity, practices, support and coping on mental illness. Religious coping has been shown to lower depression rates after stress, while day-to-day religious behaviours correlate with life satisfaction. However, research often overlooks mental well-being in favour of mental illness, thereby neglecting aspects of mental health as a whole. Fewer studies have comprehensively examined mental well-being, considering its subfacets of emotional, social, and psychological well-being, and how these are affected by religion. Previous studies have found positive associations through means of coping mechanisms and social support between religion and mental well-being, and between religion and psychological wellbeing (Schieman et al., 2012; Pew Research Center, 2019). The main aim of this study was to address the question: 'How do religious coping, religious support, and private religious practices affect mental well-being across different religious streams?'. Using longitudinal data of the Midlife in the United States studies of 1820 participants gathered at two time points with a decade in between, the Generalised Additive Mixed Models (GAMM) indicated religious support to positively predict mental well-being, while private religious practices negatively predicted mental well-being for all religious streams included. This study contributes to the understanding of how religiosity affects well-being, assessing more detailed relationships and concepts within this domain of research. By identifying strengths associated with religious practices, interventions can be developed to help individuals, religious or nonreligious, flourish and incorporate beneficial behaviours into their daily lives. Future research should focus on attaining more information about individuals' religion and their manifestations, to be able to more thoroughly examine other parts of religiosity concerning mental well-being.

Keywords: mental well-being, emotional well-being, social well-being, psychological well-being, religious support, religious coping, private religious practices

Introduction

For many, faith serves as a foundation, providing guidance and comfort during life's most challenging moments, shaping their mental health and well-being in profound ways. Practising religion can form a buffer against the experience of stress and mental illness, such as through prayer and thinking of the control of God in one's life (Schieman et al., 2012). Religious coping methods, particularly collaborative styles, are associated with lower rates of depression after stressful events such as divorce and traumatic experiences (Schieman et al., 2012). Large cross-sectional cohort studies among the American population by the Pew Research Center (2019) showed that religious individuals engage in day-to-day religion practising behaviours that correlate positively with higher life satisfaction. These differences in behaviour and satisfaction in life between religious and non-religious Americans occurred even while controlling for socio-economic variables, such as age, gender and marital status, highlighting the significant positive correlation between religiosity and mental illness (Pew Research Center, 2019). These findings highlight the role of religion in mental health, although there is still a gap in the literature, as other subfacets of well-being are often not addressed. To comprehensively address the existing research gap in the field, it is important to define the complete overview of mental health by considering both the aspects of mental illness and mental well-being that are defined as two different dimensions rather than one, as addressed by Ryff and Keyes' (1995) two continua model of mental health.

The Two Continua Model

Keyes' (2002) Two Continua Model defines mental health as encompassing both mental illness symptoms and mental well-being, considered as separate but related dimensions. It was long considered that good mental health is the same as lacking in mental illness symptoms, although some who did not have symptoms could still find themselves struggling (Keyes, 2002). The two continua model supports this, adding that individuals with mental illness can still achieve high levels of mental well-being (Keyes, 2002; MHW Advisory Groups, 2020). In the model, mental illness is represented on the x-axis, while mental `well-being is on the y-axis, showing that they are independent dimensions rather than ends of a single spectrum. Following Keyes' definition, mental health consists of the experience of mental illness symptoms (e.g. anxiety and depression) and mental well-being of the subdomains emotional, social and psychological well-being (Keyes 2002). The balance of experienced emotions, both positive and negative, and perceived emotions, such as satisfaction and happiness, can be described as emotional well-being (Bradburn, 1969, as cited by Bornstein et al., 2003; Andrews & Withey, 1976, as cited by Bornstein et al, 2003). Then there's social well-being which entails a feeling of community, involvement in society and a general sense of comfort and confidence in other community members (Keyes, 1998; Joshanloo & Nosratabadi, 2009). Lastly, psychological well-being is characterised by an individual's experience of personal thriving with the measures of under which autonomy and personal growth (Ryff & Keyes, 1995).

While there are clear links between religion and both mental and psychological wellbeing, findings on social and emotional well-being are limited and often inferred from related studies. Without direct assessment, insights into the effects of religious factors on these subfacets often rely on broader indicators, such as social support and hedonic or eudaimonic well-being (Ryan et al., 2008; Schotanus-Dijkstra et al., 2015). The two-continua model is widely acknowledged and applied across mental well-being research. The most prevalent used scale is the Mental Health Continuum (MHC), or its abbreviated version (MHC-SF). While the MHC is psychometrically supported to measure general mental well-being, assessing the subdomains—emotional, social, and psychological well-being—individually may require alternative scales (Jovanović, 2015), indicating a conceptual or design limitation. Incorporating direct and reliable measurements of social and emotional well-being could reveal deeper associations between religious practices, social support networks, and personal emotional regulation with more reliability. This approach would provide a more nuanced understanding of how different religious practices influence various aspects of mental wellbeing.

Sociodemographic Factors and Mental Well-Being

Existing research in the field of mental well-being has defined sociodemographic factors to be significantly correlated to mental and psychological well-being, such as gender, income, living environment, and employment (Diener et al. 1995, 1999; Diener and Ryan 2009 as cited by Schotanus-Dijkstra et al. 2015; Ryff and Keyes 1995; Schotanus-Dijkstra et al. 2015). In some cases, the relationship between sociodemographic factors and mental well-being is nonlinear.; those in midlife typically score higher on measures of mental well-being as opposed to their counterparts. Other predictions are linear, such as higher educational achievement and household income positively affecting social well-being (Keyes, et al., 2002; Schotanus-Dijkstra et al. 2015; Chilver et al., 2023). Moreover, being married is significantly associated with good well-being in comparison to being single, separated, or divorced. (Keyes, et al. 2002; Chilver, et al., 2023) Sociodemographic variables often account for less variance in well-being scores, but they still contribute significantly (Demir and Weitekamp, 2007 as cited by Schotanus-Dijkstra et al. 2015; Keyes et al. 2002; Lamers et al. 2012b;

Chilver et al., 2023). However, due to the differences in used methodology and samples in the field, findings do not always comply with one another, therefore it is important to take these factors into consideration when assessing mental well-being in research. This is especially the case when other factors are examined, such as religion. While religion may be at the very centre of someone's life, sociodemographic characteristics can still play a nuanced role in its relation to mental well-being and how religion may be practised.

Mental Well-Being and Religion

In their literature review, Schieman et al. (2012) summarise findings in research between 1992 and 2012 regarding religion and mental health and mental well-being. It underlines a generally positive association between religion and well-being, mediated by processes and constructs as summarised below. Schieman et al. (2012) focused on the general manifestations of religion in terms of 'religious attendance', 'private religious practices' and 'religious coping', which capture most of the concepts researched previously. These concepts are explained below, as well as their relation to mental well-being.

Religious attendance, such as attending services at church, has been found to have a positive mediating effect on psychological well-being, as the promotion of social connections with like-minded people and a consequential increase in self-esteem (Schieman et al., 2012), in turn supporting the feeling of having a large religious support system (Hayward & Krause, 2014). In their exploratory research, Bradley et al. (2020) found that religious attendance is positively correlated to the perceived social support of the individual, in line with previous findings (e.g. Ellison et al., 2009 as cited by Bradley et al., 2020; Lim & Putnam, 2010 as cited by Hayward & Krause, 2014).

The second concept that has been researched in relation to mental well-being is private religious practices, such as prayer and reading holy books outside of worship services. Sternthal et al. (2012) found a negative correlation between private religious activity and mental health symptoms, including anxiety and depression, in samples of Christian or Protestant Black and Hispanic adults living in the U.S.A. Whether these findings are representative of other religious streams and can be translated to mental well-being remains unclear, but it shows one of the few public findings in regards to these variables. An explanation for the negative relation found by Sternthal et al. (2012) is that prayer is practised more as a result of the experience of distress and thus during times of lower levels of mental well-being (Schieman et al., 2012). Additionally, it is hypothesised that the relation between private religious practices and mental health is mediated by the nature of the practices (e.g.

confessional vs. adoration) and perception of the divine other (e.g. loving vs. remote) (Bradshaw et al. 2008; Whittington & Scher, 2010).

Lastly, religious coping has been researched thoroughly in its relation to dealing with stressmoderation and mental well-being (Schieman et al., 2012; Krok, 2014). Religious coping, such as relying on religious beliefs in decision-making, has been found to be important in viewing challenging times as opportunities for growth or a part of a divine plan rather than as solely a negative experience (Schieman et al., 2012; Krok, 2014). Similar to private religious practices, cross-sectional methods make it difficult to assess long-term effects, as coping may occur during difficult times when mental well-being is lower.

Upon examining these outcomes of research in religion and mental health, it becomes clear that they are correlated or predictive in varying ways although the nature of the relationship is yet unclear. Most of the research discussed above focused primarily on Christians, excluding other religious streams that may influence mental well-being differently due to varying core beliefs and psychosocial consequences (Cohen & Johnson, 2016; Hayward & Krause, 2014). Although in the current state of the art other religious streams are considered in research regarding mental illness, this is often not the case for mental wellbeing (Hayward & Krause, 2014). This raises the additional question whether the findings for Christian individuals, as summarised by Schiemann et al. (2012) and Hayward & Krause (2014), apply to other religious streams.

The Current Study

The aim of this study is to investigate whether religiosity is associated with differences in mental, emotional, psychological and social well-being. It is hypothesised that different religious identifications will exhibit varying levels of religious coping, religious support, private religious practices, and mental, emotional, psychological, and social well-being. Considering the positive effects of religion on psychological well-being and mental health in Christian and Protestant samples, we expect that religious identification, support, and coping will positively predict mental, emotional, social, and psychological well-being. In contrast, private religious practices are expected to negatively predict well-being, based on the experience of distress being more prominent during engagement in these practices. All hypotheses are analysed in a ten-year time frame, therefore hypothesising the prediction, positively or negatively, in ten years time.

Methods

Study Design and Data Set

The dataset used for this study consists of the information gathered for the Midlife in the United States (MIDUS) study II and III, lastly updated and revised in September 2021 (MacArthur Midlife Research Network, n.d.). The data for the second and third studies were collected from 2004 to 2006 and 2013 to 2014, providing a broad overview of health-related variables in biophysiological, cognitive, and psychosocial contexts. The dataset is openly accessible on the MIDUS website. Data were gathered through the use of self administered questionnaires. The dataset includes approximately 5500 participants and over 2000 items measuring a wide range of variables, from physical health to caregiving (MacArthur Midlife Research Network, n.d.). The longitudinal data used in this study include the MIDUS II (2004–2006) and MIDUS III (2013–2014) questionnaires.

Participants

Participants in the MIDUS II study were selected based on national probability sampling by using random-digit-dialling (RDD), indicating a random selection within the adult (18+) USA population (MacArthur Midlife Research Network, n.d.). For inclusion purposes, telephone screening was conducted to identify people willing to participate. In addition, the MIDUS II study also checked and corrected for adequate minority and ethnicity inclusions, but also tested for adequate socioeconomic and age distributions to ensure the representativeness of the dataset (MacArthur Midlife Research Network, n.d.). The decision to exclude participants' data for the purpose of this research was made on account of not having filled in a third or more of all the necessary variables to ensure reliability and validity of the outcomes of the analyses. After deleting these data from the final dataset, 1820 participants remained of which the socio-demographic information can be found in Table 1.

Table 1

Socio-Demographic Information of the Sample including Age, Religious Identification, Educational Achievement, Employment, Living Situation and Relationship (N = 1820)

Characteristic	N = 1820
	n (%)
Age* (M; SD)	58.76 (11.2)

Sex

Male	758 (41.6)
Female	1062 (58.4)
Other	0 (0)
Religious Identification	
None	46 (2.5)
Christian	1689 (92.8)
Jewish	45 (2.5)
Other	40 (2.2)
Educational Achievement	
High School	21 (1.2)
College	558 (30.7)
Bachelor	906 (49.8)
Master	237 (13.0)
Professor or Doctorate	98 (5.3)
Employment	
Yes	696 (38.2)
No	1124 (62.8)
Living Situation	
Alone	74 (4.1)
Not Alone	1746 (95.9)
Relationship	
Single	446 (24.5)

*Age is given in years

Measurements

Socio-Demographic Characteristics

The measure of socio-demographic characteristics is made up of the domains of age, sex, religious identification, educational achievement, employment, living status and relationship. These are taken into account as they have been found to have significant predictions on good mental well-being (Schotanus-Dijkstra et al., 2015; Keyes, et al. 2002; Chilver, et al., 2023), or are part of the variables of interest. Religious identification, educational achievement, employment, living situation, and relationship were dummy-coded into subcategories. In total four main groups of 'Non-Religious', 'Christian', 'Judaism', and 'Other' were determined for religious identification. The 'Other' category included 5% Islam (n = 2), 10% Hinduism (n = 4), 27.5% Buddhism (n = 11), 2.5% Rastafarian (n = 1), and 55% other (n = 22) religious affiliations. The 'Other' category was used to ensure reliability due to the small number of participants identifying with these religious affiliations. Educational achievement categories were based on that of previous research by Schotanus-Dijkstra et al. (2015), creating a total of 5 categories ranging from high school to doctoral level of education. All created subcategories are shown in Table 1.

Mental Well-Being

Emotional Well-Being. This variable was measured using positive and negative affect, originating from the Positive and Negative Affect Scale (PANAS) which is widely used to measure affect (Riopel & Positive Psychology, 2019). A total of nine items were used to assess the individual's emotional state over the past 30 days, such as the statement: 'During the past 30 days, how much of the time did you feel in good spirits?'. One could respond to statements with answers ranging from 1 (all of the time) to 5 (none of the time). The mean scores were calculated to determine the final result, with higher scores reflecting higher emotional well-being. The reliability in the current study was excellent, with a Cronbach's alpha of .85.

Social Well-being. This variable was constructed by items concerning social adherence, acceptance, contribution, actualisation, and meaningfulness of society as per the original MHC-SF. A total of 16 items were used to assess social well-being, with statements such as 'The world is too complex for me.' (Keyes, 1998). One could respond to statements with answers ranging from 1 (strongly agree) to 7 (strongly disagree). Mean scores were

calculated to determine the final result, with higher scores reflecting greater social well-being. The reliability in this study was good, with a Cronbach's alpha of .78.

Psychological Well-Being. This variable was constructed by items concerning autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance as per the original MHC-SF. A total of 42 items were used to determine the psychological well-being of the individual using statements such as "It's difficult for me to voice my own opinions on controversial matters". One could respond to statements with answers ranging from 1 (strongly agree) to 7 (strongly disagree). Mean scores were calculated to determine the final result, with higher scores reflecting greater psychological well-being. The reliability in this study is excellent, with a Cronbach's alpha of .89.

Satisfaction With Life Scale - Mental Well-Being. The Satisfaction With Life Scale (SWLS) contains five items measuring mental well-being (Prenda & LAchman, 2001). Although the SWLS was developed after MIDUS II, its items align with those used in the MIDUS II questionnaires. Participants respond to statements such as "Rate your current health" with scoring ranging from 0 (the worst possible) to 10 (the best possible). Mean scores were used to determine final result, with higher scores indicating higher mental well-being. The reliability in this study was acceptable, with a Cronbach's alpha of .66.

Religious Variables

All religiosity measures were specifically developed for the MIDUS study. The scales and items used were based on existing literature within the field of this research. The measurements are split up into religious identification, religious support, religious coping, and private religious practices. These variables are the predictor variables.

Religious Support. A total of four items were used to assess religious support, with questions such as 'If you were ill, how much would people in your congregation help you out?'. Answer possibilities ranged from 1 (a great deal) to 4 (none). Mean scores were calculated to determine the final result, with higher scores reflecting greater perceived religious support. In this study, the reliability was acceptable, with a Cronbach's alpha of .61.

Religious Coping. A total of eight items were used to assess religious coping, with questions such as 'I feel God is punishing me for my sins or lack of spirituality'. Answer possibilities ranged from 1 (often) to 4 (never) for the questions, and from 1 (a great deal) to 4 (none) for the statements. Mean scores were used to determine final result, with higher scores indicating higher religious coping. In this study, the reliability was acceptable, with a Cronbach's alpha of .63.

Private Religious Practices. A total of three items were used to assess private religious practices, with questions such as 'How often do you pray in private?'. Mean scores were used to determine final result, with higher scores indicating more engagement in private religious practices. In this study, the reliability was acceptable, with a Cronbach's alpha of .67.

Data analysis

Data preparation and analysis were performed in RStudio (version 2024.04.3). All measurements for all variables were conducted at both time points. The data were then prepared by calculating mean scores for all scales per individual and per time point. The two datasets from the different time points were then combined into one long-format dataset for longitudinal analysis. Next, the assumptions of normality, linearity and equal variances were examined for continuous data to examine whether the data would be suited for parametric tests. For this the Shapiro Test, scatterplots and Breush-Pagan test were performed.

A correlation matrix was created for the continuous variables using Spearman's Correlation method to give an initial indication of important variables as a first step. Following the correlation matrix, Kruskal-Wallis tests were conducted to examine differences in scores for mental, emotional, psychological, and social well-being, as well as religious identification, support, coping, and private religious practices across religious streams. This was done in a non-parametric manner, as the data were not normally distributed. Alongside the Kruskal-Wallis test, mean scores were determined for each religious stream for every scale measuring concepts of religiosity and well-being at baseline, followed by the Dunn's test.

Generalised additive mixed models (GAMMs) with a gamma function and log link were used, as this method best fit the dataset based on the criteria for binomial, Poisson, or Gaussian methods (Bonamente, 2016). The gamma function is used for large outcome scores which are continuous, unlike the binomial and poisson function, but do not meet normal distribution criteria as for the gaussian method (Wood et al., 2016). The GAMM was used to explore the prediction of religious support, religious coping and private religious practices on mental, emotional, social and psychological well-being, while controlling for variables of age, educational achievement, employment, living situation, and relationship. The random effect of ID was added to the formula, as this research is performed with data from two timepoints of measurement per participant. Socio-demographics were included due to their stability in score over time and expected little explained variance in previous research (Schotanus-Dijkstra et al. 2015; Schieman et al., 2012). All categorical sociodemographic variables, which were gender, educational achievement, employment, living situation and relationship, were controlled for, while the continuous variable age was not. Based on the results of the Kruskal-Wallis tests and the correlation matrix, the religious variables incorporated into the GAMMs included age, religious coping, religious support, and private religious practices as smooth factors. The formula for each of the generalised additive mixed models is provided in Table 2. The significance level for all tests was p < .05.

Table 2

Table of Generalised Additive Mixed Model (GAMM) Formula used for Mental, Emotional, Social and Psychological Well-Being including Socio-Demographic and Religious Variables with ID as a Random Effect (N= 1820)

Outcome	Family	Link	Formula
Variable		Function	
Well-Being	Gamma	Log	Wellbeing $\sim s(Age) + Sex + Education + Employment$
			+ Living.Situation + Relationship +
			s(Private.Rel.Prac) + s(Religious.Coping) +
			s(Religious.Support),
			random = list(ID = \sim 1)

Results

The first aim was to explore the data and provide an initial depiction of important variables and their correlations, as shown in the correlation matrix in Table 3. All variables were positively and significantly associated with each other ($p \le .05$), except for private religious practices with emotional and social well-being. The strongest positive correlations were found between each of the well-being constructs respectively (.29 to .59, $p \le .01$), and between each of the religious variables (.24 to .66, $p \le .01$). Correlations between the well-being constructs and religious variables range between .01 and .22, with the highest, and thus strongest correlation being found between religious coping and psychological well-being, and the weakest correlation between private religious practices and mental well-being.

Table 3

Correlation Matrix of Mental, Emotional, Social, and Psychological Well-Being, Religious Support, Religious Coping and Private Religious Practices including the P-Value Significance at Baseline (N = 1820)

Variable	Mental Well-being	Emotional Well-Being	Social Well-Being	Psychological Well-Being	Religious Support	Religious Coping	Private Religious Practices
Mental Well-Being	1.00	.52**	.29**	.49**	.17**	.13**	.04*
Emotional Well- Being	-	1.00	.32**	.59**	.15**	.11**	.01
Social Well-Being	-	-	1.00	.53**	.11**	.10**	.01
Psychological Well- Being	-	-	-	1.00	.20**	.22**	.07**
Religious Support	-	-	-	-	1.00	.33**	.24**
Religious Coping	-	-	-	-	-	1.00	.62**
Private Religious Practices	-	-	-	-	-	-	1.00

* indicates $p \leq .05$

** indicates $p \leq .01$

Table 4 shows the mean scores at baseline for mental, emotional, social, and psychological well-being, as well as for religious support, coping, and private practices, by religious stream. The Kruskal-Wallis test results in Table 5 show no significant differences (p > .05) in life satisfaction, emotional well-being, social well-being, or psychological wellbeing across religious streams. However, there are statistically significant differences (p < .01) in religious coping, religious support, and private religious practices across different religious streams. Following the outcomes of the Dunn's Test using the mean scores that can be found in Table 4, it was found that the Judaism group scored highest on all domains, except social well-being. For social well-being, the 'Other' group had the highest score. The non-religious group consistently scored the lowest on all domains.

Table 4

Variable	Non-Religious	Christian	Judaism	Other
Mental Well-Being	7.58	7.8	7.98	7.75
Emotional Well-Being	37.7	38.6	39.6	39.6
Social Well-Being	12	12.2	12.2	12.6
Psychological Well-Being	3.94	4.03	4.15	4.04
Religious Support	12.5	14	13.1	13.8
Religious Coping	9.26	12.6	9.53	12.7
Private Religious Practices	5.73	10.5	6.32	11.3

Mean Scores of Well-Being and Religious Variables at Baseline for each Religious Stream

Table 5

Kruskal-Wallis Test Results for Well-Being and Religious Variables Across Different Religious Streams at Baseline (N = 1820)

Variable	χ2	df	р
Mental Well-Being	4.04	3	.26
Emotional Well-Being	6.40	3	.09

Social Well-Being	.46	3	.93
Psychological Well-Being	5.53	3	.17
Religious Support	184.29	3	<.01*
Religious Coping	31.856	3	<.01*
Private Religious Practices	170.24	3	<.01*

* indicates p < .01

The main aim of this study was to determine the relation of religious support, religious coping, and private religious practices with mental, emotional, social and psychological wellbeing. The GAMM analyses revealed significant findings across various facets of well-being: mental, emotional, social, and psychological. The findings for mental well-being are shown in Table 6, and those for emotional, social, and psychological well-being can be found in Appendix A.

Significant predictors of mental well-being emerged after controlling for sex, education, employment, living situation, and relationship status. Among the religious variables, private religious practices was found to have a negative prediction of mental wellbeing (estimate = -.01, p = .008), while religious support showed a positive prediction (estimate = .01, p < .001). Religious coping, however, did not significantly predict mental well-being (p = .307). In terms of socio-demographic variables, being female was associated with a significant positive prediction, with women scoring higher than men (estimate = .01, p = .033). Educational attainment was also a significant predictor, with individuals holding a master's or doctoral degree showing higher levels of mental well-being compared to those with lower degrees (estimate = .07 and .10, p \leq .004). Employment and being in a relationship were further linked to significantly higher levels of mental well-being (estimate = .04 and .06, p \leq .001). Living situation and age did not show any significant predictions (p = .165 and .870).

Religious support, again, exhibited a slight positive association (estimate = .01, p < .001) for emotional well-being, while private religious practices and religious coping did not. Both employment and being in a relationship remained positive predictors of emotional well-being (estimates = .03 and .03, p < .001). Additionally, educational attainment demonstrated a strong positive association, with individuals holding bachelor's, master's, or professional degrees showing increasing benefits at higher levels of education (estimates = .05, .05, and .06, p < .02). Similar to mental well-being, living situation and age did not significantly impact emotional well-being.

A similar finding of a significant positive prediction of religious support on social well-being emerged (estimate = .03, p < .001), while private religious practices and religious coping were not significant predictors. Being female was associated with lower levels of social well-being compared to males (estimate = -.03, p < .001). Educational attainment showed consistent positive predictions, with increasing benefits at the bachelor's, master's, and professional degree levels (estimates = .11, .16, and .17, p < .001). Employment was also positively associated with social well-being (estimate = .03, p < .001).

Neither private religious practices nor religious coping were significant predictors of psychological well-being, but religious support emerged as a strong positive predictor (estimate = .02, p < .001). Higher educational attainment showed a strong positive association with psychological well-being. Individuals with bachelor's, master's, and professional degrees had progressively higher psychological well-being (estimates = .06, .08, and .10, p < .003). Employment and being in a relationship were also linked to higher psychological well-being (estimate = .01, p = .005; estimate = .03, p < .001).

Table 6

Detailed Summary Table of Generalised Additive Mixed Model (GAMM) results for Mental Well-Being including Socio-Demographic and Religious Variables with ID as a Random Effect (N= 1820)

Mental Well-Being	Estimate	Std. Error	T value	Pr (> t)
Intercept	1.91	.03	65.47	<.001***
Sex	.01	.01	2.13	.033*
Educational Achievement				
High School	.05	.02	1.87	.062
Bachelor's Degree	.05	.02	1.88	.060
Master's Degree	.07	.03	2.90	.004**
Professional Degree	.10	.03	3.57	<.001***
Employment	.04	.01	5.94	<.001***

Living Situation	.02	.01	1.39	.165
Relationship	.06	.01	9.11	<.001***
	Edf	Ref.df	F value	P-value
Age	.01	.03	.16	.870
Private Religious Practices	01	<.01	-2.67	.008**
Religious Coping	.01	.01	1.02	.31
Religious Support	.01	<.01	7.01	<.001***
Relationship	.01	.01	1.37	.172

* indicates $p \leq .05$

** indicates $p \leq .01$

*** indicates $p \leq .001$

Discussion

The aim of this study was to investigate whether religiosity is associated with differences in mental, emotional, social and psychological well-being. It was hypothesised that religious individuals would exhibit higher levels of mental, emotional, psychological and social well-being compared to non-religious individuals. Additionally, it was hypothesised that there would be a difference in the mean scores of mental, emotional, psychological and social well-being for the religious streams. Given the positive relationship between religion and psychological well-being, and previous findings suggesting mental health benefits in Christian samples, it was expected that religious identification, support, coping, and private religious practices would positively influence mental, emotional, social, and psychological well-being.

Religious Identity, Mental Well-Being and Religious Behaviours

The results of the Kruskal-Wallis tests indicated that religious identity does not account for differences in well-being scores of all domains. This relationship may differ across samples depending on demographic or contextual factors. However, religious coping, religious support and private religious practices were found to be affected by religious identity, this may also differ per sample. The lack of difference in scoring on the well-being scales compared between the religious streams could have different explanations, although findings are somewhat in line with findings by Ngamaba & Soni (2017). They found only slight differences between different religious streams on mental well-being scores, though it was not tested whether these differences in scoring were significant. Ngamaba & Soni's (2017) findings relied more on socio-cultural and economic factors that have contributed to these differences. It is possible that the broader socio-cultural and economic environment, such as perceived masculinity and gender roles (Gestsdottir et al., 2015; Roothman et al., 2003; López-Madrigal et al., 2021), in which the participants practise their faith plays a more distinctive role in well-being. This may explain the absence of significant differences found in the study, as it did not account for these socio-cultural and economic factors. The significant differences found in religious support, coping, and private religious practices can be explained partially by the division of religious streams. For instance, within the existing division of groups, the level of intensity or specific stream within a larger common religion, such as Christianity, was not accounted for (e.g. separating orthodox from protestant). This enables these groups to bring up the mean level of this score, while these groups are not included in all streams. Moreover, considering the study was performed in the United States, it is likely that daily life is more inclusive to traditions of the more common religious stream (Boston College, n.d.), explaining the highest mean scoring for Christianity on all religious variables. **Religious Behaviours and Mental Well-Being**

The generalised additive mixed models (GAMMs) showed varying prediction estimates of religious coping, religious support and private religious practices on mental, emotional, social and psychological well-being. Religious support was found to be strongly positively predicted for all aspects of well-being and well-being as a whole. This is consistent with earlier research showing that social support from religious communities improves people's sense of self-worth, sense of belonging, and general level of life happiness (Bradley et al., 2020; Hayward & Krause, 2014). Moreover, religious support serves as a coping mechanism during challenging times, fostering a sense of purpose, hope, and perceived control, which positively influences all well-being domains (Jackson & Bergeman, 2011), emphasising the crucial role of social networks in well-being. Contrary to expectations, private practices such as Bible reading and prayer did not significantly correlate with emotional, social, or psychological well-being, though they were positively associated with mental well-being overall which is in line with findings by Ellison & Levin (1998). The lack of significant correlations with emotional, social, or psychological well-being may suggest that these private practices, while enhancing a person's internal sense of well-being overall, do not necessarily translate into improved interpersonal relationships or emotional regulation for instance. Religious coping did not significantly predict any of the well-being domains,

challenging the prevailing theory that religious coping helps individuals reframe stressful circumstances as opportunities for growth or as part of a divine purpose (Krok, 2014; Schieman et al., 2012). One possible explanation for these outcomes could be that although there have both been positive and negative correlations between religious coping and various aspects of well-being (Schieman et al., 2012), the relationship may be more complex than initially anticipated. Religious coping and its relation to mental well-being is mediated in different manners by the type of coping one engages in; *collaborative* coping (partnership with the divine other) is engaged in most often and yields positive outcomes, while *deferential* (cede control and responsibility to divine other) and *self-directed* (religion is not addressed) coping are engaged in far less and have been found to negatively affect mental well-being especially in relation to psychological well-being (Schieman et al., 2012). Additionally, it is also likely that one scores lower on well-being during the difficult times they are experiencing.

Strengths, Limitations and Recommendations

This study contributes to the growing body of literature on the relationship between religiosity and well-being by providing a comprehensive longitudinal analysis of mental, emotional, social and psychological well-being and religious behaviours. While religious identity alone did not significantly predict well-being, the variables of religious support, religious coping and private religious practices proved predictive of mental well-being. Contrary to a large body of research examining contributing factors to mental well-being, this study finds strength in its longitudinal design as it ensures stability of measurements due to the multiple time points. Lastly, a large strength of this study was to include separate subcategories of mental well-being as measures, enabling a closer look at how religious factors affect mental well-being.

While the study presents several strengths, there are also limitations that must be acknowledged. The reliance on self-report measures is one of the limitations, as it may introduce biases such as social desirability bias and recall bias (Bogner & Et Landrock, 2016). In terms of measurement tools, some of the measures used from the original MIDUS II study may not reflect the most current standards to ensure reliability and validity over years time. Moreover, the outcomes may not translate to other countries and cultures (Margolis, et al., 2021). While their reliability and validity were determined to be sufficient, there may be gaps in the comprehensiveness of these measures. For instance, based on exploratory research by Jovanović (2015), the use of the MHC-SF is accurate when it is used for the measurement of mental well-being as a whole, but not to measure the subcategories of emotional, social and

psychological well-being. It was recommended to use other scales to assess these facets, but due to the use of an already existing database, this was not possible. Updating the measurement tools to include current standards and comprehensive items for each subfacet respectively, would enhance the reliability and validity of future studies. Lastly, although the sample was demographically representative, it was not ideal for examining the specific variables of interest, particularly due to the imbalance in religious stream representation. The Christian religion was more prevalent in the sample than any other stream by a large amount (92.8%), which makes it difficult to determine whether the outcome of the Kruskal-Wallis Test is reliable. It should be robust, in that it does not need data to be normally distributed and can account for differences in group sizes, but perhaps not when the division is 93% for one religious stream and 7% for all others together (VassarStats, n.d.). It would be recommended to focus on gathering data from an equally distributed sample in terms of religion. Thereby, the focus would lie on attaining equal groups of religious streams, gathering participants based on the variables of interest, rather than obtaining data from an existing datafile which makes it difficult to obtain normally distributed data.

In the correlation matrix, mental, emotional, social, and psychological well-being each showed high correlations with each other, as well as the religious concepts respectfully. While none of the correlation coefficients exceeded the common threshold of 0.70, which is often used to indicate problematic multicollinearity (Tabachnick & Fidell, 2013), one should still keep this in mind as a potential threat as multicollinearity can affect effect sizes found in regression models (Dormann et al., 2013). Even in cases where correlations do not cross the threshold, they can still pose risks to the stability and interpretability of statistical models, particularly when variables represent conceptually overlapping constructs (Murel & Kavlakoglu, 2024). For example, religious support and social well-being may both be indicative of similar underlying social dynamics, such as interpresonal connectedness and a sense of belonging. This overlap can make it difficult to disentangle the specific contributions of each variable to mental well-being outcomes (Cohen & Wills, 1985).

In terms of practical implications, several possibilities have emerged, especially from a positive psychological perspective. Positive psychology is concerned with fostering wellbeing and helping individuals flourish, following the theory of the dual continua model (Choi, 2007). This research highlights religious support as a potential pathway for enhancing various aspects of mental, emotional, social, and psychological well-being. Religious support can be viewed upon as a strength that can be further developed by religious individuals. By prioritising engagement with religious communities, individuals may enhance their overall well-being and build resilience in facing life's challenges (Diener, et al., 2011; Van Cappellen, et al., 2016). For non-religious individuals, the positive effects of religious support suggest that similar benefits could be achieved through non-religious communal involvement. Communities based on shared values or interests can offer emotional and social support, fostering the same kind of well-being that religious streams provide by fulfilling psychological needs for social engagement and support (Diener, et al., 2011; Van Cappellen, et al., 2016). This means that, whether religious or not, the practice of seeking support from a community remains crucial for mental well-being.

Future research should focus on how these findings can be applied across different cultural and religious contexts, and whether non-religious forms of communal support can offer the same mental health benefits observed in religious settings. This may be especially interesting in non-Western cultures where the manifestation of religion may vary significantly. Moreover, it would assess the effect of cultural aspects on mental well-being, such as individualism versus collectivism. Additionally, longitudinal studies would highlight how consistent participation in religious, or community support networks, influences wellbeing over time, offering deeper insights into how individuals can maintain flourishing lives. Within these new studies it would be of value to consider assessing the frequency and intensity of participation in religious behaviour and how this may affect the prediction of religious behaviour on mental well-being, as well as making a distinction in specific streams within religious streams (e.g. Orthodox versus Protestant). Lastly, considering that religious behaviours at its core do not need to focus on the religion, it may be interesting to focus on other communal groups, such as sports or volunteer groups, and how their behaviours may affect mental well-being.

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Appendix A

Detailed Summary Table of Generalised Additive Mixed Model (GAMM) results for Emotional, Social, and Psychological Well-Being including Socio-Demographic and Religious Variables with ID as a Random Effect (N= 1820)

Emotional Well-Being	Estimate	Std. Error	T value	Pr (> t)
Intercept	1.32	.02	56.09	<.001***
Sex	01	.01	-1.30	.194
Educational Achievement				
High School	.04	.02	1.90	.059
Bachelor's Degree	.05	.02	2.33	.020*
Master's Degree	.05	.02	2.52	.012*
Professional Degree	.06	.02	2.70	.007**
Employment	.03	.01	6.49	<.001***
Living Situation	01	.01	68	.450
Relationship	.03	.01	4.76	<.001***
	Edf	Ref.df	F value	P-value
Age	.01	.02	.62	.533
Private Religious Practices	002	.01	17	.869
Religious Coping	.02	.01	1.80	.072
Religious Support	.01	<.01	5.44	<.001***
Social Well-Being	Estimate	Std. Error	T value	Pr (> t)
Intercept	2.39	.03	68.29	<.001***
Sex	03	.01	-3.59	<.001***

Educational Achievement

High School	.03	.03	1.12	.262	
Bachelor's Degree	.11	.03	3.20	<.001***	
Master's Degree	.16	.03	5.09	<.001***	
Professional Degree	.17	.03	5.17	<.001***	
Employment	.03	.01	3.81	<.001***	
Living Situation	-<.01	.02	21	.830	
Relationship	.01	.01	1.37	.172	
	Edf	Ref.df	F value	P-value	
Age	03	.03	-1.33	.182	
Private Religious Practices	01	<.01	-1.68	.093	
Religious Coping	<.01	.03	.07	.945	
Religious Support	.03	<.01	7.53	<.001***	
Psychological Well-Being	Estimate	Std. Error	T value	Pr (> t)	
Intercept	3.56	.02	147.66	<.001***	
Sex	<.01	<.01	.13	.896	
Educational Achievement					
High School	.04	.02	1.73	.084	
Bachelor's Degree	.06	.02	2.93	.003**	
Master's Degree	.08	.02	3.87	<.001***	
Professional Degree	.09	.02	4.2	<.001***	
Employment	.01	<.01	2.79	.005**	

Living Situation	<.01	.01	.54	.590
Relationship	.03	<.01	5.11	<.001***
	Edf	Ref.df	F value	P-value
Age	<.01	.02	.16	.872
Private Religious Practices	-<.01	<.01	-1.43	.154
Religious Coping	.02	.01	1.30	.193
Religious Support	.02	<.01	9.16	<.001***

* indicates $p \le .05$

** indicates $p \leq .01$

*** indicates $p \leq .001$