



# A Meta-Analysis of Religion/Spirituality and Life Satisfaction

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## Abstract

Human engagement with religion and spirituality is pervasive across the world, yet the extent to which religious and/or spiritual involvement promotes well-being is controversial theoretically and empirically. In the largest meta-analysis of religion/spirituality and life satisfaction to date ( $k=256$ ,  $N=666,085$ ), an overall effect size was computed ( $r=.18$ ; 95% CI .16–.19;  $p<.01$ ). Five dimensions of religion/spirituality were then examined separately to gauge their relationships with life satisfaction. Each dimension of religion/spirituality was significantly and positively associated with life satisfaction: religiosity ( $r=.16$ , 95% CI .14–.17,  $p<.01$ ), spirituality ( $r=.30$ , 95% CI .25–.35,  $p<.01$ ), religious attendance ( $r=.11$ , 95% CI .09–.13,  $p<.01$ ), religious practices ( $r=.14$ , 95% CI .10–.18,  $p<.01$ ), and religious/spiritual experiences ( $r=.29$ , 95% CI .24–.33,  $p<.01$ ). The overall effect was moderated by several study-related variables, with a stronger relationship found in samples with higher average age, in more recent studies, in developing nations, and in countries with a higher percentage of people who consider religion very important in their lives. The theoretical and practical implications of the meta-analysis are discussed.

**Keywords** Religion · Religious attendance · Religious practices · Spirituality · Life satisfaction · Well-being

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## 1 Introduction

Human involvement with religion and spirituality is pervasive in both its scope and depth. Around 68% of the world's adult population view religion as important in their lives (Diener et al., 2011), and despite declining levels of religious membership in the US and Europe (Pew, 2012), over 50% of the US believes that religion is 'very important' in their lives (Gallup Poll, 2018). Moreover, religion and spirituality are often deeply ingrained in the lives of its adherents. Given the influence of religion/spirituality in society, there are both scientific champions and challengers to the idea that it promotes individual well-being.

Note that religion and spirituality share a large degree of overlap but can also be differentiated. According to Pew (Lipka & Gecewicz, 2017), many people in the US report being religious *and* spiritual (48%), but a substantial minority report being spiritual *but not* religious (27%), while others consider themselves neither religious *nor* spiritual (18%), and just a few report being religious *but not* spiritual (6%). The concepts of religion and spirituality have been analyzed in several places, with the general result that religion involves more institutional codification of supernatural beliefs and related practices whereas spirituality is similar but involves substantially more individual latitude and syncretism (Büssing et al., 2007; Koenig, 2008; Koenig et al., 2012; Piedmont et al., 2009; Yaden et al., 2021; Zinnbauer et al., 1997; Zinnbauer et al., 1999). We use the combined term religion/spirituality to refer to a broad set of constructs, which we will further break down into components (Religiosity, Spirituality, Religious Attendance, Religious Practice, Religion/Spiritual Experience) so as to examine their individual relationships with well-being.

In terms of champions of the notion that religion/spirituality enhances well-being, the social-functionalist view, which emphasizes religion's capacity to bind individuals together, is among the most prominent (Graham & Haidt, 2010). According to this perspective, religions form moral communities that foster group cohesion and cooperation (Haidt, 2012; Wilson, 2010). Given the known detrimental effects of loneliness (Cacioppo, 2006), the social connection provided by religious communities may help to buffer against loneliness (Ellison & George, 1994). There are other perspectives that link religion/spirituality to psychological benefits. Religion can provide comfort when one is *in extremis*. Religion is associated with more resilient coping with grief and trauma (Pargament et al. 1998), which may be at least partly due to a sense of meaning and purpose (Park, 2010). Religiosity has also been linked to self-regulation, which may be related to the emphasis placed on self-control regarding lifestyle choices and habits in many religions (McCullough & Willoughby, 2009; Yaden et al., 2020). Perhaps due to these elements, religion is associated with less mental illness and drug/alcohol abuse (Koenig, 2009; Koenig et al., 2001).

Yet, challengers claim that religion is anathema to happiness (e.g., Dennett, 2006). Research has shown that religion is associated with a less analytical and more intuitive thinking style that may lead to poorer decision-making (Gervais & Norenzayan, 2012) and can result in antiscientific attitudes (Gauchat, 2008). Religiosity can lead to struggles to conform to the restrictions espoused by a given religion's mandates and can thus damage relationships with people who do not share the same religious ideals (Exline, 2002). A fixation on punishment regarding transgressing religious rules has been associated with higher rates of anxiety (Ellison et al., 2009). These results can often be moderated by one's particular interpretation of their religious beliefs, as, for example, viewing God as angry generally results in worse outcomes than views featuring a loving God (Pargament, 2002). Indeed, the DSM-5 (APA, 2013) recognizes the mental health problems that can sometimes be associated with religion with a category called "Religious or Spiritual Problem"

( $V = 62.89$ ). In general, mental health outcomes related to religion/spirituality appear to vary across a number of contextual factors associated with the particular religious or spiritual faith, institution, community, practices, social context, as well as states and traits within the religious individual (Pargament, 2002).

Due to the competing perspectives described in the foregoing, researchers are interested in gaining clarity on the relationship between well-being and religion/spirituality. Past reviews of research on religion and subjective well-being have shown mixed findings. As Hackney and Sanders (2003) note, some reviews report a generally *positive association* (Braam & Koenig, 2019; Gartner et al., 1991; Koenig & Al Shohaib, 2019; Koenig & Larson, 2001; Koenig et al., 2012; Larson et al., 1992; Nguyen, 2020; Oman & Lukoff, 2018; Oman & Syme, 2018), but some with *no overall association* (Lewis et al., 1997), and still others with a *negative association* (Schaefer, 1997).

A few well-designed, large-scale studies have been undertaken to improve on the research summary reviews described above. One longitudinal study ( $N = 74,534$ ) found that aspects of religiosity reduced all-cause mortality (Li et al., 2016) and depression (Van der Weele et al., 2016). Another recent large-scale study ( $N = 353,845$ ) showed that circumstances play an important role in moderating the effects of religion and well-being. Diener et al. (2011) found that social circumstances interact with subjective well-being, with economically disadvantaged regions demonstrating a much stronger positive correlation between religiosity and subjective well-being than richer regions (in the US and the world). Crucially, this study found that the beneficial effects of religion appear to be strongest amidst more suffering and tend to attenuate when circumstantial suffering decreases.

A few meta-analyses have been done on related constructs. Bergin (1983) conducted an early meta-analysis of 24 studies that included a sample size of  $N = 9799$  and found a significant mean correlation coefficient of  $r = 0.09$  between religious belief and mental health. Mental health was measured by the Minnesota Multiphasic Personality Inventory (MMPI), the Manifest Anxiety Scale (MAS), as well as an eclectic group of other measures related to mental health in some way. Of the 30 effects tabulated, most (23) were not significantly related, two were negatively associated, and five were positively associated between religiosity and mental health. Tangentially related, a meta-analysis of clinical trials involving religion/spirituality-based interventions found a small significant effect ( $r < 0.10$ ) on anxiety but not depression (Gonçalves et al., 2015).

Another influential meta-analysis of 35 studies that included a measure of religiosity and well-being showed similar results (Hackney & Sanders, 2003). Religion was broken down into institutional religiosity, ideology, and personal devotion. Well-being was sub-divided into three categories: psychological distress (e.g., depression and anxiety), life satisfaction (e.g., self-esteem and happiness), and self-actualization (identity integration and existential well-being). There was a large degree of looseness in how ‘life satisfaction’ was operationalized in this study, which deviates from the way we have described it in the present study. This analysis found an overall positive effect between religiosity and the total score of the well-being measures ( $r = 0.10$ ,  $p < 0.0001$ ) and life satisfaction ( $r = 0.12$ ,  $p < 0.0001$ ). More specifically, personal devotion was the highest correlate with life satisfaction ( $r = 0.14$ ), followed by ideological religion ( $r = 0.12$ ), and institutional religion ( $r = 0.10$ ). An important limitation of this work, beyond its age, is that while it included measures that were labeled “life satisfaction,” the included variables were only tenuously related to life satisfaction.

A very recent meta-analysis (conducted in parallel to the present one) of 48 longitudinal studies on components of religion/spirituality and forms of mental health (distress, well-being, life-satisfaction, quality of life) provides the most recent estimate of effect sizes (Garssen et al., 2021). This analysis found an effect size of  $r = 0.10$  between overall

religion/spirituality and life satisfaction. While this is the most recent estimate, and benefits from analyzing longitudinal rather than merely cross-sectional studies (VanderWeele, 2017a, 2017b), the overall number of samples examining life satisfaction was only nine. The present study involves 256 samples and benefits from this larger breadth of studies. Additionally, this work did not consider the dimensions of religiosity/spirituality or other important moderating factors (e.g., age, gender, culture, etc.), which the literature would suggest are critically important to consider to fully understand the relationship.

While previous reviews and meta-analyses have shed some light on the relationship between religion/spirituality and life satisfaction, there continue to be significant gaps. Foremost, religion/spirituality is typically differentiated by beliefs and practices as well as other elements (e.g., experiences, service attendance)—and these aspects need to be distinguished to assess their particular relationships with well-being accurately. Second, a number of high-quality research has been conducted on this topic over the past 20 years since the last large correlational meta-analysis was conducted. Relatively recent reporting guidelines from the APA have encouraged more studies to report the effect sizes of the relationship between variables, increasing the number of viable studies to include. Furthermore, levels of religiosity have been shifting across the US and several world regions in recent decades, which may have led changes in the relationship between aspects of religion/spirituality and life satisfaction (Hackett & Stonawski, 2017). Third, research suggests that there are key moderators that need to be examined in the relationship between religion/spirituality and well-being, including age, gender, culture, and aspects of religion that past work has not examined.

For these reasons, we conducted the largest meta-analysis on religion/spirituality and well-being to date. In this analysis, the focus is on a specific form of well-being, life satisfaction, or the overall assessment of how one's life is going as a whole (Diener, 1984). Different life satisfaction scales are highly correlated with one another (Diener et al., 2013). Domain-specific life satisfaction, however, such as work satisfaction and marital satisfaction, were excluded. Several dimensions of religiosity were included: (1) spirituality, (2) religiosity, (3) attendance at religious services, (4) religious/spiritual practices, and (5) religious/spiritual experiences. The aim was to provide, based on the current literature, an updated and accurate estimate of the relationship between aspects of religion/spirituality and life satisfaction.

## 2 Method

A systematic review and meta-analysis on life satisfaction and different aspects of religion/spirituality was conducted. This approach examines overall differences in life satisfaction and religiosity/spirituality across the literature by pooling effects from individual publications.

### 2.1 Literature Search

This systematic review covered databases, including PsychINFO, ERIC, PsychArticles, and Education Full Text. The search terms reflected a broad conceptualization of religious engagement and cast a wide net for studies measuring life satisfaction: SU (religion OR religiosity OR religious belief\* OR religious participation OR religious affiliation OR religious adherence OR religious community OR religious practice OR prayer OR meditation

OR spirituality) AND SU (happiness OR subjective well-being OR subjective wellbeing OR life satisfaction\* OR life evaluation\* OR positive feeling\* OR negative feeling\* OR psychological well-being OR psychological wellbeing OR virtue\* OR acceptance OR autonomy OR mastery OR positive relations OR purpose OR meaning OR growth OR engagement). This resulted in 2992 articles, and after removing duplicates, 1305 articles remained.

Articles were removed on the basis of failing to meet the following criteria. (1) The study must include life satisfaction, *not* psychological well-being, happiness, meaning, positive/negative emotion, or other related constructs. There are a wide variety of well-being measures, with substantial heterogeneity in the constructs included, while satisfaction with life measures are fairly uniform and specific. Life satisfaction measures could be either single items or scales. However, domain-specific measures of life satisfaction (e.g., job satisfaction) were excluded. (2) The study must include a measure of religion/spirituality; this includes religiosity, spirituality, prayer, religious service attendance, and religious/spiritual experience. (3) The study must be quantitative—not qualitative, conceptual, or theoretical. (4) The study must include an effect size or enough information to compute it. In cases where a study met the other criteria but was missing enough information to compute an effect size, authors were contacted to request additional information. (5) The studies must not violate the assumption of independent samples. Multiple studies utilizing the same sample, such as the World Values Survey with overlapping years, were excluded. Different religious/spiritual construct types (e.g., beliefs, attendance, practices) from the same sample were included but calculated independently. Lastly, scales that relate to well-being (i.e., the Spiritual Well-being Scale), have a tautological relationship with life satisfaction (for a discussion of this issue, see Garssen et al., 2016) and were therefore excluded.

## 2.2 Coding

A number of variables were coded. These include: (1) the year that the data were collected, (2) the average age of the sample, (3) the publication type (journal article or dissertation), (4) study design (correlational or longitudinal), (5) whether a general dataset was used (e.g., World Values Survey, European Values Survey), (6) the religious/spirituality construct type (spirituality, religiosity, attending services, practices, experiences), (7) the name of the religious/spiritual construct and measure, (8) the name of the specific religious faith from the sample (if there was one sample-specific religion), (9) the gender of the sample (if sample-specific), (10) whether the people in the sample faced a particular challenge (e.g., poor health, physical injury, substance use disorder), (11) the nation from which the sample was taken, (12) the correlation coefficient between the religion/spirituality construct and life satisfaction (the correlation coefficient was converted to Pearson's  $r$  in cases where Cohen's  $d$  or beta weights from linear regression were reported), (14) the sample size, (15) the reliability (Cronbach's alpha,  $\alpha$ ) for the life satisfaction measure, and (16) the reliability (Cronbach's alpha,  $\alpha$ ) of the religion/spirituality measure. If the correlation coefficient was not provided, the authors of the article were contacted.

Coders were trained with a coding manual that provided criteria and examples of articles marked for inclusion or exclusion. The coders met for consensus meetings in which coders reached a consensus regarding discrepancies (Orwin & Vevea, 2009). Every study was coded by two coders, and all of the coders went through each of the studies together in order to resolve discrepancies. Disagreements were often related to misclassifications

of the aspect of religiosity being measured. In these cases, an expert on the psychology of religion assigned the construct type.

A number of disagreements occurred regarding the religious/spiritual construct type, and these were accordingly re-coded into five categories: (1) religiosity, (2) spirituality, (3) religious attendance, (4) religious practice, and (5) religious/spiritual experience. The first category, religiosity, includes single items asking participants to rate their degree of religious belief and affiliation, as well as scales like the Theism Scale and the Religious Orientation Scale that measure religious belief. The second category, spirituality, includes instruments that refer to spiritual beliefs and affiliation, such as the Spirituality Index. The third category, religious attendance, relates to attending religious services and is measured in terms of hours of religious service attendance and frequency of attending weekly church services. The fourth category, religious practice, refers to engaging in prayer and other prayer-like religious activities, usually done on one's own. The fifth category, religious/spiritual experience, included not only scales but also single items asking participants to indicate whether they have had an altered state of consciousness that they deem religious or spiritual, usually measured with scales such as the Daily Spiritual Experiences Scale and the Index of Core Spiritual Experiences.

The set of studies included a large number of countries, which were broken down into categories based on the Human Development Index (UNDP, 2019). Countries in the top category were distinguished from those lower on the index. The country category was treated as a potential moderator. The year that the study was published was also included.

## 2.3 Statistical Analyses

A random-effects model was selected. Most meta-analyses conducted in the psychological sciences fit the random effects model assumption criteria (Cuijpers, 2016; for an alternative perspective, see Poole & Greenland, 1999).

The mean correlation between life satisfaction and aspects of religion/spirituality was calculated using Pearson's  $r$ , such that higher  $r$ 's indicate that increased religion/spirituality was related to higher levels of life satisfaction. There are several different approaches to conducting meta-analyses using random-effects models with correlation coefficients, each of which involves computing  $\tau^2$ , which represents the variance of the effect size estimates across studies (Veroniki et al., 2016). Hunter and Schmidt's (1991) technique was used here due to its superior performance to other models in a Monte Carlo study (Field, 2001). The Hunter and Schmidt (1991) technique involves summing the products of the correlation coefficient and the sample size of each study. The standard deviation is then calculated, which is then transformed into the standard error and converted into a standardized  $z$ -score. From these results, a  $p$ -value can then be derived, and upper and lower confidence intervals calculated.

The statistical programming software R was used to perform the Hunter and Schmidt (1991) meta-analytic technique. In particular, the *metafor* package (Viechtbauer, 2010) was used due to its demonstrated capacity to handle moderator analysis. First, a test of heterogeneity on the overall effect was performed to determine whether a moderator analysis was appropriate. Moderator analysis was conducted for cases in which the  $Q$  statistic was significant, indicating significant variation across studies. The  $I^2$  statistic indicates the proportion of variance due to true heterogeneity across studies (i.e., between-study variance that is explainable), rather than random, unexplainable error (Borenstein et al., 2009).

Moderators were tested using meta-regression functions in the *metafor* package (Viechtbauer, 2010). It was expected that the five types of religion/spirituality constructs described in the previous section would explain substantial variance in the overall effect size, so these were planned sub-group analyses. Moderator analysis was conducted on the variables for which we had sufficient data—the year the study was published, the average age of the sample, the type of publication (dissertation or peer-reviewed article), the study design (correlation or longitudinal), whether the sample was drawn from a large-scale dataset (e.g., Gallup), and whether the sample had substantial mental or physical health challenges. We also added three moderators by drawing on large datasets: whether the country from which data was collected was highly developed or not (according to the Human Development Index; UNDP, 2019), the percentage of people in the country the sample was drawn from that rated religion as highly important (from CIA, 2020; Pew Research Center, 2018), and whether the sample size was larger than 1000 people.

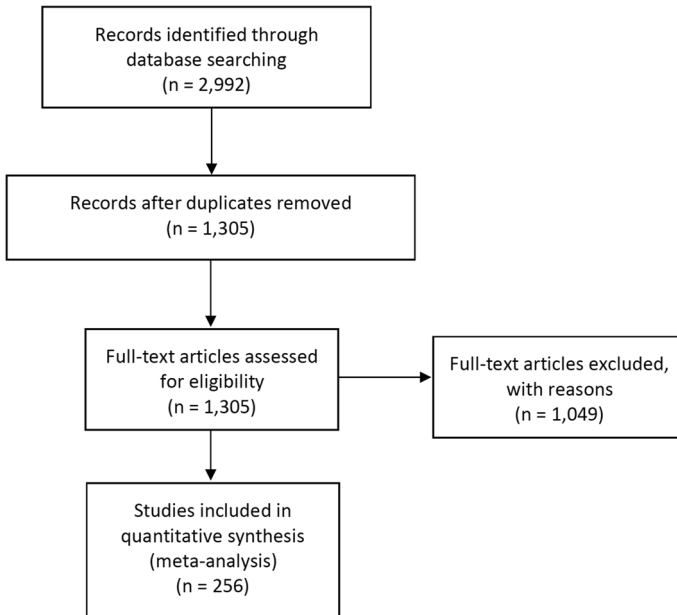
Lastly, we examined the presence of publication bias. Publication bias refers to the tendency for significant results to be published and for non-significant effects to be relegated to the ‘file drawer,’ which has been shown to be more likely in smaller studies (Borenstein et al., 2011). The funnel plot is a visual representation of the standard error, or precision, of included studies as well as their effect sizes. In funnel plots showing asymmetries around a mean effect size, particularly in lower sample size studies (where one would see a higher error but not, for example, more positive than negative findings), publication bias is more likely (Duval & Tweedie, 2000). Lastly, Egger’s linear regression intercept test (Egger et al., 1997) was performed to test possible publication bias.

### 3 Results

After applying the criteria, 1049 articles were excluded. The reasons for exclusion were as follows: (1) 733 were excluded for not containing a valid measure of life satisfaction, (2) 101 were excluded for not containing a valid measure of religion/spirituality, (3) 144 were excluded because they did not include enough information to calculate an effect size, (4) 49 were excluded for not using independent samples, and (5) 22 were excluded because the religion measure was also a well-being measure. This process left 256 independent effect sizes, including over half a million participants (Fig. 1; see Supplemental Materials for a full list of citations).

Overall, there was a significant relationship between religion/spirituality ( $k=256$ ,  $N=666,085$ ) and life satisfaction ( $r=0.18$ ,  $p<0.01$ ) when pooling all aspects of religion/spirituality. The test for heterogeneity was significant ( $p<0.01$ ) with a high degree of unaccounted for variability ( $I^2=92.4\%$ ). These values further affirmed the decision to use a random-effects model for these studies. As expected, the significant heterogeneity in effect sizes further motivated the planned subgroup analyses on each of the five aspects of religion/spirituality (see Table 1 for a summary of overall and sub-group effects). The average effect size by attribute ranged from 0.11 (Religious Attendance) to 0.30 (Spirituality).

Additionally, subgroup analyses of study-specific variables revealed four significant characteristics that modified observed relationships (i.e.,  $r$ ) between life satisfaction and aspects of religion/spirituality (Table 2). The average relationship between life satisfaction and religion/spirituality was stronger in samples in which the subjects have a higher age ( $b=0.002$ ,  $p=0.002$ ), in more recent publications ( $b=0.01$ ,  $p=0.01$ ), in countries with higher levels of religiosity ( $b=0.0019$ ,  $p=0.01$ ), and in *less* developed countries



**Fig. 1** Flow chart showing the progression of literature search

**Table 1** Meta-analytic results between life satisfaction and aspects of religion/spirituality

	<i>r</i>	SE	95% CI	<i>p</i>	<i>k</i>	<i>N</i>
Overall	.18	.01	[.16, .19]	< .01**	256	666,085
Religiosity	.16	.01	[.14, .17]	< .01**	124	427,834
Spirituality	.30	.03	[.25, .35]	< .01**	34	24,447
Religious attendance	.11	.01	[.09, .13]	< .01**	56	187,724
Religious practice	.14	.02	[.10, .18]	< .01**	22	13,780
Religious/spiritual Experience	.29	.02	[.24, .33]	< .01**	20	12,300

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

( $b = -0.09$ ,  $p = 0.02$ ). These results can be interpreted such that a one-unit increase in the average age of the sample cohort was associated with a 0.002 increase in the effect size, a one-unit increase in the publication year was associated with a 0.005 increase in the effect size, a one-point increase in the percent of the population that views religion as important was observed to have a 0.19 increase in the effect size, and each one unit decrease in the country-level development (binary variable for undeveloped or developed), as measured by the Human Development Index, was associated with an estimated 0.0019 increase in average effect size.

Funnel plots are used to measure the relationship between each study's effect size and precision (typically measured as the standard error of the estimate). Analysis with no bias would produce a plot that resembles an inverted funnel (Sterne & Harbord, 2004). Studies with the highest precision and, thus, with the most statistical power are located towards



**Table 2** Results of the meta-regression comparing overall religion/spirituality and life satisfaction

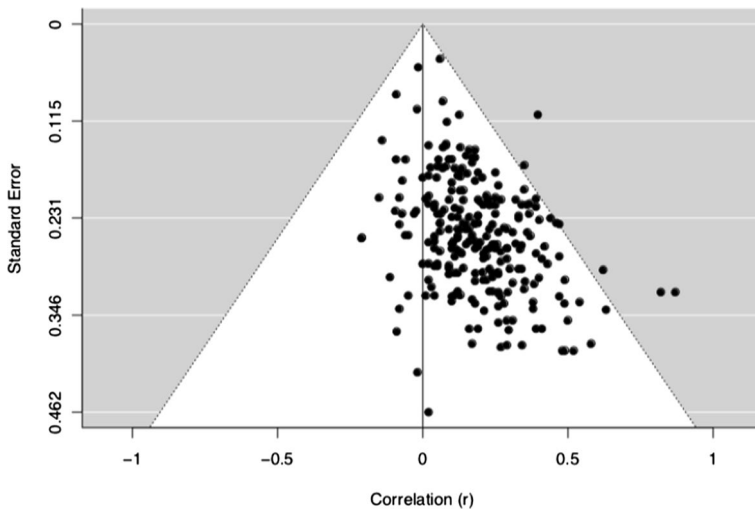
	<i>b</i>	SE	95% CI	<i>p</i>
Intercept	-9.16	3.57	[- 16.15, - 2.18]	.01*
Year Pub <sup>a</sup>	0.005	0.002	[0.001, 0.008]	.01**
Average age <sup>a</sup>	0.002	0.001	[0.001, 0.003]	<.01**
Publication type other	-0.04	0.03	[-0.09, 0.02]	.16
Study design longitudinal	-0.07	0.06	[-0.18, 0.05]	.27
Large dataset used	-0.04	0.04	[-0.11, 0.04]	.36
Sample challenge	0.01	0.04	[-0.06, 0.08]	.85
Developed country	-0.09	0.04	[-0.16, -0.02]	.02*
% Religion important in country <sup>b</sup>	0.0019	0.0007	[0.0005, 0.0033]	.01**
Sample size > 1000	-0.05	0.03	[-0.12, .01]	.12

Overall (k = 256, N = 666,085)

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

<sup>a</sup>Decimals are provided to three places to aid interpretation

<sup>b</sup>The percent coefficient has been scaled to represent an incremental change by one percentage unit (.01 in original unit)



**Fig. 2** Funnel plot. This figure provides some evidence for publication bias demonstrated by higher correlations in smaller samples with larger standard errors

the top of the plot. Smaller studies, which are typically less powerful/precise, are located towards the bottom of the plot (Sterne et al., 2011).

The funnel plot (Fig. 2) displayed obvious asymmetries in the results. The majority of effects were positive, with most results within the “pseudo” 95% confidence limits

around each standard error on the vertical axis (Sterne & Harbord, 2004). There were four studies that produced abnormally large effect sizes that exceeded the “pseudo” confidence limits. These results suggest an impact of publication bias, though it is not conclusive (Sterne & Harbord, 2004).

## 4 Discussion

This meta-analysis comparing aspects of religion/spirituality to well-being is the largest to date, covering over two hundred and fifty effect sizes and including over half a million participants. It focuses on the most widely used aspect of well-being, life satisfaction, and provides both an overall and a multidimensional approach to religion/spirituality. The overall effect was positive, with a small effect size. However, this relationship was strongest in older samples and samples collected from more religious countries as well as countries lower on the human development index, as has been found in previous research (Diener et al., 2011). Furthermore, the sub-group analyses done by religion/spirituality construct category suggest variation, with spirituality and religious/spiritual experience demonstrating the strongest relationships with life satisfaction. This is in line with the growing scholarly consensus that religion and spirituality ought to be treated as multidimensional constructs in contemporary research (e.g., Yaden et al., 2021).

The results are largely in keeping with past research and theorizing. Previous research has found small, but significant positive effects for religion/spirituality with life satisfaction with all dimensions of religion/spirituality pooled together, both in large-scale studies (e.g., Diener et al., 2011), narrative reviews (e.g., Koenig & Larson, 2001), and previous meta-analyses (Bergin, 1983; Garssen et al., 2021; Hackney & Sanders, 2003). VanderWeele (2017a, 2017b) discussed the differences between religious beliefs, practices, and attending services in terms of their respective and differential impacts on well-being. Beyond religion, spirituality has sometimes been construed as more positive than religiosity, insofar as certain well-being-promoting aspects of religion might be had without the downsides to well-being that sometimes result from rigid doctrinal adherence (e.g., Zinnbauer et al., 1997).

We found that the overall relationship was moderated by several variables, including the age of the sample, the publication date, and country-level characteristics. Significant effects were not found for publication type, study design, the dataset used, or samples with exceptional physical, mental, or life challenges. The two strongest moderation effects found were also the most theoretically grounded moderators examined: the percentage of people in the country who reported that religion was important to them, as measured by the CIA Factbook (2020) as well as the development of the country measured by the human development index (UNDP, 2019). We found the two qualities of the country from which the sample was collected significantly impacted the relationship between the variables of interest in meaningful ways, finding that less developed countries see a greater relationship between religion/spirituality and life satisfaction as well as countries in which citizens self-reportedly identify with religion to a greater extent.

This meta-analysis is generally consistent with prior meta-analyses, with some novel findings. The meta-analysis by Hackney and Sanders (2003) on well-being in general and life satisfaction in particular and employs contemporary analytic standards. Hackney and Sanders (2003) divided religion into three categories (institutional religion, ideological religion, and personal devotion) as well as an overall effect. This study found that life

satisfaction was related to institutional religion ( $p < 0.01$ ,  $r = 0.10$ ), ideological religion ( $p < 0.01$ ,  $r = 0.12$ ), personal devotion ( $p < 0.01$ ,  $r = 0.14$ ), and overall ( $p < 0.01$ ,  $r = 0.12$ ). Thus, the Hackney and Sanders (2003) overall effect size of ( $r = 0.12$ , CI 0.11 to 0.13) is somewhat smaller but within the general range of the overall effect size ( $r = 0.18$ , CI 0.16 to 0.19) of the present analysis. Similarly, the Garssen et al. (2021) meta-analysis, which included nine longitudinal samples, derived an effect size of religion/spirituality and life satisfaction of  $r = 0.10$  (CI 0.01 to 0.13). This meta-analysis, which controlled for baseline assessments in longitudinal designs (as suggested by VanderWeele, 2017a, 2017b), found a marginally smaller effect size than the one identified in the present analysis. Previous effect size estimates comport well with the present effect sizes insofar as they are quite close in absolute terms. Notably, however, we observed substantially higher effect sizes for spirituality ( $r = 0.30$ , CI 0.25 to 0.35) and spiritual experience ( $r = 0.29$ , CI 0.24 to 0.33). This relationship has received less study and represents a future direction for this area of research.

While estimates regarding the association between aspects of religion/spirituality and life satisfaction appear to be relatively stable across the present and previous meta-analyses, a debate has emerged around characterizing the magnitude of the effect sizes. Specifically, do these effect sizes *matter* for practical purposes? Garssen et al. (2021) claim that the effect of religion/spirituality on mental health is not substantial and, therefore, unworthy of further investigation. However, in a commentary on this study, VanderWeele (2021) points out that small effect sizes can still have a large overall impact if a large portion of the population is exposed for long periods of time to the phenomenon in question, as is the case with religion/spirituality. In another commentary, Koenig et al. (2021) characterize the observed effect sizes as not just statistically significant but also potentially clinically important. In their response to these commentaries, Garssen and Visser (2021) reiterate that it appears that the relationship between religion/spirituality is small and that the field may be better served by looking at more basic psychological processes or outcomes of a different kind. But it is difficult to arrive at a final assessment of how much of a difference makes a difference in terms of correlational effect sizes. For example, one review classifying 147,328 correlational effect sizes within applied psychology found that  $r$  less than 0.09 is considered small (weak), 0.09 to 0.26 medium (moderate), and  $> 0.26$  large (strong) (Bosco et al., 2015). Thus, the range of effect sizes of 0.11 to 0.30 found in this study would be considered medium or even large, at least within applied psychological work described by Bosco et al. (2015).

Nevertheless, whether this effect size is deemed important or not will likely depend entirely on the context and aims of a given judgment. We do, however, believe that the growing consensus on the magnitude of the relationship between religion/spirituality and life satisfaction provides a sound empirical basis to temper the often-exaggerated claims from enthusiasts and skeptics alike on this subject.

## 5 Limitations and Future Directions

This meta-analysis was limited in a number of ways. First, we were unable to include information about moderators, including gender, for many studies, as data was missing or coded inconsistently. This missing data limited the set of moderator variables. There was substantial evidence of unaccounted variability, requiring additional moderator analysis when this data becomes available in future meta-analyses. Second, this study took only

one component of subjective well-being into account, life satisfaction, and did not examine other aspects of well-being. Third, there appeared to be some evidence of publication bias. The funnel plot showed an asymmetry, with more positive than negative findings reported in smaller sample sizes, which have higher degrees of error. One can reasonably assume that these effect sizes would be smaller with complete data. Finally, VanderWeele (2017a, 2017b) commented that meta-analyses of correlational studies should be interpreted with caution, as they are not able to control for baseline assessments as in longitudinal designs (e.g., Garssen et al., 2021), and we echo this caution.

## 6 Conclusion

In the largest meta-analysis to date between dimensions of religion/spirituality and life satisfaction, religion/spirituality was overall associated with life satisfaction to a small to moderate degree, depending on the particular dimension measured. However, the results of the present meta-analysis emphasize how spirituality and spiritual experience may be a particularly important active ingredient in the relationship between religion/spirituality and well-being. Finally, the general relationship is stronger in older individuals, in countries where religion is normative, and in developing nations.

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## Declarations

**Conflict of interest** The authors have no conflicts to report.

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