Religion and Mental Health

Chapter for “Handbook of Labor, Human Resources and Population Economics”

Sriya Iyer* and Giovanni Rosso†

December 3, 2021

Abstract

Does religion contribute to mental health and well-being? If so, is this link universal? This chapter reviews the interdisciplinary literature on religion and mental health. While a large number of cross-sectional studies document a positive effect of religiosity and religious practices on mental health, stress coping and life satisfaction, few causal investigations of this relationship have been conducted. Furthermore, the bulk of the research has focused on the North American context, leaving other continents and developing countries relatively less studied. There is therefore ample scope for economists expanding the research on religion and mental health across three dimensions (i.) employing methods which attempt causal identification, (ii.) focusing on developing country contexts, (iii.) focusing on a larger set of mental health indicators and on a wider spectrum of religious groups. This review includes three case studies of papers exemplifying the ways in which economists can contribute to the literature on religion and mental health.

*Faculty of Economics and St Catharine’s College, University of Cambridge; CEPR, IZA and GLO. Email: si105@cam.ac.uk.
†Faculty of Economics, University of Cambridge. Email: gmr43@cam.ac.uk.
1 Introduction

Events worldwide in 2020-2021 with the onset of the Covid-19 pandemic have brought into sharp focus the importance of studies of mental health. Another feature of the global pandemic noted by recent studies is the increase in religiosity as well as other aspects, such as pro-sociality (Bentzen, 2020; Caicedo et al., 2021). This brings into focus the possible interactions between religion and mental health. While this subject has been intensely researched in the psychology and sociology literature, economists for their part have seldom approached the subject. The reason for this relative neglect is hard to fathom, but with increasing interest in mental health issues worldwide, and debates about non-clinical ways in which to supplement clinical treatments for mental health concerns, it seems apposite to think more deeply about the relationship between religion, religiosity, mental health and well-being. We know that religion and life satisfaction might be related more generally.

In Figure 1 for example, which examines life satisfaction and religious service attendance taken from pooling individual data points from all countries in the the World Values Survey 2017-2020 wave (more information on the survey and the data in the next section), it is clear that those who say that they attend a place of worship regularly also report higher levels of life satisfaction than those who attend a place of worship sporadically or those who almost never attend; and the difference is about 5 percentage points. This relationship should be interpreted as a correlation. Again, this is reflected not only in religious attendance, an indicator of ‘belonging’ but equally in an indicator of ‘believing’ in Figure 2, in which those who report higher life satisfaction are also those who report that they pray daily, compared to those who say that they pray sometimes or never pray at all; and the difference is almost 10 percentage points greater life satisfaction among those who report that they pray.

This is also reflected in the regression analysis presented in Table 1 showing the results of estimating a regression, using 65564 observations across the world from the World Values Survey, of life satisfaction on religion with a series of controls for gender, age, marital status, employment and education. The coefficient presented in the table shows that religious membership is positively associated with life satisfaction in this sample and is highly significant even after controlling for other factors such as the frequency of prayer, service attendance, religiosity and belief in God. All the other religious variables present a positive coefficient too, apart from belief in god. This result is potentially consistent with the distinction between “believing” and “belonging” religiosity indicators. The fact that the “belonging” indicators all present a positive association with life satisfaction while belief in god a negative one could be explained by the capacity of religious ‘belonging’ to create social-capital and build community. This contention is also supported by Figure 3, which reports an interesting result: in the case of the most recent health crisis with the Covid-19 pandemic, on a scale of 1-5, over 45% thought that religion was not very important for Covid-19, although others do think that religion is important for coping with Covid-19. Again, this might be due to the fact that building social capital and community through religious membership was harder during the pandemic and forced social distancing. The immediate and longer term policy relevance of this relationship between religion and mental health, as well as the empirical challenges
it poses, make it an exciting new frontier for economic research. This chapter outlines the current research in religion and mental health from the perspective of a variety of social science disciplines with a focus on the literature from economics, as well as suggesting the directions in which this field might as yet still move forward.

Fundamentally, there are three main channels through which religiosity can affect mental health. Firstly, religious communities can be effective in creating social capital (Iyer, 2016), building informal networks of support to help individuals through hardship. There is considerable research in economics which suggests that social capital may be important in addition to other forms of capital, in encouraging economic growth more generally. Koenig and Larson (2001) argue that 19 out of 20 studies in their review identify a positive effect of religious communities in fostering social interactions. Furthermore, shared religious background might be positively related to marital stability, and hence to social well-being.

Secondly, religiosity might act as a coping and meaning-making device. A classical literature dating back to Karl Marx, Max Weber and Sigmund Freud approached this question, suggesting that one function of religion might be “palliative” and as a buffer helping people tolerate the adversities of life, while also potentially representing a form of psychosis. More recently, in the light of empirical evidence, a number of psychology studies have highlighted the role of religion as a “stress buffer”, allowing individuals to better deal with stressful events such as a health shock, an income shock, a family member or friend’s suicide, marital breakdowns or other stressful life events (Pearlin, 1989; Koenig et al., 2014). These studies identify different kinds of stressors and demonstrate how religion might alleviate some of these concerns. Religiosity and spirituality might also help individuals find meaning in times of unforeseen illness and general misfortune or to act as a form of insurance (James and Wells, 2003).

Thirdly, because religions may both prescribe and proscribe certain practices, considering some thoughts and practices ‘sinful’ might help in self-regulation (James and Wells, 2003). It might also help to reduce the incidence of risky, deviant or self-destructive behaviours (Gruber and Hungerman, 2008; Fletcher et al., 2014). This might be especially true in the case of adolescents. For instance, religiosity and religious participation might help adolescents adopt good behaviour, or to be more motivated in their activities, occasioned by the peer effects of belonging to positive youth groups (Fruehwirth et al., 2019).

Ever since the writings of Durkheim (2005[1897]), the relationship between religiosity and suicide has also been extensively researched. The contention is that in 19th century Prussia, Protestantism had a substantial positive effect on suicide for the historical periods 1816-21 and 1869-71 (Becker and Woessmann, 2018). Lastly, it is also possible for religion to affect mental health negatively. Spiritual struggles, as well as periods of religious crisis might severely affect stability and mental health. For example, a strong desire to contravene a religious taboo or obligation might create strong distress.

In practice, many studies researching the relevance of these mechanisms are based on cross-sectional datasets and discuss correlations between religion and mental health issues. This makes it difficult to interpret their results in strictly causal terms, a factor which economists are more frequently concerned with nowadays. A correlation identified between
religiosity and mental health might mean that either (1.) religiosity affects mental health positively/negatively or that (2.) the mental health of an individual influences the probability of an individual being religious. Without causal identification, it is impossible to rule out either of these two explanations conclusively. Recent research has focused on meta-analyses, longitudinal studies and on different econometric techniques to identify a causal effect of religiosity on mental health. The need for future research of this kind is the first motivating reason behind this chapter.

Section 2 introduces a brief discussion of the definitions of religiosity and mental health. It also outlines the characteristics of the main data sources and surveys adopted in this chapter. Section 3 commences by presenting the large body of evidence on religion and mental health from the USA. After reviewing the results of the large cross-sectional literature, mostly supporting the existence of a link, it will then concentrate on the most recent meta-analyses and high quality longitudinal studies, also confirming the existence of a link between religiosity and mental health. Section 4 presents results from research across the globe, suggesting that such a link might not be universal. Lastly, Section 5 analyses the econometric literature on this relationship, trying to unveil a causal link between religion and adolescent suicide, religion and mental health across the business cycle, and religion and war trauma. Three articles are presented as case studies of the kinds of research being conducted by economists, in the hope that the identification techniques they employ might pave the way for future economic and econometric research on this important issue.
Table 1: Results of regression of life satisfaction on religiosity variables and controls.

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<tr>
<td>Religious Membership</td>
<td>0.220***</td>
<td>0.195***</td>
<td>(14.93)</td>
<td>(14.15)</td>
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<td>Frequency of Prayer</td>
<td>0.0145***</td>
<td>0.00252</td>
<td>(3.98)</td>
<td>(1.01)</td>
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<td>Service Attendance</td>
<td>0.0153***</td>
<td>0.000637</td>
<td>(4.48)</td>
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<td>Religiosity</td>
<td>0.190***</td>
<td>-0.0846***</td>
<td>(13.66)</td>
<td>(-8.60)</td>
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<td>Belief in God</td>
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<td>-0.0369*</td>
<td>(-8.65)</td>
<td>(-2.41)</td>
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<tr>
<td>Male</td>
<td>0.0426**</td>
<td>0.0464***</td>
<td>(3.19)</td>
<td>(3.49)</td>
<td>(3.66)</td>
<td>(3.59)</td>
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<td>Age</td>
<td>-0.0492***</td>
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<td>(-18.97)</td>
<td>(-18.76)</td>
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<td>Age squared</td>
<td>0.000473***</td>
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<td>(19.32)</td>
<td>(19.67)</td>
<td>(19.03)</td>
<td>(19.16)</td>
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<td>Marital Status</td>
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<td>-0.0953***</td>
<td>(-28.02)</td>
<td>(-27.96)</td>
<td>(-28.48)</td>
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<td>Employment: student</td>
<td>0.0696*</td>
<td>0.0715*</td>
<td>0.0716*</td>
<td>0.0720*</td>
<td>0.0749*</td>
<td>0.0708*</td>
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<tr>
<td>Employment: unemployed</td>
<td>-0.616***</td>
<td>-0.621***</td>
<td>(-25.52)</td>
<td>(-25.78)</td>
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<td>Employment: retired</td>
<td>-0.0753***</td>
<td>-0.0724***</td>
<td>(-3.05)</td>
<td>(-2.93)</td>
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<td>Employment: housewife</td>
<td>-0.109***</td>
<td>-0.126***</td>
<td>(-4.62)</td>
<td>(-5.38)</td>
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<td>Constant</td>
<td>8.635***</td>
<td>8.326***</td>
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$t$ statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
2 Measurement of Mental Health and Religiosity

Mental health can be defined as including emotional, psychological, and social well-being. It encompasses how individuals think, feel, and act. It also relates to how individuals handle stress, relate to others, and make a variety of life choices. Mental health can be investigated at all stages of the life cycle including childhood, adolescence, adulthood and old age. It should also be recognised that defining an objective measure of mental health may be subject to debate. Furthermore, unless high-quality data on treatment for mental health or suicide is available (and even then it is not clear that would be a precise measure for the milder levels of mental illness) we need to rely on self-reported and survey indicators of mental health. Being self-reported, these measures are subject to selection biases, implicit biases and other factors. A possible definition of mental health which can be adopted for the sake of simplicity is the WHO one: “the state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”. In order to translate this definition into indicators, we can examine subjective well-being indicators, most often self-reported life satisfaction and happiness. This is because these are the most widely available, as well as less biased. However, sometimes more specific symptoms, such as suicidal ideation, risky behaviour (smoking or alcohol consumption) or sleep quality are mentioned. This is also a way to potentially connect religiosity to general health.

Religiosity data is obtained from World Values Survey data. Graphical visualisations and illustrative summary statistics are computed using data from two surveys, the World
Values Survey and the CovidiStress survey. We employ data from the joint WVS-EVS wave 2017-2020, which covers 81 countries with a total of 135000 individuals surveyed (minimum 1200 per country surveyed). The questionnaire used to collect the data encompasses more than 231 variables linked to values, religion, happiness and life satisfaction, and is drafted centrally by the organisation incorporating the input from social scientists worldwide. It is then translated in every local language for the countries surveyed. Sampling is conducted so that it is representative of the whole population over the age of 18 who is part of a private household in each country. The sampling method is full probability or a combination of probability and stratified sampling. The CovidiStress Global Survey dataset is a social science dataset collected between 30th March and 30th May, 2020 by collaborators from 39 countries, with forms available in 47 languages and dialects. The survey was conducted by using an online link asking respondents to detail their experience during the pandemic for a period of 62 days. Participation in the survey was on a voluntary basis (except for Japan). The survey encompasses psychological, risk-taking as well as demographic variables together with COVID-specific indicators, specifically linked to the respondents’ everyday experience of lockdowns and isolation.

3 Religiosity and Mental Health in the US

The aim of this section is to provide an overview of the main findings on religion and mental health in the USA, grouped by areas of interest. In order to reinforce the importance of recent developments, the focus is on the literature which has been published after the year 2015. Comprehensive reviews of the existing literature are also found in Rosmarin and Koenig (2020) and Koenig (2018). While most studies are cross-sectional and hence of limited interest when trying to uncover a causal relationship between religiosity and mental health, a few outlier studies employing longitudinal samples do exist. They find significant influence of both private religious practices (e.g. praying) and service attendance on risky behaviour and suicidal risk. These effects seem to vary across gender, occupation and educational level. The overall effect uncovered however, is always positive.

War traumas and religiosity

War veterans are often exposed to a large number of traumatic events and they experience a high risk of mental disorders (Currier et al., 2015; Kopacz et al, 2017; Tanielian and Jaycox, 2008; Cesur and Sabia, 2016). The two most severe conditions faced by deployed service people after 9/11 are PTSD (Post traumatic stress disorder) and TBI (Traumatic brain injury), caused by the explosion of shells and mines. Stype et al. (2020) estimate the treatment of these illnesses to have costed the Department of Veteran Affairs $150 billion. Because of this, a strong public health effort has concentrated on mitigating these effects. Several studies have tested whether large survey data support the relevance of religion in tampering with post-traumatic stress and coping with the difficulties of returning to civil life after combat-zone exposure. Kopacz et al (2017) report that, working on a
sample of 22,701 veterans who survived a suicide attempt, 32.8% of the individuals requested chaplaincy services in the month following their attempt. They however do not look at potential beneficial effects of these encounters. Sharma et al. (2017) analyse a cross-sectional sample from the National Health and Resilience in Veterans Study (NHRVS), finding a significant effect of religiosity/spirituality associated with a reduction in the risk of current and lifetime PTSD, alcohol use disorder and suicidal ideation. Although these results cannot be interpreted as causal, they do offer some evidence of an association. Evidence of a causal dimension of this link is found by Cesur et al. (2020) which will be presented more in depth in Section 5. The results just presented are echoed by the finding of Henrich et al. (2019) that “Individuals more exposed to war are more likely to be members of religious groups years after the end of local conflicts”. This contention is based on a analysing a sample of individuals from conflict areas including Tajikistan, Sierra Leone and Uganda. Whether this effect can be interpreted as causal depends on whether the assumption of quasi-randomness of conflict exposure given religious membership is tenable for these areas. While not strictly related to the religiosity and mental health literature, Henrich et al. (2019) is an interesting case of a study expanding the boundaries of research on religion beyond North America, the importance of which will be the focus of the next section.
Religiosity as a stress buffer

Adverse life events have obvious repercussions on the mental health of individuals. The extent to which each person reacts negatively to shocks, however, depends largely on how well they engage in coping, as suggested by Pearlin (1989). Two potential sources of coping from the literature are social support and cognitive flexibility (Thoits, 1995). Religion can be thought of as a vehicle for both these coping processes: perceiving one’s own stressful experiences through the lens of religiosity might provide solace because of meaning-making and stress-buffering. For instance, belief in ‘divine control’ has been found by Upenieks and Schieman (2020) to be associated with a lower level of stress, vis-a-vis negative life events of comparable size. A possible explanation is that interpreting adversities as part of God’s plan might help optimism that the situation will resolve (Spilka et al., 2003; Koenig et al., 2014). On the other hand, Ellison et al. (2019) find a possible effect of religion as a moderator between stressful life events and sleep quality. Similarly, DeAngelis and Ellison (2018) find a (non-causal) role of religion in attenuating the impact of aspiration strain on mental health. Krause and Pargament (2018) show evidence supporting the contention that reading the Bible can partially help keeping stress at bay. Pirutinsky et al. (2020) study religious coping among the American Orthodox Jewish community during the onset of the COVID-19 pandemic. They find positive and significant correlation between trust in god and intrinsic religiosity, and a lower degree of stress in facing the pandemic.

Religiosity, risky behaviours and suicide in adolescents

Adolescents are exposed to a large number of stressors, as they face an age of considerable social and psychological development. Debnam et al. (2018) is a cross-sectional empirical investigation of the association between substance use in adolescents and religiosity. It concludes that substance use is more prevalent for male students than for female students, and that religiosity might be a possible coping device counteracting the drive towards substance use. The identified effect of religiosity on substance use is significant both for males and females, while the negative correlation between religiosity and stress holds only for males. An important alternative strand of research focuses on the relationship between religiosity and suicide tendencies/suicidal ideation. This is a particularly pressing problem, as data from the Centre for Disease Control and Prevention (CDC) in 2014 indicated suicide as the second cause of death of youths aged 12-17 in the US. An exploratory cross-sectional study is Cole-Lewis et al. (2016), detecting lower levels of suicidal ideation associated with religious support and private religious practices (e.g. praying). Again, this does not bear any causal import. On the contrary, VanderWeele et al (2016) employs a longitudinal study on a very large sample of 89000 women nurses, investigating the possibility of an association between religious attendance and suicide rates. In their sample, attendance of a religious service once per week is associated with a 5-fold decrease in the risk of suicide compared to the ‘never attending service’ baseline. More recently, Chen et al. (2020) present another longitudinal study based on three age cohorts: young, middle-aged and older adults. This study manages to control for potential factors which might act as confounders and for the selection in
religion problem, as well as allowing for a causal interpretation, given the longitudinal dimension of the dataset. The authors find that, compared to those who never attend religious services, individuals who do attend a religious service have a lower risk of mortality, smoking and heavy drinking. Furthermore, service attendance is found to be negatively associated with depression and anxiety. These results provide strong support for the claim that religiosity and spirituality help in fostering social capital, improving social interaction and mental health, thus reducing the incidence of risky or self-damaging behaviour. This in turn can have positive spillovers on general health. However, the association between religiosity and physical conditions, e.g. cardiovascular disease, is not found to be significant.

Negative effects of religion

There are three main mechanisms which might make religiosity have a potentially negative effect on mental health (Weber and Pargament, 2014). The first is ‘negative religious coping’, or spiritual struggle. Resentment towards God, spiritual crises as well as negative encounters with other believers can all fall under this umbrella. This form of negative coping is associated with more severe grief (Lord and Gramling, 2014) and suicidal ideation (Rosmarin et al., 2013). Secondly, religious membership can increase the number of instances in which advice from professional doctors is in conflict with the doctrine of religious authorities, hence causing delays in searching for treatment for mental health (Moss et al., 2006) as well as deteriorating the doctor-patient relationship (Koenig, 2004). Finally, believers who hold a punitive image of God might have a higher chance of exhibiting paranoia or psychotic symptoms (Silton et al., 2014).

Summarising the literature: Meta-Analyses

In summary, there is a great deal of cross-sectional evidence on the (positive or negative) effect which religion can have on mental health. However, only a small subset of this evidence can be interpreted causally. A summary of the causal findings on religion and mental health is Garssen et al. (2021), a meta analysis of longitudinal studies on religion and mental health. They include in their analysis 48 longitudinal studies using random effects. They find evidence of a positive and significant random weighted average effect $r$ of religion on mental health, albeit a small one ($r = 0.08$ for attendance of religious activities, implying that less than 0.6 of the variance in mental health is explained by religiosity). This encouraging result shows that there is need for more longitudinal studies, covering a wider array of definitions of religiosity and investigating a broader range of outcome ‘well-being’ indicators. Still, the positive relationship between religiosity and psychological well-being, only suggestively sketched by cross-sectional studies, finds support in more rigorous longitudinal studies. All these results are obtained in the context of the US. It should therefore not be expected of them to be straightforwardly extrapolated to other geographical, institutional and religious contexts. This challenge is the focus of the next section.
4 Global Evidence on Religiosity and Mental Health

Is the link between religiosity and mental well-being universal? That is, is it substantially the same across countries and religious groups? It seems unlikely. A simple illustration is presented in Figure 4. Life satisfaction is regressed on religious membership and controls for every country in the World Values Survey. The coefficients $\beta$ are extracted for each country, capturing the association between religious membership and life satisfaction after accounting for demographic factors. The map presents the different levels of $\beta$ across the world: blue countries show a positive association, while red countries a negative one. The darker the colour, the larger the magnitude of the association. The overall picture is one of great diversity, with no straightforward pattern. Pöhls et al. (2020) also provide a useful exploratory analysis in this direction. Working with World Values Survey data as well, they analyse how the strength of the link between religiosity and mental health depends on (1.) societal development (2.) importance of religion as a societal norm in the country. They find that contextual factors act as important interactions between the two forces, generating significant differences across groups and nations.

It is therefore important to explore evidence not relating uniquely to the North-American...
Hodapp and Zwingmann (2019) conduct a meta-analysis of 67 studies from German-speaking countries and contrast their findings with those relating to the US. They still find a significant association between spirituality and mental health, albeit a very small one. Namely, they calculate a weighted average correlation of 0.3%, confirming that in the more secularised German context, the impact of religion overall might be less significant than in the US. They also find no support for the thesis of religion as a coping mechanism for stress: individuals not faced with a life crisis or stressful events have a higher \( r = 0.7 \) than those undergoing a difficult experience \( r = -0.1 \). Interestingly, a key result of this meta-analysis is that negative indicators of religiosity (negative coping and so forth) have a stronger negative effect on mental health than identified by US studies. In general, it is clear that in the German secularised context, the universality of a strong link between religiosity and mental health is in question.

Pawlikowski et al. (2019) study the importance of religious service attendance for well-being in Poland. Analysing three waves of a Polish household panel study, they find that attending religious services has positive spillovers on overall well-being. Attendance is also associated with lower incidence of risky behaviours (smoking, drinking). Within the same European context, Ten Kate et al. (2017) set their focus on the highly secular Netherlands, researching the diverse impact of religion on life satisfaction across individuals with different religious affiliations. They find that Muslim individuals are less satisfied than non-religious individuals, within the context of the 2009 wave of the Netherlands Longitudinal Lifecourse Study (NELLS). This difference is, however, almost entirely explained by the difference in privilege and socio-economic conditions that exist between the two groups. There is therefore little explanatory power left for religiosity. On the other hand, Catholics are found to exhibit higher life satisfaction than the non-religious, a difference that is attributed to the sense of ‘belonging’ and social ties constructed within the religious community.

In summary, the results from the US literature do not have necessarily the external validity to be of policy relevance in other geographical and institutional contexts. Besides this, one factor starkly emerges from reviewing the global literature on religion and mental health. It is in fact not global at all. All the studies just presented refer to Europe. This identifies a large potential area of future research which is to target research on religion and mental health in developing country and emerging market contexts. While much of the literature in development economics for example conducts research on physical health in poor nations extensively, there is arguably a very clear need for studies which examine religion and mental health in a developing country context. While there is some work on the economics of religion in developing countries in the context of religion, inequality and public service health and education provision among the poor (see for example Iyer (2018)), there is much more research that needs to be conducted on mental health. Part of the issue for the lack of studies here may be a paucity of reliable data from developing countries on this topic, and the belief that religion might help the poor cope with adverse circumstances keeping them in poverty traps through a religious belief in fatalism, but these are as yet unproven conjectures and do need deeper investigative research. A strong recommendation would be that economists and others may need to delve much more into the interactions
between religion and mental health in the developing world.

5 Economics Case Studies on Religion and Mental Health

Cesur, Freidman and Sabia (2020): War traumas and religiosity

In principle, the effect of traumatic shocks on religiosity following the experience of war might bear a positive or a negative sign. Whilst possible that traumatic war experiences cause a loss of faith in supernatural good and divine will, it might also be the case that vulnerability due to traumas might induce veterans to seek the help of a social safety net or spiritual reassurance. Furthermore, seeking the assistance of a religious figure might be perceived as less risky than professional counselling (Morgan et al., 2016; Besterman-Dahan et al., 2012). Cesur et al. (2020) investigate whether the positive effect dominates the negative, and whether this can be done by identifying a causal relation. The identification strategy follows a large literature due especially to Angrist (Angrist, 1990, 1998; Angrist and Chen, 2011) employing the randomness of the lottery draft to evaluate effects of military service on labour markets. After the abolition of said lottery draft, it is not possible to adopt the same strategy. The authors, therefore, exploit a feature of the administrative process assigning soldiers to warzones: senior commanders assign servicemen to combat zones based almost purely on military characteristics, like experience, military rank, expertise and training received. That is, deployment can be assumed to be exogenous to religiosity. This relies on the further assumption that religious people are significantly represented in the army: it might be that peace-keeping values due to religious beliefs might prevent most religious people from enrolling in the army as well as being drafted. If this is the case, there would be a problem with this identification strategy. If, instead, this is not a significant challenge, by having a (conditionally) randomly selected treatment group, the identification strategy based on a longitudinal sample of veterans can uncover a causal effect. The same strategy is employed by the author to identify effects of combat zone service on PTSD and domestic violence (Cesur and Sabia, 2016). The tenability of this identification strategy is tested by regressing the probability of deployment on a number of explanatory variables (skills, military experience, training received) as well as religious variables. The finding of no significant coefficient on the latter lends support to the exogeneity assumption. It is therefore possible for the authors to test whether war traumas have any causal effect on religiosity and spirituality of soldiers. The study draws data from two different sources: the NLSAAH (National Longitudinal Study of Adolescent to Adult Health) and the HRB (Health and Related Behaviours) survey from the department of defense. Using NLSAAH data, they find that soldiers exposed to combat zones are 7.9 percentage-points more likely to attend a weekly service, compared to soldiers assigned to areas with no combat. Using HRB data, they obtain an estimate of 1.9 percentage-points for the same effect. Similar but not statistically significant effects are found for private prayer, using both surveys. Furthermore, being injured in war is linked with an increase in service attendance of 7.3 percentage points and an increase in private prayer of 5.4 percentage points. In sum, there is evidence that
experiencing combat zones has a role in increasing religiosity.

**Fruehwirth, Iyer and Zhang (2019): Religion and depression in adolescence**

*Fruehwirth et al. (2019)* show that religiosity affects depression. This study is based on a nationally representative sample of 20,000 US adolescents in grades 7-12, with information on these adolescents’ school and home environment from the National Longitudinal Study of Adolescent and Adult Health during the 1994-95 school year, and who have been followed for five waves subsequently until 2016-18. The main finding of the study is that a one standard deviation increase in religiosity decreases the probability of being depressed by 11 percent. This effect is thus quite substantial. What the study also shows is that peer religiosity predicts own religiosity, hence the analysis is able to demonstrate that the link is causal. Another key finding of the study is that more depressed individuals benefit significantly more from religiosity than the least depressed. The study provides a framework within which to think about issues of religion and mental health.

Based on the psychology and sociology of religion literature, there are many ways in which religion in theory at least can affect depression. First, religion provides psychological resources such as improved self-esteem. Second, it may provide coping skills such as the way to approach problems (active vs passive problem solving). Third, religious organisations may provide social resources such as helpful friendships, neighborhood resources or direct financial aid. Finally, religion may reduce exposure to stressors such as a health shock or a family member of friend’s suicide, fostering more stable home environments. One of the findings of this study is also that there is a larger effect of religion on depression in single-parent households than other households.

One of the other contributions of the study is to use the peer effects literature from the economics of education to show that the link between religion and depression is not simply a correlation but is in fact causal. As discussed in previous sections of this chapter, we know that adolescent peers have strong effects on a variety of behaviours, ranging from drug and alcohol use to academic performance. This is true for religiosity as well. When this study explores effects across grades in the same school, by chance students in some grades are exposed to more religious peers than students in other grades. This creates a quasi-experiment. Students who by chance are exposed to religious peers may then become more religious themselves. The study proceeds to isolate the effect of individual religiosity on depression using variation in individual religiosity coming solely from this random variation in the religiosity of school-grade peers. Hence, if certain adolescents become more religious as a result of exposure to religious peers, it is possible to investigate whether these same adolescents subsequently show improved mental health. And that is exactly what this study finds.

In order to study this link, the study uses a well-recognised measure of depression, namely self-reported symptoms used to diagnose depression in clinical settings. This is based on the Center for Epidemiological Studies Depression Scale (CES-D) and includes 19 questions
which report how frequently individuals experience different symptoms of depression. These questions include questions such as, "You were bothered by things which usually do not bother you", "You felt that you could no shake off the blues, even with help from your family and your friends", "You were happy", "You felt that life was not worth living" and many other questions that are able to gauge depressive symptoms in clinical settings. The responses are then aggregated to form the CES-D scale.

In terms of religiosity, the study explores measures such as the frequency of church attendance, church-related activities, prayer and importance of religion. One interesting aspect of this study is that it also highlighted the heterogeneity of depression and religiosity by gender, race and other characteristics. For example, Blacks were more likely to be religious and more depressed than Whites. Catholics were more likely to be depressed. If a pupil had a mother with a high school education, they were less likely to be depressed. This study demonstrated that the relationship between religion and depression in adolescents was causal and that the effect of religion persisted even when other community support activities such as membership of athletic clubs or school activities was taken into account, suggesting that the effect of religion may have contributed more to alleviating depression than simply community-enhancing activities. The study suggests that more research is needed on the relationship between religion and depression in adolescents, both in the US and elsewhere.

Makridis, Johnson and Koenig (2021): Religiosity and pro-cyclicality of happiness

Subjective well-being has often been found in the literature to be pro-cyclical, that is to have a positive correlation with GDP and to be negatively related to unemployment (Di Tella et al., 2001; Wolfers, 2003). Individuals tend to be happier on average when the economy is experiencing a boom, and vice versa. Religion, through the creation of social capital and a sense of meaning, might be able to smooth this effect out, sheltering believers from business cycle well-being fluctuations. Makridis et al. (2021) investigate this hypothesis. Namely, they try to answer the question “Can differences in religious affiliation explain differences in the cyclicality of well-being over the Great Recession between 2008 and 2017?”. To answer this question, they employ a US panel dataset at the county level combining information on religion from Gallup surveys and labor market variables from the QCEW (Quarterly Census of Employment and Wages) over the crisis period 2008-2017. The longitudinal dimension allows them to estimate a fixed effects model. They find a significant interaction effect of religiosity in moderating the pro-cyclicality of life satisfaction, both for Christians (Catholics and Protestants) and (if less so) for theists with some religious affiliation. They also investigate whether this effect is due to ‘social capital’ effects, studying how this link varies by spatial heterogeneity due to the different amount of social capital in different communities. They note that life satisfaction is not pro-cyclical for Christians, whether they live in areas with high or low social capital. Conversely, non-Christians show pro-cyclicality of life satisfaction for communities with low social capital. This result strengthens the notion that religious participation can build communities and thus cushion the shifts in well-being due
to economic downturns, even when social capital is otherwise scarce.

What all these three case studies have in common is that they try to find innovative ways to address issues of causal identification in economic studies of religion. To that end, these case studies might be valuable to scholars interested in this field.

6 Summary

This chapter evaluates the recent literature on religion and mental health. It highlights some recent studies from different fields, but with a focus on those conducted by economists and their concerns. The topic is an important one as there are many theoretical reasons why religiosity might counteract various stressors which individuals encounter during the course of their lifetimes. This chapter first focuses on the literature from the United States, as a majority of the studies on this subject have been conducted on US data in the context of war trauma, religion as a stress buffer, as well as how religiosity counteracts risky behaviours in adolescents which might affect their physical and mental health. This literature suggests that the effects of religion on mental health are significant. The chapter then goes on to investigate global evidence on religion and mental health, with studies drawn mainly from various European contexts. One point worth emphasising is the relative paucity of literature on religion and mental health in the developing world, leaving space for economists to conduct more studies in this area in the future. Economists are mainly concerned with causal identification in empirical work as well, and the economics of religion area more generally highlights the difficulties and benefits of thinking about this. The chapter also presents three studies where questions of identification were dealt with in different ways in the context of religion; more investigations along these lines are needed. The main conclusion is that as a policy question the interactions between religion and mental health may be profound for the well being of populations worldwide. Economists and others have much research left to explore in this vital area.

Acknowledgement

Responsible Section Editor: Olga Popova. The article has benefited from valuable comments of the editors and anonymous referees. Financial support by The Keynes Fund is gratefully noted. There is no conflict of interest.

7 Cross-References

- Happiness and Religion
- Gender and Intrahousehold Issues
- Early Life Health Shocks and Labor Market Outcomes
- Ethnicity, Race and Minorities
- Mental Health and Labour Market Outcomes
• Social Interaction Methods
• The Political Economy of Religion and Labor
• Causality
• Ramadan: Health, Human Capital, and Economic Outcomes
• Religion and Family
• Religious Markets
• Religion and Economic Preferences
• Religion and Trust
• Economics of Suicide
• Risky Behaviour and Its Consequences During Adolescence and Young Adulthood
• Socioeconomic Conditions in Childhood and Mental Health Later in Life

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