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Abstract

Previous research has found that religiosity is positively related to mental well-being. This study assesses whether the religious context moderates the relationship between individual levels of religiosity and depression in the religiously diverse European context. We apply multilevel models, examining 68,874 individuals in 29 European countries subdivided into 277 regions from the sixth (2012) and seventh (2014) wave of the European Social Survey. First, we found that religious service attendance is associated with fewer depressive feelings, but the opposite is true for frequency of prayer. Second, the results indicate that the association between religiosity and depression is moderated by the religious context. In less religious regions, depressive symptoms relate less to service attendance than in highly religious regions, while frequency of praying relates to more depressive symptoms in regions with lower levels of religiosity.

Keywords

Depression, Europe, multilevel analysis, religious context, religious minority

The relation between religion and depression in Europe

In general, religious people report less distress – especially when they undergo highly stressful life experiences – than those who are not religious (Idler, 1995; Koenig et al., 2001; Lim and Putnam,

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2010). This finding holds up across a variety of measures both of religion and of well-being, including depression (Schieman et al., 2013; Strawbridge et al., 2001). The study on how religion benefits mental health is part of a larger tradition in the sociology of religion of focusing on the positive aspects of religiosity for individuals and the whole society (Cadge et al., 2011). Since Durkheim's (1912) seminal study on religion, one of the most emphasized positive functions of religion is its integrating power. The idea is that through collective behavior in moral communities, religions provide moral and social support (Stark, 1996). The positive functions of religiosity for mental health are based on two aspects: religious group behavior and the existence of an important religious community. Thus, the positive effects of religiosity are limited when religious behavior is not practiced in group or when the social significance of the religious community declines. Solitary religious behavior may not be associated with the same moral and social support as religious behavior in a group. Likewise, the moral and social support is limited if only a small proportion of the population is religious or shares the same denomination with you.

Research comparing different religious settings indeed found that the religious context impacts a variety of health-related outcomes, such as subjective well-being (Diener et al., 2011; Inglehart, 2010), life satisfaction and feelings of happiness (Elliott and Hayward, 2009; Hayward and Elliott, 2014; Okulicz-Kozaryn, 2010, 2011; Stavrova et al., 2013), suicide (Maimon and Kuhl, 2008; Van Tubergen et al., 2005), and self-reported health (Huijts and Kraaykamp, 2011; May and Smilde, 2016; Nicholson et al., 2009). However, despite considerable advances made in exploring the various health-promoting dimensions of religiosity (i.e., social support, self-esteem, coping), until now, most of this comparative research relied on unidimensional measures of religiosity that fail to capture the complexity of religious life (Sternthal et al., 2010). Integrating different dimensions of religiosity, including less collective oriented religious behaviors, might shed a new light on the existing findings from comparative perspectives (Hill and Pargament, 2003; Idler et al., 2003; Schieman et al., 2013). Only a small number of studies assessed how multiple dimensions of religiosity associate with well-being. Hayward and Elliott (2014) found that the strength of the positive association between religion and happiness as well as general subjective health tends to increase in more religious countries, and this for different measures of religiosity, including frequency of service attendance, the importance of God, and religious salience. Okulicz-Kozaryn (2010) finds that religious people, measured as the degree to which people believe in God, the importance of God in life, and the importance of religion in life, are less happy than non-religious people, but if they live in highly religious countries, they are much happier than non-religious people. Okulicz-Kozaryn (2011) shows that people in general are less happy in religiously diverse countries but does not examine whether this relation differs for religious and non-religious people. These studies however do reveal that the social setting impacts the relationship between religion and (mental) health.

In the current study, we integrate the research that focuses on how different dimensions of religiosity relate to mental health with studies that examine the impact of the religious context. Our analysis contributes to the literature in three ways. First, it will be the first comparative study to focus on the association between religion and depression. This health outcome is particularly interesting, given that, on one hand, people may turn to religion in times of distress, while, on the other, certain religious behaviors may actually be harmful to mental health. Second, we compare multiple dimensions of religiosity, including religious service attendance, frequency of prayer, religious salience, and membership of a majority or minority religious denomination. As a result, we are able to examine how the religious context moderates the relationship between depression and each of these dimensions. Third, we focus on the European context using recent data. During the last decades, religious individualization accelerated in Europe, with institutional forms of religion, especially traditional Christian Churches, increasingly losing their social significance (Norris and Inglehart, 2011). Therefore, collective religious behavior might be losing its significance in some

European regions. However, the level of religiosity varies considerably across regions, making it especially suitable for comparative research (Davie, 2002; Pérez et al., 2011).

Evidence from the Eurobarometer surveys, which has been conducted since 1970, suggests a consistent decline in church attendance across 15 of the European Union member states, with a particularly steep drop in Belgium, Luxembourg, and the Netherlands, and a relatively shallow decline over the years in Germany, France, and Ireland (Pérez et al., 2011). Data from the European Value Survey show that some of the post-communist societies are among the least religious: these include the Czech Republic and East Germany, as well as the Scandinavian countries, such as Sweden and Denmark. On the other hand, some Central and Eastern European countries have witnessed an increase in religiosity over the last few years. In general, however, religiosity in Europe tends to be lower than in the rest of the world (Davie, 2002). Not only between European countries but also within countries, religiosity varies substantially (Meuleman and Billiet, 2011). In the less religious regions, forms of social and cultural activity based on religious principles are frequently seen as illegitimate, which is something unique for the European situation (Foner and Alba, 2008). In these regions, religious involvement and behavior might be less beneficial for individuals' mental health.

We use the sixth wave (2012) and seventh wave (2014) of the European Social Survey (ESS) covering 68,874 individuals in 29 European countries subdivided in 277 regions. Given the large variation of religiosity across and within European countries, we look at how contextual religiosity at the subnational, regional level affects the association between religion and depression.

Theory and hypotheses

Religiosity and depression

Studies on religion and depression are often based on two partly overlapping theories (Braam et al., 2001). The first identifies religion as a coping strategy or an aid to the cognitive structuring of a person's life. The psychological resources provided by religious involvement may prevent adverse effects of stress on the sense of self. In addition, because religious spaces may be seen as separate from the material world, they may offer a respite from the adversities in daily life (Schieman et al., 2013). The second theory focuses on the social dimensions of religion, emphasizing religion as a means to enhance social support and a sense of belonging (Dein et al., 2010).

Research demonstrated that frequency of attendance is negatively associated with psychological distress and positively relates to psychological well-being (Ellison et al., 2001). Participation in religious activities enhances mental health by providing social support, such as involvement in meaningful social relationships and integration into supportive networks. Social support is important for mental health because it buffers the deleterious impact of stress and provides coping resources (Grav et al., 2012). Because religious institutions tend to comprise those with similar values and beliefs and tend to promote norms of reciprocity and care, service attendance can increase perceptions of positive social support (Haslam et al., 2009). Religious networks also act as a source of social capital (Strømsnes, 2008; Traunmüller, 2011), by functioning as a way to find jobs and by providing material support, for example (Smidt, 2003). Finally, the church can function as an alternative to mental health care by offering religious counseling and pastoral care (Leavey, 2008; Trinitapoli et al., 2009). Attendance also correlates with several psychological indicators, such as self-esteem, personal mastery, and a sense that one matters to others, which can act as resources for mental health (Krause, 2003b; Schieman et al., 2010). A number of studies also examined negative social interactions within the religious environment. Mental health could be harmed when members of one's congregation are too critical or demanding (Ellison et al., 2009;

Sternthal et al., 2010). Greater involvement would increase exposure not only to beneficial social exchanges but also to those that are potentially harmful (Schieman et al., 2013). However, because the vast majority of research points toward an inverse relationship between attendance and distress, in the current study, we propose that *higher frequency of religious service attendance will associate with lower levels of depression (Hypothesis 1)*.

Research on the relationship between prayer and mental health is less straightforward. On one hand, prayer can influence mental health psychodynamically through the effects of positive emotions such as hope, forgiveness, empowerment, self-esteem, and mattering (Schieman et al., 2010). Prayer can promote a feeling that the individual is unique, which in turn enhances mental health (Krause, 2003a). On the other hand, the substantive features of prayer appear to associate differently with mental health. For example, Whittington and Scher (2010) established that prayer types that appear to be less ego-focused, and more focused on a divine other, had positive effects for mental well-being, whereas negative types of prayer described as confessional, supplication, and obligation had an opposite nature. Similarly, negative religious coping (e.g. using prayer to avoid thinking of stressors) and religious struggle with one's own belief can increase depressive feelings (Hill and Pargament, 2003). Finally, some people are more inclined to turn to prayer in times of distress (Bradshaw et al., 2008). Given the diverging findings concerning the association between prayer and depression, we propose two opposing hypotheses: *higher frequency of prayer will associate with higher levels of depression (Hypothesis 2a) or in contrast with lower levels of depression (Hypothesis 2b)*.

While behavioral aspects, such as service attendance and praying, may be essential to mental health, beliefs about the divine could also play a pivotal role (Schieman et al., 2013). Mental health benefits have been attributed to the philosophical foundation that religion offers for daily activities. They believe that a divine other watches over and cares about a person's life, and would allow this person to be more optimistic when confronted with stressful situations. By lending comprehensibility and existential security to those activities, religious beliefs may decrease depression (Ellison and Levin, 1998). Similarly, religious salience may reflect an individual's assurance of his or her personal power (Pargament et al., 1992; Shafranske, 2005). Research indeed established a positive relation between perceived divine relations and happiness (Childs, 2010; Stark and Maier, 2008). Individuals with significant religious doubts are more likely to experience cognitive dissonance because this lack of spiritual clarity conflicts with their personal identities as religious persons (Schieman et al., 2013). However, while the image of a close, caring, supportive divine other relates to better mental health, it relates to worse mental health when images of a remote divine other are held (Bradshaw et al., 2008). Given the overall positive association between religious salience and mental health, we propose that *higher overall religious salience will associate with lower levels of depression (Hypothesis 3)*.

Religiosity and religious context

In this article, we claim that the religious context is crucial for understanding the association between depression and religion. The benefits of collective religious behavior might be limited if the religious group has a less prominent place in a given society. Moreover, in less religious settings, it is more difficult for religion to act as a 'plausibility structure' which provides an overarching, agreed-upon narrative or symbol system (Berger, 1967). These plausibility structures, that is, social networks of individuals who share the same beliefs and worldviews, help maintain religious legitimations. The greater the number and importance of interpersonal commitments based on the religious identity, the more salient that identity becomes (Weaver and Agle, 2002). In other words, the breadth and depth of the religious community can affect the salience of someone's religious

identity and, thus, that identity's influence on religious behavior. In addition, as people interact more often with persons having the same characteristics, such as religion, they correspondingly receive more support through these homogeneous relationships.

Empirical research shows that religious communities, and social networks in general, provide social and emotional support to their members, which enhances mental well-being (Pescosolido, 1990). The more co-religionists there are in a person's direct environment, the more strongly that individual will be involved in his or her religious community, which will, in turn, provide more support (Okulicz-Kozaryn, 2010; Van Tubergen et al., 2005). Accordingly, non-religious people will receive less social support in strong religious regions (Diener et al., 2011). However, religious communities may go beyond that of protecting their own members. This idea is based on the finding that non-religious people are more likely to be exposed to religious culture, and perhaps to pro-religious government policies, media and educational systems, when in a religious rather than secular context (Kelley and Graaf, 1997). This also makes them more likely to adopt the healthy lifestyles prescribed by certain religious groups (Huijts and Kraaykamp, 2011).

While being religious in a religious context could enhance mental health, in a less religious context, it may put religious people at risk for minority stress (Meyer, 2003). Minority stress refers to the juxtaposition of minority and dominant values and the resultant conflict with the social environment experienced by minority group members (Mirowsky and Ross, 1989; Pearlin, 1989). Certainly, when the individual is a member of a minority group in a stigmatizing and discriminatory society, the conflict between that person and the dominant culture can be onerous and the resultant minority stress significant (Thoits, 2010; Turner and Avison, 2003). Larger and more established religions tend to benefit from historical associations with the majority culture, prominent members, greater wealth, and more formal ties with other social authorities, whereas members of deviant, marginal, or stigmatized affiliations may suffer as a result of internalizing these negative attributes. Additional government regulation of individual religious liberties, for example, that of religious minority groups in Eastern Europe (Titarenko, 2008), tend to be associated with lower life satisfaction (Veenhoven, 2000).

Religious people living in a non-religious context are thus not only less able to reap the positive effects of their religiosity but also more likely to be subject to minority stress because of their deviant position. Therefore, the positive functions of religiosity might be limited in less religious regions. At the same time, possible negative associations between praying and mental health might be exacerbated when solitary religious behavior occurs in regions where religiosity is uncommon. This leads us to expect that *in less religious regions, the association between the three dimensions of religiosity (service attendance, frequency of prayer and religious salience) and depressive symptoms will be less pronounced (Hypothesis 4a). However, in case we find that higher frequency of prayer associates with more depressive symptoms, this association will more pronounced in less religious regions (Hypothesis 4b). In a related way, we expect that members of a religious minority will report more depressive feelings (Hypothesis 4c).*

Data and methods

Data

We use data from the wave 6 and wave 7 of the European Social Survey, Edition 3 (ESS-3), covering 29 European countries. Data were gathered during 2012 and 2014 by face-to-face interviews among a sample of the resident national population aged 15 or older, irrespective of language, citizenship, or nationality. Although response rates of 70 percent or higher were pursued, response rates varied from 31.41 percent in Germany (2014) to 77.40 percent in Albania (2012). The sample is restricted

to respondents from age 18 to 75. The unweighted sample, after listwise deletion of missing cases on the variables in the analyses, consists of 68,874 individuals (32,468 men and 36,406 women). An advantage of using the ESS is that the dataset is appropriate for use in research into contextual effects, given that respondents are assigned to a Nomenclature of Territorial Units for Statistics (NUTS) region. NUTS is a geographical nomenclature used by the European Union to divide the European territory into regional units of statistics. In this study, data were clustered at the NUTS 2 level, except for a number of countries for which the ESS only collected data at the NUTS-1 level (Cyprus, Germany, and the United Kingdom). The European Union defines the NUTS 2 level as the basic regions for the application of regional policies. We made use of the regional variable constructed by the ESS in Albania and Kosovo. After recoding, we retain a total of 277 regions. While the ESS is representative of the general population, it is not representative of all the European regions.

Measures

An 8-item version of the Center for Epidemiologic Studies–Depression Scale (CES-D-8) scale is used to measure the frequency and severity of depressive symptoms, as defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) criteria for major depressive disorder. The CES-D was built to identify populations at risk of developing depressive disorders; it should not, however, be used as a clinical diagnostic tool by itself. Respondents were asked to indicate how often in the week previous to the survey they felt or behaved in a certain way (felt depressed, felt that everything was an effort, slept badly, felt lonely, felt sad, could not get going, enjoyed life, or felt happy – last two items are reverse-coded). Response categories forming a 4-point Likert scale ranged from *none or almost none of the time* (0) to *all or almost all of the time* (3). Scale scores for the CES-D-8 were assessed using non-weighted summed rating and ranged from 0 to 24, with higher scores indicating a higher frequency and severity of depressive complaints. If four or fewer items were missing, mean substitution was applied. The reliability and the validity of the inventory were confirmed across countries (Van de Velde et al., 2010).

The religiosity of respondents is measured by five different variables. First, religious salience was assessed by the question ‘Regardless of whether you belong to a particular religion, how religious would you say you are?’ Answers were recorded on an 11-point scale ranging from *not at all religious* (0) to *very religious* (10). Second, frequency of prayer is included as a metric variable, based on the answer to the question ‘Apart from when you are at religious services, how often, if at all, do you pray?’ On a 7-point scale, answers varied, ranging from *every day* (1) to *never* (7). Scores were reverse-coded so that a score of 7 means that a respondent prays every day and a score of 1 means that a respondent has indicated that he or she never prays. In this way, higher scores indicate higher frequency of praying, which is in line with the scaling of the religious salience variable. Third, religious service attendance assesses the frequency of service attendance of respondents. This variable is based on the question ‘Apart from special occasions such as weddings and funerals, about how often do you attend religious services nowadays?’ The answers to a 7-point scale were again recoded meaning that a score of 7 indicates attending services every day and a score of 1 that a respondent never attends services. Fourth, we add the denomination respondents adhere to the models: Roman Catholic, Protestant, Eastern Orthodox, Islamic, other, and none (reference category). Fifth, we include a dichotomous variable to indicate whether respondents are a religious minority in the region where they live. Respondents received a score of 0 if they share their affiliation with at least 50 percent of the inhabitants of the region where they live. Individuals who are not affiliated to the dominant regional affiliation were given a score of 1. This variable was

constructed by combining, on one hand, the individual-level information on religious affiliation and, on the other hand, by aggregating this information to the regional level.

At the contextual level, we assess two indicators of regional religiosity. These variables are attributed to each NUTS region in the ESS dataset. First, we include the dominant affiliation in the region where respondents live. Data on the individual affiliation of respondents were aggregated at the regional level. If one of the religious affiliations had at least 50 percent adherents among the respondents, we considered that affiliation as the dominant religious affiliation. If none of the different denominations reached 50 percent in a certain region, then that region is considered to have a diverse dominant religious affiliation. This leads to a categorical variable with six categories: Roman Catholic, Protestant, Eastern Orthodox, Islamic, diverse, and non-affiliated (reference category). The latter category comprises regions where 50 percent or more of the respondents indicated that they are not affiliated to any religious denomination. Second, the mean level of regional religiosity is included in the analyses. First, we constructed an index which combines the religious salience, frequency of praying, and frequency of service attendance variables. Using factor analysis, we calculated the factor scores of this index of which we then calculated the regional mean. The resulting variable, mean regional religiosity, thus expresses the mean level of religious salience, frequency of praying, and frequency of service attendance in the region where people live. Higher scores indicate higher mean levels of religiosity in the region.

We include gender in our model as a dichotomous variable, with male respondents being the reference category. To account for the nonlinear association between depression and age, we include both age and age squared in our analyses.

We control for socioeconomic position by introducing labor market position, educational level, and household income into our models. Labor market position is a dichotomous variable that indicates whether respondents are in paid employment (1) or not (0: reference category). Educational level is a metric variable based on the total number of years of full-time education completed by respondents. Income position is a categorical variable representing the household income as a proportion of the national median equivalent income. The four categories represent people living in relative poverty (<50% of the median equivalent income), a low-income group (50–80% of the median equivalent income), people with an income around the national average (80–120% of the median equivalent income), and those with a relatively high income (>120% of the median equivalent income: reference category). The influence of the family structure is examined by including the dichotomous variable ‘cohabiting’ in our models. This variable indicates whether respondents are currently cohabiting with a partner or not (living alone: reference category).

Statistical analysis

Given that respondents are nested at the individual level in two contexts, that is, the region and the country where they live, we apply three-level multilevel models: (1) respondents ($N_i = 68,874$) are nested in (2) regions ($N_j = 277$), which are again nested in (3) countries ($N_k = 29$).

We present five different models. Our first model contains all individual-level controls and independent main effects, with feelings of depression as the dependent variable. In the second model, we add all independent contextual main effects. This model enables us to test all hypotheses, except for Hypotheses 4a and 4b. To test these hypotheses, we present three different models in which we include interactions between the variables measuring individual levels of religiosity and the mean regional level of religiosity. Models 2, 3, and 4 therefore include an interaction between the regional mean level of religiosity and, respectively, the individual level of religious salience, frequency of praying, and frequency of service attendance. The first two models are presented in Table 2. Models 3–5 are presented in Table 3. For Models 3–5, we also plot the

interaction effects in Figures 1 to 3. The religiosity measures are all included in the same model, despite the fact that they correlate significantly ($r = 0.65, 0.61, \text{ and } 0.67$). However, the multicollinearity assumption is not violated (all variance inflation factor (VIF) scores are below two). In addition, a sensitivity analysis in which each variable is separately included in the analysis gives the same results. All metric variables are grand mean centered and the data are weighted at the individual level using the design weight provided by the ESS.

Given the relatively high number of respondents with missing information on the household income variable (14,815 cases, or 17.8%), the data were completed using multiple imputation techniques.

Results

Table 1 presents the descriptive statistics for each variable. The results of the multilevel models are depicted in Tables 2 and 3. For each model, we display the coefficients, the standard errors in parentheses, and the significance levels. To test our hypotheses, we look at our five multilevel models and at the depiction of the interaction effects in Figures 1 to 3.

With our first hypotheses, we examine the relationship between individual levels of religiosity and mental health. Therefore, we look at the individual effects in Model 1, which are depicted in Table 2. Hypothesis 1 predicted lower levels of depression with higher frequencies of religious service attendance. This hypothesis is supported by our results: frequency of religious service attendance is negatively associated with depression. The more often people attend religious services, the less depressive symptoms they report. With Hypothesis 2a, on the other hand, we predicted more depression among people who pray more often. This is again supported by our results: we notice a significant positive effect in Model 1, indicating that people who pray more often tend to have more depressive symptoms. Hypothesis 3 predicted a negative association between religious salience and depressive symptoms. This, however, is not supported by our results: the overall effect of religious salience is not significant. These results indicate that religious practices might have different associations with mental health: whereas some practices, such as service attendance, are associated with less depression, the opposite is true for praying, while religious salience seems not to be associated with depression.

We now look at the potentially moderating effect of the religious context on the association between religion and depression in individuals. Results testing Hypotheses 4a, 4b, and 4c are shown in Table 3 and Figures 1 to 3. In each figure, we demonstrate the moderating relationship of the religious context by plotting the effects of, respectively, the frequency of religious service attendance, frequency of praying, and the degree of religious salience in two regions. The first region, Centre France, is one of the less religious regions (mean regional religiosity at the 10th percentile with a regional mean factor score of religiosity at -0.48). The second region is Banskobystrický kraj in Slovakia, which is one of the more religious regions (mean regional religiosity at the 90th percentile with a regional mean factor score at 0.61). The figures thus demonstrate the varying relationship between individual religiosity and depression according to the religiosity of the context where people live.

From Table 3, we notice that the relationship between religiosity and mental health is significantly affected by the religiosity of the context where people live. To interpret the interaction effects, we look at the different slopes as depicted in Figures 1 to 3. The slopes for service attendance support our Hypothesis 4a for service attendance and religious salience, but not for frequency of prayer. The negative association between service attendance and depressive symptoms is lower in regions where religiosity is lower. The better mental health for individuals who attend religious services more frequently is thus limited in less religious regions. We see similar results

Table 1. Descriptive statistics.

	Range	N (%)
		Ave. (Std.)
Period		
2012	0/1	39.3 (56.9%)
2014	0/1	29.6 (43.1%)
Individual		
Dependent		
CES-D-8	0–24	5.5 (4.1)
Independent		
Gender		
Male	0/1	32.5 (47.1%)
Female	0/1	36.4 (52.9%)
Age	18–75	46.7 (15.8)
Age ²	324–5625	2427.6 (1478.7)
Paid employment		
No	0/1	30.7 (44.6%)
Yes	0/1	38.2 (55.4%)
Education	0–24	13.0 (3.7)
Income		
<50% of median income	0/1	9.2 (13.3%)
50–80% of median income	0/1	13.2 (19.2%)
80–120% of median income	0/1	21.7 (31.6%)
>120% of median income	0/1	24.8 (36.0%)
Cohabiting		
Lone	0/1	30.3 (44.0%)
Cohabiting	0/1	38.6 (56.0%)
Service attendance	1–7	2.5 (1.5)
Praying	1–7	3.1 (2.3)
Subjective religiosity	0–10	4.4 (3.0)
Denomination		
Roman Catholic	0/1	20.3 (29.4%)
Protestant	0/1	9.4 (13.6%)
Eastern Orthodox	0/1	4.8 (7.0%)
Islamic	0/1	2.6 (3.8%)
Other	0/1	1.4 (2.1%)
None	0/1	30.4 (44.1%)
Religious minority		
No	0/1	37.7 (54.8%)
Yes	0/1	31.1 (44.5%)
Contextual		
Dominant denomination		
Roman Catholic	0/1	20.1 (29.1%)
Protestant	0/1	2.7 (3.9%)
Eastern Orthodox	0/1	4.4 (6.4%)
Islamic	0/1	1.5 (0.6%)
None	0/1	11.9 (17.4%)
Divers	0/1	28.2 (40.0%)
Regional religiosity	–0.88 to 1.38	–0.0 (0.42)

CES-D-8: 8-item version of the Center for Epidemiologic Studies–Depression Scale.

N individual = 68,874.

Table 2. Multilevel analyses of depressive symptoms.

	Model 1	Model 2
	Coef. (SE)	Coef. (SE)
Individual		
Intercept	6.147*** (0.224)	6.031*** (0.231)
Independent		
Female	0.587*** (0.029)	0.587*** (0.029)
Age_cen	0.199*** (0.007)	0.199*** (0.007)
Age ² _cen	-0.002*** (0.000)	-0.002*** (0.000)
Paid employment	-0.858*** (0.036)	-0.858*** (0.036)
Education_cen	-0.074*** (0.004)	-0.074*** (0.004)
Income		
<50% of median income	1.549*** (0.050)	1.549*** (0.050)
50–80% of median income	0.756*** (0.042)	0.756*** (0.042)
80–120% of median income	0.367*** (0.036)	0.367*** (0.036)
>120% of median income	Ref.	Ref.
Cohabiting	-1.115*** (0.032)	-1.115*** (0.032)
Service attendance_cen	-0.123*** (0.014)	-0.122*** (0.014)
Praying_cen	0.121*** (0.009)	0.121*** (0.009)
Religious salience_cen	-0.012 (0.007)	-0.012 (0.007)
Denomination		
Roman Catholic	-0.180*** (0.048)	-0.182*** (0.048)
Protestant	-0.409*** (0.054)	-0.410*** (0.054)
Eastern Orthodox	0.112 (0.083)	0.097 (0.084)
Islamic	0.514*** (0.101)	0.512 (0.102)
Other	0.081 (0.109)	-0.078 (0.109)
None	Ref.	Ref.
Minority	0.179*** (0.036)	0.182* (0.037)
2014	-0.211*** (0.031)	-0.211*** (0.031)
Contextual		
Dominant regional affiliation		
Roman Catholic		0.201 (0.184)
Protestant		-0.065 (0.227)
Eastern Orthodox		0.363 (0.198)
Islamic		0.318 (0.367)
Diverse		0.050 (0.121)
Non-affiliated		Ref.
Mean regional religiosity_cen		-0.106 (0.159)
Variance		
National	1.349*** (0.363)	1.250*** (0.339)
Regional	0.144*** (0.021)	0.142*** (0.021)
Individual	13.891*** (0.075)	13.892*** (0.075)
-2 Log Likelihood	376,534.70	376,530.50

SE: standard error.

N individual = 68,874; N region = 277; N country = 29.

Intra-class correlation (null model): 11.7 percent at higher levels (10.7% country level and 1.1% regional level).

* $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$ (two-sided); _cen = grand mean centered.

Table 3. Interaction effects between individual and regional religiosity.

	Model 3	Model 4	Model 5
	Coef. (SE)	Coef. (SE)	Coef. (SE)
Individual			
Intercept	6.084*** (0.238)	6.093*** (0.240)	6.133*** (0.241)
Independent			
Female	0.585*** (0.030)	0.583*** (0.030)	0.587*** (0.029)
Age_cen	0.199*** (0.007)	0.200*** (0.007)	0.199*** (0.007)
Age ² _cen	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
Paid employment	-0.859*** (0.036)	-0.857*** (0.036)	-0.855*** (0.036)
Education_cen	-0.074*** (0.004)	-0.074*** (0.004)	-0.074*** (0.004)
Income			
<50% of median income	1.548*** (0.050)	1.551*** (0.050)	1.554*** (0.050)
50–80% of median income	0.755*** (0.042)	0.758*** (0.042)	0.758*** (0.042)
80–120% of median income	0.366*** (0.036)	0.367*** (0.036)	0.369*** (0.036)
>120% of median income	Ref.	Ref.	Ref.
Cohabiting	-1.109*** (0.032)	-1.109*** (0.032)	-1.110*** (0.032)
Service attendance_cen	-0.119*** (0.019)	-0.127*** (0.015)	-0.120*** (0.015)
Praying_cen	0.121*** (0.009)	0.132*** (0.012)	0.124*** (0.009)
Religious salience_cen	-0.013 (0.007)	-0.013 (0.007)	-0.018* (0.009)
Denomination			
Roman Catholic	-0.183*** (0.049)	-0.191*** (0.049)	-0.212*** (0.049)
Protestant	-0.396*** (0.055)	-0.395*** (0.054)	-0.389*** (0.055)
Eastern Orthodox	0.106 (0.084)	0.114 (0.085)	0.067 (0.085)
Islamic	0.521*** (0.102)	0.518*** (0.102)	0.502*** (0.102)
Other	0.089 (0.109)	0.088 (0.109)	0.082 (0.109)
None	Ref.	Ref.	Ref.
Minority	0.173*** (0.039)	0.162*** (0.039)	0.128*** (0.040)
2014	-0.211*** (0.031)	-0.214*** (0.031)	0.210*** (0.031)

(Continued)

Table 3. (Continued)

	Model 3		Model 4		Model 5	
	Coef. (SE)		Coef. (SE)		Coef. (SE)	
Contextual						
Dominant regional affiliation						
Roman Catholic	0.080 (0.172)		0.091 (0.174)		0.077 (0.173)	
Protestant	-0.399 (0.480)		-0.405 (0.491)		-0.378 (0.485)	
Eastern Orthodox	0.205 (0.225)		0.224 (0.227)		0.223 (0.225)	
Islamic	0.325 (0.380)		0.345 (0.385)		0.428 (0.397)	
Diverse	0.055 (0.113)		0.073 (0.115)		0.066 (0.114)	
Non-affiliated	Ref.		Ref.		Ref.	
Mean regional religiosity_cen	-0.004 (0.156)		-0.017 (0.158)		-0.001 (0.156)	
Interactions						
Service attendance x Mean regional religiosity_cen						
Praying x Mean regional religiosity_cen	-0.077* (0.036)		-0.055* (0.024)		-0.067*** (0.018)	
Religious salience x Mean regional religiosity_cen						
Variance components						
National variance	1.289*** (0.347)		1.301*** (0.351)		1.321*** (0.356)	
Regional variance	0.128*** (0.020)		0.133*** (0.020)		0.133*** (0.020)	
Service attendance	0.025*** (0.005)		0.011*** (0.002)		0.005*** (0.001)	
Praying						
Religious salience						
Individual variance	13.849*** (0.075)		13.844*** (0.075)		13.851*** (0.075)	
Model fit						
-2 Log Likelihood	376,455.477		376,446.167		376,455.635	

SE: standard error.

N individual = 68,874; N region = 277; N country = 29.

* $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$ (two-sided); _cen = grand mean centered.

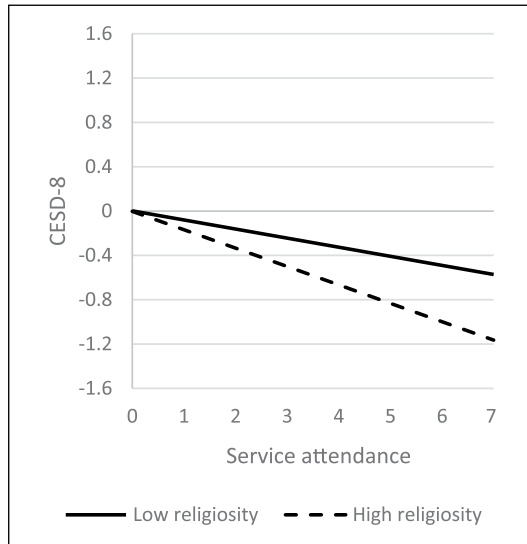


Figure 1. The association between frequency of service attendance and depressive symptoms according to the religious context.

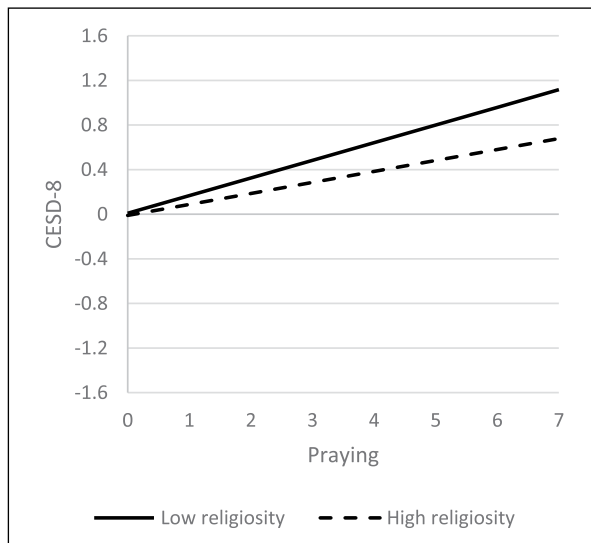


Figure 2. The association between frequency of praying and depressive symptoms according to the religious context.

for religious salience in Figure 3: individuals with a higher religious salience tend to have less depressive symptoms in religious regions, while they have more symptoms in less religious regions. These findings thus partly support Hypothesis 4a, and therefore, we can conclude that the negative association between service attendance and depressive symptoms, and religious salience and depressive symptoms is indeed lower in less religious regions. This hypothesis does not hold for

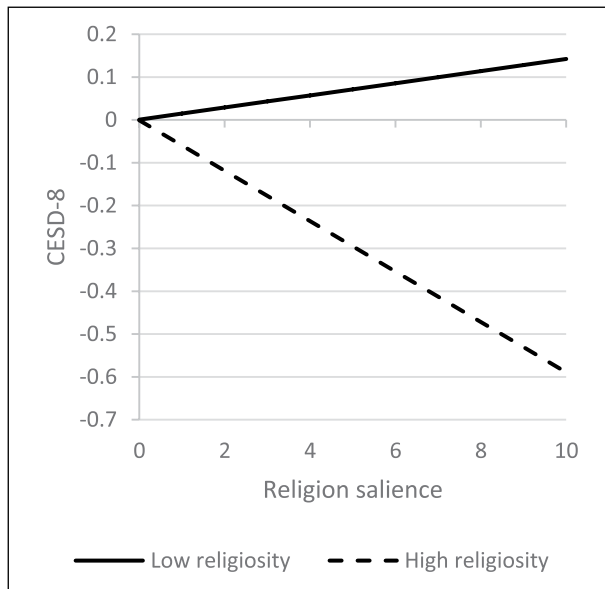


Figure 3. The association between religious salience and depressive symptoms according to the religious context.

frequency of prayer. In contrast, we find support for Hypothesis 4b. The association between praying and depression is greater in regions where religiosity is lower.

The final hypothesis, 4c, predicted higher levels of depression among members of a religious minority. To test this hypothesis, we look at the effect of minority in Table 2. We find support for our last hypothesis: being affiliated to the same religious denomination as the majority of individuals in the region where one lives is associated with fewer depressive feelings than when a member of a religious minority. These results additionally show that Muslims report more depressive symptoms than non-religious people, while Catholics and Protestants report fewer depressive symptoms.

Conclusion and discussion

The purpose of this study was to examine the dimensional nature of religiosity and its relationship with depression in the European context. We also examined the influence of the religious context on the connection between religiosity and depression. We can derive two main conclusions from our results.

First, our research demonstrates that different dimensions of religiosity do not associate with depression in a similar way. In line with our expectations, higher frequency of religious services attendance associates with lower levels of depression, whereas higher frequency of prayer associates with higher levels of depression. At the same time, while the overall effect of religious salience does not relate to individuals' level of depression, those with higher religious salience have fewer depressive symptoms in more religious regions, and actually more in the less religious regions. The positive association between service attendance and mental well-being is in line with previous research that, overall, confirms the relative importance of social support and social capital as stress-reducing sources. Our results for frequency of prayer contradict research that identifies prayer as a coping strategy. Our results suggest that the benefits of prayer for mental health may

not evolve as much from the frequency of prayer, but instead in the methods of prayer and the perceived nature of divine relations or images – or even the divine's character (Froese and Bader, 2010). Given that our measure of prayer excludes praying at religious services, it may not capture the social benefits of praying among like-minded people. In addition, people may be more inclined to turn to prayer in times of distress (Bradshaw et al., 2008). Longitudinal studies would help address the issue of whether the negative association observed between prayer and mental health in the current cross-sectional study is due to the use of prayer as a coping resource during times of distress. Similarly, more detailed measures of the nature and purpose of prayer – beyond simple measures of frequency – could enrich our knowledge about both the detrimental and beneficial effects of prayer across various social contexts.

As with all other cross-sectional surveys, it is difficult to distinguish the cause from the effect. Religiosity and religious practices may help a person to cope with stress and therefore reduce the likelihood of developing depression. However, depressed people may also be more likely to turn to religion as a way of finding comfort in times of need or, in contrast, discontinue religious service attendance or experience a loss in faith. In a longitudinal study, Maselko et al. (2012), examining this reverse causality, shows both that religion protects against depression and that depression leads to lower levels of religious service attendance. When interpreting our results, it is therefore important to note possible reverse causation. Our study was replicated using the third wave of the ESS (results not reported here). Analysis based on these earlier data from the year 2006 show similar results, thus validating our current study.

The second main conclusion of this study refers to the necessity to embed mental health benefits of religion in the broader religious context. First, religious salience associates with more depression in highly religious regions, but with less depression in less religious regions. Second, service attendance is associated with a far better mental health in highly religious regions than in less religious regions. Third, praying is associated with a worse mental health in less religious regions, while there is no association with mental health in highly religious regions. Likewise, respondents who are a member of a religious minority group report fewer depressive feelings. These findings show us that the religious context can play an important role in determining the influence of individual religiosity. If religious behavior is not shared by an important religious community, or if individuals belong to a religious minority, then religiosity does not associate with better mental health, and can even be related to more depressive feelings in the case of praying.

In contrast to the vast majority of comparative research, we chose to capture contextual religiosity at the regional level instead of the national level. Our choice was based on both statistical and substantive grounds. Because of the higher number of cases at the contextual level, using the NUTS level instead of the country level gave our model more statistical power. Moreover, results indicated that considering religiosity at the regional level rather than at the national level provided a better description of the data. In addition, because religious practices, such as attending religious services, are most often organized in locations close to the home of the individual, we predicted that the regional rather than national level of religiosity would be a better measure, which is confirmed by our results. In line with our logic, Lim and MacGregor (2012) recently cautioned against using data at a larger level of aggregation in their study on the network spillover effect of religion on volunteering. Furthermore, there is considerable variation in both levels of religiosity and the religious constellation within European countries. In Germany, for instance, there is a clear divide in religiosity between West and East Germany (Pollack and Pickel, 2007). Therefore, the influence of contextual religiosity may be operating at a more local than national level.

In conclusion, our findings present an interesting case of the role of individual religiosity in diverging religious contexts. Although some aspects, such as service attendance, are associated with better mental health, it is the religious symbiosis of individuals with the people in their

vicinity that determines the direction of the relationship for religious salience and praying. This finding is especially relevant in the European context, which has seen a steady decline of institutionalized religiosity. In places where this decrease was most pronounced over the last few decades, those who remained religious have more mental health problems, except for those who still attend services. For those individuals, being out-of-touch with the changed religious environment might be associated with minority stress and feelings of isolation. Our study therefore is in line with health sociology's recent recognition of the need to differentiate different dimensions of religiosity and situate their individual-level associations within the broader social context.

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