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Psychotic experiences and religiosity: Data from the WHO World Mental Health Surveys

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Abstract

Objectives: Religiosity is often associated with better health outcomes. The aim of the study was to examine associations between Psychotic Experiences (PEs) and religiosity in a large, cross-national sample.

Methods: A total of 25,542 adult respondents across 18 countries from the WHO World Mental Health Surveys were assessed for PEs, religious affiliation and indices of religiosity, DSM-IV mental disorders, and general medical conditions. Logistic regression models were used to estimate the association between PEs and religiosity with various adjustments.

Results: Of 25,542 included respondents, 85.6% (SE = 0.3) (n=21,860) respondents reported having a religious affiliation. Overall, there was no association between religious affiliation status and PEs. Within the subgroup having a religious affiliation, four of five indices of religiosity were significantly associated with increased odds of PEs (odds ratios ranged from 1.3 to 1.9). The findings persisted after adjustments for mental disorders and/or general medical conditions, as well as religious denomination type. There was a significant association between increased religiosity and reporting more types of PEs.

Conclusions: Among individuals with religious affiliations, those who reported more religiosity on four of five indices had increased odds of PEs. Focussed and more qualitative research will be required to unravel the interrelationship between religiosity and PEs.

Keywords

religiosity; psychotic experiences; World Mental Health Survey; epidemiology

Introduction

Psychotic experiences (PEs), which include hallucinatory and delusional experiences, are common among the general population (1, 2). Recent studies have found that PEs are associated with a range of mental and general medical disorders (3–6), and risk factors such as childhood adversity (7). It is less clear if there are additional factors that may be protective with respect to PEs. Over the last few decades, there has been an emergence of

studies linking religiousness and better health outcomes (8, 9). These studies are often based on the assumption that religious beliefs and related social networks may buffer (protect) individuals during times of stress, however the evidence suggests that this relationship is more nuanced and multifaceted (10, 11). Within those who identify with a religious denomination, there are degrees of adherence and intensity of belief, often referred to as *religiosity*. There is evidence that increased religiosity is associated with improved quality of life in patients with cancer, cardiovascular, respiratory, and neurological disorders, and associated with reduced mortality (9, 12–14). With respect to mental health-related outcomes, several studies have found that those with greater religiosity tend to have lower rates of depression, anxiety, substance use, and suicide attempts (15–17). However, not all studies have found that increased religiosity is associated with better outcomes (17, 18).

Mindful that the definition of clinical delusions usually exclude beliefs that are solely attributable to shared religious (doctrinal) teachings (19), the relationship between clinical psychotic disorders and religiosity has been a longstanding topic of interest (15, 17). In light of the association between religiosity and both mental disorders and general medical conditions (3–6), we were interested in investigating whether religiosity may be associated with PEs. With respect to psychotic experience, the limited data evidence is mixed. Studies show that increased religiosity was associated with higher prevalence of PEs in a community sample of young adults (20), among inpatients (21) as well as in adolescents (22). Steenhuis et al (22) found that there was a non-linear association between religiosity and hallucinatory experiences in which ‘moderate religiosity’ was significantly associated with hearing voices more strongly than non- or ‘strongly religious’ adolescents. In contrast, there is evidence that religiosity may provide a psychosocial buffer against the impact of persistent PEs (16).

Aims of the study

The main aim of this study was to explore the association between religiosity and psychotic experiences in a large, cross-national sample, which included a range of different psychotic experience types (e.g. two types of hallucinations and four types of delusions) and five indices of religiosity. In addition, we had the opportunity to examine the influence of mental disorders and general medical conditions on these associations.

Method

Samples

The WHO World Mental Health (WMH) surveys are a coordinated set of community surveys administered in probability samples of adult respondents (18 years and over) in countries throughout the world (23). We examined 18 WMH surveys that included both the Psychosis Module and items related to religiosity (N = 26,107). These surveys are distributed across North and South America (Argentina, Sao Paulo in Brazil, Colombia, Mexico, Peru, USA); Africa (Nigeria); the Middle East (Iraq, Lebanon); Asia (Shenzhen in the People’s Republic of China); and Europe (Belgium, France, Germany, Italy, the Netherlands, Portugal, Romania, Spain). The majority of these surveys were based on multi-stage, clustered area probability household sampling designs, the exceptions being Belgium, Germany and Italy, which used municipal resident registries to select respondents

(Supplementary table S1). The weighted (by sample size) average response rate across the 18 surveys was 72.1%.

In order to focus on the correlates of PEs in those without psychotic disorders, we made the *a priori* decision to exclude individuals who had PEs but who also screened positive for possible schizophrenia/psychosis, or manic-depression/mania. In keeping with previous publications (2, 3, 24–26) we excluded respondents who: (a) reported (1) *schizophrenia/psychosis* or (2) *manic-depression/mania* in response to the question “*What did the doctor say was causing (this/these) experiences?*”; and (b) those who ever took any antipsychotic medications for these symptoms.

Procedures

All WMH interviews were conducted in the homes of respondents by trained lay interviewers. Informed consent was obtained before beginning interviews in all countries. Procedures for obtaining informed consent and protecting individuals (ethical approvals) were approved and monitored for compliance by the institutional review boards of the collaborating organisations in each country. Standardised interviewer training and quality control procedures were used consistently in the surveys. Full details of these procedures are described elsewhere (27, 28).

Interviews were administered face to face in two parts. Part 1, which assessed a core set of mental disorders was administered to all respondents. Part 2 of the interview which assessed additional mental disorders, questions about PEs, and religiosity, was administered to respondents who met lifetime criteria for any Part 1 disorder, and a random proportion of the remaining sample of those without any Part 1 disorders. Part 2 respondents were weighted by the inverse of their probability of selection to adjust for differential sampling, and therefore provide representative data on the target adult general population. Details about sampling methods are available elsewhere (23). Additional weights were used to adjust for differential probabilities of selection within households, nonresponse, and to match the samples to population socio-demographic distributions.

Measures

The WMH surveys administered the WHO Composite International Diagnostic Interview (CIDI)(28), a validated fully-structured diagnostic interview designed to assess the prevalence and correlates of a wide range of mental disorders according to the definitions and criteria of both the DSM-IV and ICD-10 diagnostic systems. Translation, back-translation, and harmonisation protocols were used to adapt the CIDI for use in each participating country.

Psychotic experiences (PEs): The CIDI Psychosis Module included questions about six PE types – 2 related to hallucinatory experiences (HEs) and 4 related to delusional experiences (DEs). We excluded PEs experienced while dreaming, half-asleep or under the influence of alcohols or drugs (Supplementary tables S2a, S2b). In this paper we present religiosity distributions for any PEs. In addition, we included two key PE variables: (a) number of PE types (*PE type metric*), and (b) an ‘annualized’ frequency metric based on the

frequency of PE episodes per year (*PE frequency metric*). We derived the latter by dividing the total number of PE episodes by the time since onset of the first PE (age at interview minus age of onset plus 1 in order to avoid zero as a denominator).

Religiosity: Respondents were assessed for their religious affiliations in the demographics section of the CIDI. Six broad types of religion were included in this study with weighted proportion and case numbers as follows: Protestantism (16.4%, n = 4170), Catholicism (45.7%, n = 11648), Judaism (0.2%, n = 47), Islam (21.0%, n = 5359), no religions (14.4%, n = 3682), and other religion (2.3%, n = 636). Respondent who reported having multiple religions or do not know or refused to report their religion affiliations were excluded from all the analyses (n = 565, 2.1%) leaving 25,542 respondents in the final risk set. Among those respondents declaring a religious affiliation, five additional items (used in previous mental health studies (29, 30)) were asked regarding the nature of their religious practice and/or 'spirituality' (henceforth 'indices of religiosity'). In keeping with previous epidemiological studies on religiosity (31), we dichotomized the indices of religiosity as follows: (1) *How important was religion in your life when you were growing up?* (dichotomized very important vs somewhat, not very, or not at all important) (2) *How often do you usually attend religious services* (dichotomized more than once a week vs about once a week, one to three times a month, less than once a month, and never)? (3) *How important are religious or spiritual beliefs in your daily life* (dichotomized very important vs somewhat, not very or not at all important)? (4) *How often do you seek comfort through religious or spiritual means when you have problems or difficulties in your family, work or personal life* (dichotomized often vs all sometimes, rarely, or never)? (5) *When making decisions in your daily life, how often do you think about what your religious or spiritual beliefs suggest you should do* (dichotomize often vs. sometimes, rarely, or never)? Three of the five religiosity items (Nos. 3, 4 & 5) also included text about 'spiritual beliefs' thereby intermingling the constructs of religiosity and spirituality. We were not able to partition the influence of these overlapping constructs in our analyses.

Mental disorders: The WMHS version of the CIDI assessed lifetime history of DSM-IV mental disorders broadly classified into *mood disorders*, *anxiety disorders*, *behavior disorders*, *eating disorders* and *substance use disorders* (see supplementary table S2c). Full details are given in several WMH publications including two of our recent papers (3, 7).

General medical conditions (GMCs): General medical conditions were assessed based on a series of questions adapted from the US National Health Interview Survey. Fourteen conditions were assessed in this study. Respondents were asked if they had a lifetime history of symptom based conditions (e.g. arthritis or rheumatism, chronic back or neck pain, frequent or severe headaches, any other chronic pain, seasonal allergies or stroke) and whether they were ever told by a doctor or other health professional that they had a series of medical conditions (e.g. heart disease, cancer, diabetes mellitus, hypertension, asthma, other chronic lung diseases, epilepsy or peptic ulcer). Prior research has demonstrated good concordance between self-reported illness and medical records (32).

Statistical Analysis

A series of multivariable logistic regression models was used to investigate the relationship between religious affiliation, indices of religiosity, and PEs. PE outcomes were defined as 'Any PE' (at least one of six types), and two more specific subgroups; 'Any Hallucination' (at least one of two types of hallucinations), and 'Any Delusion' (at least one of four types of delusions). Analyses adjusted for confounding factors such as sex, age at interview, and country (Model 1). Additionally, the models were adjusted for (a) lifetime mental disorders (Model 2); (b) lifetime general medical conditions (Model 3), and (c) all of the above (Model 4). Models of indices of religiosity and PEs (Models 5 to 8) are a repetition of Models 1 to 4 within the subset of those with a declared religion. In these models, we additionally adjusted for religious denomination type (Protestantism, Catholicism, Judaism, Islam, other religion). Finally, to examine whether the associations of indices of religiosity and PEs differ by PE metrics, we repeated the analyses (model 8) using number of PE types (two or more PE types vs 1 PE type), and annualized frequency of PEs (median split) as outcome variables.

As the WMH data are both clustered and weighted, the design based Taylor series linearization implemented in SUDAAN software was used to estimate the standard errors and evaluate the statistical significance of the coefficients. Logistic coefficients and their standard errors were exponentiated to generate ORs and 95% confidence intervals. All significance tests were evaluated at the 0.05-level using two-sided tests.

Results

Prevalence of psychotic experiences with and without a declared religion

Of 25,542 included respondents, 85.6% (SE = 0.3) (n=21,860) declared that they had a religious affiliation. With those with a religious affiliation, only 5% (SE=0.2) (n=1,409) had PEs compared to 6.4% (SE=0.7) in those without a religious affiliation (Supplementary Table S3a). The prevalence of PEs among Protestants was 8.2% (SE=0.7), Catholics 5.2% (SE=0.3) followed by Judaism (2.%, SE=1.5) and Muslims (1.3%, SE=0.2). The prevalence of PEs of the five indices (among those who declared a religion) varies between 3.5% (SE=0.4) ('attended religious services more than once a week') and 6.5% (SE=0.4) ('often often seek comfort when experiencing problems') (Supplementary Table S3b). The mean age for the total sample was 40.5 years (SE=0.16), and the percentage of males in this sample was 51.4% (SE=0.44).

Associations between religious affiliation and psychotic experiences

Table 1 shows the association between any PEs and declared religious affiliations. There was no association between declared religious affiliations and any PEs using basic adjustments for confounding factors such as sex, age at interview, and country (M1). As expected, a similar null association was found when models were adjusted for comorbid mental disorders and/or general medical conditions.

Associations between religiosity and psychotic experiences

Among 21,860 respondents with a declared religious affiliation, 56.8% (SE = 0.5) found 'religion to be very important in their daily life' while 55.4% (SE = 0.5) regarded 'religion to be very important when they grew up'. Only 29.8% (SE = 0.5) 'attended religious services more than once a week', and less than half 'often seek comfort when experiencing problems' (45.7%, SE = 0.5) or 'often think about religion to help with decision making in their daily life' (43.2%, SE = 0.5). The distribution of PEs by these indices is shown in Supplementary Table 3b.

Table 2 shows the associations between indices of religiosity and PEs (within the subset of those with a declared religion). In the basic model (M1), we found that four (out of five) indices of religiosity (those who consider 'religion was very important when growing up', or 'religion was very important in their daily life', or 'often seek comfort when experiencing problems', or 'often think about religion to help with decision making in daily life') were significantly associated with increased odds of PEs. The odds ratio ranged between 1.3 and 1.9 with the highest odds ratio was for those who often seek comfort when experiencing problems (OR = 1.9, 95% CI = 1.6–2.2), and the lowest was in those who consider religion was very important when growing up (OR = 1.3, 95% CI = 1.1–1.5). The relationships persisted after adjustments with comorbid mental disorders and general medical conditions as well as with various religious denominations.

Associations between religiosity and type and frequency of psychotic experiences

Within those with both a declared religious affiliation and PEs, we examined if indices of religiosity were associated with the number of PE types (2 or more versus 1 type). We found that three (out of five) indices of religiosity were significantly associated with PE type metric, as seen in Table 2 (Table 3). Based on the same subgroup, we found no association between those with indices of religiosity and annualized frequency of PEs.

Discussion

Based on cross-national surveys, we found that about 85% of the people had declared religious affiliations, and within this group, about half of them found religion to be very important in their daily life and for making decision and looking for comfort when experiencing problem. Of those with a religious affiliation, about a third attended a religious service more than once a week, demonstrating how religion is important in the daily life of many people around the world and thus its relevance for understanding risk and protective factors for mental health (33).

Overall, while there was no association between religious affiliations and PEs, we speculate that this crude dichotomization may have masked underlying complexity. For example, it is feasible that respondents may have endorsed a religious affiliation because this was perceived as being socially acceptable (i.e. 'normative') – the additional religiosity items were included to explore this particular issue. Furthermore, respondents with an interest in 'new age' spirituality but without a formal religious affiliation would not have endorsed this item (and those would not have been included in the sample with information on religiosity).

There is evidence to suggest that this individuals may be more likely to report PEs (33). When we examined indices of religiosity and PEs (among those with a religious affiliation), we found that 4 of the 5 measures of indices of religiosity (those who consider religion was very important when growing up, or religion was very important in their daily life, or often seek comfort when experiencing problems, or often think about religion to help with decision making in daily life) were significantly associated with increased odds of PEs. The relationships persisted after various adjustments including basic demographic variables (age at interview, sex, and country), comorbid mental disorders and general medical conditions as well as broad type of religious denominations. The results indicate that indices of religiosity were linked to PEs regardless of any mental disorder or general medical condition. Only the measure related to frequency of attendance at religious services was not associated with PEs –a finding consistent with that reported by Steenhuis et al (22). We note that the effect size for this particular analysis was in the expected direction (OR = 1.2) but that the 95% confidence intervals were imprecise (0.9–1.6). Thus, this finding should be considered inconclusive (rather than a strong null), and it is feasible that a weak relationship does exist between the variables of interest, but our large sample size was not able to confidently detect it.

The complex links between religion and mental disorder are transactional and influenced by a wide range of site-specific cultural factors (17, 33–35). These associations can be further confounded when the religious practices and doctrinal beliefs may influence the content of PEs (17, 36, 7). In a study based on ‘charismatic Christians,’ Luhrmann (38) found that none of the 128 subjects met criteria for a diagnosis of psychotic disorders while roughly one third of the subjects reported that they had heard the voice of God speaking to them (auditory hallucinations) on at least one occasion. Luhrmann suggests that membership in particular types of religious groups may subsequently kindle propensity to PEs (11). While the links between specific culture practices and PEs are beyond the scope of the present study, these interesting research questions would be better served by qualitative and anthropologically-focussed studies. It is also feasible that increased religiosity may occur as a result of experiencing PEs (i.e. reverse causality). However, we have no way to explore this possibility due to fact that we did not ask respondents about age of onset of religiosity.

While the current study has many strengths (e.g., range of PE types, large sample size, range of countries, uniform methodology for data collection), the present findings have to be interpreted in light of several important methodological limitations. We excluded those who screened positive for possible psychotic disorders based on self-reporting having received a psychosis diagnosis or having used antipsychotic medications to treat the reported PEs. However, it is possible that some respondents who reported PEs had an untreated psychotic disorder. The screen question on religious affiliation was focused on organised or traditional religious denominations. We did not assess identification with measures of general ‘spirituality’, which have been linked to endorsement of delusional experiences (20). In addition, three of the five items related to religiosity included additional text about ‘spiritual beliefs’, which limits our ability to fractionate the influence of narrowly defined religiosity from the broader concept of spirituality and religiosity. It is feasible that respondents who scored highly on religiosity may have interpreted the PE probes as particularly linked to their religious experiences - a more focused qualitative study would be needed to explore

this particular research question. While the statistical analyses adjusted for type of religion, the sample were predominantly Christian, thus our results may not generalize across all types of religion. Our study was focused on cross-national, and cross-religion research questions, but raises many important research questions suitable for future research. Importantly, future studies will be needed to unravel broader research questions concerning the links between religiosity and mental disorders in general. For example, there are many interesting research questions related to particular types of religions and types of PEs that could be examined in future studies. Within this context, we previously reported that the prevalence of any PEs was lower in studies from low income countries (compared to middle and high income countries). For example, while the overall prevalence for PEs was 5.8%, it was only 1.1% in Iraq (2). This issue limits the power to undertake fine-grain analyses by each religion and PE type. Finally, as noted above, the surveys are cross-sectional and thus unable to determine direction of causality.

Conclusions

Overall, there was no association between religious affiliations and lifetime prevalence of PEs. However, in those with a religious affiliation (85% of the respondents), increased religiosity was generally associated with an increased risk of PEs. We found that four (out of five) indices of religiosity (those who consider religion was very important when growing up, or religion was very important in their daily life, or often seek comfort when experiencing problems, or often think about religion to help with decision making in daily life) were significantly associated with increased odds of PEs. This is an area of research where multidisciplinary collaborations and mixed method studies will be required to better understand to address the nuanced relationship between religiosity and mental health.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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A complete list of all within-country and cross-national WMH publications can be found at <http://www.hcp.med.harvard.edu/wmh/>.

Competing interests:

In the past 3 years, Dr. Kessler received support for his epidemiological studies from Sanofi Aventis; was a consultant for Johnson & Johnson Wellness and Prevention, Shire, Takeda; and served on an advisory board for the Johnson & Johnson Services Inc. Lake Nona Life Project. Kessler is a co-owner of DataStat, Inc., a market research firm that carries out healthcare research. In the past 3 years, Dr. Demyttenaere has received personal fees from Lundbeck, Servier and Johnson & Johnson.

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Significant outcomes

- While there was no association between religious affiliation status and psychotic experiences (PEs), within the subgroup having a religious affiliation, four of five indices of religiosity were significantly associated with increased odds of PEs
- The risk is not explained by comorbid general medical conditions and mental disorders.
- There was a significant association between increased religiosity and reporting more types of PEs.

Limitations

- Our sample is predominantly Christian, and may not be representative of all types of religion
- Data did not allow us to assess identification with measures of general 'spirituality', which may have links to endorsement of delusional experiences
- Our study was cross-sectional and we could not explore the temporal order between religiosity and PEs.

Table 1.

Associations between religious affiliation and psychotic experiences

PE metrics (n = 25,542)	M1: Adj for controls ^a		M2: Adj for controls + comorbid mental disorders ^b		M3: Adj for controls + comorbid general medical conditions ^c		M4: Adj for controls + comorbid mental + general medical conditions ^d	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
I. PE								
Any PE (ref: no PE)	0.8	(0.6–1.1)	0.9	(0.7–1.2)	0.8	(0.6–1.1)	0.9	(0.7–1.2)
Any HE (ref: no HE)	0.7	(0.5–1.0)	0.8	(0.6–1.1)	0.8	(0.6–1.0)	0.8	(0.6–1.1)
Any DE (ref: no DE)	0.8	(0.5–1.2)	0.9	(0.6–1.4)	0.8	(0.5–1.3)	0.9	(0.6–1.4)
II. PE type metric								
2 or more PE types (ref: 1 PE type)	0.9	(0.5–1.5)	0.9	(0.5–1.5)	0.8	(0.5–1.5)	0.9	(0.5–1.5)
III. PE annualized frequency metric								
> 0.3 episodes per year (ref: 0.3 episodes per year)	1.1	(0.6–1.8)	1.1	(0.6–1.8)	1.1	(0.6–1.8)	1.1	(0.6–1.8)

PE, Psychotic experiences; HE, Hallucinatory experiences; DE, Delusional experiences; OR, Odds ratio; CI, Confidence interval

* Significant at the .05 level, 2-sided test.

^aM1: Logistic regression model of declared religion (ref: no declared religion) as predictors of PE (ref: no PE) adjusted for controls (country, sex, and age at interview).^bM2: Adjusted for controls and any lifetime DSM-IV mental disorders.^cM3: Adjusted for controls and any lifetime general medical conditions.^dM4: Adjusted for controls, any lifetime DSM-IV mental disorders, and any lifetime general medical conditions.

Table 2.

Associations between indices of religiosity (religious practice) and psychotic experiences among those with a declared religion

Among those with a declared religion (n = 21,860)	M5: Adj for controls ^a		M6: Adj for controls + comorbid mental disorders ^b		M7: Adj for controls + comorbid general medical conditions ^c		M8: Adj for controls + comorbid mental + general medical conditions ^d	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Religion was very important when growing up	1.3*	(1.1–1.5)	1.3*	(1.1–1.6)	1.3*	(1.1–1.5)	1.3*	(1.1–1.6)
Attend religious services more than once a week	1.1	(0.9–1.5)	1.2	(0.9–1.6)	1.2	(0.9–1.5)	1.2	(0.9–1.6)
Religious/spiritual beliefs are very important in daily life	1.6*	(1.4–2.0)	1.7*	(1.4–2.1)	1.6*	(1.3–2.0)	1.7*	(1.4–2.0)
Often seek comfort through religious/spiritual means when experiencing problems in family, work or personal life	1.9*	(1.6–2.2)	1.8*	(1.5–2.2)	1.8*	(1.5–2.2)	1.8*	(1.5–2.2)
Often think about what religious/spiritual belief suggest you should do when you make decisions in your daily life	1.7*	(1.4–2.0)	1.7*	(1.4–2.1)	1.7*	(1.4–2.0)	1.7*	(1.4–2.0)

PE, Psychotic experiences; OR, Odds ratio; CI, Confidence interval

* Significant at the .05 level, 2-sided test.

^aM5: Logistic regression model of indices of religiosity as predictors of PE (ref: no PE) adjusted for controls (country, sex, age at interview) and religion denomination types.^bM6: Adjusted for controls, religion denomination types, and any lifetime DSM-IV mental disorders.^cM7: Adjusted for controls, religion denomination types, and any lifetime general medical conditions.^dM8: Adjusted for controls, religion denomination types, any lifetime DSM-IV mental disorders, and any lifetime general medical conditions.

Table 3.

Associations between indices of religiosity (religious practice) and PE related metrics

Among those with a declared religion and PE (n = 1,409)	More than 2 types of PE (ref: 1 PE type) ^a		More than 0.3 episodes per (ref: 0.3 episodes per year) ^a	
	OR	(95% CI)	OR	(95% CI)
Religion was very important when growing up	1.6 *	(1.1–2.2)	0.8	(0.6–1.2)
Attend religious services more than once a week	1.5	(0.9–2.4)	0.9	(0.6–1.5)
Religious/spiritual beliefs are very important in daily life	1.6 *	(1.1–2.3)	1.0	(0.7–1.5)
Often seek comfort through religious/spiritual means when experiencing problems in family, work or personal life	1.1	(0.7–1.7)	1.0	(0.7–1.5)
Often think about what religious/spiritual belief suggest you should do when you make decisions in your daily life	1.5 *	(1.0–2.3)	1.1	(0.8–1.6)

PE, Psychotic experiences; OR, Odds ratio; CI, Confidence interval

* Significant at the .05 level, 2-sided test.

^aLogistic regression model of indices of religiosity as predictors of PE related metrics (more than 2 PE types, more than 0.3 episodes) adjusted for country, sex, age at interview, religion denomination types, any lifetime DSM-IV mental disorders, and any lifetime general medical conditions.