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Brief report

A test of faith in God and treatment: The relationship of belief in God to psychiatric treatment outcomes



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ABSTRACT

Background: Belief in God is very common and tied to mental health/illness in the general population, yet its relevance to psychiatric patients has not been adequately studied. We examined relationships between belief in God and treatment outcomes, and identified mediating mechanisms.

Methods: We conducted a prospective study with $n=159$ patients in a day-treatment program at an academic psychiatric hospital. Belief in God, treatment credibility/expectancy, emotion regulation and congregational support were assessed prior to treatment. Primary outcomes were treatment response as well as degree of reduction in depression over treatment. Secondary outcomes were improvements in psychological well-being and reduction in self-harm.

Results: Belief in God was significantly higher among treatment responders than non-responders $F(1,114)=4.81, p<.05$. Higher levels of belief were also associated with greater reductions in depression ($r=.21, p<.05$) and self-harm ($r=.24, p<.01$), and greater improvements in psychological well-being ($r=.19, p<.05$) over course of treatment. Belief remained correlated with changes in depression and self-harm after controlling for age and gender. Perceived treatment credibility/expectancy, but not emotional regulation or community support, mediated relationships between belief in God and reductions in depression. No variables mediated relationships to other outcomes. Religious affiliation was also associated with treatment credibility/expectancy but not treatment outcomes.

Conclusions: Belief in God, but not religious affiliation, was associated with better treatment outcomes. With respect to depression, this relationship was mediated by belief in the credibility of treatment and expectations for treatment gains.

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1. Introduction

In the modern era, spirituality and religion continue to play an important role across cultures globally. This is particularly the case in the United States where 93% of the population holds belief in God or a Higher Power (Gallup, 2011) and the words “In God We Trust” appear on every bill and coin produced by the U.S. Mint. It is therefore not surprising that this important domain can have both a positive and negative effect on mental health. On the one hand, spiritual/religions involvement can buffer against depression, hopelessness, self-injury and suicidality (Miller et al., 2012; Murphy et al., 2000; Rasic et al., 2009), facilitate regulation of negative emotions (McCullough and Willoughby, 2009) and serve as a resource during times of distress

(Pargament et al., 2000). On the other hand, spiritual struggles such as anger at God or religious guilt can exacerbate (McConnel et al., 2006) or even facilitate the development of psychiatric symptoms (Pirutinsky et al., 2011). What is surprising, however, is that although the number of studies in this area has grown over the past two decades (Hill and Pargament, 2003) virtually all research has been conducted within the general population or within specific religious communities (Koenig, 2009). Moreover, the handful of studies conducted within clinical psychiatric samples have been essentially descriptive in nature (e.g., assessing the prevalence of church attendance) and failed to examine mediators by which specific facets of spirituality may proximally and functionally connect to specific symptoms or outcomes (Rosmarin et al., 2011). In light of the importance of this domain, its central relevance to political, economic and other trends, and research suggesting links to mental health/illness in the general population, a closer look at the clinical psychiatric relevance of spirituality – beyond the perfunctory appraisal of religious affiliation during a standard psychiatric assessment – is warranted.

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One recent study in a clinical sample found that self-rated importance of religion at baseline (measured by a single-item) was associated with improved treatment outcomes in outpatient care for panic disorder (Bowen et al., 2006). Specifically, patients who rated religion as “very important” demonstrated greater reductions in anxiety and stress, though not depression, over the course of Cognitive Behavioral Treatment (CBT). Findings were significant at 6- and 12-month follow-up and remained after controlling for pre-treatment levels of self-esteem, interpersonal functioning, mastery, perceived stress, and depression. This interesting result points to the potential clinical importance of patients’ spiritual involvement in psychiatric treatment outcomes. However, this finding has yet to be replicated. Further, and more importantly, it remains unclear *how* and *why* spirituality might be tied to better mental health treatment outcomes.

One possibility is that belief or faith in God can generalize to belief or faith in psychiatric treatments. It is known that treatment credibility – how believable and logical a treatment is perceived to be – and treatment expectancy – patient expectations to experience treatment gains – are robust predictors of treatment success in psychosocial interventions (Newman and Fisher, 2010). Among other things, these factors improve the therapeutic alliance, as well as patient motivation and compliance with treatment (Goossens et al., 2005). It is thus theoretically plausible that the general cognitive framework of faith in a God or Higher Power may impact treatment outcomes by facilitating greater faith in treatment (i.e., enhancing treatment credibility and expectancy) in the course of psychiatric care. More broadly, the tendency or proclivity to have faith in conventional social constructs could generalize across both religious faith and faith in medicine (and perhaps faith in conventional economic and political constructs as well). Thus, the general attribute of faith could be related to both spiritual and medical domains, whereas mechanistically, faith in treatment could mediate enhanced treatment response by individuals with spiritual beliefs. Another possibility is that spiritual belief may serve as an internal resource to support emotion regulation, which has been postulated to lie at the heart of mood and affective disorders (Goldin et al., 2008). Specifically, belief in God or a Higher Power may facilitate cognitive reappraisal – the ability to change one’s thinking about emotionally charged situations (Gross, 1998) – and/or the ability to experience negative emotions without suppression (Gross, 2002). However, it is also possible that any positive effect of belief in God on treatment outcomes is simply an artifact of religious social systems that provide congregational support.

We therefore prospectively assessed for belief in God in an acute partial hospital psychiatric setting, and examined its relationship to treatment outcomes. We further assessed for possible mediating mechanisms of this relationship—namely, treatment credibility/expectancy, emotion regulation, and congregational support. We hypothesized that belief in God would be associated with better treatment outcomes. We further hypothesized that spiritual belief would correlate with treatment credibility/expectancy, use of emotion regulation and religious social support, and that any observed relationships between spiritual belief and treatment outcomes would be jointly mediated by these factors.

2. Methods

2.1. Procedure and participants

One-hundred and fifty-nine patients were recruited from an acute Cognitive Behavioral Therapy partial hospital program (day treatment) at McLean Hospital, over a period of one year

(November, 2010 to October, 2011). Patients were approached in the common area of the program to participate in “a research study” and less than 5% refused for a variety of reasons (e.g., symptom severity, lack of interest in research). Only two participants refused to complete the study following informed consent, which disclosed the subject matter of the study. Participants completed measures of spiritual belief, treatment credibility/expectancy, emotion regulation and religious support at the beginning of treatment. Measures of depression, psychological well-being, and self-harm were administered at both the start and conclusion of patients’ hospital stay ($M=9.94$ days, $SD=4.20$). Prior to treatment, diagnoses were ascertained with a structured interview as well as consultation with supervising psychiatrists. No monetary or other compensation was given for participation. This study was approved by the McLean Hospital Institutional Review Board and all participants provided informed consent to participate after a complete description of the study.

Mean age in the sample was 33.69 ($SD=13.55$) years and 61.6% of participants were female. Most participants were Caucasian (83.6%) and single (61.4%), and there were a high number of college graduates (45.3%). Impairment in the sample was high in that 56% of participants were unemployed, and all patients presented with global assessment of functioning (GAF) scores of <45 , representing serious symptoms/impairment. Patients were diagnostically heterogeneous: 60.4% presented with a primary diagnosis of major depression (current or recurrent), 11.9% presented with bipolar disorder (manic, depressed or mixed), and the remainder with other primary diagnoses (e.g., anxiety disorders). “Fairly” or greater belief in God or a Higher Power was reported by 72.1% of the sample. Belief was equally distributed among diagnostic groups $F(7,150)=1.21$, $p=.30$. More than half the sample (61.6%) reported some form of religious affiliation. See Tables 1 and 2 for distribution of spiritual belief and religious affiliation within the sample.

2.2. Measures

2.2.1. Demographic covariates

We assessed for patient age, gender, race, marital status, and current employment via self-report.

2.2.2. Belief in God

A single item (To what extent do you believe in God?) was used to assess for belief in God. A 5-point Likert-type scale was utilized with anchors ranging from “Not at all (No belief at all)” to “Very (A strong sense of belief)”.

Treatment credibility/expectancy was assessed using the 6-item treatment credibility and expectancy questionnaire (Deville and Borkovec, 2000). The measure is divided into two subscales assessing for treatment credibility (e.g., How confident would you be in recommending this treatment to a friend who experiences similar problems?) and expectancy (e.g., By the end of the treatment period, how much improvement in your symptoms do you think will occur?), respectively, and it has demonstrated adequate reliability and validity in previous research.

Table 1
Frequencies of ‘To What Extent Do you Believe in God or a Higher Power?’.

	<i>n</i>	%
Very	56	35.2
Moderately	31	19.5
Fairly	27	17.0
Slightly	14	8.8
Not at all	30	18.9
Choose not to respond	1	0.6

Table 2
Religious affiliation.

	<i>n</i>	%
Catholic	38	22.6
Protestant or other Christian	32	20.1
Jewish	11	6.9
Buddhist	7	4.4
Hindu	1	0.6
Other	9	5.7
None	61	38.4

Cronbach's alpha for both subscales was high in the sample ($\alpha=.80$ for credibility, $\alpha=.93$ for expectancy).

2.2.3. Emotion regulation

The 10-item Emotion Regulation Questionnaire (Gross and John, 2003) was used to assess for utilization of both cognitive reappraisal (a positive strategy) and suppression (a negative strategy). Internal consistency was moderate to high for both subscales ($\alpha=.90$ for reappraisal, $\alpha=.76$ for suppression).

2.2.4. Congregational support

We utilized the 2-item "Support Received" subscale from the religious support scale. This brief measure has been well validated as an index of the extent to which individuals obtain emotional support from their spiritual/religious community (Krause, 1999).

2.2.5. Depression

We utilized the 10-item Center for Epidemiological Studies Depression (CES-D) scale (Andresen et al., 1994), a widely used, brief instrument for symptoms of depression. The measure demonstrated good internal consistency in this study ($\alpha=.87$).

2.2.6. Psychological well-being

Well-being was assessed using the Schwartz Outcome Scale (Blais et al., 2008), a well-validated and reliable measure assessing overall psychological well-being. Internal consistency of the SOS was high in the present study ($\alpha=.93$).

2.2.7. Self-harm

The self-harm subscale of the 24-item behavior and symptom identification scale [BASIS-24] (Eisen et al., 2004) was used to assess self-harm over the past week. The BASIS-24 has demonstrated good psychometric properties across inpatient, outpatient, residential, and partial hospital settings as a broad assessment of psychopathology and associated distress. Reliability for the measure in the current study was moderate ($\alpha=.77$).

2.3. Analytic plan

First, we calculated reliable change index (RCI) scores to establish a cut-off point for clinically meaningful treatment response in the sample. Based on previous guidelines (Jacobsen and Truass, 1991), we used published data from non-clinical samples using the CES-D and computed an upper confidence interval of 1.96 SD above the grand mean of all identified studies, representing outpatient levels of depression (in accordance with the goal of acute psychiatric day treatment). RCI was thus calculated to be a score of 6.4 or below on the CES-D. Using this criterion, 37.1% ($n=59$) achieved reliable change in depression. Second, we calculated pre-post treatment change scores for depression, psychological well-being, and self-harm to assess for magnitude of symptom change in the sample. Higher scores indicate better improvement for depression and self-harm, and

worse improvement (or reduction) in psychological well-being. We then evaluated relationships between belief in God, pre-treatment symptom levels and demographics to identify potential confounds in the sample. Subsequently, we evaluated whether belief in God and religious affiliation differed between treatment responders and non-responders, and we computed zero-order correlations to examine linear relationships between belief in God and change scores for primary (depression) and secondary outcomes (self harm and psychological well-being). We then examined whether proposed mediators accounted for observed relationships between spiritual belief and treatment change. We used a mediation approach which is superior to the traditional causal steps method in that it allows for the testing of several proposed mediators simultaneously with 1000 bootstrap samples to produce ordinary least square estimates and 95% confidence intervals for estimates (Preacher and Hayes, 2008). A calculation of achieved power was conducted. For the main study analyses described above, statistical power was determined to be sufficient (.85–.96) to detect medium to small sized effects ($d=.50$ or less) at $p<.05$.

3. Results

Demographics were uncorrelated with treatment change scores, but it was observed that belief in God was associated with both age ($r=.25$, $p<.001$) and female gender ($r=.22$, $p<.01$). Neither belief nor religious affiliation was associated with any pre-treatment symptom levels (r s ranging from $-.09$ to $.07$, ns).

With regard to primary treatment outcomes, belief in God was significantly higher among treatment responders than non-responders $F(1,114)=4.81$, $p<.05$, and linearly associated with greater reductions in depression over treatment ($r=.21$, $p<.05$). With regard to secondary outcomes, higher levels of belief in God were associated with increases in psychological well-being ($r=-.19$, $p<.05$), and reductions in self-harm ($r=.24$, $p<.01$). Relationships between belief and changes in depression and self-harm remained significant after controlling for age and gender ($p<.05$). See Fig. 1. However, religious affiliation was not associated with treatment response or any change scores.

Belief in God was also associated with greater treatment credibility ($r=.41$, $p<.001$), treatment expectancy ($r=.36$, $p<.001$), and religious community support ($r=.35$, $p<.001$), but not use of emotion regulation (cognitive reappraisal, $r=-.08$, ns; suppression, $r=-.08$, ns). Affiliation with any religion was also associated with greater treatment credibility ($F(1,154)=9.21$, $p<.01$) and expectancy ($F(1,153)=16.57$, $p<.001$). See Fig. 2.

See Table 3 for standard errors and 95% confidence intervals from the bootstrap distribution of the mediation analyses. The total effect path (path c) and the direct effect (path c') of spiritual belief on improvement in depression were $B=.86$, $p<.05$, and $B=.63$, ns, respectively. Of the proposed mediators, only the confidence intervals for treatment credibility and expectancy were significant (i.e., did not contain zero), suggesting that these variables mediated associations between belief in God and depression change. The point estimate for the indirect effect of treatment credibility was negative, as a result of a negative b path from credibility to improvement in depression, $B=-.31$, $p=.05$. With regard to changes in well-being and self-harm, none of the proposed mediators reached significance.

To further evaluate the potential for unique effects of belief in God on treatment response (i.e., independent of treatment credibility/expectancy), we sought to conduct one additional set of analyses by comparing subjects with "A strong sense of belief" in God and low on credibility/expectancy (bottom quartile), to subjects with "No belief at all" in God but high on credibility/

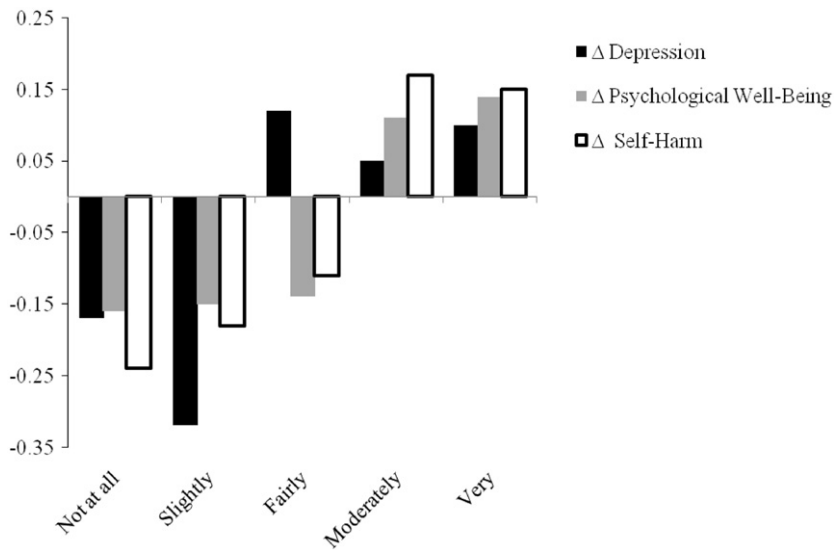


Fig. 1. Standardized values of symptom change across levels of belief in God. Note: To maintain consistency across all three indices in this figure, psychological well-being was reverse scored such that higher change scores indicate greater improvement in well-being, whereas higher scores for depression and self-harm indicate greater reduction in these symptoms over treatment.

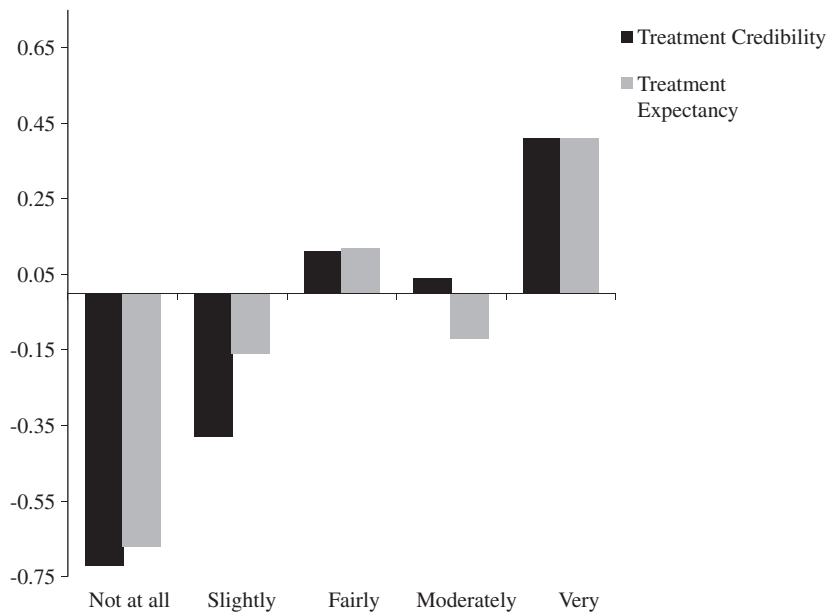


Fig. 2. Standardized values of treatment credibility/expectancy across levels of belief in God.

Table 3
Mediation analyses (bias corrected confidence intervals).

	Change in depression			Change in well-being			Change in self harm		
	95% confidence interval			95% confidence interval			95% confidence interval		
	Point estimate	Lower	Upper	Point estimate	Lower	Upper	Point estimate	Lower	Upper
Total mediated effect	.23 (.25)	-.20	.78	-1.08 (.43)	-2.01	-.32	.02 (.03)	-.03	.10
Treatment credibility	-.32 (.17)	-.87	-.07*	-.24 (.30)	-.88	.33	.005 (.03)	-.04	.06
Treatment expectancy	.32 (.18)	.04	.77*	-.33 (.30)	-1.04	.17	.02 (.03)	-.03	.09
Reappraisal	.09 (.10)	-.03	.36	-.19 (.21)	-.61	.23	.007 (.01)	-.01	.04
Suppression	-.04 (.07)	-.29	.03	.04 (.12)	-.15	.39	-.003 (.01)	-.03	.01
Congregation support	.18 (.14)	-.06	.50	-.35 (.26)	-1.03	.05	-.01 (.02)	-.05	.03

Notes: All mediators were insignificant except for treatment credibility/expectancy with respect to depression change.

expectancy (top quartile). Only two subjects were identified in the latter category, suggesting that it is rare for individuals with no belief in God to have high treatment credibility/expectancy. Since this sample size was insufficient to power our analyses as planned, we conducted an alternative subgroup analysis by comparing subjects high on both belief in God and treatment credibility/expectancy ($n=27$), with subjects high on belief in God but low on treatment credibility/expectancy ($n=9$). Likelihood of treatment response was equivalent for the two groups, $\chi^2(1, 36)=.36$, ns, as were all treatment change scores, $t(35)$ ranging from $-.17$ to $-.36$, ns. These results suggest that among individuals with very high levels of spiritual belief, the effects of belief in God on treatment outcome may remain significant independent of faith in treatment.

4. Discussion

Despite the prevalence and importance of spirituality and considerable literature tying this domain to mental health and illness in the general population, academic medicine in general, and psychiatry in particular, has been slow to study this subject matter within patient samples. Consequently, much remains unknown about the relevance of spiritual factors to patient care, and any mechanisms by which it may impact healthcare and outcomes. In this study, we sought to replicate and extend previous findings among outpatients suggesting that spirituality is associated with improved outcomes in psychosocial treatment (Bowen et al., 2006), by examining similar factors within an acute psychiatric sample.

Results indicated that over the course of treatment, belief in God, but not religious affiliation, was associated with greater likelihood of treatment response as well as greater reductions in depression and self-harm, and greater increases in psychological well-being. With respect to depression and self-harm, effects of belief remained significant after controlling for significant demographic covariates. With respect to depression only, the relationship between belief in God and change scores was mediated by patient beliefs in the credibility of treatment, and patient expectations for treatment gains. Surprisingly, other possible mediators, including congregational support and emotion regulation, were not significant, indicating that treatment credibility/expectancy is a unique factor accounting for relationships between belief in God and treatment outcome.

As a whole these findings suggest that belief in God is associated with improved treatment outcomes in psychiatric care. More centrally, our results suggest that belief in the credibility of psychiatric treatment and increased expectations to gain from treatment might be mechanisms by which belief in God can impact treatment outcomes. It is also notable that faith in treatment was virtually not present in the absence of belief in God, and that few participants with high belief in God had low treatment credibility/expectancy. This may suggest that faith is a general cognitive attribute representing an optimistic mental schema that can generalize to spiritual, medical and perhaps other domains as well. In this regard, patients can utilize faith (spiritual or otherwise) in an adaptive manner in a treatment context by supporting belief in treatment. However, treatment credibility/expectancy did not mediate relationships between spiritual belief and changes in self-harm or psychological well-being. Further, among individuals with high levels of spiritual belief, treatment credibility/expectancy was not associated with greater likelihood of psychiatric treatment response or greater magnitude of change in symptoms over the course of treatment. Future research should examine alternative mediators such as optimism and hope, as well as other secular beliefs or dispositions

(e.g., a tendency to trust in other people). Future research should also examine relational as well as cognitive facets of spiritual/religious involvement, such as attachment to God. Nevertheless, it appears that belief in God may represent an overarching framework that can generalize to treatment. This has particular relevance in the treatment of severe psychopathology where hopelessness is highly prevalent (Beck et al., 1993) and the need for faith may be greater than in an outpatient context.

It is noteworthy that neither belief in God nor religious affiliation was associated with lower levels of symptoms and functioning prior to treatment. While previous research has suggested that some spiritual/religious factors may protect against depression and related difficulties in the general population (Rasic et al., 2009), this relationship was not apparent within the present clinical sample. This may suggest that the potential benefit of spirituality or religion to patients does not prevent the onset of severe psychiatric symptoms. It is also significant that religious affiliation did not predict greater psychiatric symptom change in this sample, though belief in God did. It is quite possible that association with a religious community, in and of itself, is not psychologically protective whereas internalized spiritual beliefs can facilitate functionally adaptive, situation-specific cognitions, which in turn have a positive impact on human affect (Rosmarin et al., 2011). This speaks to the importance of moving beyond the ubiquitous, descriptive research in this area (e.g., examinations of how church attendance is associated with incidence of psychopathology) and assessing for facets of spirituality/religion that might be proximally tied to mental health and functioning, as well as potential mediating factors.

Our study had several limitations, including homogeneity of demographic characteristics within the sample, heterogeneity of symptom presentation and treatment, and reliance on self-report for variables of interest. However, each patient in this study received a standardized evaluation of symptoms as well as spiritual variables in the course of this study, and the naturalistic treatment context provides for greater generalization of study findings. Further, by examining the clinical relevance of spirituality in a clinical context, the present study moves beyond the scope of most work in this area, which has been conducted in community settings. Additionally, the geographic location of the study – Eastern Massachusetts – is one of the least religiously dense areas within the United States (Pew Forum on Religion and Public Life, 2008) and it is thus plausible that findings may be stronger in other locales nationwide. Furthermore, our findings represent a meaningful advancement in that they provide a potential theoretical explanation for a path through which spirituality may impact psychiatric treatment outcomes. Given the prevalence of spirituality in patient populations, it is hoped that further research will shed more light onto this understudied yet important subject.

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Conflict of interest

The authors have no conflicts of interest to disclose. David H. Rosmarin, Ph.D. had full access to all the data in this study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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