Depression Research and Treatment

Religious and Spiritual Factors in Depression

Guest Editors: Harold G. Koenig, David H. Rosmarin, Rachel E. Dew, Raphael M. Bonelli, and Sasan Vaseqh

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Editorial Board

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Editorial

Religious and Spiritual Factors in Depression

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To our knowledge, this issue is the first peer-reviewed journal in psychiatry to devote an entire issue to this subject and is certainly the first open access journal to do so. For nearly a century, mental health professionals have been reluctant to conduct systematic research on religion and depression—almost as reluctant as they have been to address it in therapy. Freud viewed religion as a form of neurosis [1–3], and other mental health professionals over the years have likewise argued that the less religious that people are, the healthier they will be [4–6].

As a result, when religion came up in the clinical counter, it was either ignored or treated as part of the pathology that had to be corrected in the treatment [7]. By the end of the 20th century, this negative attitude towards religion had impacted the personal views of many psychologists and psychiatrists themselves. Surveys during this period found that from 57% to 74% of psychologists [8, 9] and from 24% to 75% of psychiatrists [10–12] did not believe in God, compared to only 4% in the general US population [13]. This pathological view of religion had even become institutionalized as part of the psychiatric nomenclature. A systematic review of the religious content of DSM-III-R found that over 22% of all cases of mental illness included religious descriptions [14].

There is indication in recent years, however, that attitudes toward religion in psychiatry are changing. Consider a recent national survey of U.S. psychiatrists that found 84% of psychiatrists indicating a religious affiliation, 74% describing themselves as moderately or highly spiritual, 65% believing in God, and 29% attending religious services at least twice a month or more [15, 16]. Furthermore, 76% said that the influence of religion/spirituality on health is generally positive, and 64% that religion/spirituality often or always "gives patients a positive, hopeful state of mind [17]." Likewise, a national survey of US psychologists around the same time reported similar findings; 82% regarded religion as beneficial rather than harmful to mental health [18]. One reason for this change in attitude is the outpouring of systematic research on religion and mental health. Over the past 30 years, the generally negative view in psychiatry toward religion (based primarily on the opinion of influential mental health professionals quoted above) has been challenged by hundreds of observational studies and a handful of randomized clinical trials—nearly 300 in depression alone [19].

Adding to the research base on religion and depression are the studies reported in this special issue. The lead article (authored by the editors) is a review up through 2010 of quantitative research on religion, spirituality and depression, including both observational studies and randomized clinical trials, and brief mention of more recent studies published earlier this year. Research findings, both the positive and negative, are reviewed, and reasons for them are discussed. The article ends by an examination of religious psychotherapies that illustrate ways of integrating patients' religious beliefs into therapy. This review sets the tone for the original research reports that follow.

The research published in this issue by T. Sorensen and colleagues from, Norway, analyzes data from the HUNT-3

study (a population-based study of 37,981 participants) in order to examine how religious involvement (religious attendance) moderates the relationship between death of a family member and depressive symptoms. This is one of the few studies from secular Northern Europe that examines these relationships. The population-based aspect of this study is particularly important in generalizing the findings.

In another research report, also from Europe (the Netherlands), A. W. Braam and colleagues examine the relationship between religious involvement and depressive symptoms among those at the end of life. Data come from the Amsterdam Longitudinal Study of Aging that include 272 after-death proxy interviews with family members of deceased participants. Relationships between religious involvement, feelings of depression, and feelings of peace during the last week of life were analyzed, controlling for a wide range of other predictors.

In a report by L. L. Toussaint and colleagues from Luther College and Harvard University, researchers examine the possible mediating role that forgiveness plays in the relationship between religiousness/spirituality and depression. This prospective study involves a nationally representative sample of 966 U.S. adults assessed at baseline and six months later. Religious involvement was measured at baseline by attendance at services, frequency of prayer, and self-ratings of spirituality and religion. Four dimensions of forgiveness were assessed (forgiving self, God, others, and seeking forgiveness). Depressive disorder was determined using the World Health Organization's Composite International Diagnostic Interview (CIDI) both at baseline and follow-up.

An article by L. L. Hourani and colleagues assesses the influence of spirituality on depression, posttraumatic stress disorder (PTSD), and suicidal tendencies in 24,000 randomly selected activity duty military personnel. Data were analyzed from a 2008 U.S. Department of Defense survey examining health-related behaviors of soldiers in the army, navy, air force, and marine corp. Spirituality was assessed by agreement with the statements, "My religious/spiritual beliefs are a very important part of my life" and "My religious/spiritual beliefs influence how I make decision in my life." Depression was measured with the 10-item Center for Epidemiological Studies-Depression scale, PTSD was assessed with a 17-item self-report measure, and suicidal tendencies were examined with two items asking about suicidal thoughts and suicidal attempts within the past year.

Next, R. D. Hayward and colleagues at Duke University use structural equation modeling to examine the longitudinal relationship between religious involvement (subjective religiosity, private prayer, attendance at services, and religious media use) and clinician-rated depression severity using the Montgomery-Asberg Depression Rating Scale (MADRS). Participants were ages 59 or over and diagnosed with unipolar depression at the baseline interview (when religious characteristics were also measured). The MADRS was used to assess depressive symptoms at baseline and three months later. Both direct and indirect effects of religious variables were examined on change in depressive symptoms, controlling for other participant characteristics.

Acquiring a mixture of qualitative and quantitative data, L. Blalock and R. E. Dew survey 25 clergy regarding mental health issues in children. Examined were clergy referral habits, knowledge about childhood mental disorders, past experiences with mental health provides, and resources available in their local religious communities. Clergy came from a variety of religious traditions, including Protestant Christian, Jewish, Hindu, and Muslim. The findings provide important information on how members of the clergy in central North Carolina (part of the Bible Belt) behave and feel toward mental health professionals who provide care to children in their congregations.

John Peteet from the Dana Farber Cancer Institute (part of Harvard Medical School) begins to address how religion/spirituality can be incorporated into clinical practice. Although no original data is included in this report, he provides a conceptual framework for integrating spirituality into the treatment of depression. He discusses the obstacles that impede such integration, presents an approach to those obstacles, and provides a rationale for including spirituality in assessment, formulation, and treatment.

Finally, an article by H. G. Koenig describes an ongoing randomized clinical trial of religious versus conventional cognitive-behavioral therapy (CBT) for major depression in patients with chronic medical illness. The rationale behind the study, the specific aims, methodology, and preliminary results are described. The therapy is being provided remotely by either instant messaging, Skype, or by telephone. Religious CBT is being conducted using a manualized intervention adapted to the specific religious traditions of participants in the study (Christian, Buddhist, Hindu, Jewish, and Muslim). Outcomes being examined include depressive symptoms (Beck), positive behaviors/emotions (gratefulness, optimism, and generosity), and indicators of immune/endocrine function. Also being examined is the influence of genetic polymorphisms on treatment response. This study represents a prototype of the kinds of studies that are needed to help guide the use of religion/spirituality in the treatment of depression.

In summary, studies in this special issue involve a wide range of research designs from cross-sectional studies to prospective studies to randomized clinical trials. Both the theory behind using religious/spiritual factors in the treatment of depression and the barriers to doing so are discussed. We hope that the research and discussions presented in this issue will help to focus attention on what may be an important resource (and sometimes liability) for depressed persons, one that is often neglected by mental health professionals. It is a resource that the majority of populations around the world and throughout recorded history have told us helps them to deal with the difficult situations and circumstances that often lie at the root of depression. May we now begin to listen to them.

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Review Article

Religious and Spiritual Factors in Depression: Review and Integration of the Research

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Depressive symptoms and religious/spiritual (R/S) practices are widespread around the world, but their intersection has received relatively little attention from mainstream mental health professionals. This paper reviews and synthesizes quantitative research examining relationships between R/S involvement and depressive symptoms or disorders during the last 50 years (1962 to 2011). At least 444 studies have now quantitatively examined these relationships. Of those, over 60% report less depression and faster remission from depression in those more R/S or a reduction in depression severity in response to an R/S intervention. In contrast, only 6% report greater depression. Of the 178 most methodologically rigorous studies, 119 (67%) find inverse relationships between R/S and depression. Religious beliefs and practices may help people to cope better with stressful life circumstances, give meaning and hope, and surround depressed persons with a supportive community. In some populations or individuals, however, religious beliefs may increase guilt and lead to discouragement as people fail to live up to the high standards of their religious tradition. Understanding the role that R/S factors play in preventing depression, facilitating its resolution, or leading to greater depression will help clinicians determine whether this is a resource or a liability for individual patients.

1. Introduction

Depression is widespread around the world. The 12-month prevalence of major depressive disorder is 6.7% in the United States and is 2.0% for severe depression [1]. Depressive disorder has an enormous impact on a person's ability to function at work, in relationships, and in other areas of life. The World Health Organization projects that, by the year 2020, major depression will be the world's second most debilitating condition; only cardiovascular disease will cause more disability [2]. Among persons aged 15 to 44 in the USA, major depression is now the leading cause of disability days [3]. Depression affects not only ability to function and quality of life but also physical health by driving persons to suicide (over 1 million lost lives/year worldwide [4]) or by altering vital physiological processes necessary for survival (immune, endocrine, and cardiovascular functions). In the USA alone it is estimated that depression costs over $65 billion per year [5].

Religious involvement is also common today, with surveys showing that a significant proportion of the world's population has religious beliefs and practices that are important to daily life. For example, the World Gallup Poll surveyed representative populations of 143 countries ($n = 140{,}000$), finding that 92 percent of people in 32 developing countries indicated religion was an important part of daily life [6]. Likewise, a survey of developed countries by Angus Reid Strategies involving 5,800 adults in

Australia, Britain, Canada, China, Egypt, France, Germany, India, Israel, Italy, Japan, Lebanon, Mexico, Russia, Saudi Arabia, South Africa, Republic of Korea, Spain, Turkey, and the United States found that 48% of respondents said religion is a "very important" component of their daily lives [7]. Based on information collected on 238 countries, 13,000 ethno-linguistic peoples, 5,000 cities and 3,000 provinces by the World Christian Database, atheists make up less than 0.01% of the populations of 24 countries, less than 0.1% of the populations in 100 countries on which such data are available, and more than 5% of the population in only 9 countries (Cuba, Latvia, Uruguay, Viet Nam, China, Mongolia, Kazakhstan, Sweden, and Democratic People's Republic of Korea) [8]. With regard to the United States, the most recent Gallup Poll conducted in late 2011 found that 55% of Americans indicated that religion is very important in their lives and 26% said it is fairly important, leaving only 19% who said it was not important [9].

A large and growing volume of research suggests that religious or spiritual (R/S) beliefs and practices may be used to cope with or adapt to stressful life circumstances. Although there are many genetic, developmental, and environmental factors contributing to the onset and maintenance of depression, failure to cope with life stress is often a major underlying factor [10]. If R/S involvement is capable of reducing life stress by helping people to cope better, then it may help to prevent the development of depression or speed the attenuation of a depressive episode and/or depressive symptoms. Alternatively, R/S beliefs may also create high standards that are difficult to live up to, resulting in a sense of failure and guilt. Furthermore, those unable to live according to these standards may face rejection from their faith community, resulting in social isolation. To what extent R/S helps to buffer against depression and speed its remission or serves to bring on depression or complicate its course has been studied using research methods within the social and behavioral sciences. The purpose of this review is to summarize quantitative research on the religion-depression relationship, including randomized clinical trials that have examined the effects of religious interventions on depression. Knowing about this research will help clinicians decide whether religious beliefs of patients are a resource or a liability.

2. Definitions

First, however, we briefly define how we are using the terms religion and spirituality in this paper. Space here does not allow a full discussion of this complex and controversial issue, so we refer the reader to other sources [11–13]. We present here abbreviated versions of the definitions presented in the *Handbook of Religion and Health*.

> Religion involves beliefs, practices, and rituals related to the transcendent, where the transcendent is God, Allah, HaShem, or a Higher Power in Western religious traditions, or to Brahman, manifestations of Brahman, Buddha, Dao, or Ultimate Truth/Reality in Eastern traditions. . .Religion is a multidimensional construct that includes beliefs, behaviors, rituals, and ceremonies that may be held or practiced in private or public settings, but are in some way derived from established traditions that developed over time within a community [14]. . .

> Spirituality is distinguished from all other things—humanism, values, morals, and mental health—by its connection to that which is sacred, the transcendent. . .Spirituality includes both a search for the transcendent and the discovery of the transcendent, and so involves traveling along the path that leads from non-consideration to questioning to either staunch non-belief or belief, and if belief, then ultimately to devotion, and finally, surrender [14].

Since we are discussing research, we use the terms religion and spirituality interchangeably (R/S) for two reasons. First, there is similarity between the terms, which both involve a relationship to the transcendent. Second, whenever spirituality has been assessed using measures not contaminated by items assessing mental health (well-being, peacefulness, meaning and purpose, connectedness to others, etc.), spirituality has been assessed using questions measuring religion [15, 16].

3. Review of the Research

The following summary of the research findings is based on two systematic reviews conducted in 2001 and 2010 and covers a period spanning between 1962 and 2010. Every study referred to in this review is annotated and described in the appendices of two editions of the *Handbook of Religion and Health* (and for an expanded discussion of this research, which we only briefly summarize here, see the chapters focused on this topic in the *Handbook)* [17, 18].

The systematic review was conducted as follows. Computer literature searches using Medline and PsychInfo databases were conducted to systematically identify studies on the depression-religion relationship by entering the search words "religion," "religiosity," "religiousness," and "spirituality," and cross-referencing these with the search term "depression." The studies' abstracts were then examined to determine if they were qualitative or quantitative. Qualitative studies were excluded, as were those with samples sizes less than 15 unless they were experimental studies. In this manner, 444 studies were identified that quantitatively measured religious involvement or spirituality; not included here are studies of religious affiliation, which are reported separately (see below). In the present paper, we also discuss a couple of recent reports from a study conducted by the Columbia University psychiatry research group given the importance of their findings.

3.1. Religious Affiliation. Given its superficial nature, religious affiliation is a poor indicator of degree of religious involvement or commitment. However, it does provide some general information about the prevalence of depression in broad religious groups. In general, people of Jewish descent,

Pentecostals, and those with no affiliation experience higher rates of depression than other religious groups. Higher rates of depression in people of Jewish descent, particularly those who are not actively religious, have been documented in both cross-sectional and longitudinal studies [19–21]. A variety of factors may explain why people of Jewish descent at least appear to be at higher risk. One reason may be the selective reporting of depressive symptoms. In other words, people of Jewish descent may be more likely to report depressive symptoms and seek help from mental health professionals rather than turn to maladaptive means of coping with emotional pain (e.g., people of Jewish descent also demonstrate lower rates of alcohol abuse [22]). Depression rates appear highest in Jewish people of Eastern European decent, and there has long been speculation that genetic factors may contribute to depression (melancholia agitata Hebraica) among Eastern European Jews [23]. However, Glicksman in studies examining response styles suggests that Jewish people of Eastern European descent are much more likely than Irish or Italian Catholics to express negative affect [24].

Higher rates of depression in Pentecostals may be due to people with emotional problems self-selecting themselves into Pentecostal groups because of the latter's strong focus on overcoming emotional problems (many uplifting hymns, strong emphasis on socialization, and positive content of sermons) [25]. Another reason may be the strong emphasis placed on evangelism by Pentecostals, leading to drawing of members from lower socioeconomic groups that may be at high risk for depression and other mental illnesses [26].

Higher rates of depression in those lacking a religious affiliation may be due to the absence of social support from a faith community or lack of commitment to a belief system that makes sense of traumatic events and difficult life stressors. The nonaffiliated may, however, have alternative sources of support from nonreligious communities and secular belief systems that compensate for lack of religious connections. Furthermore, even those without a formal religious affiliation may nevertheless hold quite devout religious beliefs that are expressed in nonorganizational ways.

3.2. Religious/Spiritual Involvement. Rather than simply focusing on affiliation, however, we are particularly interested in the relationship between level of R/S involvement (e.g., importance of belief, degree of commitment, and amount of time spent in religious activities) and depression. As noted above, at least 444 original quantitative studies examined the relationship between R/S and depression or the effects of R/S intervention on depression between 1962 and 2010. Of those, there were 414 observational studies and 30 clinical trials (Table 1). Overall, of the 444 total studies, 272 (61%) found less depression, faster recovery from depression, or a reduction in depressive symptoms in response to an R/S intervention, whereas 28 studies (6%) found the opposite.

Rather than simply present the results for all studies regardless of design or quality, the methodological rigor for each study was rated on a scale from 1 to 10 based on a scheme adapted from Cooper [27]. Cooper emphasized the definition of variables, validity, and reliability of measures, how representative the sample was, quality of the research methods, how well the execution of the study conformed to the design, appropriateness of statistical tests, and the interpretation of results. Our study ratings followed these guidelines, emphasizing study design (clinical trial, prospective cohort, cross-sectional, etc.), sampling method (random, systematic, or convenience), number of R/S measures, quality of R/S measures, quality of mental health outcome measure, contamination between outcome and R/S measures, inclusion of control variables, and quality of the statistical analyses. This method was tested for interrater reliability in a subgroup of 75 studies (examining relationships between R/S and depression, as well as between R/S and other mental and physical health outcomes) [17]. Direct correlation between two separate raters (Pearson's r) was 0.57. The Kappa statistic of agreement for categorizing studies as higher quality (ratings of 7 or higher) versus lower quality (ratings less than 7) was 0.49 (indicating good interrater agreement [28]).

Of the 444 studies, 178 (40%) were rated 7 or higher on the 1-to-10 scale. Of these methodologically more rigorous studies, 119 (67%) found less depression, faster recovery, or greater responsiveness to R/S interventions, whereas 13 studies (7%) reported the opposite. Thus, overall, 61% of studies find less depression among the more religious, and as the quality of the study increases, this proportion remains the same or increases slightly (67%). These findings are similar to those of a meta-analysis conducted by Smith and colleagues that was published in 2003 [29], which examined findings on the religion-depression relationship using data from 98,975 subjects involved in 147 studies. The average effect size (correlation) was small ($r = -0.10$) but consistent and could not be explained by gender, age, or ethnicity. Furthermore, the size of the effect was equivalent to the effect of gender on depression based on similar meta-analyses (and certainly gender is considered a major risk factor for depression). Interestingly, studies that included subjects experiencing high levels of stress found the buffering effect of religious involvement was 50% stronger ($r = -0.15$).

More recently, psychiatric epidemiologists at Columbia University have examined whether religiosity protects against depression in high risk individuals [30]. Investigators reported results from a 10-year prospective study of 114 adult offspring of depressed ($n = 72$) and nondepressed parents ($n = 42$). Religious measures at baseline were personal importance of religion or spirituality, frequency of attendance at religious services, and denomination. The outcome was the presence of major depression at the 20-year follow-up (10 years after religious measures were assessed). After controlling for the covariates gender, age, history of depression, and risk status (based on parental depression), those who indicated that religion or spirituality was highly important to them were 73% less likely to be depressed (OR = 0.27, 95% CI = 0.07–1.08, $P = 0.06$, trend). In the low-risk group without a history of depressed parents, religious variables did not predict the presence of depression at follow-up. However, in those at high risk due to parental depression, those indicating at baseline that religion or

Table 1: Systematic review on depression and religiosity/spirituality (1962–2010).

	Observational studies			
	Cross-sectional	Prospective	Clinical trials	Total (column)
Findings	*N* (%)	*N* (%)	*N* (%)	*N* (%)
Inverse (−)/improved	214 (62)	39 (56)	19 (63)	272 (61)
Positive (+)/worse	19 (6)	7 (10)	2 (7)	28 (6)
Mixed or no association	111 (32)	24 (34)	9 (30)	144 (32)
Total *N*	344 (100)	70 (100)	30 (100)	444 (100)

spirituality was highly important to them were 90% less likely to have major depression (OR = 0.10, 95% CI 0.01–0.92).

In a second report from this study, where the sample was expanded from 114 to 185 participants, investigators examined differences in relationships between R/S and future depression episodes based on level of exposure to negative life events (NLE) [31]. All analyses were controlled for age, gender, denomination, history of depression, and history of parental depression. In the overall sample, increased religious attendance predicted a 49% lower likelihood of mood disorder (OR = 0.51, 95% CI 0.30–0.87) and 53% lower likelihood of any psychiatric disorder (OR = 0.47, 95% CI 0.29–0.79). Attendance also reduced the effect that parental depression had on mood disorder (interaction OR = 2.13, 95% CI 1.14–3.97) and on any psychiatric disorder (interaction OR = 1.81, 95% CI 0.96–3.41, $P < 0.07$, trend). Most important, however, was the interaction found with NLEs. For high risk participants (those with depressed parents) with high exposure to NLEs, religious attendance reduced the likelihood of major depression on follow-up by 76% (OR = 0.24, 95% CI 0.06–0.94), any mood disorder by 69% (OR = 0.31, 95% CI 0.09–1.00), and any psychiatric disorder by 64% (OR = 0.36, 95% CI 0.11–1.17, $P < 0.10$, trend). Importance of religion/spirituality also reduced the odds of mood disorder in this group by 74% (OR = 0.26, 95% CI 0.07–0.94).

These latter reports underscore the role that R/S involvement may play in protecting those at high-risk for depression because of a family history of depression, the presence of negative life events, or both.

4. Suicide

The findings from research on R/S and depression are also consistent with research on the relationship between R/S and suicide. Depression is a well-established risk factor for suicide. Indeed, depression—along with anger, need for control, and impulsiveness—is psychological state often associated with suicide attempts and completed suicide [32]. Substance abuse is another factor, along with life stressors. One study of suicide in Finland (which has some of the highest suicide rates in the world) found that recent life events were documented in 80% of suicides [33]. If R/S involvement is related to less depression, less anger and hostility, lower rates of substance abuse, greater social support, and better coping with stress, it should not be surprising that R/S is also related to less suicide. A systematic review of this literature, presented in the 2001 and 2012 editions of *Handbook,* identified 141 studies that examined the relationship between R/S and completed suicide, attempted suicide, or attitudes toward suicide. Of those, 106 (75%) found inverse relationships (39 of the 49 highest-quality studies or 80%) [34]. Only 4 of 141 (<3%) studies found more suicide attempts, completed suicide, or positive attitudes toward suicide among people with more R/S involvement. Thus, research findings for both depression and suicide reinforce the notion that R/S involvement may serve as an important resource for some individuals at risk for depression and its most feared consequence, suicide.

5. Reasons for Less Depression and Suicide

The majority of studies (61%) find less depression or faster recovery from depression for those who are more R/S or a better response to an R/S intervention compared to other treatments or controls. Even a higher percentage of studies (75%) find inverse relationships between R/S and suicide attitudes, attempts, and completed suicide, and <3% find the opposite. Why is this so? We already discussed the possibility that R/S involvement may help persons to cope better. This has been reported in hundreds of both quantitative and qualitative studies where individuals enduring stressful life circumstances are asked what enables them to cope with the stress [35, 36]. For example, in one study of 330 consecutively hospitalized patients to the general medicine, cardiology and neurology services of Duke Hospital, when asked an open-ended question about what enabled them to cope with the stress of their illness, 42% spontaneously reported that it was some aspect of religious faith or activity [37]. Furthermore, R/S has been shown to predict a faster speed of remission of depression in at least three studies of hospitalized patients experiencing the stress of medical illness [38–40].

Besides helping people to cope better with life stressors, R/S involvement may reduce the likelihood that stressors will happen in the first place. Daily decisions that involve choices on how to treat others (generosity, altruism, gratefulness, and forgiveness), lifestyle practices (marital fidelity, delinquency or crime, and school performance), and health behaviors (use of alcohol, use of drugs, and disease prevention activities) may influence the psychosocial or physical stressors that a person has to deal with. Since R/S involvement has been associated with greater altruism, gratefulness, forgiveness,

marital satisfaction, less delinquency/crime, better school performance, less substance abuse, and more disease prevention activities [14], it would make sense that this should result in fewer life stressors. Further, social support has been known to buffer against depression and suicide in a wide range of studies and populations since the mid-1970s [41, 42] and is likely one way that R/S helps people to cope with life stressors. A strong support system involving friends and family is a powerful resource for those facing difficult circumstances out of their control. In the *Handbook*'s systematic review of research on R/S and social support, 82 percent of quantitative studies (61 of 74) reported significant positive relationships between the two [14].

R/S involvement has also been associated with positive emotions, such as greater life satisfaction, well-being, hope, optimism, and meaning and purpose in life, feelings which help to neutralize the negative emotions that underlie depression and suicide. The *Handbook*'s systematic review found links with R/S in 256 of 326 studies (79%) on well-being/life satisfaction, 29 of 40 studies (73%) on hope, 26 of 32 studies (81%) on optimism, and 42 of 45 studies (93%) on meaning and purpose [14]. Thus, these constructs should be reflected in the associations between R/S involvement, depression, and suicide.

6. Reasons for More Depression

In some populations, however, it appears that R/S involvement is related to higher rates of depression. This is particularly true for religious persons who are struggling with family issues related to child problems, marital problems, abuse, or caregiving issues (R/S is more likely to be inversely related to depression in those dealing with more external problems related to finances or health issues) [43]. Failure in family life, an area of particular importance to highly religious persons because of its emphasis by religious traditions, may predispose to higher levels of guilt and greater depression.

Several high-quality studies (methodology ratings of 7 or higher on a 1-to-10 scale) published since the year 2000 have found a positive link between R/S and depression in various other settings. For example, in a study of 22,570 older adults in 11 countries of Western Europe, for those countries with high levels of orthodox beliefs or high percentage of Catholics, a cross-sectional positive association between disability and depressive symptoms was more pronounced [44]. Likewise, a 2-year prospective study of depressive symptoms in 219 couples from The Netherlands who had suffered the loss of a child, those with a religious affiliation were significantly more likely to experience depression than those without a religious affiliation [45]. Given the high value that religion places on family and children, the loss of a child may be more distressing and associated with more depression, as other research has suggested [46]. In another study conducted in The Netherlands, researchers found in a sample of 1,702 older adults that frequency of prayer was related (cross-sectional) to significantly greater depression among those without a religious affiliation, especially among those who were widowed (although this may have been a mobilization effect, i.e., people praying because they feel down) [47].

In a study conducted in Providence, Rhode Island, religious attendance and major depression were examined in a sample of 718 participants (mean age 34). Among men ($n = 438$), cross-sectional analyses revealed that those not attending religious services were 44% less likely to have major depression; in fact, compared to men who attended religious services both during youth and currently, those who changed their frequency of attendance (most of whom stopped attending) were at even lower risk of depression (OR = 0.50, 95% CI 0.31–0.83) [48]. Finally, a clinical trial examined the effects of manual-guided spiritual direction (SD) on depressive symptoms in 60 adults following inpatient detoxification for substance abuse (New Mexico). Subjects were randomly assigned to either a spiritual direction intervention or to a treatment as usual control (TAU) group that received behavioral counseling and education. At 4-month follow-up, depressive symptoms were significantly higher in the SD group compared to the TAU group ($t[37] = -3.93$, $P < 0.001$), although the difference disappeared at 8 and 12-month follow-ups.

Thus, among those with family problems, those living in Catholic countries in Europe with orthodox beliefs, couples in The Netherlands experiencing bereavement, older widowed European widows without a religious affiliation, young men from Providence Rhode Island, and psychiatric inpatients with substance abuse problems, R/S involvement appears to be associated with a greater risk of depression. Four of the six studies above were cross-sectional (preventing causal inferences), although one was prospective (but examined religious affiliation only) and one was a well-designed clinical trial. In some of the studies above, it is likely that guilt may have been aroused by R/S involvement and could help to explain some of the association. In other cases, religious involvement may have been an indicator of stress in populations characterized by low religious involvement, where turning to religion only occurs when stress levels are high and people are particularly desperate (i.e., mobilization effect).

7. Clinical Applications

If R/S is generally related to less depression (and suicide) and predicts a faster remission from depression over time, then could this information be of use to clinicians? Indeed, a number of randomized clinical trials have examined whether utilizing patients' R/S resources in therapy may help to speed the resolution of depression. Evidence of this sort, and the development of R/S forms of psychotherapy for depression, might increase access to therapy for many depressed persons who consider R/S important in their lives, yet fear seeking secular therapy because they are concerned that their R/S beliefs will not be respected. This has been a major barrier to R/S persons seeking professional help since time of Freud [49] and such negative attitudes have not changed much [50, 51]. A recent national survey of USA psychiatrists found that 56% never, rarely, or only sometimes inquire

about religious/spiritual issues in patients with depression or anxiety, and when inquiry does occur, it often is done in the context of R/S as a cause for the psychopathology [52, 53].

Furthermore, pastoral counselors, chaplains, and even community clergy could use such therapies to help many R/S persons that they seek to help. A poorly known fact is that community clergy spend on average about 15% of their time counseling at the local level [54]. Considering that there are over 300,000 clergy in the USA alone (not including the activities of nearly 100,000 full-time nuns or chaplains), this means more than 140 million hours of therapy is provided by clergy each year—equivalent to the entire membership of the American Psychological Association providing 33 hours/week of counseling [54]. Clergy, then, are often on the front lines of mental health care but seldom receive the training to do so. Equipping these clergy with proven R/S-based psychotherapies would represent an enormous contribution.

In fact, there are several randomized clinical trials already completed that demonstrate benefit using religious or spiritually integrated psychotherapies for depression. For example, researchers examined the effectiveness of religious (Christian) cognitive-behavioral psychotherapy (RCBT) compared to conventional CBT (CCBT), ordinary pastoral counseling (PCT), and a wait-list control condition (WLC) in the treatment of depressed religious patients [55]. Fifty-nine subjects were randomized to these four groups and received 18 therapy sessions over 3 months. Only those in the RCBT condition experienced significantly lower immediate posttreatment depression scores (Beck Depression Inventory or BDI) compared to WLC. RCBT and PCT also showed trends toward lower posttreatment Hamilton Depression Rating Scale scores compared to WLC. Finally, RCT resulted in significantly better social adjustment scores (SAS) compared to the WLC ($P < 0.001$).

Furthermore, at least two randomized clinical trials have found that psychotherapy supplemented with teachings from the Koran and Islamic prayer was effective in treating depression ($n = 64$) and bereavement ($n = 30$) among religious Muslims in Malaysia, compared to traditional therapy [56, 57]. Since the year 2000, at least 22 clinical trials or experimental studies have examined the effects on depressive symptoms, including meditation, religious forgiveness therapy, mantra chanting, spiritual coping therapy, spiritual-focused therapy, spiritual history taking, a spiritual teaching program, 12-step spirituality program, spiritual direction, and a variety of other psychospiritual interventions, of which nearly two-thirds (63%) reported significant benefits [58]. A relatively recent meta-analytic review by Smith and colleagues found between-treatments effect size of 0.51 overall and 0.96 for studies which assessed for positive as well as negative outcomes [59]. Another independent review of this research by other investigators has recently confirmed the role that R/S could play in the treatment of depression and other psychiatric disorders as well [60].

Finally, there is also evidence that use of R/S therapies for depression does not have to be restricted to R/S therapists. Rather, these therapies can be delivered by secular therapists as well, sometimes even more effectively than by R/S therapists [55, 61].

8. Conclusions

There are certainly many factors that influence the risk of depression besides R/S, including genetic, developmental, and environmental factors. However, in the majority of studies, everything else being equal, R/S involvement is related to less depression, particularly in the context of life stress. The systematic review discussed above indicates many more studies show possible benefits from R/S compared to those that show possible harm (61% versus 6% of studies). Nevertheless, a number of high-quality studies show that R/S involvement may increase the risk of depression in certain populations (those with family problems) or may worsen the prognosis of depression (a single study in substance abusers). Interventions that utilize the R/S beliefs of patients have been tested in randomized clinical trials and shown to reduce depressive symptoms, and clinical trials are now examining the effects of religious psychotherapy against standard therapies [62]. R/S involvement appears to be related to depression in one way or another. Given the worldwide prevalence of both R/S and depression, the frequent use of R/S as a coping behavior and reported effectiveness, and the serious disability that depression causes, researchers and clinicians need to better understand how R/S impacts mental health and vice versa.

Conflict of Interests

The authors have no conflicts of interest.

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Research Article

Late-Life Depressive Symptoms, Religiousness, and Mood in the Last Week of Life

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Aim of the current study is to examine whether previous depressive symptoms modify possible effects of religiousness on mood in the last week of life. After-death interviews with proxy respondents of deceased sample members of the Longitudinal Aging Study Amsterdam provided information on depressed mood in the last week of life, as well as on the presence of a sense of peace with the approaching end of life. Other characteristics were derived from interviews with the sample members when still alive. Significant interactions were identified between measures of religiousness and previous depressive symptoms (CES-D scores) in their associations with mood in the last week of life. Among those with *previous* depressive symptoms, church-membership, church-attendance and salience of religion were associated with a greater likelihood of depressed mood in the last week of life. Among those *without* previous depressive symptoms, church-attendance and salience of religion were associated with a higher likelihood of a sense of peace. For older adults in the last phase of life, supportive effects of religiousness were more or less expected. Fore those with recent depressive symptoms, however, religiousness might involve a component of existential doubt.

1. Introduction

One important aspect of religion is how it may guide people through questions about the end of life. For some religious believers, it is clear that death only implies a transition. Others are less convinced, and may doubt about the existence of a transition, or about the conclusion of a judgement on their moral behaviour. In a previous study, we focused on the role of religiousness with respect to aspects of mood in the last week of life, as observed in a sample of older adults in The Netherlands [1]. Several aspects of religiousness were included, but none of them was associated with depressed mood in the last week of life, as reported by surviving relatives. Nonetheless, church attendance earlier in life predicted a "sense of peace" with the approaching end of life. Therefore, only modest support was found for the adaptive potential of religion in the last week of life. A possibly maladaptive aspect was not identified in this first report. Furthermore—although the analyses were adjusted for effects of previous depressive symptoms—the first study did not focus on those who were prone to depression during their lifetime.

The Netherlands represents a highly secularized country, but the older generation has still grown up in a society in which religious traditions had a prominent role, and many older people still endorse religious beliefs [2]. An ongoing debate in The Netherlands, especially among psychologists of religion and mental health professionals, is about the question whether religious beliefs, instead of giving support, may provoke depressive symptoms, such as feelings of guilt [3]. Indeed, for older people with a depressive syndrome, feelings of guilt were more often reported for the Calvinist Protestants and Roman Catholics, compared to nonchurch members [4]. The same was true for complaints of psychomotor inhibition, especially among depressed Protestants, but

among the nondepressed, there were no denominational differences in guilt or psychomotor inhibition. Therefore, the relationship between facets of religiousness and mood seems to differ between the depressed and the nondepressed.

The last phase of life may follow different trajectories, such as with a gradual or rapid physical decline, and the mental demands will vary across the different types of illness. The last phase of life is characterized by inevitable adjustments for many older adults. There is a large need of informal and formal care, and many have to face a transfer to a different living environment [5]. In a recent study from the US, Hui and colleagues described fairly high levels of spiritual distress (such as feeling despair and brokenness, from an existential point of view) among patients with advanced cancer [6]. As expected, spiritual distress was associated with depression.

On the other hand, several studies among terminally ill patients showed associations between Spiritual Well-being Scale scores and lower levels of psychological distress [7, 8]. As some content overlap may occur between spiritual well-being and emotional well-being (or its reverse, psychological distress), these studies included statistical adjustment for depressive symptoms. Which aspects of religiousness and spirituality specifically determined the association with psychological distress in the terminally ill is difficult to say because the measure of spiritual well-being combines several aspects. One study included the belief in a hereafter as a distinct variable, and this was associated with lower levels of hopelessness, but not with feelings of anxiety or depression [9]. A complementary finding by Van Laarhoven and colleagues, in a small sample of advanced cancer patients, was the association of an explicit agnostic perspective on death and afterlife with higher levels of hopelessness [10]. The authors also described a negative association, but only at a nonsignificant level, between an explicit religious attitude and depression. In a palliative care study, a significant negative association with depression or anxiety disorder was found for church-attendance, but not for religious affiliation, prayer, or subjective religiousness [11].

With respect to the association between religiousness and the course of depression, several studies (from the US, Netherlands, and Australia), have shown that intrinsic religious motivation (or salience of religion) was associated with a quicker remission of the depression [12]. Findings in the literature about the association between church-attendance and the course of depression are however less consistent [13].

Clinical experience and epidemiological evidence have made clear that depression and depressive symptoms (or "subthreshold" depression) tend to recur, and for a minority, to persist, also in later life [14–16]. Therefore, the best predictor of depression is previous depression, and likewise, we expect that the vulnerability to depression will also predict depressed mood in terminal patients. With respect to the possible role of religiousness in this last phase of life, little is known about how an existing vulnerability to depression interferes with supportive or undermining effects of religiousness.

The current, population-based study focuses on relationships between aspects of religiousness and mood in the last week of life, as reported by surviving relatives of deceased sample members of the Longitudinal Aging Study Amsterdam (LASA) [17]. Information on religiousness was also obtained from the LASA respondents who were interviewed during lifetime about several aspects of religious life, as well as about depressive symptoms. In our previous study, we found that previous depressive symptoms predicted depressed mood, anxiety, and lack of sense of peace in the last week of life [1]. The current study aims to examine whether previous depressive symptoms modify associations between aspects of religiousness and mood in the last week of life, either giving way to a supportive potential of religiousness (e.g., for salience of religion), or to maladaptive effects (e.g., for certain convictions such as belief in hell).

2. Methods

2.1. Sample. The Longitudinal Aging Study Amsterdam (LASA) is an ongoing interdisciplinary study on predictors and consequences of changes in autonomy and well-being in the aging population. The LASA cohort is based on a nationwide random sample of older adults between the ages of 55 and 85, stratified for age, sex, and expected mortality five years into the study. Registries of 11 municipalities in areas in the West (mostly secularized, including Amsterdam), North-east (predominantly Protestant), and South (predominantly Roman Catholic) of The Netherlands provided the sampling frame [18, 19]. The realized number of respondents in the LASA baseline interview cycle in 1992/1993 amounted to 3,107. Respondents were interviewed in their homes by intensively supervised interviewers. Three years later, in 1995/1996, all respondents were approached for the T2 interview cycle. The participation rates and numbers of decedent respondents are shown in Figure 1. Between T2 and T3 (1998/1999), 342 respondents died. The database of LASA contains contact information about two persons close to the sample member, such as the partner, a child, sibling, or other person who had had close contact. Wherever possible, one proxy respondent was selected, who had been involved in the last three months of the sample member, and who was willing and able to participate. The proxy respondent was approached with a letter with information on the study, followed by a telephone call, to make an appointment for the interview, which was held in the home of the proxy respondent. This research method is known in the literature as "retrospective/after-death approach" or "proxy interview" [20]. The number of proxy respondents amounted to 270, mainly children (50%) and spouses (33%) of the sample members.

2.2. Measures

2.2.1. Mood in the Last Week of Life. The interview with the proxy respondent included a one-item question on whether the sample member showed feelings of depression in the last week of life. Scores were 0 (absence of depressed mood) or 1 (presence of depressed mood). Furthermore, the proxy respondents were asked to estimate whether the sample member experienced a sense of peace with the approaching

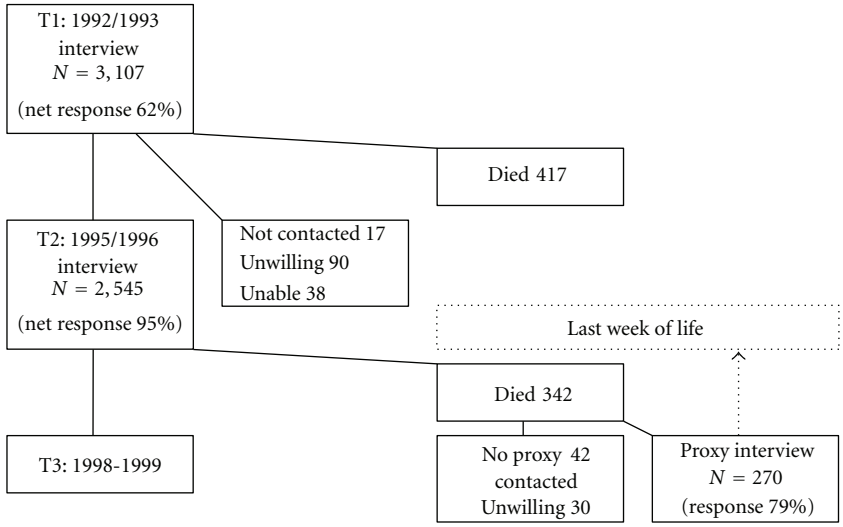

Figure 1: Flowchart of sampling times of the proxy interviews of deceased respondents of the Longitudinal Aging Study Amsterdam between T2-T3.

end of life. This was scored as 0 (sense of peace-absent) or 1 (sense of peace present).

2.2.2. Religiousness. Data on *religious affiliation* and *church attendance* were obtained during the first assessment cycle of LASA. Religious affiliation included: Protestant, Roman Catholic, and nonreligious affiliation. The Protestant group consisted of several denominations, but most with origins in the Reformed/Calvinist protestant tradition. The religious affiliation of the parents was also asked, and was coded as: (1) both parents and sample member affiliated; (2) parents affiliated, sample member not affiliated (first generation secularized); (3) neither parents nor sample member affiliated (second generation secularized). Church-attendance was assessed using five response categories, ranging from "once a year or less" (1) to "once a week or more" (5).

The second LASA assessment cycle contained questionnaires on orthodox religious beliefs and salience of religion. The level of adherence to traditional (Christian) religious beliefs was assessed at T2 by the Orthodoxy Scale, which has been regularly used in studies by the Dutch Social and Cultural Planning Office (SCP) [2]. Doctrines included are (asked as "Do you believe in"): life after death, heaven, purgatory, hell, the devil, the actual existence of Adam and Eve, and the Bible as God's word. Answer could be "yes" (score = 1) or "no" (score = 0), yielding a score range of 0–7 (Cronbach's alpha 0.86).

Salience of religion was assessed using two items of a religious salience scale [21]: "My religious faith/philosophy of life has a pronounced impact on my daily life" and "When I take important decisions, my religious faith/philosophy of life plays a considerable role." Response categories range between "totally disagree" (0) to "totally agree" (5). Salience of religion was also probed in the proxy interview, using the same items ("Salience-according-to-proxy").

2.2.3. Previous Depressive Symptoms Assessed in the LASA Respondent Interview. Depressive symptoms were measured using the Center for Epidemiologic Studies Depression Scale [22]. Subjects were asked how often they experienced each of 20 symptoms during the previous week. The response categories ranged from 0 ("rarely or none of the time") to 3 ("most of or all the time"), yielding a score range of 0 to 60 (Cronbach $\alpha = 0.83$). A CES-D score of 16 or higher has generally been used as indicative for clinically relevant depressive symptoms, including both minor or subthreshold depression and major depression [23, 24]. Therefore, in the stratified analyses, this cutoff was applied.

2.2.4. Covariates from the LASA Respondent Interview. Demographic characteristics of the sample member included age of death, sex, education in years, and marital status (married versus widowed, divorced, or never married).

The number of *major chronic diseases* was assessed at T2, by explicitly asking the respondents whether or not they had or had had any of the following seven conditions: chronic lung disease, cardiac disease, peripheral artery disease, stroke, diabetes mellitus, arthritis, and cancer [25].

2.2.5. Covariates from the Proxy Interview

Physical State. The proxy respondents were asked about the presence of serious physical symptoms in the last week of life of the sample member: fatigue, pain, shortness of breath, confusion, and nausea and/or vomiting. Responses (0 "no" and 1 "yes") were summed to obtain a symptom burden score (range 0–5).

Cognitive change between the measurement in 1995/1996 and 3 months before death was assessed using the six-item short form Informant Questionnaire on Cognitive Decline in the Elderly [26]. For every item, the proxy respondent

answered on a five-point scale (range 1–5; Cronbach $\alpha = 0.93$). Higher sum scores indicate cognitive decline.

Time Intervals. The duration of the periods between the T2 interview and death, and between death and the proxy interview were included to adjust for any influence of time on the outcomes.

Whether the sample members had *expected death* and had been *aware of the approaching end* was estimated by the proxy respondents, with "yes," "no," or "more or less" as response categories. When both questions were answered with "yes," it is assumed that the sample member clearly realized the approaching end.

2.3. Statistical Procedure. In the previous paper, associations with the two outcome variables on mood in the last week of life—feeling depressed and sense of peace—were analysed for each of the religious variables, using logistic regression analysis, computing odds ratios (OR) and 95% confidence intervals (95% CI) [1]. Adjustment was made for the covariates with significant associations with the dependent variables, as was evident from prior bivariate and multivariate analyses (also carried out in the stratified subgroups of interest with and without previous depressive symptoms). As there was variation in item nonresponse between the variables, the maximal number of sample members was included in each of the analyses.

Modification of the association with the outcome variables was examined by including the product term between previous depressive symptoms as assessed on T2 (79%) or on T1 (21%, with missing scores at T2) and each of the religion variables in the subsequent logistic regression models. To avoid multicollinearity between first-order terms and product terms, product terms were formed by multiplying the centered (deviation from the mean) scores of both components [27]. The level of statistical significance was set at $P < 0.05$ for main effects, and at $P < 0.10$ for interaction effects, as the power of statistical tests for higher order terms is generally lower than for first order terms [27, 28]. To facilitate interpretation of the interactions, the associations between the religion variables and the outcome variables were examined using logistic regression analyses, adjusted for relevant covariates and stratified for two contrasting subgroups: those who had low levels of depressive symptoms at a previous assessment (CES-D score < 16) and those who had high levels of depressive symptoms (CES-D ≥ 16).

3. Results

3.1. Characteristics of the Sample. The majority of the sample (Table 1) was male, which is in accordance with the higher expected mortality among males. Mean age of death amounted to 80 years. About one-third was Protestant, one-third Roman Catholic, and one-third nonaffiliated. One-third of the sample members used to attend church on a weekly basis. As examples of items of the orthodoxy, 57% of the sample members reported to believe in heaven, and 30% reported to believe in hell. Salience of religion received higher scores by the sample members at T2, compared to the report by the proxy respondents. The Cohen κ for interrater agreement was fair for both salience items (.27 and .25). Depressed mood in the last week of life was reported for 28% of the sample members and sense of peace for 76%.

Bivariate associations between covariates and mood in the past week of life have been reported in the previous publication [1]. Depressive symptoms, assessed in previous LASA interviews, significantly predicted the presence of depressed mood in the last week of life ($t = -2.9$, $P = .005$), as well as the absence of a sense of peace ($t = 4.3$, $P = .000$). Neither the duration of the period between the T2 interview and death, nor the duration between death and the proxy interview had significant associations with depressed mood ($t = 0.6$, $P = .573$; $t = -1.1$, $P = .263$) or with sense of peace ($t = -0.7$, $P = .459$; $t = 0.2$, $P = .869$). These time periods did not significantly interact with depressive symptoms assessed in the previous LASA interview and depressed mood or sense of peace in the last week of life (results on request). Similarly, the type of relationship between the respondent and the proxy (whether or not this was the partner or child) did not interact with the association between depressive symptoms and mood in the last week of life (results on request).

Serious physical symptoms and cognitive decline were significantly associated with depressed mood in the last week of life ($t = -4.2$, $P < .001$, and $t = -2.6$, $P = .009$, resp.). In contrast, cognitive decline and higher age were positively associated with a sense of peace ($t = 2.0$, $P = .043$; $t = 2.3$, $P = .024$).

3.2. Interactions with Previous Depressive Symptoms. The results of the tests for interactions are shown in Table 2. For depressed mood in the last week of life, previous depressive symptoms significantly interacted with religious affiliation, church-attendance, and orthodox beliefs. For sense of peace, previous depressive symptoms significantly interacted with religious affiliation, church-attendance, and salience according to proxy. The nature of the interactions is illustrated using stratified analyses. Table 3 summarizes the associations between the religious variables and the proxy's reports on depressed mood and sense of peace in the last week of life, both for those who had high and low CES-D scores at an earlier assessment. Two main patterns emerge.

First, among those with previous depressive symptoms (CES-D ≥ 16), there was a significantly higher risk of depressed mood in the last week of life for those who were affiliated with a church, for those who attended church on a more frequent basis, and for those for whom religion was salient according to the proxy respondent. Although only at the level of a statistical trend, the same was found for those with higher orthodoxy scores. No significant association was found between salience of religion and depressed mood in the last week of life.

The second pattern pertains to the other outcome, sense of peace in the last week of life. Here, for those *without* previous depressive symptoms (CES-D < 16), there was a higher chance on a sense of peace for those who used to go to church on a regular basis, and for those for whom religion was salient according to the proxy respondent.

Table 1: Characteristics of deceased sample members of the Longitudinal Aging Study Amsterdam (LASA) between 1995 and 1998.

	n	Range	Mean	(SD)	%
Sex (% female)	270				38.1
Age of death	270	59–91	80.4	(7.5)	
Time interval: last respondent interview–death (days)	269	8–1321	589	(330)	
Time interval: death proxy interview (days)	270	131–1479	789	(316)	
Last respondent interview					
Marital state (% married)	263				47.1
Education (years)	263	5–18	8.6	(3.4)	
Number of major chronic diseases	270	0–7	1.6	(1.2)	
Depressive symptoms (% ≥16) [n = 56 at T1, n = 211 at T2]	267	0–44	10.4	(8.6)	21.7
Religious affiliation	270				
Protestant					31.9
Roman Catholic					28.9
Other					1.5
Nonaffiliated[(2)]					37.8
Church attendance in 1992 (LASA baseline interview)	270	1–5	2.7	(1.8)	
Orthodoxy scale	203	0–6	2.9	(2.3)	
Salience of religion, last interview with sample member	203	0–8	5.1	(2.1)	
Interview with proxy respondent					
Cognitive decline *according to proxy respondent* [(1)]	238	1–5	3.8	(0.8)	
Serious physical symptoms in the last week of life[(1)]	259	0–5	2.2	(1.3)	
Mood in last week of life *according to proxy respondent*					
Depressed mood	233				28.2
Sense of peace—absent	204				23.5
Salience of religion *according to proxy respondent*	268	0–8	3.5	(3.1)	
Expected death/aware of approaching end (both "yes", %)	270				53.0

[(1)] High scores indicate more problems.
[(2)] Among the nonaffiliated: one or both parent(s) affiliated 61% (n = 59) and both parents nonaffiliated 39% (n = 38) (9 had missing value).

3.3. Denominational Background. Additional analyses (Table 4) revealed that among those with previous depressive symptoms, the risk of depressed mood was, at trend level, somewhat more evident for Roman Catholics, compared to the nonaffiliated. Among those without previous depressive symptoms, affiliation showed a gradual increase in the likelihood of experiencing a sense of peace in the last week of life; compared to second generation secularized, the difference for the first generation secularized was not significant (OR 2.46), reached trend-level for Roman Catholics (OR 3.15), and was significant for Protestants (OR 3.52). The confidence intervals showed, however, a considerable overlap, indicating that the differences between the three denominational groups do not differ significantly.

4. Discussion

The current contribution focused on the role of religiousness in the association between previous depressive symptoms and mood in the last week of life. Information was partly obtained from interviews, as the sample members participated in a prospective population-based study, and partly from after-death interviews with relatives of the deceased sample members.

The previous report on these data showed that there were no significant associations between aspects of religiousness and depressed mood in the last week of life in the full sample [1]. However, the current study shows that among those with *previous* depressive symptoms in the last interview cycle (on average about two years before death), several aspects of religiousness were associated with an increased likelihood of depressed mood in the last week of life: church-attendance, (Roman Catholic) church-membership, and salience of religion (salience-according-to-proxy).

In contrast, among those *without* previous depressive symptoms, church-attendance, church-membership, and salience of religion (salience-according-to-proxy) were associated with a higher likelihood of a sense of peace with the approaching end of life. This sense of peace had the lowest reports among the nonchurch members with nonaffiliated parents (second generation secularized).

The finding that religiousness is associated with depressed mood in the last week of life for those who had previous depressive symptoms, at least at the level of

Table 2: Interaction effects between previous depressive symptoms and aspects of religiousness for mood (depressed mood or sense of peace) in the last week of life, according to proxy respondents; results of logistic regression analyses; results printed in bold are statistically significant.

	Depressed mood in last week of life (according to proxy) interaction with previous depressive symptoms (CES-D)[a]				Sense of peace with approaching end of life (according to proxy) interaction with previous depressive symptoms (CES-D)[b]			
	N	B (SE)	Wald	*P*	*N*	B (SE)	Wald	*P*
Church members versus nonaffiliated	216	**0.08(0.04)**	**3.8**	**.050**	192	**−0.13 (0.05)**	**7.9**	**.005**
Church attendance	218	**0.02 (0.01)**	**3.6**	**.058**	194	**−0.03(0.01)**	**6.8**	**.009**
Orthodox beliefs	162	**0.03 (0.01)**	**5.6**	**.018**	156	−0.01 (0.01)	0.2	.644
Salience of religion	163	0.01 (0.01)	0.3	.615	154	−0.01 (0.02)	0.5	.482
Salience according to proxy	217	−0.01 (0.01)	0.2	.650	193	**−0.01 (0.01)**	**3.4**	**.067**

[a] Adjusted for effects by physical distress (according to proxy respondent) and cognitive decline (according to proxy respondent).
[b] Adjusted for effects by age of death, physical distress (according to proxy respondent), and expectance of death/awareness of the approaching end (according to proxy respondent).

Table 3: Mood in the last week of life, as reported by proxy respondents of deceased sample members of the Longitudinal Aging Study Amsterdam between 1995 and 1998: associations with aspects of religiousness, stratified for previous depressive symptoms.

		Depressed mood in last week of life (according to proxy)[a]					Sense of peace with approaching end of life (according to proxy)[b]				
		N	Wald	*P*	OR	95% CI	*N*	Wald	*P*	OR	95% CI
Previously nondepressed	Church members versus nonaffiliated	171	0.1	.739	0.88	0.42–1.86	151	2.3	.129	1.92	0.83–4.45
	Church attendance [1–5]	173	0.0	.942	1.01	0.83–1.23	153	**4.5**	**.034**	**1.31**	**1.02–1.68**
	Orthodox beliefs [0–6]	131	0.1	.770	0.97	0.81–1.17	123	0.6	.433	1.08	0.89–1.33
	Salience of religion [0–8]	131	0.8	.360	0.92	0.76–1.11	124	1.3	.250	1.14	0.91–1.41
	Salience according to proxy [0–8]	173	0.1	.707	1.02	0.91–1.15	152	**4.1**	**.042**	**1.15**	**1.00–1.32**
Previously depressed (CES-D ≥ 16)	Church members versus nonaffiliated	45	**4.9**	**.028**	**9.05**	**1.28–64.02**	41	0.7	.412	0.51	0.10–2.56
	Church attendance [1–5]	45	**6.4**	**.011**	**2.32**	**1.21–4.44**	41	1.1	.300	0.79	0.51–1.23
	Orthodox beliefs [0–6]	32	*3.5*	*.060*	*1.58*	*0.98–2.55*	30	1.1	.299	1.24	0.83–1.86
	Salience of religion [0–8]	32	1.6	.207	1.41	0.83–2.40	30	1.8	.174	0.68	0.39–1.18
	Salience according to proxy [0–8]	44	**4.0**	**.046**	**1.40**	**1.00–1.93**	41	0.4	.540	0.92	0.70–1.20

Results printed in **bold** are statistically significant (*italics*: trend).
[a]Adjusted for effects by physical distress (according to proxy respondent) and cognitive decline (according to proxy respondent).
[b]Adjusted for effects by age of death, physical distress (according to proxy respondent), and expectance of death/awareness of the approaching end (according to proxy).

Table 4: Religious affiliation and mood in the last week of life, as reported by proxy respondents of deceased sample members of the Longitudinal Aging Study Amsterdam between 1995 and 1998: stratified for previous depressive symptoms.

		Depressed mood in last week of life (according to proxy)[b]					Sense of peace with approaching end of life (according to proxy)[b]				
		N	Wald	*P*	OR	95% CI	*N*	Wald	*P*	OR	95% CI
Previously nondepressed	Protestant[a]	57	1.4	.245	0.52	0.17–1.57	47	**4.3**	**.039**	**3.52**	**1.07–11.58**
	Roman Catholic[a]	58	0.0	.885	0.93	0.32–2.65	49	*3.8*	*.053*	*3.15*	*0.99–10.08*
	First-generation secularized[a]	29	0.1	.774	1.17	0.40–3.48	35	2.1	.144	2.46	0.74–8.25
	Second-generation secularized	17			1		21			1	
Previously depressed (CES-D ≥ 16)	Protestant[a]	15	0.5	.502	1.78	0.33–9.55	14	0.1	.718	1.47	0.18–11.72
	Roman Catholic[a]	11	*2.8*	*.095*	*4.67*	*0.77–28.47*	12	1.5	.220	0.27	0.04–2.11
	First-generation secularized[a]	11	0.0	.999	1.00	0.15–6.53	9	0.4	.518	0.50	0.06–4.09
	Second-generation secularized	11			1		7			1	

Results printed in **bold** are statistically significant (*italics*: trend).
[a]Reference group is second generation secularized (nonaffiliated respondents with nonaffiliated parents).
[b]Nonadjusted because of too low number of respondents; when adjusted as in Table 3, the results are slightly stronger but with problematic wide 95% CI's.

subthreshold depression, is appealing and raises the question what mechanism is at work. In discussing theories on death anxiety, Kastenbaum considers that death concern belongs to the core Christian conceptions [29]. He states that it is possible that Christian doctrine may intensify both anxiety, living in dread of judgment, and serenity, even with longing and impatience. Kastenbaum calls for more elaborate empirical research to understand the psychological and social key factors through which individuals and families come to terms with both the "dread" and the "welcome" of Christian death. The current results seem to offer empirical support for the existence of both positions.

Church-attendance showed the greatest contrast between those with and without previous depressive episodes. The level of orthodoxy of Christian beliefs showed a contrast as well, but was significant only at the level of a statistical trend in those with previous depressive symptoms. Thus, the cognitive (doctrinal) aspects of religiousness do not seem to represent the main explanation, whereas behavioural and motivational aspects (as measured with church-attendance and salience of religion) do come to the fore. The emotional facet, the feeling of being accepted by the deity, or abandoned, could be even more central. Especially feelings of abandonment by God are known to have high correlations with depression, and, hypothetically, may result in a deeper crisis when the belief in sustainment by the deity seems to be out of grasp [30]. Future research should also address the emotional facet of religiousness in this context.

In the current sample of older adults, there was still considerable membership of religious denominations, but the nonaffiliated represented a sizable group. About one-third of this group had nonaffiliated parents as well. The main impression is that the nonaffiliated had the least disadvantages (least depressed mood in the last week of life) in case of previous depressive symptoms. On the other hand, for those without previous depressive symptoms, the nonaffiliated who had nonaffiliated parents as well had the least advantages with respect to sense of peace. Perhaps, this group may no longer have access to the supportive aspects of religious faith, in contrast to the first generation secularised. It should however be noted that the denominational differences in the current study were statistically modest or even weak, because of small group numbers in the stratified analyses.

The contemporary society of The Netherlands should be characterized as highly secularized, and in younger samples, the first-generation secularized represents a large group. Some convictions and remnants of doctrines may persist, along with spiritual feelings, rituals, and new beliefs, such as feelings about reincarnation. With respect to the needs and strengths of secularized older adults when facing death, future research may include aspects of spirituality and other dimensions of meaning in life. For those who have been raised within a religious tradition, inclusion of measures of intrinsic and extrinsic religious motivation is warranted, as well as deeper inquiry into the contents of beliefs, to reveal which church doctrines and which motivations are more sustaining and supportive and which are more depressing.

Salience of religion as reported by the proxy respondent, but not salience as reported by the sample member, was associated with a sense of peace in the last week of life. One may therefore assume that the proxy respondents (especially the spouses) used to have similar religious beliefs and practices as the respondents had during their lives. On the one hand, the results from the current study might show how religiousness of the proxy respondent helped to cope with the loss of the relative. On the other had, the considerable degree of personal involvement of the proxy respondents may have influenced the results. The current study focuses, however, on effect modification by a variable that was assessed earlier in life: previous depressive symptoms. Apparently, the global assessment of mood in the last week of life by the proxy respondents did not prevent that more or less opposing results for the nondepressed and depressed still could be described.

One limitation of the current study is that mood in the last week of life was not directly observed in the respondents when they were terminally ill, but was assessed retrospectively. For the current sample, Klinkenberg and colleagues verified some information obtained from the proxy respondents with reports from physicians [31]. The proxy respondents seemed to provide accurate information with respect to chronic physical conditions. As Addington-Hall and McPherson (2001) point out in their review about the validity of after-death interviews, some studies provided evidence that there is little correspondence between the sample member and the proxy respondent about topics like depressed mood [32]. According to research on the concordance of patient and caregiver reports, both patient and caregiver depression were common predictors of disagreement [33]. Although the results of the current study closely examined for effects of previous depressive symptoms, further reasons for nonconcordance could not be ruled out. The same is true for recall bias by the proxy respondents, many of whom were interviewed after two years. An important concern regarding research about the end of life in the general population remains the difficulty of timely identification of respondents, and if they can be identified, few will be able or allowed to participate. Interviews with surviving relatives therefore will remain a source of knowledge about the last phase of life. Another limitation is that both outcomes consisted of one-item measures. One recommendation for future research is to examine the state of mood more fully. Meanwhile, psychometrically acceptable measures of the quality of the dying experience have become available, such as two versions of the quality of dying in long-term care instrument [34]. A related point is that the current study did not include measures on, partly overlapping, concepts such as spiritual distress, or death anxiety [6, 35]. Measures on emotional aspects of religiousness, spirituality, and secular sources of meaning in life may be included in further research.

The current results suggest that vulnerability to depression is an important aspect for the direction of the relationship between religiousness and mood in the last phase of life. It should be underlined that replication is desirable, both employing quantitative and qualitative research methods, before any recommendations can be done to professionals in

the field of palliative care. Recent guidelines and recommendations for the quality of spiritual care—as a dimension of palliative care—provide suggestions for screening questions to assess spiritual life in patients in palliative care, to keep an eye on spiritual distress or religious struggle, and how to integrate spiritual issues into the treatment plan [36]. Verifying the recent history of depressive symptoms may provide a cue to detect any religious struggle or other severe existential doubts, which may possibly represent an additional burden for those in the last phase of life.

Conflict of Interests

No competing financial interests exist.

Acknowledgments

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Research Article

A Pilot Survey of Clergy Regarding Mental Health Care for Children

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Collaborations between healthcare and faith-based organizations have emerged in the drive to improve access to care. Little research has examined clergy views on collaborations in the provision of mental healthcare, particularly to children. The current paper reports survey responses of 25 clergy from diverse religious traditions concerning mental health care in children. Subjects queried include clergy referral habits, specific knowledge of childhood conditions such as depression and anxiety, past experiences with behavioral health workers, and resources available through their home institutions. Overall, surveyed clergy support collaborations to improve childhood mental health. However, they vary considerably in their confidence with recognizing mental illness in children and perceive significant barriers to collaborating with mental health providers.

1. Introduction

As US healthcare costs continue to climb, large segments of the American population remain underserved. This is especially felt in the arena of behavioral health. In the struggle to improve access to care there has been a movement to form collaborations with faith-based organizations [1, 2]. However, much of this work has focused on medical illness, to the exclusion of behavioral health issues [3–6]. Mental health care, especially that for children, continues to be understaffed and patients underserved [7].

Collaborations between psychiatry and faith-based organizations pose unique problems [8]. The psychiatric establishment and religious organizations have historically viewed one another with suspicion and at times direct hostility [9, 10]. Religious organizations and clergy may be at odds with the medical establishment as to causes and proper treatment of such illnesses as depression and anxiety [11]. In some religious groups these maladies may be seen as stemming from a spiritual source rather than brain pathology [12].

Some research has emerged attempting to characterize the current relationship of psychiatry to the religious community. What little research is available on this topic largely relates to questions of adult mental health [11, 13, 14]. An analysis of the National Comorbidity Survey, a study of mental health in a large nationally-representative US sample, found that one-quarter of all respondents seeking mental health care sought this care from a clergy member [14]. The majority of those contacting clergy for mental health care in the last year saw no other providers. Nearly one-fourth of those contacting clergy for help met criteria for serious mental illness. Another study of urban and rural churches in the Southern US found that predominantly African-American churches provided more general health and mental health programs for their members than their Caucasian counterparts. Neither African-American or Caucasian churches had significant contact with or cross-referral with traditional healthcare agencies [10].

Despite evidence that a significant proportion of care for the mentally ill in America is provided by clergy, the literature on clergy views of mental health care and collaboration with mental health professionals is sparse. A 2007 paper by Leavey and colleagues reported on 32 interviews with male ministers, rabbi, and imams in the United Kingdom. A majority of respondents had received little or no training in mental health issues and felt low confidence in dealing with mentally ill members. Interviews indicated little specific knowledge of psychiatric disorders

and a significant tendency to interpret symptoms such as psychosis as spiritual problems [2]. A 2008 survey of Protestant ministers in Hawaii found similar results, with the majority of respondents feeling undertrained for recognizing mental illness [4]. Interestingly, when presented with clinical vignettes, 40% of those endorsing inadequate mental health training said they would personally counsel the patients rather than referring to traditional psychiatric services.

Attempts at rapprochement have been recently described. Training in spirituality and "cultural competence" have recently been added to education for psychiatric residents [15]. A 2012 report details an interdisciplinary training experience shared by psychiatric trainees and seminary students in South Carolina. Each group learned about the other's training and discussed barriers to and guidelines for collaboration. Pre- and postexperience surveys indicated an improvement in both groups opinion of the other's role in dealing with mental health problems [15].

Given that mental health services are severely lacking for children and adolescents, and that a large proportion of patients consult with clergy in preference to traditional mental health providers, collaborations with faith-based organizations to improve access to care should be explored. The following research study aimed to improve understanding of views of mental health care for children among clergy in the Southern United States. It also sought to assess this group's self-assessed understanding of childhood mental illnesses. Understanding the experience and attitudes of clergy toward mental health care can inform efforts to collaborate with faith-based organizations, which may ultimately improve provision of mental healthcare to US children.

2. Methods

The authors collected names of religious institutions across religions within a 25-mile radius of Durham, N C. 2010 census data from the US Census Bureau indicate that residents of this area are 43% Caucasian, 41% African-American, and 5% Asian. 14% are identified as of Hispanic or Latino origin.

Were the investigators able to obtain e-mail contact information for the institution, an e-mail was sent soliciting participation of the pastor or other institution leader in the anonymous online survey. This e-mail contained a link to the survey and a letter explaining the study aims and procedures. The survey was administered via Survey Monkey (http://www.surveymonkey.com/), a secure website. No identifying information was collected. The study was approved by the Duke University Medical Center Institutional Review Board.

A Likert-scale formatted questionnaire was created for the survey. Topics covered included questions related to perceptions of the need for mental health services among members; perceptions that clergy can influence their members with regard to seeking mental healthcare; to what degree clergy support referral of members to mental health services; clergy perceptions of their own knowledgebase regarding child mental health; opinions regarding collaboration; and barriers to collaboration with mental health professionals.

Clergy reported demographic information (race, religious tradition) as well as information about the size of their organization. A series of questions examined what healthcare resources were available within the respondent's religious organization. Due to the small proportion of respondents (23%) to this pilot survey, as well as the relative demographic homogeneity of respondents, rigorous statistical comparison was deemed inappropriate and results were assessed using descriptive statistics only.

3. Results

Results are displayed in Table 1. Of 108 survey invitations sent, 25 clergy responded and completed the online survey. Religious affiliations of the 108 institutions to which invitations were sent were as follows: Christian 91% (Protestant 83%, Catholic 7%), Jewish 6%, Muslim 2%, Hindu 1%, and other 1%. Religious affiliations of the 25 responders were as follows: Protestant Christians 86%, Jewish 7%, Hindu 4%, and Muslim 3%. Reported race of respondents was Caucasian 92%, African-American 4%, and South Asian or Indian 4%. Institutional size was quite varied, with 12% endorsing less than 100 members and 24% endorsing over 1000 members.

The majority of the sample (84%) agreed or strongly agreed that children in their institution were in need of mental health services. A majority also agreed or strongly agreed that the local community was in need of more mental health professionals caring for children. Most respondents (84%) felt that psychiatrists and psychologists had important roles in treating children, and nearly all stated that they would make a referral to a child psychiatrist if they thought it was needed.

Although the overall group endorsed openness to use of behavioral health services, 68% stated that they would prefer to personally counsel members rather than referring them to mental health professionals. 72% of polled clergy agreed that they held strong influence over the use of mental health services by their members; however, 60% disagreed that church members would ask them prior to seeking care from a mental health professional. A majority would support the use of psychiatric medication if recommended by a doctor, and most also supported the use of individual or family psychotherapy.

A series of questions queried the respondent's perception of his or her own knowledge about mental health in children. 60% agreed or strongly agreed that they felt knowledgeable about mental health disorders affecting children while 48% felt confident in their ability to recognize the need for mental health services for children. 76% endorsed knowledge of where to refer a child or family for mental health care.

The clergypersons were then asked about their perception of knowledge regarding specific psychiatric disorders in children. A slight majority felt they did not know enough about depression in children. A similar breakdown was seen for knowledge regarding anxiety disorders in children,

Table 1: Survey items and responses ($N = 25$).

Item	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)
Perceptions of need of mental health services in their congregation				
There is need for mental health (MH) services for children in my congregation.	16	68	8	8
My community needs more MH professionals to care for children.	36	40	16	8
Psychiatrists and psychologists have important roles in treating children.	40	44	12	4
I would prefer to counsel my members rather than refer them to MH professionals.	8	16	40	36
I would refer a child to a psychiatrist if I felt they needed it.	52	44	0	4
Perception of influence				
I have a lot of influence on whether my members seek MH services.	0	72	24	4
I support treatment with psychiatric medication if recommended by an MD.	20	76	4	0
I support a member seeking "talk therapy" from an MH professional.	29	58	13	0
I support a member seeking family therapy or counseling.	40	56	4	0
My members ask me before they seek MH treatment elsewhere.	4	28	68	0
Perception of knowledge base				
I feel knowledgeable about MH disorders affecting children.	8	52	36	4
I feel confident in my ability to know if a child needs MH services.	4	44	52	0
I know where to refer a child and family if they need MH services	12	64	20	4
I know enough about…ADHD	17	42	37	4
Depression in children	4	44	48	4
Anxiety in children	4	44	52	0
Bipolar disorder in children	4	28	64	4
Autism	4	28	64	4
Schizophrenia in children	4	28	64	4
Substance abuse in children	12	44	40	4
Disruptive behavior disorders in children	8	40	48	4
Oppositional defiant disorder	8	24	64	4
Conduct disorder	8	36	52	4
I would like to know more about the above disorders.	13	57	26	4
Perception of collaboration with MH professionals				
It is valuable to collaborate with MH professionals.	32	68	0	0
MH professionals value my role as a spiritual leader in caring for the mentally ill.	16	36	44	4
I prefer to send my members to a counselor who is sensitive to spiritual needs.	44	40	16	0
I would like to educate MH professionals on the unique spiritual beliefs, values, and needs of my members.	32	56	12	0
I have had a good experience with MH professionals.	12	72	16	0
I have had a bad experience with MH professionals.	4	57	35	4

Table 1: Continued.

Item	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)
Perception of barriers				
There are many barriers for children who need adequate mental health services in my community.	28	52	20	0
The following are large barriers				
no insurance,	36	48	16	0
not enough MH professionals in my community,	12	48	36	4
unclear where to refer children in need,	16	52	32	0
unclear how to determine if a child needs MH services.	24	40	36	0
MH professionals do not understand the spiritual needs of my members.	16	48	36	0
My members do not want to see MH professionals.	8	44	44	4
Resources at religious institutions				
We have enough youth programs at my institution.	8	40	40	12
We have plenty of parental support groups.	4	40	48	8
We have adequate services for counseling on site.	0	28	60	12
We have a parish nurse or health coordinator on site.	0	16	68	16
I want to collaborate with others to increase the youth groups program.	4	60	32	4
I want to collaborate with others to increase the parental support program.	4	60	28	8

attention deficit hyperactivity disorder, and childhood substance abuse. As a group the sample felt less confident in their knowledge about childhood bipolar disorder, autism, schizophrenia, oppositional defiant disorder, and conduct disorder. 70% of those surveyed agreed or strongly agreed that they would like to know more about the specific psychiatric disorders mentioned in the survey.

The survey went on to query opinions about collaborations between faith-based organizations and mental health professionals. All respondents agreed or strongly agreed that it is valuable to collaborate with mental health professionals; however, 48% felt that their role as a spiritual leader in caring for the mentally-ill was not valued by mental health professionals. 84% agreed or strongly agreed that they would prefer to send members to a counselor sensitive to spiritual needs, and the majority endorsed an urge to educate mental health professionals on the unique spiritual beliefs, values and needs of their members. When asked about previous experiences in working with mental health professionals 84% endorsed having had good experiences in such collaborations. However, 61% endorsed bad experiences in working with behavioral health workers.

The survey asked respondents to reflect on barriers to finding adequate psychiatric services for children in their institutions. All specifically listed barriers were perceived by a majority of respondents. These included problems with uninsured children, lack of mental health professionals available, lack of clarity about where to refer, lack of confidence in determining whether mental health services were needed, and lack of understanding of spiritual needs among mental health professionals. About half the sample endorsed feeling that their members do not want to see mental health professionals.

Healthcare resources available at the respondents' home institutions were variable. 52% felt that programming for youth at their institution was inadequate, whereas 56% felt their parental support groups were insufficient. Most did not feel there were adequate on-site services for counseling, and the majority did not have a parish nurse or health coordinator in house. Most would like to collaborate to increase support for youth and parents among their parishioners.

The final section of the survey allow for additional comments. Comments offered included the following.

> *"I have trouble locating mental health professionals for referrals that support values and attitudes that are consistent with Christian faith. I would like to have a way to connect with mental health professionals that are Christians by specialty."*

> *"I'm tired of our church members being disrespected for their beliefs and the choices they make that are shaped by their faith."*

> *"Clergy need to distinguish between pastoral care and pastoral counseling. Some are not trained for both and ought not to attempt counseling beyond having some basic referral skills."*

> *"Mental health professionals need to stop seeing spirituality is politically incorrect for counseling. Patients with active church involvement need to see how to integrate their faith into their mental health."*

"Sometimes the clergy and mental health professional ought to collaborate (with patient's permission) but this is rarely encouraged."

4. Discussion

Based on these results, the current group of clergy showed significant acceptance of behavioral health care for children from their institutions. Yet, the group also seemed to endorse cautious feelings in considering this topic. They admitted to seeing many barriers to collaboration, and having faced stigma from the psychiatric community. Most expressed a preference for personally providing counseling to members of their religious institutions, rather than referring them to mental health providers. Comments revealed an urge to identify clinicians that would be respectful of members belief systems and implied that members of their institutions had faced difficulty in integrating their faith with standard mental health treatment. Furthermore, a large part of the sample felt their membership would not want to work with psychiatrists or other mental health providers.

Our results conform with previous studies, [10, 11, 13, 15], in that those surveyed felt generally positive toward collaborating with the mental health establishment, but also endorsed hesitance related to stigma felt by themselves and their members. As in the Hawaiian study [13], although a significant proportion admitted to inadequate knowledge of psychiatric disorders in children, a majority would rather counsel members personally than refer them out.

In contrast to previous clergy surveys [11, 13], nearly half of this sample felt confident in their knowledge of common psychiatric disorders. The majority, however, endorsed a desire to learn more about less familiar mental illnesses. Educational efforts are likely to be hampered by the presence of stigma and disrespect clergy sometimes feel when dealing with mental health workers. However, it may be that mutual education between the two groups can be successful [15].

5. Limitations

The presented study has several features that limit its generalizability. First, the sample was not randomly selected. Second, response rate was low. Thirdly, the survey was created by the investigators without a previous validation study. Fourth, respondents were all based in the Southern US and were predominantly Caucasian and Protestant. Fifth, this study explores the subject of psychiatry and religion from the point of view of clergy with no input from mental health workers.

Much further work in this area is needed to fully understand how collaboration between religious leaders and the mental health establishment could be accomplished and what barriers need to be addressed. Further research should involve more qualitative methodology to create surveys followed by validation studies. Investigators may then seek to confirm findings in a larger, more representative sample. Future research should explore viewpoints from multiple stakeholder groups to facilitate active dialogue between traditional mental health providers and religious organizations.

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Research Article

Influence of Spirituality on Depression, Posttraumatic Stress Disorder, and Suicidality in Active Duty Military Personnel

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Understanding the role of spirituality as a potential coping mechanism for military personnel is important given growing concern about the mental health issues of personnel returning from war. This study seeks to determine the extent to which spirituality is associated with selected mental health problems among active duty military personnel and whether it moderates the relationship between combat exposure/deployment and (a) depression, (b) posttraumatic stress disorder (PTSD), and (c) suicidality in active duty military personnel. Data were drawn from the 2008 Department of Defense Survey of Health Related Behaviors Among Active Duty Military Personnel. Over 24,000 randomly selected active duty personnel worldwide completed an anonymous self-report questionnaire. High spirituality had a significant protective effect only for depression symptoms. Medium, as opposed to high or low, levels of spirituality buffered each of the mental health outcomes to some degree. Medium and low spirituality levels predicted depression symptoms but only among those with moderate combat exposure. Medium spirituality levels also predicted PTSD symptoms among those with moderate levels of combat exposure and predicted self-reported suicidal ideation/attempt among those never deployed. These results point to the complex relationship between spirituality and mental health, particularly among military personnel and the need for further research.

1. Introduction

A sizable amount of literature has focused on the influence of religiosity and spirituality on health outcomes. Many of these studies are summarized in the 2001 book: *Handbook of Religion and Health* [1] and in Koenig et al. [2]. Research has shown associations between both concepts of spirituality and religiosity and mental health. For example, studies have indicated a significant relationship between higher levels of religiosity and lower levels of depression [3, 4], particularly among those at high risk for depression [5]. The association between higher levels of spirituality and lower levels of depressive symptoms has been demonstrated in several different subpopulations, including adolescent girls [6], patients in an urban clinic [7], and terminally ill patients with cancer and AIDS [8]. In addition, findings from the Baltimore Epidemiologic Catchment Area Study indicated that individuals who reported ever seeking spiritual comfort at Wave 3 assessment had decreased odds of suicidal ideation at Wave 4 as compared to those who reported never seeking spiritual comfort at Wave 3 [9]. The literature examining the relationship between spirituality, religion, and anxiety disorders and suicide is less robust [10]. However, greater levels of spirituality have been associated with fewer anxiety symptoms among patients with advanced illness [11] and with lower posttraumatic symptom severity among survivors of violent trauma [12]. Krejci et al. [13] found that although sexual abuse victims and controls did not differ in terms of spiritual well-being, lower psychopathology including PTSD symptom scores, were associated with increased spiritual well-being in both groups.

Several hypotheses have emerged that explain spirituality's link with mental disorders. Dating back to the end of the 19th century, Durkheim's study of religiosity/spirituality

and suicidal behaviors suggested that those with increased spirituality also had greater levels of social support, which effectively buffered against psychopathology and suicidal behaviors [14]. More recent studies have come to similar conclusions [2, 3]. Another mechanism may be that greater spirituality protects against mental disorders and/or suicide by increasing the ability to cope with stressors [15], deepening one's sense of purpose or meaning [16], and/or reducing feelings of hopelessness, which have been indicated as a predictor of suicide [17]. In contrast, it has been suggested that religious beliefs may exert a negative influence on mental health especially in the emotionally vulnerable by increasing fears or guilt, reinforcing neurotic tendencies [2].

There have been a few published studies investigating the relationship between spirituality/religiosity and mental disorders and suicide in veteran samples. In a recently published study by Berg [18], spiritual distress was related to both combat-related posttraumatic stress disorder (PTSD) and depression in a sample of Vietnam veterans. Subjective religiosity (the extent religious beliefs are a source of comfort/strength) was shown to be associated with both women veterans [19] and male veterans [20] with sexual assault experience. Spiritual well-being was also found to be a mediator of the effect of a mantra (a sacred word or phrase repeated over and over) intervention to decrease PTSD symptoms in veterans with military trauma [21]. Other studies have examined interventions that include a spirituality component to help promote resilience (Pargament and Sweeney [22]), reduce health risks (Niederhauser et al. [23]), integrate health promotion and wellness (Parker et al. [24]), and reduce PTSD symptoms in veterans exposed to trauma (Harris et al. [25]), though all indicate that further, more robust research is warranted in these areas.

Additional investigations in military populations are needed given the potential importance of spirituality in helping active duty service members cope with deployment as well as transition from deployed to nondeployed status during wartime. Although programs such as the Warrior Transition Units have been created, they are not currently able to fully meet the needs of all returning service members [26]. Thus, the role of spirituality as a coping mechanism in the transition from deployed to nondeployed status and various associated stressors from recent combat experience may be important [27]. Spiritual fitness was named as one of the eight domains comprising a new framework of Total Force Fitness, an initiative from the Chairman of the Joint Chiefs of Staff for maintaining the health, readiness, and performance of Department of Defense (DoD) service members [28]. As part of the Army's Comprehensive Soldier Program which is comprised of a spiritual fitness tracker that requires soldiers to respond to statements such as, "I am a spiritual person, my life has lasting meaning, I believe that in some way my life is closely connected to all humanity and all the world," this program has come under recent controversy [29, 30]. The recommendations call for the development of evidence-based spiritual support policies and programs and integrating chaplains as primary providers of such services [31]. In 2010, DoD and the Department of Veterans Affairs (VA) launched a joint strategic action implementation plan under the DoD/VA Integrated Mental Health Strategy to increase understanding of chaplains' roles in primary care within the military treatment system and VA; to support continuity in the role of chaplains between the services and VA; to identify ways to facilitate access to mental health care through collaboration with community clergy and faith communities. Investigation of the relationship between spirituality and mental health problems is particularly important given that active duty members have particularly high rates of suicidal ideation and extreme anxiety as compared to reports from general population samples [32–34].

The present study seeks to address two research aims. The first aim is to determine the extent to which spirituality is associated with selected mental health problems (i.e., depression, PTSD, and suicidality) among active duty military personnel controlling for potential demographic, coping, and service-related variables. We hypothesize that high spirituality, defined as the self-reported importance of religious/spiritual beliefs in life and decision making, is protective against depression, PTSD, and suicidality. Although the measure used in this study combines both concepts of religiosity and spirituality, we refer to the broader concept of spirituality to encompass the combination of the concepts in this measure throughout this paper.

The second aim is to determine whether spirituality moderates the relationship between combat exposure/deployment and these mental health problems. We hypothesize that high levels of spirituality will buffer the association between combat exposure/deployment and depression, PTSD, and suicidality.

2. Materials and Methods

2.1. Subjects. Data were drawn from the 2008 DoD Survey of Health Related Behaviors Among Active Duty Military Personnel (2008 HRB Survey) [29]. The survey consists of a randomly selected representative sample of active duty military personnel from the Army, Navy, Marine Corps, Air Force, and Coast Guard. A two-stage replacement cluster sample proportional to size was employed in which geographic areas were clustered and randomly selected in the first stage, and individuals within the clusters were randomly selected in the second stage. All active duty members were eligible except for recruits, academy cadets, and persons who were absent without leave or incarcerated. The final sample of participants consisted of 28,546 military personnel (5,927 Army, 6,637 Navy, 5,117 Marine Corps, 7,009 Air Force, and 3,856 Coast Guard), who completed self-administered questionnaires anonymously. The overall response rate was 70.6%. Although the number of missing items tended to increase with the length of the questionnaire, the response rate was high relative to most military surveys, and most items showed less than a 5% missing rate. Data were weighted to represent all active duty personnel, meaning that the results of the survey represent population estimates of the entire active force. The current study included only the DoD services (Army, Navy, Air Force, and Marine Corps) for a study total of 24,690.

2.2. Survey Procedures. The majority (97%) of the 32-page anonymous self-report questionnaires were obtained during onsite visits to 64 military installations worldwide by the study team. The rest were obtained from questionnaires mailed to respondents who were unable to attend group sessions. At the group sessions, survey data collection field teams described the purpose of the study, assured participants of anonymity, informed participants of the voluntary nature of the survey, distributed introductory handouts, ensured that an ombudsperson was present for each group administration to attest that teams explained the voluntary nature of participation, and showed personnel the correct procedures for marking the questionnaire. Team members then distributed the optical-mark questionnaires to participants, who completed and returned them. On average, the questionnaire required about an hour to complete. Institutional Review Board approval was obtained from RTI International and DoD. Additional sampling and methodological details have been reported and published elsewhere [35].

2.3. Key Measures

2.3.1. Demographics. Demographics included gender (male and female) race/ethnicity (white non-Hispanic, black non-Hispanic, Hispanic, and other), highest level of education (high school diploma or less, some college, and college degree or more) age group (17–20, 21–25, 26–34, and 35 or older), and military pay grade (E1–E3 junior enlisted, E4–E6 middle enlisted, E7–E9 senior enlisted, W1–W5 warrant officer, O1–O3 junior commissioned officers, and O4–O10 middle and senior officers).

2.3.2. Spirituality. Respondents were asked to what extent they agreed with two questions regarding the importance of religious/spiritual beliefs and the degree to which religious/spiritual beliefs influenced their decision making. Items were "My religious/spiritual beliefs are a very important part of my life" and "My religious/spiritual beliefs influence how I make decisions in my life," each rated on a 4-point scale from strongly agree to strongly disagree. Respondents' spirituality was categorized as high if they reported "strongly agree" to both questions, moderate if they reported either "strongly agree" or "agree" to at least one of the questions, and low if they reported either "disagree" or "strongly disagree" to both questions. These items were adapted from those used in the National Survey on Drug Use and Health [36].

2.3.3. Combat Exposure. Exposure to combat and related circumstances was measured using a modified version of the 17-item Combat Experiences Scale of the Deployment Risk and Resilience Inventory [37]. These items assess exposure to incoming fire, mines, improvised explosive devices, firing on the enemy, viewing dead bodies or human remains, interaction with enemy prisoners of war, and similar circumstances that may be relevant. Each item asked how many times the respondent was exposed, and response options were 0 (0 times), 1 (1 to 3 times), 2 (4 to 12 times), 3 (13 to 50 times), and 4 (51 or more times). All items were summed, and the sum score was used to create a categorical combat exposure item where a score equal to zero was considered "deployed but no exposure to combat," a score from 1 to 9 was classified as "low/moderate combat exposure," and a score of 10 or greater was considered as "moderate/high combat exposure." A fourth category was added to capture personnel who had not been deployed. These cutoffs were subsequently examined with factor analysis and item scoring methods suggesting that these categories captured meaningful distinctions between groups of scores.

2.3.4. Coping. Respondents were asked to identify the types of strategies that they use to cope when they "feel pressured, stressed, depressed, or anxious." The list of strategies included items that assess both approach-oriented and problem-solving strategies ("Think of a plan to solve the problem," "Talk to a friend or family member," and "Exercise or play sports") and avoidant coping ("Have a drink," "Light up a cigarette," and "Get something to eat").

2.3.5. Depression. Depression was assessed using the 10-item short version of the Center for Epidemiologic Studies Depression Scale (CESD-10). Cutoff scores for depressive symptoms were greater than or equal to 10. Andresen and colleagues [38] found good predictive accuracy when they compared the CESD-10 to the full-length 20-item version of the CES-D.

2.3.6. PTSD. PTSD symptom severity was assessed using the PTSD Checklist, Civilian Version (PCLC) [39], a 17-item self-report instrument that asks respondents to rate the extent to which they have been bothered by PTSD symptoms during the previous 30 days using a 5-point scale (1: not at all and 5: extremely). PCLC items parallel DSM-IV PTSD symptom criteria B, C, and D, and a variety of studies support the use of the PCLC as a valid and reliable screening instrument [40–42]. The HRB Survey, and other DoD studies, prefer the PCLC over the military version of the PCL because the military version ignores symptoms from nonmilitary experiences and can miss common causes of deployment or war-related PTSD in women (e.g., sexual assault rather than combat) as well as deployment-related exacerbations of PTSD symptoms if the original inciting trauma is not military related [35]. The standard cutoff was used such that if the sum was greater than or equal to 50, the participant was classified as positive for PTSD; those with scores less than 50 were considered not to have PTSD [39].

2.3.7. Suicidal Ideation and Attempt. Suicidal ideation was assessed by asking respondents about the occurrence of suicidal thoughts within the past year. A dichotomous item indicated any thoughts of suicide versus no thoughts of suicide. This particular item has also been used as a first-level screen for suicidal ideation in previous studies of military personnel [35]. Suicide attempts were assessed by asking respondents whether they had attempted suicide within the past year. A dichotomous item indicated any suicide attempt versus no suicide attempt. Individuals responded based on

Table 1: Prevalence of mental health outcomes by spirituality level*.

	Overall prevalence (%) $N = 24{,}690$	Prevalence among spirituality levels		
		High $N = 5{,}692$	Medium $N = 11{,}639$	Low $N = 6{,}102$
Depression	30.6	24.9[a]	32.2[b]	32.1[b]
PTSD	10.7	8.8[a]	10.9[b]	11.6[b]
Suicide attempt, past year	2.2	1.8	2.4	2.0
Suicide contemplation, past year	4.6	4.2[a]	4.3[a,b]	5.3[b]
Suicide (attempt or contemplation), past year	6.0	5.5	5.9	6.5

*Excludes missing responses; Ns are unweighted.
[a,b]Estimates for spirituality column differences for depression, PTSD, and suicide contemplation not sharing a common superscript are significantly different at $P < 0.05$.

their own definitions of what it meant to them as having seriously considered or attempted suicide. A third item was created that indicated past year suicide contemplation or attempt versus no suicide contemplation or attempt.

2.4. Statistical Analyses. Analyses were conducted using SUDAAN [43] to account for the complex sampling design. Aim 1, the determination of basic prevalence of mental health problems across levels of spirituality and the associations of spirituality with these outcomes, was examined using simple frequencies and crosstabs. Multiple predictor logistic regression models were used to assess the prevalence of mental health outcomes by levels of the key independent variables of spirituality and combat exposure. Aim 2, examination of the moderation or hypothesized buffering effect of greater spirituality on the negative mental health impacts of combat exposure, was addressed with logistic regression models, which included spirituality by combat exposure interaction terms. Significant interaction parameters indicated that the effect of different levels of spirituality was not consistent across levels of combat exposure. For example, although high versus low spirituality may provide modest protection against depression for those not deployed, in the high deployment group the impact could be much greater, with high spirituality personnel showing less combat exposure-related depression relative to their lower spirituality peers. The reference category for spirituality was changed to "high" for models involving interactions because this category was the most dissimilar from the other two and would better highlight differential effects of combat exposure on the mental health outcomes. All regression models included gender, age, race/ethnicity, pay grade, and education as control measures.

3. Results

An estimated 30.6% of active duty personnel met screening criteria for depression on the CES-D, 10.7% met screening criteria for PTSD on the PCLC, and 6.0% reported either seriously considering or attempting suicide in the past year (Table 1). As shown in Table 1, 23.1% fell into the high spirituality category, 48.7% fell into the medium spirituality level, and 28.2% fell into the low spirituality level. Lowest rates of all mental health outcomes (except suicide attempts) were observed in the highest spirituality level.

To address the first aim, Table 2 presents the influence of spirituality on mental health outcomes and controlling for demographic and service-related variables. Moderate spirituality had a significant protective effect only for depression. Risk factors for both depression and PTSD were being female, being in younger age groups, non-Hispanic ethnicity, junior-enlisted pay grades, avoidant coping behaviors, and those with moderate or high combat exposure. Results were similar for suicidality with the exception that age and gender effects were not significant. Active coping behaviors were protective for each outcome.

To address the second aim, Table 3 displays the odds ratios and confidence intervals for the logistic models that included combat exposure by spirituality interactions to test the buffering effect of greater spirituality. Four interactions were significant, indicating that the magnitude of the odds ratio for one or more comparisons of spirituality's impact on mental health were conditional on level of combat exposure. To illustrate these differences in patterns, Table 4 shows the adjusted marginal estimates for the mental health outcomes for spirituality levels crossed with the four combat exposure categories. The logistic regression models with interactions effects for combat exposure and spirituality revealed several instances where the impact of combat exposure on mental health was conditional on level of spirituality. Two interactions were significant for spirituality and combat exposure with depression as the dependent variable. Within the low-to-moderate combat exposure group, high spirituality showed a significantly more pronounced buffering effect of exposure on depression. As indicated in Table 4, rates of depression for the high spirituality group within low-moderate combat exposure (21.3%) was considerably lower than the rate in the medium and low spirituality groups (31.1% and 27.3%, resp.). High spirituality was also associated with a more pronounced protective influence against PTSD compared to those with medium spirituality in the low-moderate combat exposure group. (4.4% versus 6.4%). Finally, and counter to expectations, for those in the nondeployed group, medium spirituality was associated with significantly lower likelihood of suicidality relative to those

Table 2: Logistic regression model parameters, interactions not included.

Independent variables	DV		
	Depression	PTSD	Suicidality
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Intercept	0.19 (0.14–0.25)*	0.02 (0.01–0.03)*	0.02 (0.02–0.04)*
High spirituality	0.99 (0.90–1.10)	1.16 (0.99–1.37)	1.11 (0.90–1.36)
Moderate spirituality	1.12 (1.01–1.25)*	1.08 (0.91–1.27)	0.96 (0.78–1.17)
Low spirituality	ref	ref	ref
Male	ref	ref	ref
Female	1.64 (1.49–1.79)*	1.63 (1.39–1.91)*	1.24 (1.04–1.47)*
17–20	1.32 (1.10–1.58)*	1.25 (0.94–1.66)	0.98 (0.69–1.39)
21–25	0.96 (0.83–1.12)	0.97 (0.82–1.14)	0.86 (0.67–1.12)
26–34	0.85 (0.74–0.98)*	0.93 (0.76–1.15)	0.79 (0.63–0.99)*
35 or older	ref	ref	ref
Non-Hispanic white	ref	ref	ref
Non-Hispanic black	1.08 (0.98–1.19)	1.01 (0.82–1.24)	1.45 (1.12–1.87)*
Hispanic	1.10 (1.00–1.21)	1.10 (0.90–1.34)	1.46 (1.16–1.83)*
Non-Hispanic other	1.26 (1.10–1.46)*	1.45 (1.21–1.74)*	1.97 (1.56–2.49)*
High school or less	ref	ref	ref
Some college	1.10 (1.00–1.20)*	1.08 (0.93–1.26)	0.96 (0.82–1.12)
College degree or more	1.10 (0.94–1.28)	0.95 (0.76–1.18)	0.98 (0.80–1.21)
E1–E3	1.79 (1.34–2.39)*	3.97 (2.12–7.45)*	2.37 (1.27–4.43)*
E4–E6	1.57 (1.23–2.00)*	2.96 (1.62–5.41)*	2.15 (1.23–3.74)*
E7–E9	1.15 (0.85–1.54)	1.89 (0.97–3.68)	1.68 (0.99–2.84)
W1–W5	0.88 (0.73–1.07)	0.76 (0.17–3.51)	1.71 (0.90–3.24)
O1–O3	1.13 (0.89–1.42)	1.88 (0.89–3.97)	1.69 (0.96–2.98)
O4–O10	ref	ref	ref
Not deployed	0.99 (0.87–1.13)	1.12 (0.91–1.38)	1.08 (0.89–1.31)
No combat exposure	ref	ref	ref
Moderate combat exposure	1.14 (1.04–1.26)*	1.11 (0.88–1.39)	0.84 (0.74–0.96)*
High combat exposure	1.52 (1.35–1.72)*	3.57 (3.00–4.26)*	1.28 (1.06–1.56)*
Active coping	0.68 (0.65–0.72)*	0.67 (0.62–0.73)*	0.65 (0.58–0.73)*
Avoidant coping	3.21 (3.02–3.41)*	3.10 (2.80–3.43)*	1.90 (1.70–2.12)*

with high spirituality (4.6% versus 6.4%) compared to this relationship in other combat exposure categories.

4. Discussion

This study examined the relationship between spirituality, combat exposure, and mental health among a large, population-based sample of active duty military personnel. Overall, spirituality had a positive influence on depression but not on suicidality. This relationship held while controlling for demographic variables, coping behaviors, and combat exposure; however, there was only limited support for the hypothesis that high spirituality would moderate the relationship between combat exposure and mental health outcomes. Findings showed that spirituality did buffer depression and PTSD symptoms but only among those with low-moderate combat exposure. On the other hand, a medium level of spirituality, relative to a high level, was protective of self-reported suicidal ideation/attempt only among those never deployed. This suggests that high levels of spirituality may be associated with greater suicidal ideation or attempt in this nondeployed subgroup of military personnel. It is certainly possible that this subgroup of nondeployed personnel had admitted to suicidal ideation during predeployment screening accounting for their nondeployment. Further research on this group may help elucidate whether this nondeployed group is coming into the service with higher levels of suicidal ideation or whether they are being screened out on mandatory predeployment health assessment forms. This also has implications for chaplains, social workers, and other service providers. Although wounded warriors have captured the attention of the media and have become a priority for service provisions and policy making in the military, these findings suggest that this should not be at the exclusion of those military personnel who have not been deployed.

These results point to the complex relationship between spirituality and mental health, particularly among military personnel. Although consistent with studies that found a relationship between depression and spirituality in various

Table 3: Logistic regression model parameters, interactions included.

Independent variables	DV		
	Depression	PTSD	Suicidality
	OR (95% CI)	OR (95% CI)	OR (95% CI)
High spirituality	ref	ref	ref
Moderate spirituality	1.07 (0.91–1.27)	0.73 (0.51–1.02)	1.27 (0.85–1.89)
Low spirituality	0.98 (0.85–1.13)	0.81 (0.52–1.27)	1.06 (0.68–1.65)
Male	ref	ref	ref
Female	1.63 (1.49–1.79)*	1.63 (1.40–1.90)*	1.24 (1.04–1.47)*
17–20	1.33 (1.11–1.60)*	1.25 (0.94–1.67)	0.98 (0.69–1.40)
21–25	0.96 (0.83–1.11)	0.97 (0.82–1.14)	0.87 (0.67–1.12)
26–34	0.85 (0.74–0.97)*	0.93 (0.76–1.15)	0.79 (0.63–0.99)*
35 or older	ref	ref	ref
Non-Hispanic white	ref	ref	ref
Non-Hispanic black	1.08 (0.98–1.19)	1.01 (0.82–1.24)	1.44 (1.12–1.86)*
Hispanic	1.10 (0.99–1.21)	1.10 (0.90–1.33)	1.46 (1.17–1.83)*
Non-Hispanic other	1.27 (1.10–1.46)*	1.46 (1.22–1.75)*	1.97 (1.57–2.49)*
High school or less	ref	ref	ref
Some college	1.10 (1.00–1.20)*	1.08 (0.93–1.26)	0.96 (0.82–1.12)
College degree or more	1.10 (0.95–1.28)	0.95 (0.76–1.18)	0.99 (0.80–1.21)
E1–E3	1.79 (1.33–2.40)*	3.95 (2.10–7.42)*	2.39 (1.28–4.47)*
E4–E6	1.55 (1.21–1.99)*	2.92 (1.59–5.37)*	2.16 (1.24–3.74)*
E7–E9	1.14 (0.84–1.54)	1.87 (0.95–3.66)	1.68 (1.00–2.84)
W1–W5	0.87 (0.71–1.06)	0.75 (0.16–3.50)	1.70 (0.89–3.23)
O1–O3	1.11 (0.88–1.40)	1.85 (0.88–3.93)	1.69 (0.96–2.97)
O4–O10	ref	ref	ref
Not deployed	1.18 (0.97–1.42)	1.14 (0.76–1.69)	1.56 (1.08–2.26)*
No combat exposure	ref	ref	ref
Moderate combat exposure	0.83 (0.65–1.05)	0.69 (0.44–1.07)	1.08 (0.66–1.75)
High combat exposure	1.42 (1.14–1.77)*	2.97 (1.94–4.56)*	1.64 (0.97–2.80)
Active coping	0.68 (0.65–0.72)*	0.67 (0.62–0.73)*	0.65 (0.58–0.73)*
Avoidant coping	3.21 (3.02–3.41)*	3.10 (2.80–3.43)*	1.89 (1.70–2.11)*
High spirituality, nondeployed	NA	NA	NA
High spirituality, no exposure	NA	NA	NA
High spirituality, moderate exposure	NA	NA	NA
High spirituality, high exposure	NA	NA	NA
Medium spirituality, nondeployed	0.81 (0.65–1.01)	1.01 (0.65–1.58)	0.55 (0.35–0.87)*
Medium spirituality, no exposure	NA	NA	NA
Medium spirituality, moderate exposure	1.55 (1.20–2.01)*	2.05 (1.22–3.43)*	0.70 (0.37–1.30)
Medium spirituality, high exposure	1.09 (0.84–1.41)	1.41 (0.86–2.31)	0.65 (0.34–1.24)
Low spirituality, nondeployed	0.80 (0.63–1.01)	0.93 (0.54–1.61)	0.77 (0.48–1.24)
Low spirituality, no exposure	NA	NA	NA
Low spirituality, moderate exposure	1.42 (1.07–1.88)*	1.46 (0.81–2.65)	0.81 (0.46–1.43)
Low spirituality, high exposure	1.10 (0.78–1.56)	1.06 (0.57–2.00)	0.89 (0.42–1.89)

Note: NA indicates interaction term included reference level of one or more predictors and was not estimable.

Table 4: Adjusted estimates of spirituality by combat exposure.

Combat exposure	Not deployed			No exposure			Low-moderate exposure			High exposure		
Spirituality	High	Med	Low	High	Med	Low	High	Med	Low	High	Med	Low
Depression	27.8	25.1	23.1	24.7	26.0	24.2	21.3	31.1	27.3	31.7	35.2	33.3
PTSD	7.1	5.3	5.5	6.3	4.7	5.2	4.4	6.4	5.2	16.7	17.0	14.8
Suicidality	6.4	4.6	5.3	4.2	5.3	4.5	4.5	4.0	3.9	6.8	6.7	6.4

civilian populations, they are not consistent with the Berg [18] study that related spiritual distress with combat-related PTSD among Vietnam veterans, although that study used a different measure of spirituality than the present study. Further, these findings suggest that the buffering role of spirituality in mental health is limited, dependent on type of mental health problem investigated, and may be potentially overwhelmed by great stress, such as high levels of combat exposure. That is, the buffering effect of spirituality may operate within a limited window of stress (e.g., it may not make a difference for those with low amounts of stress or challenges but may be overwhelmed by greater stressors). This effect may also account for studies that have identified negative consequences of high spirituality. That is it may be suggested that high combat exposure may increase emotional vulnerability leading to poorer mental health among highly spiritual personnel. It is clear that spirituality/religiosity plays an important but complex role in the mental health of military personnel and must be investigated within the context of both a wide range of potential covariates and individual mental health indicators or diagnoses. Findings also suggest that it may be beneficial to enhance chaplain involvement across the entire deployment cycle (before, during, and after), ensuring that service members are encouraged to attend to their spiritual needs in whatever manner makes sense to them, and to integrate spiritual assessment into physical and mental health care to improve care of the whole individual. These findings extend those by Edlund et al. [44] using a similar measure who found a strong negative relationship between religiosity and substance abuse in the US population. Given the strong comorbidity of our mental health outcomes with substance abuse, future research should examine the effect of spirituality on mental health controlling for those who abstain from alcohol and other substances on religious grounds.

Among the limitations of this research is the self-report and cross-sectional nature of the data, which limits the ability to make casual inferences. The use of mental health screening measures does not imply clinical diagnoses. Due to the length of the questionnaire, the number of missing items tended to increase slightly with its length. However, the overall response rate was high relative to other military surveys, and most missing items showed less than a 5% missing rate. Although there is limited or a lack of psychometric data on some scales (e.g., coping behaviors scale) used in the survey, all have been utilized successfully in previous military surveys. It should be noted that the definition of spirituality used in this study is an operational one reflecting the specific language of the questionnaire items used to measure what may be thought of as a combination of conceptual definitions. Although religiosity and spirituality are intimately linked, it is widely acknowledged that the two should be studied as distinct concepts in research studies [45]. A large portion of prior research has focused on religiosity (generally used to refer to affiliation with organized and institutional religion) [46], but in recent years there has been an increasing focus on studying the impact of spirituality (generally more personal [2] or broadly defined as an individual's existential relationship with God [47, 48]) on mental health outcomes, specifically depression, anxiety, and suicide. Operational definitions of both constructs have varied widely and often overlap in their assessment [48, 49] as was done in the current study to be consistent with educational materials used in military settings [29]. Unfortunately this combined measure, based on the SAMHSA items, lacks psychometric information. Further studies would benefit from more comprehensive and rigorous measures of spirituality that specified the components of spirituality, such as forgiveness of self and others, and included religion measures, such as religious commitment. Investigating characteristics that differentiate between high, medium, and low levels of spirituality may be particularly informative. Further research into the theory and mechanism by which spirituality is associated with mental health is also warranted.

5. Conclusions

In conclusion, the most important finding of this study is that high spirituality appears to have some protective effect for depression and PTSD, but only for those in the low-moderate combat exposure group. This extends and qualifies previous findings of both positive and negative associations between religiosity and mental health outcomes in this and other populations. A number of additional topics for further investigation are identified emphasizing the need for evaluation of potential interventions including spiritual resilience programs implemented by the military.

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Research Article

Religious versus Conventional Psychotherapy for Major Depression in Patients with Chronic Medical Illness: Rationale, Methods, and Preliminary Results

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This paper (1) reviews the physical and religious barriers to CBT that disabled medically ill-depressed patients face, (2) discusses research on the relationship between religion and depression-induced physiological changes, (3) describes an ongoing randomized clinical trial of religious versus secular CBT in chronically ill patients with mild-to-moderate major depression designed to (a) overcome physical and religious barriers to CBT and (b) compare the efficacy of religious versus secular CBT in relieving depression and improving immune and endocrine functions, and (4) presents preliminary results that illustrate the technical difficulties that have been encountered in implementing this trial. CBT is being delivered remotely via instant messaging, telephone, or Skype, and Christian, Jewish, Muslim, Buddhist, and Hindu versions of religious CBT are being developed. The preliminary results described here are particular to the technologies employed in this study and are not results from the CBT clinical trial whose findings will be published in the future after the study ends and data are analyzed. The ultimate goal is to determine if a psychotherapy delivered remotely that integrates patients' religious resources improves depression more quickly than a therapy that ignores them, and whether religious CBT is more effective than conventional CBT in reversing depression-induced physiological changes.

1. Introduction

Depression is a major public health problem. Based on a joint study conducted by the Harvard School of Public Health and the World Health Organization, depression was the leading cause of disability in the world (measured by years of life lived with disability) in 1990 [1] and, in 2020, is expected to be the world's second leading cause of disability, surpassed only by cardiovascular disease [2]. The lifetime prevalence of depression in the USA is 20% in women and 10% in men [3].

Depression is widespread in patients with chronic disabling medical illness. While the point prevalence of major depression among the general population in the United States is 7% [4], this figure increases to 10% to 45% among patients with medical illness depending on setting [5–8]. Not surprising, the use of antidepressants by primary care physicians has increased dramatically in recent years [9]. Treating with antidepressants, while lifesaving for many, comes with it the risk of side effects in medically frail patients and increases the risk of drug interactions with medications prescribed for nonpsychiatric illness [10]. This is especially true since major depression is already a potent risk factor for disease morbidity, with depressed medical patients having double the mortality of those without depression [11, 12]. Furthermore, medications are expensive, and managing side effects or drug interactions increases the cost further.

Psychotherapy has also been shown to benefit depressed medical patients. The kinds of depression seen in primary care medicine are often situation-specific and due to life changes brought on by physical illness, including day-to-day problems with functioning at home and work. Thus, psychotherapeutic approaches focused on helping patients adjust to difficult real life circumstances are useful in depressed patients seen in primary care settings. Not surprising, psychological approaches such as cognitive-behavioral therapy (CBT) have been particularly effective in treating

depression in medical patients, often done by addressing the maladaptive beliefs and thoughts related to medical illness that initiate and maintain depression [13–16].

The aims of this paper are to (1) review the physical and religious barriers to psychotherapy that disabled medically ill-depressed patients face, (2) discuss research on the relationship between religious involvement and depression, and their relationships to physiological changes influencing the course of medical illness, (3) describe an ongoing randomized clinical trial designed to overcome physical and religious barriers to psychotherapy in the medically ill by utilizing remote delivery methods for CBT that integrate religious resources into psychotherapy, and (4) present preliminary results that illustrate the technical difficulties that we have encountered in implementing this trial.

2. Barriers to Psychotherapy

While psychological treatments for depression are known to be effective, there are numerous barriers to referral, compliance, and follow-up of persons with depressive disorders. These include physical, cultural, and religious barriers. Physical barriers to psychotherapy for medically ill-disabled patients are formidable. Medical patients with mobility problems or those who are home bound may have trouble accessing psychotherapy (i.e., traveling to therapists' offices, sitting in waiting rooms, etc.). To address this barrier, online and telephone approaches to delivering CBT have been developed, and are effective in and acceptable to medical patients with depression [17, 18].

2.1. Online Communications. Online communications are now widespread in the United States and around the world. Of 6.8 billion people, 25% (1.7 billion) use the Internet [19]. Of the 341 million people in North America, nearly 75% (252 million) use the Internet. In 2005, close to 75 million Americans used e-mail and search engines on an average day (including 29% of those over age 50) [20, 21]. That number has increased considerably since then, not to mention the millions who now have a MySpace or Facebook account (74% of all Americans ages 18 to 34, and 25% of those ages 55 or older), or the estimated 15 million who use Twitter [22]. One of the fastest growing groups of Internet users is older adults; 77% of all persons over age 55 use the Internet to search for healthcare information [23].

2.2. Online CBT. Individual cognitive-behavior therapy (CBT) can be offered online by a therapist using instant messaging, during which client and therapist communicate in real time with typewritten responses. Benefits of this approach include flexibility and optimal use of patient and therapist time, outreach to patients for whom travel to treatment centers is difficult for reasons of geography or disability, and access to foreign language therapists. Furthermore, this approach is acceptable to depressed patients, and therapy without face-to-face contact may encourage greater disclosure [24].

The Lancet published the first report of a randomized controlled trial (RCT) of therapist-delivered online CBT for moderately severe depression in primary care patients in 2009 [25]. The study found that CBT by this method was significantly more beneficial than usual care provided by primary care physicians. Those benefits were maintained over at least 8 months. This means that a relatively small number of therapists can cover a wide geographical area and be available to patients at a range of times. The way that patients express their feelings may also impact treatment effectiveness. Online CBT takes advantage of the fact that writing about traumatic experiences improves outcomes [26, 27]. This appears especially true when writing about events from a religious viewpoint [28, 29].

2.3. Telephone CBT. An issue with online CBT, particularly when delivered alone on the Internet without therapist guidance, has been "*dropouts*" during treatment [30]. Even with therapist-delivered online CBT, this remains a problem (dropout rate was 28% in the *Lancet* study). To minimize dropouts and boost effects, it has been recommended that a telephone component be added [31] since telephone therapy is known to increase compliance [32]. Furthermore, structured CBT delivered by telephone has been shown to be both clinically effective and cost effective in treating medical patients with depression [33].

3. Religion and Depression

Besides physical barriers that depressed disabled medically ill patients encounter when seeking psychotherapy, there are also religious barriers. When religious patients become depressed, their beliefs may interfere with their acceptance of and compliance with conventional treatments, especially psychotherapy. Many such patients shy away from secular psychotherapy because they perceive it as unsympathetic to their religious beliefs [34]. Religious patients may also feel that seeking therapy means abandoning their faith in favor of secular treatments. Finally, religious persons may feel guilty or ashamed about being depressed and thus fail to address it with their clergy and avoid seeking support within their faith community.

Clergy have traditionally served as front-line mental health providers in communities across the USA, providing nearly as many hours of counseling as does the entire membership of the American Psychological Association [35]. Consider that clergy spend on average 15% of their time in counseling activities, providing over 140 million hours of mental health services each year, not including the activities of nearly 100,000 full-time nuns or chaplains. Furthermore, they do not charge for their services, and there is no stigma associated with this type of counseling. Thus, depressed religious persons often receive their first treatment by clergy or other counselors within their faith community.

Treatment within the faith community, however, is not always effective, especially for more severe depression, requiring referral to mental health professionals for additional treatment. The problem is that the relationship between clergy and mental health professionals has not always been good. In fact, there is a long history of conflict between religious and mental health professionals, beginning with

Freud's description of religion as "the universal obsessional neurosis." [36] There is often open resistance to consideration of religious beliefs in conventional mental health care, resistance that is clear from a recent discussion among British psychiatrists (see e-letters in response to two recent articles in *The Psychiatrist*) [37, 38]. Negative attitudes toward religion by mental health professionals are not limited to Great Britain. A systematic review of the religious content of DSM-III-R found that nearly one-quarter of all cases of mental illness included religious descriptions [39]. More recent publications by mental health professionals continue to emphasize a lack of concern for patients' religious beliefs, [40, 41] and a recent national survey of USA psychiatrists found that 56% never, rarely, or only sometimes inquire about religious/spiritual issues in patients with depression or anxiety [42].

Based on this generally neglectful (and at times disparaging) view held by some mental health professionals toward religion, religious professionals are often reluctant to refer members of their congregation to mental health professionals, especially for psychotherapy that seeks to alter beliefs and attitudes. Failure of clergy to refer may prevent many patients from receiving the treatment they need. Furthermore, if patients are members of a faith community and that community does not reinforce (or perhaps even counteracts) the gains made in psychotherapy, then those gains may not last.

4. Depression, Religion, and Physiological Changes

Whether religion is a resource (as clergy claim) or a liability (as mental health specialists like Freud claim) to depressed medical patients needs to be established before bringing down the barrier that stands between mental health care and religion. Like it or not, religious involvement is important to the vast majority people in the USA and around the world [43]. According to a January 2009 Gallup Poll, 65% of Americans indicated that religion is an important part of their daily life, a figure that increases to over 75% in the southeastern USA [44]. Likewise, according to the Pew Foundation's national survey of 35,000 Americans, 56% indicated that religion was "very important" in their lives, a figure that increases to 69% in the southeastern USA This is especially true for medical patients, who often turn to religious beliefs to cope with illness [45].

Literally hundreds of qualitative and quantitative studies document high rates of religious coping behaviors in those trying to cope with medical illness [46, 47]. In some areas of the USA, nearly 90% of hospitalized patients with medical problems use religion to cope, and of those who do, nearly half (45%) report that religion is the *most important* factor that keeps them going [48]. Furthermore, greater religiosity predicts a faster resolution of depressive symptoms in medical patients over time, increasing the speed of remission by 50 to 70 percent overall, but especially in those with persistent physical disability, in whom it predicts a more than 100 percent increase in speed of remission [49–52].

Religious involvement has also been associated with positive emotions such as optimism and purpose in life [53], as well as gratefulness, generosity, and altruism [54–56]. These characteristics may enhance well-being and counteract maladaptive cognitions and behaviors that maintain depression [57]. Religious people, however, are not exempt from depression, especially when serious health problems strike. In a study at Duke Hospital, 64% of medical inpatients over age 50 with major depression (diagnosed using the Structured Clinical Interview for Depression (SCID)) indicated they were both spiritual and religious and 76% prayed at least once daily [58].

5. Consideration of Religious Beliefs in Therapy

Depression not only destroys quality of life but may also affect the physical body by interfering with immune and endocrine functioning. Religious beliefs and behaviors that facilitate coping with life stress may help to normalize those changes.

5.1. Physiological Effects of Depression. There is evidence that the alterations in immune and endocrine function associated with depression increase medical morbidity by increasing the risk of infection [59], inflammatory disorders [60], and possibly malignancy [61–63]. This relationship, however, is a complex one that is likely bidirectional in nature [64]. Furthermore, depression is known to stimulate some components of the immune system and suppress others. Stimulation of proinflammatory cytokines can lead to sickness behaviors that resemble depression, which has led to consideration of how immune and endocrine functions influence the pathophysiology of depression, especially when depression develops in a setting of chronic stress [65].

Regardless of direction of effect, major depression is associated with a host of immune [66], endocrine [67], and proinflammatory functions [68] that could adversely affect physical health and response to medical treatments. Depression is associated with an altered balance in the Th1/Th2 ratio, that is, higher pro-inflammatory Th1 cytokines (IL-1, IL-12, INF-γ), higher pro-inflammatory monocytic cytokines (IL-6, TNF-α) [69–71], and lower anti-inflammatory Th2 cytokines (IL-4, IL-10) [72]. Depressed patients also have reduced natural killer (NK) cell cytotoxicity [73–75] and diminished lymphocyte responses to phytohemagglutinin and concanavalin A [76, 77].

Impaired immune functions associated with depression also appear to normalize in response to treatment with electroconvulsive therapy (serum TNFα) [78], antidepressant drug therapy (serum TNFα and CRP) [79], and psychological interventions [80] (due in part to a return of the pro-/anti-inflammatory cytokine balance). A number of randomized clinical trials involving psychological interventions that relieve depression or boost positive emotions have reported improvement in immune and/or endocrine functions. For example, Antoni et al. conducted a 10-week CBT stress-management program in human-immunodeficiency-virus- (HIV-) infected men [81]. The intervention significantly increased naïve CD4+ T cells in blood over

a 12-month follow-up among those in the CBT group (n = 16) compared to controls (n = 9). This effect was mediated by a reduction in depressive symptoms and a decrease in urinary cortisol levels. A more recent study by Antoni et al. examined the effects of a 10-week cognitive behavioral stress management program in 128 women with breast cancer, finding that the intervention significantly lowered serum cortisol, increased Th_1 pro-inflammatory cytokines (IL-2 and INF-γ), and increased IL-2 : IL-4 ratio [82].

In another clinical trial, Van Middendorp et al. conducted an emotional disclosure intervention (4 weekly sessions) in 68 nondepressed patients with rheumatoid arthritis, finding a reduction in urinary cortisol, a reduction of serum INF-γ, and a trend towards a reduction in IL-6 (P = 0.07) [83]. Also, a recent intervention by Lee Berk et al. to increase positive emotions (via mirthful laughter) in 20 high-risk diabetics with hypertension and hyperlipidemia found that the intervention lowered serum epinephrine, norepinephrine, INF-γ, CRP, TNF-α, and IL-6 [84]. Finally, Roberts et al. found that the hypocortisolism in 41 subjects with chronic fatigue syndrome (a depression-like syndrome) was improved following 15 sessions with CBT [85]; thus, whether cortisol is pathologically high or low, psychological therapies may help normalize levels.

In summary, psychotherapeutic treatments that increase positive emotions (particularly CBT) appear to increase naïve CD4+ cells, increase NK cell cytotoxicity, reduce IL-6, reduce TNF-α, reduce CRP, reduce INF-γ (sometimes increasing in nondepressed female patients), decrease catecholamines, and normalize (decreasing or increasing) cortisol.

5.2. Physiological Effects of Religion. As noted previously, religious involvement has been associated with better mental health. However, it is also associated with better physical health and greater longevity [86, 87]. The mechanisms that explain the association with physical health are unclear but likely involve behavioral and psychosocial factors operating at least partly through immune/endocrine pathways related to stress [88–90]. There is some evidence that religious involvement is associated with better immune and endocrine functions, although no studies have yet examined the effects of a religious psychotherapy on these functions.

For example, Sephton et al. examined the relationship between religious involvement and immune function in 112 women with metastatic breast cancer [91]. Religious expression was positively related to the total number of circulating T cells (r = 0.24, P = 0.01) and helper T cells (r = 0.23, P = 0.01), and controlling for social network size, disease, and medical treatment variables had little effect on these relationships. Investigators also found positive associations between religious expression and cytotoxic T cells (r = 0.18, P < 0.05) and a trend towards greater NK cell numbers (r = 0.14, P = 0.07).

Studying a vulnerable population, Ironson et al. examined the effects of changes in spirituality/religiousness (S/R) following the diagnosis of HIV on CD4 counts (T cells) and viral load during 4 years of follow-up [92]. Hierarchical linear modeling was used to examine the effects of changes in S/R over time with the outcome being slopes of change in CD4 cells and viral load during follow-up. Patients who reported an increase in S/R after diagnosis experienced significantly less decrease in CD4 counts and less increase in viral load during the 4-year follow-up. Results were independent of church attendance and initial disease status, medication use, age, gender, race, education, health behaviors, depression, hopelessness, optimism coping, and social support. In fact, among all significant predictors of CD4 cell count and viral load, change in S/R was the most powerful predictor. A number of other studies have found similar connections between religious involvement and other immune functions (T cells, in particular) [93–95], pro-inflammatory indicators (IL-6) [96–98], and endocrine measures (specifically cortisol) [99–103].

In contrast to the numerous observational studies cited perviously, there have been far fewer intervention studies. One that examined nondepressed HIV+ patients reported that a stress management intervention designed to increase spiritual growth led to an increase in lymphocyte proliferation and a 3-fold increase of INF-γ [104]. Likewise, Eastern spiritual meditation has been shown to increase antibody response to influenza vaccine [105], alter the ratio of pro-/anti-inflammatory cytokines [106, 107], increase NK cell activity [107], reduce cortisol [107–110], and decrease catecholamine [111, 112] levels (and in one study, there was a trend toward superiority over conventional CBT [113]).

Thus, psychotherapy for depression that utilizes patients' religious resources in therapy may help to normalize endocrine and immune dysfunctions, perhaps even more so than conventional treatments [114]. Whether or not this is true, however, is completely unknown. The study described below is the first randomized clinical trial to address this gap in the literature and to examine whether religious CBT is equally effective, more effective, or less effective than conventional CBT in depressed patients with chronic medical illness. The effectiveness of religious CBT is suggested both (1) by an earlier study showing that religious CBT was more effective than conventional CBT in religious patients [115] and (2) by a study showing that patients receiving conventional CBT responded more quickly to the therapy if they indicated that religion was important to them [116].

6. Ongoing Randomized Clinical Trial

Psychotherapy that takes into account patients' religious beliefs as potential resources in therapy may not only help to overcome religious barriers to therapy but may also be more effective in resolving depressive symptoms and reversing depression-induced physiological changes. The efficacy of religious psychotherapy, that is, taking into account the religious beliefs and practices of patients and utilizing them in therapy, however, has yet to be examined in medical settings. Religious CBT has been shown to increase the speed of remission in depressed healthy religious patients and do so beyond that achieved by conventional CBT [117–119]. Likewise, a number of studies that utilized patients' religious beliefs in therapy have reported results superior to secular

treatments or usual care, especially in religious patients [120–124].

Finally, there is plenty of evidence that many patients in the United States prefer to have their religious beliefs integrated into therapy. For example, one recent study found that 77% to 83% of adults aged 55 or older with depression and comorbid chronic medical illness wished to include religion in their therapy [125]. Likewise, in a survey of a more general population of 74 individuals receiving counseling, Rose et al. found that only 18% of patients said they did not want to discuss religion or spirituality in psychotherapy and only 8% said they wanted to discuss spiritual but not religious issues [126]. Likewise, Kelly found in a national survey that only 19% of respondents did not want to integrate religious/spiritual beliefs and values into therapy [127]. Thus, from the patient's perspective, there appears to be little resistance to utilizing their religious beliefs in therapy.

Benefits resulting from addressing religious beliefs in therapy may stem partly from redirecting attention away from a focus on loss and preoccupation with self and instead centering one's thoughts on positive processes such as gratitude, altruism, and generosity. Such positive cognitions have been shown to predict lower depressive symptoms [128–131]. Furthermore, religious cognitions that promote purpose and meaning in life and a hopeful and optimistic attitude toward circumstances may help to counter the negative cognitions and behaviors associated with depression. Indeed, dozens of studies have reported a link between positive emotions such as optimism and purpose in life, religious involvement, and fewer depressive symptoms [132]. Having a common worldview and explanatory model that gives meaning and purpose to negative life events may also strengthen the therapeutic alliance between patient and therapist, which could contribute to treatment efficacy [133]. This may be particularly true for minority populations who often suffer from disparities in psychiatric care and yet tend to be very religious.

7. The Interventions

We are now in the first phase of a randomized clinical trail being conducted at two sites, Duke University Health Systems in the Triangle region of North Carolina and Glendale Adventist Medical Center in Los Angeles County. During Phase I (Rounsaville 1a) [134], we are developing and further refining a manual to guide the delivery of religious CBT and are conducting an open trial to assess subject recruitment and to allow therapists to gain experience with the treatment and method of delivery. In this preliminary phase, religious and conventional CBT are being delivered online by instant messaging, over the telephone, or by Skype to determine which method of delivery is most acceptable, preferred, and likely to be complied with by patients during the randomized clinical trial in Phase II.

In Phase II (Rounsaville 1b), we will conduct a randomized proof of concept comparison of conventional CBT versus religious CBT that will (1) further demonstrate feasibility of recruitment and subject compliance, (2) confirm the expected clinically meaningful difference (effect size) in the therapies, and (3) show differential effects in reversing depression-induced immune and endocrine functions. In this head-to-head trial, 70 persons who are at least somewhat religious/spiritual and ages 18–85 with an episode of major depression (diagnosed by the Mini International Neuropsychiatric Inventory using DSM-IV criteria), moderate severity of depression based on Beck Depression Inventory (BDI) scores, and at least one chronic medical illness will be randomized to either conventional CBT or religious CBT. Excluded will be patients with significant cognitive impairment, those currently receiving psychotherapy, those that meet criteria on the MINI for psychotic disorder, alcohol or substance abuse, or PTSD, those with a history of bipolar disorder, active suicidal thoughts (passive suicidal thoughts will not exclude), diagnosis of HIV/AIDS, autoimmune diseases, or endocrine disorders likely to affect stress hormone levels, or taking immunosuppressant drugs (due to proposed immune and endocrine analyses).

The trial will consist of ten 50 min sessions, administered by licensed master's level therapists and delivered over 12 weeks. The primary endpoint will be depressive symptoms on the BDI (clinician-rated scales like the Hamilton or MADRS are not being used because nonclinicians blind to study group will be administering outcome assessments). Subjects will be assessed on the BDI at baseline, 4 weeks, 8 weeks, 12 weeks, and 24 weeks. Immune (pro-inflammatory and anti-inflammatory cytokines) and endocrine (urinary cortisol, epinephrine, and norepinephrine) measures will be assessed at baseline, immediately at the end of therapy (12 weeks), and at 24 weeks from baseline.

8. Preliminary Results

Both interventions are taking a CBT approach documented in treatment manuals. Depressed persons with chronic medical illness have often allowed their health problems and disability (i.e., circumstances) to shape the way they think and view their world. Depression is often maintained by a negative worldview that sees the person's situation as hopeless and without meaning or purpose. Both conventional and religious CBT seek to alter these dysfunctional, maladaptive beliefs, replacing them with positive, realistic beliefs and behaviors that generate positive emotions.

8.1. Conventional CBT. CCBT helps depressed patients understand the links between thoughts, emotions, and behavior. It uses guided discovery, Socratic questioning, and challenge of automatic negative thoughts to help patients identify and appraise their cognitions and determine problematic behaviors. Interventions include activity scheduling, along with practice assignments, in which clients test out ideas and behaviors discussed during sessions. In this arm, therapists will be asked to avoid reference to the participant's faith or religious belief. If religious issues come up, therapists will gently redirect the patient to more secular ways of approaching the issue and, if necessary, will address religious issues in the broadest conventional way possible, relating them to other cognitions/behaviors usually addressed in

conventional CBT. We felt justified in doing this because most CBT today does not utilize and integrate the religious beliefs of patients into psychotherapy.

8.2. Religious CBT. Religious CBT follows the same process described for CCBT, except that religious beliefs and motivations will be utilized to stimulate changes in thought and behavior. For example, participants may have obsessive guilt about sin or punishment, report religious doubt, or want to discuss the cognitive and emotional elements of their faith. In RCBT all those issues will be considered fully acceptable as part of therapy, including an emphasis on religious resources. In other words, RCBT uses religious rationales (based on the subject's faith tradition) and religious arguments to counter irrational thoughts and utilizes religious behaviors (involvement in the religious community) to increase supportive relationships. RCBT teaches patients to use their own religious teachings, doctrines, and behaviors to help change maladaptive beliefs, values, and behaviors so as to transform their worldview into one that is meaningful, hopeful, and optimistic, one that is incompatible with depression. RCBT seeks to bolster powerful religious beliefs that promote behaviors such as forgiveness, gratitude, generosity, and altruism (focusing on others and on God) that generate meaning and purpose, optimism, and hope, which neutralize depression.

The RCBT manual is initially being developed within a Christian framework and will then be adapted to the subject's faith tradition (i.e., versions of the manual for Jewish, Hindu, Buddhist, and Muslim patients). These versions of the manual will be prepared by experienced psychotherapists well versed each of these faith traditions, who will work under the direction of Ken Pargament, a psychotherapist widely renowned for his writings on integrating spirituality into psychotherapy [135]. The therapists who develop the different religious versions will help supervise study therapists while they are treating patients in these faith traditions.

9. Conclusions

Preliminary results from Phase I indicate that of the first 82 patients screened for inclusion (from North Carolina and Los Angeles County), 78% had a computer at home, 77% had access to the Internet at home, 75% could type easily and quickly on the computer, 68% had a landline telephone, 95% had a cell phone, but only 30% had Skype (or equivalent program) and a webcam. Most (>80%) preferred therapy by telephone, 9% preferred online therapy, and 9% preferred therapy via Skype. Patients were also asked what method of therapy they were not willing to try; 70% said they were unwilling to try online therapy and 78% were unwilling to try Skype.

Of the 82 subjects, 18 met inclusion criteria and were randomized to treatment arm (one to online, two to Skype, and 15 to telephone, based on what subjects were willing to do). Technical issues encountered during therapy have been the biggest problem. The telephone route has had the fewest issues; 84% of telephone sessions (delivered by two-person conference call) had no technical difficulties; 8% had a problem with conference call ending or dropping; 5% had difficulty with sound; and one patient's cell phone battery died. Overall, only 0.6% of telephone therapy session time was wasted dealing with technical issues (during the course of 57 therapy sessions). For the single subject who was willing to try the online method thus far, difficulty connecting to the online platform (PsychologyOnline) was a problem for all sessions; overall, 35% of session therapy time was wasted on dealing with this issue. With regard to Skype, only 30% of 20 sessions proceeded without technical difficulties; 30% had difficulty with sound, 25% had difficulty connecting with Skype over the computer; and 5% had trouble with delay in picture, video call dropped, or session could not be recorded. Overall, 7% of therapy session time for Skype was spent dealing with technical issues. These preliminary findings suggest that the most preferred method of delivering the therapy and the one with the least technical difficulties is therapy by telephone, although we need more experience with the online and Skype methods.

10. Conclusions

Major depression is a common psychiatric illness, especially prevalent among persons with chronic medical illness, that can adversely affect physical health and medical outcomes by altering immune and endocrine functions. Religion is widespread and often used to cope with medical illness and problems with physical functioning. In this study, we are testing whether a psychological therapy that takes advantage of patients' religious resources improves depression more or less quickly than conventional therapy and reverses the adverse physiological changes associated with depression.

The results from this study will be important because they are relevant to therapists other than those who explicitly practice pastoral counseling, extending to secular therapists as well. If 65% of Americans indicate that religion is an important part of daily life and 80% of depressed patients wish to include it in therapy, then all therapists (whether they have explicit training in pastoral counseling or not) are likely to encounter patients among their clientele who will prefer this approach. Interestingly, Propst et al. in their study of religious versus conventional CBT found that delivery of religious CBT by secular therapists was at least as effective (if not more so) than religious CBT delivered by religious therapists [136].

In their 2009 review of religion in psychotherapy, Post and Wade make two points relevant to this issue [137]. First, although therapists in general are less overtly religious than patients, many therapists have spiritual beliefs that should assist them in appreciating the role that patients' religious beliefs play as a resource in their mental health. Second, while it is helpful for therapists to be well versed in the basic tenets of their patients' religious beliefs, it is not necessary for them to be experts in religion: "instead, approaching religious/spiritual clients with an openness and willingness to engage the religious/spiritual conversation will help clients to feel comfortable expressing their needs." These authors concluded that religious interventions in psychotherapy can

be effectively delivered by therapists with a wide range of religious/spiritual beliefs, not only pastoral counselors.

Conflict of Interests

The author have no conflict of interests.

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Research Article

Prospective Associations between Religiousness/Spirituality and Depression and Mediating Effects of Forgiveness in a Nationally Representative Sample of United States Adults

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The present investigation examines the prospective associations of religiousness/spirituality with depression and the extent to which various dimensions of forgiveness act as mediating mechanisms of these associations. Data are from a nationally representative sample of United States adults who were first interviewed in 1998 and reinterviewed six months later. Measures of religiousness/spirituality, forgiveness, and various sociodemographics were collected. Depression was assessed using the Composite International Diagnostic Interview administered by trained interviewers. Results showed that religiousness/spirituality, forgiveness of oneself and others, and feeling forgiven by God were associated, both cross-sectionally and longitudinally, with depressive status. After controlling for initial depressive status, only forgiveness of oneself and others remained statistically significant predictors of depression. Path analyses revealed that religiousness/spirituality conveyed protective effects, prospectively, on depression by way of an indirect path through forgiveness of others but not forgiveness of oneself. Hence, forgiveness of others acts as a mechanism of the salutary effect of religiousness/spirituality, but forgiveness of oneself is an independent predictor. Conclusions regarding the continued development of this type of research and for the treatment of clients with depression are offered.

1. Introduction

The present study examines the associations of religiousness/spirituality with depression in a nationally representative sample of United States adults. A parallel aim is to investigate the extent to which various dimensions of forgiveness may act as mechanisms of the connection between religiousness/spirituality and depression. Though research on religiousness/spirituality and its connections to depression and broader mental health has proliferated for several decades, only a small fraction of this research has utilized longitudinal designs and population-based samples. The present study aims to address this void in the literature and contribute to our understanding in this area.

In the *Handbook of Religion and Health*, Koenig et al. [1] define religion as "an organized system of beliefs, practices, rituals, and symbols" (page 18) intended to encourage a close relationship with God or higher power/truth/reality and to help individuals understand their connection to others living in a community. Spirituality is defined as the search for understanding and meaning in life that may or may not be related to religious rituals and community [1]. Koenig et al. devote an entire chapter in this handbook to the review of published research on religiousness/spirituality and depression. These authors provide an overall synopsis of this literature and suggest that generally religious and spiritual individuals experience less depression, as compared to non-religious/spiritual individuals. Over 100 studies are indexed that on the whole support this conclusion. The size of this correlation is modest, but not trivial, and meta-analytic reviews have estimated the overall effect size to be in the neighborhood of $r \approx .20$ [2]. In about a decade

since the publication of this comprehensive review, more than 60 studies have been added to this literature that again support the conclusion that religiousness/spirituality shows salutary associations with mental health [3]. As one example, recent longitudinal work showed that church attendance was associated with reduced development of subsequent depressed mood over the course of eight years in older Australian adults [4]. Despite sustained interest in the potentially beneficial effects of religiousness/spirituality on mental health, few studies have examined the question using similar longitudinal designs or population-based samples. Hence, there remains a gap in the literature that cannot be filled by cross-sectional analyses of convenience samples. Prospective designs are needed to discern the temporal ordering of the association between religiousness/spirituality and depression. Evaluating the generalizability of any such effect will require representative, population-based samples. The present study offers both of these advantages.

In addition to testing the prospective relationship between religiousness/spirituality and depression, the present study offers the opportunity to examine several dimensions of forgiveness as potential mechanisms of this association. A number of psychosocial, health, and health-behavior mechanisms have been invoked to explain the salutary associations of religiousness/spirituality and depression; yet the question of what accounts for these effects has yet to be entirely answered [5]. Perhaps forgiveness is a viable mechanism.

Forgiveness is a multidimensional phenomenon that involves the voluntary letting go of negative thoughts, feelings, and behaviors and potentially even replacing these with positive thoughts, feelings, and behaviors [6]. Often the focus of forgiveness is toward another individual, but the focus of forgiveness can also involve oneself [7], God/higher power [8], and sometimes involves the process of seeking the forgiveness of others [9]. Forgiveness has been shown to be related to religious and spiritual variables, but often it is not related at the levels of magnitude that one might expect [10, 11]. Further, investigations of the connections between religiousness/spirituality and forgiveness almost exclusively regard forgiveness of others, and do not consider other dimensions of forgiveness. Nonetheless, there is a modest but reliable association between religiousness/spirituality and forgiveness of others and it may likely extend to other dimensions of forgiveness as well, especially feeling forgiven by God and seeking others' forgiveness.

Given its association with religiousness/spirituality, forgiveness might be considered a viable mechanism of the salutary associations of religiousness/spirituality with depression if it too were associated with depression or other related mental health conditions. Indeed, associations between forgiveness and a variety of mental health outcomes have been documented [12]. A vast majority of these studies have examined cross-sectional associations in convenience samples or highly specific patient populations. A few exceptions do exist in which, for instance, forgiveness has been linked to diagnosable depression in a nationally representative sample of United States adults [13] or in a prospective fashion demonstrating that forgiveness predicts subsequent mental distress [14]. These recent findings suggest that forgiveness may have meaningful prospective associations with mental health outcomes.

Given the research findings reviewed above, we believe that a prospective study of religiousness/spirituality, forgiveness, and depression will offer useful insights and add to what we estimate is only a handful of studies of this type. Based on our review, we have built a model to examine four hypotheses. First, we hypothesize that religiousness/spirituality will show a prospective, protective (inverse) association with depression. Second, we hypothesize that religiousness/spirituality will be positively associated with multiple dimensions of forgiveness. Third, we hypothesize that forgiveness will show a prospective, protective (inverse) association with depression. Fourth, we hypothesize that the protective (inverse) association of religiousness/spirituality with depression will operate via the mechanism of forgiveness. Put another way, we expect that religious and spiritual individuals will experience a greater proclivity toward multiple forms of forgiveness, and this tendency will in turn yield benefits for depression risk.

2. Method

2.1. Sample. Participants responded to the Survey of Consumers, a telephone survey of adults age 18, and older conducted by the University of Michigan's Institute for Social Research. The sample was nationally representative and was randomly selected using the two-stage random-digit-dialing (RDD) procedure described by Waksberg [15]. The survey employs a rotating panel design to gather data from approximately 500 respondents on a monthly basis. Each monthly sample consists of about 300 new respondents and 200 respondents being re-interviewed six months after their initial interview. The initial sample for this study consisted of the new national sample selected each month for five months for a total of 1,423 respondents. The reinterview target sample consisted of approximately three-fourths of the original respondents who were randomly selected for a total of 1,055 respondents. Both the initial and reinterview samples are nationally representative. The response rate for the survey ranged from .69 to .71. After listwise deletion of missing data, the final sample consisted of 966 respondents who participated at both times 1 and 2.

2.2. Measures

2.2.1. Depression. The measurement of major depressive episode was based on the definitions and criteria specified in the revised edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R). Major depressive episode was assessed using a brief, screening version [16, 17] of the depression module of the World Health Organization's (WHO) Composite International Diagnostic Interview, Version 1.0 (CIDI) [18, 19]. The CIDI is a structured interview schedule designed to be used by trained interviewers who are nonclinicians to assess the prevalence of specific psychiatric disorders [20]. WHO field trials and other methodological studies have

Table 1: Forgiveness scales, items, and alphas.

Scale (alpha)
Forgiveness of self (α = .67)
I often feel that no matter what I do now I will never make up for the mistakes I have made in the past.[a]
I find it hard to forgive myself for some of the things I have done wrong.[a]
Forgiven by God (α = .64)
Knowing that I am forgiven for my sins gives me the strength to face my faults and be a better person.[a]
I know that God forgives me.[a]
Forgiveness of others (α = .72)
When someone hurts you, how often do you hold resentment or keep it inside?[b]
When someone hurts you, how often do you try to get even in some way?[b]
When someone hurts you, how often do you try to forgive the other person?[b]
I have grudges that I have held on for months or years.[a]
I have forgiven those who have hurt me.[a]
Seeking forgiveness (α = .64)
How often do you ask God's forgiveness when the respondent had hurt someone?[b]
How often do you ask the other person's forgiveness when the respondent had hurt someone?[b]
How often do you pray for someone who had hurt the respondent?[b]

[a]Response scale: strongly agree, agree, disagree, or strongly disagree.
[b]Response scale: never, hardly ever, not too often, fairly often, and very often.

shown good test-retest reliability and clinical validity of these CIDI diagnoses [21, 22].

2.2.2. Forgiveness. Four dimensions of forgiveness were assessed, and, as with all following scales, all scoring was done so that higher scores represented higher levels of the construct. All reported alpha values for forgiveness and all following scales are based on the present study's data. Forgiveness measures used in the present investigation were adapted from those originally used by Watson et al. [23, 24], Mauger et al. [25], Idler et al. [26], and Gorsuch and Hao [27]. For a complete list of the items utilized to measure forgiveness, see Table 1.

2.2.3. Religiousness/Spirituality. 4 religiousness/spirituality factors were assessed as follows: *service attendance* was measured by asking respondents how often they went to religious services. Response categories ranged from (1) never to (6) more than once a week. Frequency of *prayer* was measured by asking how often they prayed in places other than church and synagogue. Responses ranged from (1) never to (6) more than once a day. Respondents were also asked to rate how *religious* and how *spiritual* they were on a ten-point scale.

The four religiousness/spirituality items were combined to form a single index of religiousness/spirituality. This decision was made for five reasons. First, the items had virtually identical patterns and magnitudes of association with depression. Second, when factor analyzed (maximum likelihood extraction) the items loaded on a single latent factor (loadings = attend (.67), pray (.71), how religious (.92), and how spiritual (.80)). Third, using a single religiousness/spirituality composite offered parsimony in testing more complex religiousness/spirituality → forgiveness → depression mediation models. Fourth, multiitem composites contain less measurement error than single items. Finally, Koenig et al. caution researchers about multicollinearity in the use of multiple religiousness/spirituality indices in regression models. The average correlation between religious/spiritual variables in this study was $r = .55$, similar to the magnitude of the associations used to illustrate multicollinearity problems in Koenig et al.'s [1] discussion. Using a composite instead of individual measures of religiousness/spirituality eliminates potential multi-collinearity issues in our regression models. The religiousness/spirituality composite index had an internal consistency of .85.

2.2.4. Control Variables. Covariates assessed included: gender (male = reference category), age (in years), race (white = reference category), marital status (0 = not married; 1 = married), education (years completed), and income (13-point continuum ranged from under $10,000 to $100,000 or more). Exploratory analyses revealed that there were no noticeable differences between this coding scheme and other schemes that included dummy variables for separated and divorced, never married, and widowed respondents.

2.3. Statistical Analyses. Data were weighted for age, gender, and race to take into account differential probabilities of selection and to adjust the demographics of the sample to that of the United States population using the Current Population Survey. Analyses proceeded in three phases. First, we computed and examined descriptive statistics (means/counts and standard deviations/ranges) and bivariate correlations. Second, we used a hierarchical logistic regression model to examine the prospective relations of religiousness/spirituality and forgiveness with depressive diagnosis six months later. This model was structured so that on step one depressive diagnosis at time one was entered. On step two, sociodemographic control variables were entered. On step three, the religiousness/spirituality index was entered. On step four, the four forgiveness variables were entered. In this way, religiousness/spirituality was tested for its longitudinal association with depressive status, and initial evaluations of the mediating effects of forgiveness were also considered.

The third phase of analysis involved a more thorough and sophisticated examination of the mediating mechanisms that might explain the prospective relationship of religiousness/spirituality with six-month depressive diagnosis. Although the design of the hierarchical logistic regression model allows one to examine the extent to which the religiousness/spirituality coefficient is accounted for by forgiveness variables entered on the subsequent step, it

does not allow for a specific test of the indirect effect of religiousness/spirituality through forgiveness to six-month depressive status.

Traditionally, a hierarchical model of this type might have been seen as sufficient for establishing that forgiveness acts as a mediating mechanism, but thanks to recent work [28], it has become clear that the traditional mediation approach is limited in two important ways. First, the traditional mediation approach requires a statistically significant total effect between religiousness and depressive diagnosis to be present. Second, it does not guarantee an explicit test of the indirect effect. A better manner in which to proceed is to simply test the indirect effects of interest [28]. However, when the outcome variable is dichotomous, calculating an indirect effect requires that any logistic regression coefficients in the estimated mediation model be standardized. There are at least six different methods for standardizing logistic regression coefficients, but an efficient and effective method requires simply that the predictors be standardized before entry into the logistic model [29]. Following this requirement, our mediation models are constructed so that coefficients representing the associations between religiousness/spirituality and forgiveness are *unstandardized* ordinary least squares regression coefficients. Coefficients representing associations between forgiveness variables and depressive diagnosis are *standardized* logistic regression coefficients. The indirect effect is computed by multiplying the unstandardized coefficient for religiousness/spirituality predicting forgiveness with the standardized coefficient for forgiveness predicting depressive diagnosis. The indirect effect can then be tested for statistical significance using the Sobel method [30].

3. Results

Table 2 gives the means and proportions, standard deviations and ranges, and bivariate associations for all study variables. Looking at columns one and two shows the associations between all predictors and depression both cross-sectionally and six months lagged. Lagged associations showed that the strongest predictor of depression at time two was prior depression at time one. Religiousness/spirituality showed a modest protective association, as did feeling forgiven by God. Protection against depression offered by forgiveness of oneself and others was noticeably larger. Bivariate associations for religiousness/spirituality and forgiveness variables with depression were similar for cross-sectional and lagged analyses.

Intercorrelations between religiousness/spirituality and forgiveness are contained in the lower right-hand portion of Table 2. Religiousness/spirituality was positively correlated at moderate levels with forgiveness of others and feeling forgiven by God. Religiousness/spirituality showed its highest positive correlation with seeking forgiveness and its lowest positive correlation with forgiveness of oneself. Forgiveness of others was moderately, positively correlated with forgiveness of oneself, feeling forgiven by God, and seeking forgiveness. Forgiveness of oneself was modestly, positively correlated with feeling forgiven by God and not correlated with seeking forgiveness. Feeling forgiven by God and seeking forgiveness were moderately, positively correlated.

Also evident in the table are small cross-sectional associations of sex and age with depression. Women showed slightly greater risk of depression at time one, and older participants showed slightly less risk. Age and income also showed a small protective, prospective association with depressive diagnosis. Hispanics were at increased risk, prospectively, of developing a depressive diagnosis.

Table 3 summarizes the results of the hierarchical logistic regression analysis. Unlike the bivariate associations reported above, the logistic model allows for an examination of the unique, prospective predictors of depressive diagnosis at time two, controlling the effects of initial depressive diagnosis. Model one examined the association of time one depression with time two depression. The odds ratio indicated that individuals with likely depressive diagnosis at time one showed over 12 times increased odds of depression at time 2. Regarding sociodemographic predictors of depression at time two, Hispanic respondents showed 3.6 times increased odds of depression, whereas higher-income respondents showed .08 times reduced odds of depression. The most theoretically meaningful results of the logistic regression model were those showing effects for religiousness/spirituality and forgiveness. Religiousness/spirituality showed no influence on the odds of depression at time two, but forgiveness of oneself and others showed .28 and .32 reduced odds of depression, respectively.

Based on the results of our bivariate and logistic analyses, we constructed a path model examining the indirect effects of religiousness/spirituality through forgiveness of oneself and others on depressive diagnosis at time two (see Figure 1). We did not include feeling forgiven by God or seeking forgiveness because neither variable had an independent direct effect on depression—a requirement for a mediating variable. The mediation model controlled the effects of depressive diagnosis at time one and all socio-demographic variables. The results of the model showed that religiousness/spirituality was significantly, positively associated with both forgiveness of oneself and others. Forgiveness of oneself and others were also significantly, negatively associated with depressive diagnosis at time two. The indirect effect of religiousness/spirituality through forgiveness of oneself on depressive diagnosis at time two was not statistically significant ($B = .02$, $Z = -1.63$, $P = .10$). The indirect effect of religiousness/spirituality through forgiveness of others on depressive diagnosis at time two was statistically significant ($B = .03$, $Z = -1.98$, $P < .05$). Hence, religiousness/spirituality shows a prospective, protective association with depression through forgiveness of others but not forgiveness of oneself.

4. Discussion

This study set out to examine the prospective association of religiousness/spirituality with depression and the extent to which this association might be mediated through various dimensions of forgiveness. Our findings both confirm and disconfirm our expectations. As is typical in this type of

Table 2: Means/proportions, standard deviations/ranges, and bivariate correlations for all study variables.

(a)

	Dep T2		Dep T1		Fem		Age		Blk		Hsp		Ed		Inc	
Depression time 1	.41	***	1.00													
Sex (female = 1)	.05		.09	**	1.00											
Age	−.08	*	−.10	**	.04		1.00									
Black (other = 0)	.02		−.03		−.03		−.10	**	1.00							
Hispanic (other = 0)	.10	**	.00		.09	**	−.14	***	−.07		1.00					
Years of education	−.03		−.01		−.06		−.11	**	−.09	**	−.07	*	1.00			
Income	−.12	***	−.07		−.16	***	−.11	**	−.14	***	−.10	**	.46	***	1.00	
Separated/divorced (other = 0)	.04		.02		−.05		.06		.05		.01		−.09	**	−.14	***
Widowed (other = 0)	−.01		−.04		.16	***	.37	***	.01		−.05		−.22	***	−.28	***
Never married (other = 0)	.05		.01		−.07	*	−.41	***	.21	***	−.02		.03		−.12	***
Religiousness/spirituality	−.09	*	−.12	***	.14	***	.17	***	.01		−.05		.01		−.04	
Forgiven oneself	−.25	***	−.28	***	.05		.00		−.12	***	.02		.22	***	.23	***
Forgiven others	−.25	***	−.30	***	.10	**	.13	***	−.08	*	−.04		.04		.03	
Forgiven by God	−.09	**	−.08	*	.14	***	.07	*	.06		−.02		−.11	**	−.06	
Seek forgiveness	−.04		−.04		.27	***	−.02		.15	***	−.02		−.09	**	−.16	***
Mean/proportion	.11		.12		.55		45.90		.10		.06		14.03		8.02	
SD/range	0-1		0-1		0-1		16.11		0-1		0-1		2.49		3.60	

(b)

	Sep/Div		Wid		Nvr Mar		Rel/Sp		FS		FO		FG		SF
Separated/divorced (other = 0)	1.00														
Widowed (other = 0)	−.11	**	1.00												
Never married (other = 0)	−.20	***	−.14	***	1.00										
Religiousness/spirituality	−.01		.09	*	−.14	***	1.00								
Forgiven oneself	−.07	*	−.07	*	−.08	*	.07	*	1.00						
Forgiven others	−.02		.08	*	−.13	***	.32	***	.39	***	1.00				
Forgiven by God	.06		.07	*	−.14	***	.39	***	.10	**	.26	***	1.00		
Seek forgiveness	.02		.02		−.03		.57	***	.02		.32	***	.38	***	1.00
Mean/proportion	.15		.07		.19		5.28		4.03		4.03		4.70		3.87
SD/range	0-1		0-1		0-1		1.76		1.15		.74		.66		.99

*$P < .05$, **$P < .01$, ***$P < .001$. Listwise $N = 966$. Dep = depression, Fem = female, Blk = black, Hsp = Hispanic, Ed = years of education, Inc = household income, Sep/Div = separated/divorced, Wid = widowed, Nvr Mar = never married, FS = forgiven self, FO = forgiven others, FG = forgiven by God, and SF = seek forgiveness. Values in the "mean/proportion" row represent means for continuous variables and proportions for dichotomous variables; likewise, values in the "SD/Range" row represent standard deviations for continuous variables and range of possible values for dichotomous variables.

Table 3: Unstandardized logistic regression coefficients, standard errors, and odds ratios for the association of time 1 depression, sociodemographics, religiousness/spirituality, and Forgiveness Predicting Time 2 Depression.

	Model 1				Model 2				Model 3				Model 4			
	B	S.E.	OR		B	S.E.	OR		B	S.E.	OR		B	S.E.	OR	
Depression time 1																
Depressed	2.52	.26	12.46	***	2.54	.28	12.70	***	2.50	.28	12.21	***	2.07	.30	7.91	***
Not depressed (referent)	—	—	—		—	—	—		—	—	—		—	—	—	
Sex																
Female					−.01	.28	.99		.02	.28	1.02		.22	.30	1.24	
Male (referent)					—	—	—		—	—	—		—	—	—	
Age					−.01	.01	.99		−.01	.01	.99		−.01	.01	.99	
Race ethnicity																
Black					.25	.41	1.28		.26	.42	1.29		.17	.42	1.19	
Hispanic					1.28	.54	3.61	*	1.26	.54	3.54	*	1.36	.55	3.90	**
White (referent)					—	—	—		—	—	—		—	—	—	
Years of education					.05	.06	1.05		.05	.06	1.05		.09	.07	1.10	
Income					−.09	.04	.92	*	−.09	.04	.92	*	−.06	.05	.94	
Marital status																
Separated/divorced					.39	.37	1.48		.37	.37	1.45		.39	.39	1.48	
Widowed					.28	.59	1.32		.28	.59	1.32		.35	.62	1.42	
Married (referent)					—	—	—		—	—	—		—	—	—	
Never married					.24	.37	1.27		.18	.38	1.20		.16	.39	1.17	
Religiousness/spirituality									−.06	.08	.94		−.01	.10	.99	
Forgiveness of oneself													−.32	.12	.72	**
Forgiveness of others													−.39	.20	.68	*
Forgiveness by God													−.21	.20	.81	
Seeking forgiveness													.09	.20	1.09	

*$P < .05$, **$P < .01$, ***$P < .001$; listwise $N = 966$; model 1 pseudo $R^2 = .22$, model 2 pseudo $R^2 = .26$, model 3 pseudo $R^2 = .26$, model 4 pseudo $R^2 = .31$.

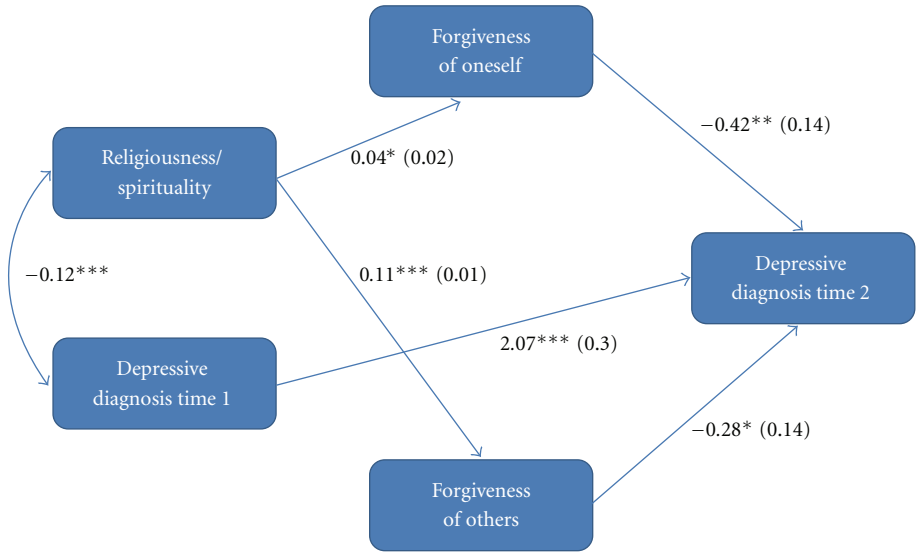

Figure 1: Path analysis of the prospective effects of religiousness/spirituality and prospective mediating effects of forgiveness on depression. Paths from religiousness/spirituality to forgiveness of oneself and others are unstandardized ordinary least-squares regression coefficients (standard errors). Paths from forgiveness of oneself and others to depression are standardized logistic regression coefficients (standard errors). All coefficients are net of the effects of gender, age, race, education, income, and marital status. $R^2 = .32$ for depression at time 2. Listwise $N = 966$.

design, the strongest predictor of depression at time 2 was depression at time 1. More importantly, bivariate analyses confirmed that religiousness/spirituality and forgiveness of oneself, forgiveness of others, and feeling forgiven by God were inversely associated with depression, and this was true both cross-sectionally and longitudinally. Unexpectedly, religiousness/spirituality did not show prospective associations with depression after controlling for initial depressive status in logistic models. As expected, forgiveness of oneself and others remained statistically significant, prospective predictors of depression, even after controlling for initial depressive status.

4.1. No Prospective Effect of Religiousness/Spirituality on Depression. Although unadjusted associations between religiousness/spirituality and depression do exist in the present study, religiousness/spirituality does not predict depression prospectively after adjusting for initial depressive status and other controls. The lack of a prospective association flies in the face of existing, sound empirical work suggesting the opposite [1–3, 5]. Furthermore, the results of the present study run contrary to those of dozens of studies showing that religiousness/spirituality offers protective advantages in multiple mental health domains [3]. As noted earlier, hundreds of other studies show salutary effects of religiousness/spirituality for physical health outcomes [1]. Given this outcome, there is good reason to consider what this might mean.

Although there are probably several reasons for the results observed in the present study, a couple of issues deserve discussion. First, as noted above, Koenig et al. [1] identified over 100 studies of religiousness/spirituality and depression that were conducted prior to 2001, and Toussaint et al. [3] identified an additional 66 that were conducted between 2001 and 2009. The majority of these studies reported at least one result suggestive of a protective connection between religiousness/spirituality and depression [3]. However, these studies have been overwhelmingly cross-sectional in nature, and most have relied on convenience samples. Koenig et al. [1] in their exhaustive review identified only 22 prospective cohort studies, and Toussaint et al. [3] identified little more than a handful of additional prospective studies in recent years. Of the 22 prospective cohort studies identified by Koenig et al. [1], only four utilized population-based samples, and in two of the four studies the beneficial effects of religiousness/spirituality were confined to a particular group (e.g., blacks, men). As such, the overreliance on cross-sectional methods to inform us about the relationships between religiousness/spirituality and depression seems a risky enterprise. Longitudinal research continues to be badly needed. The present study offers exactly that, a prospective examination of associations between religiousness/spirituality and depression in a representative sample of United States adults. Given how much faith we have placed in cross-sectional studies and how few and nuanced the prospective relations are, perhaps the current findings are not all that surprising. Rather, the present study might offer an initial point of reference for future prospective, population-based work.

A second issue in the present study regards the measurement of religiousness/spirituality. There has been great debate regarding what is the core essence of religiousness/spirituality and how it should be measured. Nevertheless, three key constructs have emerged [1, 31]. These include organizational religiousness, private religious practices, and religious importance. Indicators of each of these constructs

were included in the present study; however, we chose to combine each of the items into an overall religiousness/spirituality index. Some may question the utility of this approach arguing that these are different constructs worthy of individual investigation. We would agree. However, as we indicated in the methods, there are several reasons for this decision. First, the direction and magnitude of the effects were all highly similar for each of the individual items. Second, all items factored onto a single factor that resulted in an index with good internal consistency. Third, examining single-item indicators has an untoward effect on predictive efficiency due to increased measurement error, and including multiple variables in regression models increases the likelihood of multicollinearity problems. Fourth, although we captured multiple dimensions of religiousness/spirituality, we used single-item indicators of each construct and did not comprehensively capture all relevant dimensions of religion/spirituality. As a result, the decision was made to combine the items into a single index. This allowed for a more sensitive test of the association between religiousness/spirituality and depression and allowed us to focus on the important mediating effects of forgiveness without requiring 8 to 16 paths from initial religiousness/spirituality variables to mediating forgiveness variables. The end result of creating a religiousness/spirituality composite was a sensitive yet parsimonious model of the prospective relations between religiousness/spirituality, forgiveness, and depression.

4.2. Indirect Effects of Religiousness/Spirituality on Depression Operate through Forgiveness of Others but Not Oneself. The absence of a prospective relationship between religiousness/spirituality and depression offered the opportunity to refocus on an important and vexing question. That question is why might religiousness/spirituality have salutary effects? Though numerous psychological, social, and health mechanisms have been proposed and examined [1, 5, 32], the answer to why religiousness/spirituality has mental health benefits has not been entirely answered. Based on the present findings, we believe that forgiveness is an important piece of the puzzle.

Our data show that religiousness/spirituality promotes forgiveness of others, which in turn has a moderate protective relationship with depression, and our path model bears out that this indirect effect is statistically significant. This is not so for forgiveness of oneself. In this case, the connection between religiousness/spirituality and forgiveness of oneself is not sufficiently large, even though it is statistically significant, to result in a significant indirect effect. It is clear that the indirect effect breaks down in this connection and not elsewhere, because the connection between forgiveness of self and depression is almost twice the size of the connection between forgiveness of others and depression. Furthermore, the prospective direct effect of forgiveness of oneself on depression is over twice the size of the typical effect of religiousness/spirituality on depression ($r \approx .20$) [2]. Clearly, there is a meaningful benefit of forgiveness of oneself in terms of depression. But interestingly, this type of forgiveness is not strongly driven by religiousness/spirituality.

To summarize, the results of our path model suggest that religious and spiritual persons secure mental health benefits through their increased likelihood to forgive others but not because they forgive themselves. This may reflect the emphasis on forgiveness of others that is present in organized religion [11, 33, 34] and the relative lack of religious teaching on forgiveness of oneself [35]. It appears there is a stark delineation between the forgiving mechanisms that convey benefit of religiousness/spirituality to depression. That said, forgiveness of oneself remains the most powerful prospective predictor of depression, outside of preexisting depression. Clearly, this dimension of forgiveness deserves more attention.

Forgiving oneself has clearly been "The Stepchild of Forgiveness Research" [7]. That said, recent conceptual and empirical work has outlined some of the key correlates/predictors of self-forgiveness and its likely outcomes. Hall and Fincham [7] provide what might be considered the most comprehensive review of self-forgiveness and discuss several constructs which are likely to be causal antecedents of self-forgiveness. These include causal attributions, offense severity, shame/guilt, empathy, perceived forgiveness from victim/higher power, and conciliatory behavior. Nowhere is there mention of religiousness/spirituality in this conceptual model. This is a striking irony, because the general notion of forgiveness is infused with such religious and spiritual overtones that for years its study was thought not to be appropriate within science [11]. Moreover, Barry [35] indicates that the Bible offers no instance in which self-forgiveness is discussed. Given this context, perhaps it is not surprising that forgiveness of oneself emerged as an independent prospective predictor of depression and did not act as a mediating mechanism of the influence of religiousness/spirituality.

Recent empirical work confirms the importance of self-forgiveness for mental health. Macaskill [36] examined self-forgiveness in two studies involving over 500 participants. In her path analyses, self-forgiveness consistently showed robust associations with mental health. Importantly, in one of her path models where both self- and other forgiveness were modeled simultaneously, self-forgiveness showed statistically significant and moderate associations with both mental illness symptoms and life dissatisfaction while other forgiveness did not show significant associations with either variable. While these were cross-sectional studies and causal effects cannot be inferred, they do provide confirming evidence of the particular importance of self-forgiveness in our path models predicting depression.

4.3. Limitations. As with studies of this type, there are some limitations to this work. First, the number of religious/spiritual and forgiveness items could have been greater. This would have allowed for broader assessment coverage of these constructs and would have helped to reduce measurement error. Nonetheless, even after a decade of enthusiastic forgiveness research, we are hard pressed to find measures that provide equally efficient and broad coverage of these four different forgiveness dimensions. Second, the elapsed time span between initial data collection and followup was

six months. Though this provides ample time for changes to occur in mental health status, diagnosable depression likely changes less in this period of time. A longer follow-up would allow for even greater change, more variability, and potentially more predictive power. Third, given the paucity of longitudinal studies utilizing population-based samples, we feel that the findings from the present study provide a useful contribution to the existing literature. Nevertheless, we would encourage future investigators to consider collecting data from three or more waves so that growth modeling and latent trajectories could be established. Our two time-point data are useful in establishing prospective effects but do not allow for this type of more sophisticated understanding of change, variability in change, and latent trajectory analysis. Fourth, religiousness/spirituality and forgiveness are both measured at time one, and as such it is not possible to infer causal direction. Though religiousness/spirituality are often thought to be causally antecedent to forgiveness [11], it is also possible that being a more forgiving person might influence one's tendencies toward a religious/spiritual life. Future work utilizing three panels of data collection would be advisable and would improve on mediation models of the present type. Fifth, it is important to consider that respondents reporting on religiousness, spirituality, and forgiveness can be influenced by social desirability. Finally, in looking at depression as the main outcome in this study, it would have been useful to have controlled for other co-morbid disorders.

5. Conclusions

The present study provides a prospective, population-based analysis of relationships between religiousness/spirituality and depression. To our knowledge, approximately five other studies have investigated this question using prospective designs and representative, population-based samples. As a result of the scantiness of this literature, our understanding of the influence of religiousness/spirituality on depression is limited. Continued development of this literature will inform us about the extent to which religiousness/spirituality can truly be considered a causal factor that impacts the risk of depression or whether it is merely a side effect of psychiatric disturbance.

Prospective relationships between multiple dimensions of forgiveness and depression were tested in our analyses. Forgiveness of oneself and others proved to be important predictors of depression. Forgiveness of self is an independent predictor not connected to religiousness/spirituality as a mediating mechanism. Forgiveness of others, however, was found to convey the beneficial effects of religiousness/spirituality to depression. This is most likely the first demonstration, of which we are aware, of the prospective relations between forgiveness of oneself and others and diagnosable depression risk.

Continued attention to the connections between religiousness/spirituality, forgiveness, and depression will undoubtedly shed light on the causal linkages between these constructs. To the extent that religious and spiritual persons reap benefit from forgiveness of others but not of oneself, there may be potential for tailored patient-centered forgiveness therapy; that is, religious and spiritual clients may be helped more by addressing issues regarding forgiveness of others, whereas self-forgiveness may be more important for less religious/spiritual clients or nonreligious. Future work might do well to examine the interaction effects of religiousness/spirituality and forgiveness. If synergistic effects were observed, this might suggest the importance of client-centered forgiveness interventions. With continued attention, the importance of religiousness/spirituality and forgiveness for depression care and treatment will be better understood, and we will gain improved resolution on the implications of religiousness/spirituality and forgiveness in the treatment of depression and related mental illnesses.

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Research Article

Does Death of a Family Member Moderate the Relationship between Religious Attendance and Depressive Symptoms? The HUNT Study, Norway

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Background. The death of a family member is a stressful life event and can result in an increased level of depressive symptoms. Previous American research has shown inverse relationships between religious involvement and depression. European investigations are few and findings inconsistent; different contexts may have an important influence on findings. We therefore investigated the relationship between attendance at church/prayer house and depressive symptoms, and whether this relationship was moderated by the death of a close family member, in Norway. *Methods*. A population-based sample from the Nord-Trøndelag Health Study, Norway (HUNT 3, $N = 37{,}981$), was the population examined. Multiple regression and interaction tests were utilised. *Results*. Religious attendees had lower scores on depressive symptoms than non-attendees; death of a close family member moderated this relationship. The inverse relationships between attendance at church/prayer house and depressive symptoms were greater among those experiencing the death of an immediate family member in the last twelve months compared to those without such an experience, with men's decrease of depressive symptoms more pronounced than women's. *Conclusion*. In a population-based study in Norway, attendance at church/prayer house was associated with lower depressive symptoms, and the death of a close relative and gender moderated this relationship.

1. Introduction

Previous research has shown that loss of family members is associated with increased level of depression [1]. Religious involvement, in turn, has been associated with better psychological outcomes for people undergoing stressful life events [2]. However, even if people with religious or spiritual beliefs have better outcomes in response to negative life events in some studies [3], there is still much to be learned about how this relationship comes about [4].

Numerous studies from the USA have reported inverse relationships, both cross-sectional and longitudinal, between organizational religious involvement and depression [5, 6]. Among the most common measures used to assess religiosity in this field has been a single item, attendance at religious services [7].

The relationship between religious activity and depression in the European context is largely unexplored, and results of previous research are inconsistent. This may have to do with the different populations being studied in terms of the distribution of life stressors. In a study that examined religion and depression in eleven Western European countries, no direct association between religious indicators (including weekly church attendance) and depressive

symptoms was found in this community-based sample [8]. Even though religious attendance has been associated with fewer depressive symptoms in some studies [9], stressful life events may affect this relationship. In fact, Braam [10] found that bereaved and nonmarried church attendees had slightly higher depression scores if they had high levels of orthodox belief.

Cultural context may be of importance when studying relationships between religion and mental health [11]. The inverse relationship between religiosity and depression appears stronger in countries with populations characterized by lower socioeconomic status (higher stress), high rates of religious attendance, and Catholic rather than Protestant majorities [6]. The present study is utilizing a large population-based sample from Norway consisting primarily of Protestants, mostly individuals from the middle class with low rates of attendance at church or prayer house. We examine here how the relationship between religious involvement and depressive symptoms operates in the presence or absence of the death of an immediate family member.

The aim of this study was therefor to explore (a) the relationship between attendance at church/prayer house and depressive symptoms and (b) whether a stressful life event, such as death of an immediate family member, moderates the relationship between attendance at church/prayer house and depressive symptoms in a Norwegian population.

2. Methods

Our data was collected in Nord-Trøndelag, a county in central Norway with a total population of 130,708 inhabitants [12]. With regard to characteristics such as geography, economy, industry, income, age distribution, types of illness, and mortality, this population is quite similar to the general Norwegian population [13]. However, education levels are lower than the national average, and the inhabitants live largely in rural districts and in small towns with up to 20,000 people.

The religious context is quite homogenous, since approximately 90% of the inhabitants belong to the Church of Norway (Lutheran). At the same time, frequency of religious attendance at churches or prayer houses is low compared to other countries, with 13% of the population attending once a month or more often, and only 3.6% attending weekly or more [14]. Furthermore, 47% seek God's help when they need strength and solace, and 75% state that the Christian worldview comes closest to their own.

2.1. Data Source. We utilized data from the third wave of the population-based Nord-Trøndelag Health Study (2006–2008), the HUNT 3 [15]. All inhabitants in Nord-Trøndelag aged 20 and over were invited to participate ($N = 94{,}121$). Of this group, 50,405 people completed Questionnaire 1 (Q1) and attended a screening visit, where clinical measures were administered and blood samples taken. Of these, 41,174 also completed Questionnaire 2 (Q2), received at the screening visit and returned it by mail. Within Q2, 37,981 participants responded to the question about attendance at church/prayer house, and this was our final sample. There were no substantial differences between the sample at Q1 and the final sample at Q2 regarding mean age (52.8 years versus 53.4 years) or gender (54.7% versus 55.9% women).

2.2. Measures. The *depressive symptoms* subscale of the Hospital Anxiety and Depression Rating Scale (HADS) administered at Q2 consisted of seven items [16]. The responses to each item ranged from 0 to 3 in severity. The subscale scores were constructed by adding the item scores, with the overall scores ranging from 0 to 20. Cronbach's alpha for the seven items in our sample was 0.75.

Attendance at church or prayer house was measured by the question, "How often in the last six months have you been to church or prayer house?" Responses were "never," "1–6 times in the last 6 months," "1–3 times/month," and "more than 3 times/month." This variable's applicability is evaluated [14], and it is found to measure attendance at religious service in addition to visits at funerals, weddings, baptisms, and concerts, as well as religious meetings in prayer houses for other reasons. For bivariate analyses this variable was dichotomised as "never" or "yes."

Death of an immediate family member was measured by the question "Serious life events in the last twelve months: Has a member of your immediate family died?" ("No" and "Yes"). The dataset also included questions regarding relationship breakups and imminent mortal danger because of a serious accident, catastrophe, violent situation, or war. However, analyses investigating these two variables' interaction with attendance at church/prayer house, utilizing depression as dependent variable, showed no significant relationship. Consequently, they were not targeted for further investigation.

Age was calculated from the individual's date of birth and was analysed as a continuous variable. The participants' *education level* was obtained from Statistics Norway [12] and was dichotomised into lower ($\leq$12 years) or higher (>12 years). *Relationship status* was dichotomised as single, separated, divorced, or widow(er) versus married/cohabiting.

2.3. Statistical Analyses. Frequency distributions were used to derive the characteristics of the sample. One-way ANOVA was utilized for bivariate analyses between attendance at church/prayer house and depressive symptoms stratified by the experience of death of an immediate family member. A multiple-regression model including all variables predicted depression scores for the entire sample. The same model was employed to test the interaction between attendance at church/prayer house and death of an immediate family member by including an interaction term in the model. Also, an interaction term of "Attendance at church or prayer house by Death of an immediate family member by Gender" was utilized to examine the effect of this three-way interaction. Demographics, socioeconomic characteristics and attendance at church/prayer house were included as independent variables in the regression analyses, together with death in family. The significance level was set at $P < 0.05$. SPSS Version 19 was used for all analyses [17].

The HUNT study is licenced by the Norwegian Data Inspectorate. Both the HUNT study and the research in this

Table 1: Participants of The HUNT Study (HUNT 3, 2006–08) answering questions about religious attendance. Characteristics of the sample.

	Total (N = 37,981)		Women (N = 21,247)		Men (N = 16,734)	
	Values (SD) range	N	Values (SD) range	N	Values (SD) range	N
Depression, mean (SD), Range	3.3 (2.9) 0–20	37,622	3.1 (2.9) 0–20	21,023	3.6 (2.9) 0–20	16,599
Death in immediate family (%)	10.2	3,755	10.6	2,182	9.7	1,573
Religious attendance (%)						
More than 3x/month	3.6	1,382	3.8	816	3.4	566
1–3x/month	9.7	3,671	10.4	2,205	8.8	1,466
1–6x/last 6 months	45.9	17,447	46.6	9,909	45.0	7,538
Never	40.8	15,481	39.1	8,317	42.8	7,164
Age, mean (SD), Range	53.4 (15.6) 20–96	37,981	52.5 (16.0) 20–96	21,247	54.4 (14.9) 20–96	16,734
Education (%)						
Up to 12 years	70.8	26,684	69.0	14,534	73.1	12,150
More than 12 years	29.2	11,014	31.0	6,537	26.9	4,477
Married/Couple (%)	60.9	23,092	57.8	12,259	64.8	10,833

Table 2: Religious attendance and depressive symptom scores measured by HADS, stratified by stressful life event (death in immediate family over the last 12 months).

		Mean	SD	95% CI	P values	N	Post hoc[b]
	Religious attendance (%)				<0.001		
	A: More than 3x/month	3.47	2.92	3.32–3.63		1,366	$A > D$
	B: 1–3x/month	3.57	2.86	3.47–3.66		3,639	$B > C$
	C: 1–6x/last 6 months	3.20	2.78	3.14–3.22		17,308	$C < B$ $C < D$
	D: Never	3.43	3.06	3.39–3.48		15,309	$D > C$
Stratification:							
No death in immediate family	Religious attendance, Yes (%)[a]	3.18	2.76	3.14–3.22	<0.001	19,177	
	Religious attendance, No (%)	3.35	3.02	3.30–3.40		13,686	
Death in immediate family	Religious attendance, Yes (%)[a]	3.70	3.03	3.58–3.82	<0.001	2,459	
	Religious attendance, No (%)	4.11	3.39	3.92–4.30		1,256	

[a] "Yes" equals any religious attendance the last 6 months. "No" equals never attendance the last 6 months
[b] Significant differences ($P < 0.05$) by Tukey post hoc tests.

paper were approved by the Regional Committee for Medical and Health Research Ethics (REK) in Central Norway.

3. Results

The average score of depressive symptoms was 3.3 (women 3.1, men 3.6). 10.2% of the sample had experienced the death of an immediate family member (women 10.6%, men 9.7%). 40.8% never attended church or prayer house, 45.9% had attended one to six times over the last six months, 9.7% attended one to three times per month, and 3.6% more than three times per month. Mean age in the sample was 53.4 years, 29.2% had more than 12 years of education, and 60.9% lived in coupled relationships (Table 1).

In bivariate analysis, those who had experienced death within their immediate family had higher scores on depressive symptoms than those who had not (Table 2). Those who attended church or prayer house who had not experienced death in their immediate family had a lower depressive symptoms score, 3.18 (95% CI 3.14–3.22), than nonattendees, 3.35 (95% CI 3.30–3.40). Those attending church or prayer house who had experienced death in their immediate family also had lower depressive symptoms scores (3.70, 95% CI 3.58–3.82) compared to nonattendees (4.11, 95% CI 3.92–4.30) (Table 2).

Regression analysis controlling for all variables, including "Death of an immediate family member during the last 12 months," revealed an inverse relationship between attendance at church/prayer house and depressive symptoms. Coefficients for the relationship between attendance and depressive symptoms were $B = -0.18$ ($P = 0.03$) for attendance >3x/month, $B = -0.26$ ($P < 0.001$) for 1–3x/month, and $B = -0.25$ for 1–6x/last 6 months ($P < 0.001$), compared to those who never attended church or prayer houses (Table 3(a)). In the relationship between the stressful life event of a death within one's immediate family and depressive symptoms the coefficient was $B = +0.36$ ($P < 0.001$) (Table 3(a)).

There was a very close to significant interaction between attendance at church/prayer house and the death of an

Table 3: Multiple regression model for depressive symptoms' relation to death in immediate family, religious attendance, age, gender, relationship status, and education (a), and the same model including the interaction term "Religious attendance by Death in immediate family" (b).

(a) Regression model for entire sample

	Coefficients[a]	*P* values
Death in immediate family (ref. "No")	0.36	<0.001
Religious attendance (ref. "Never")		<0.001
>3x/month	−0.18	0.03
1–3x/month	−0.26	<0.001
1–6x/last 6 months	−0.25	<0.001
Age	0.03	<0.001
Women (ref. "men")	−0.35	<0.001
Married/Couple (ref. "unmarried/not couple")	−0.41	<0.001
Low education, ≤12 years (ref. ">12 years")	0.58	<0.001
R^2	0.057	

(b) Regression model including interaction term

	Coefficients[a,b]	*P* values
Death in immediate family (ref. "No")[c]	0.49	<0.001
Religious attendance[d]		<0.001
>3x/month	−0.10	0.24
1–3x/month	−0.25	<0.001
1–6x/last 6 months	−0.24	<0.001
Religious attendance[e]		
>3x/month	−0.69	0.002
1–3x/month	−0.32	0.03
1–6x/last 6 months	−0.43	<0.001
Interaction term: "Religious attendance By Death in immediate family"		0.053
R^2	0.057	

[a] Unstandardized.
[b] Adjustment for age, sex, relationship status, and education.
[c] Difference in the "Never" group for religious attendance.
[d] Differences from the "Never" group for religious attendance, within the "No"-group for death in immediate family.
[e] Differences from the "Never" group for religious attendance, within the "Yes"-group for death in immediate family.

immediate family member, with depressive symptoms as dependent variable ($P = 0.053$) (Table 3(b)). When investigating the depressive symptoms coefficients on attendance at church/prayer house, quite distinct differences between the "No" group and the "Yes" group with respect to the variable of "Death in immediate family" occurred (cf. annotation "c" and "d"). In this context, stratified analysis was appropriate.

Separate regression models were run with attendance at church/prayer house and other independent variables showing coefficients for depressive symptoms in the presence

Table 4: Coefficients for the association between depressive symptoms and religious attendance, stratified by stressful life event (death in immediate family), controlling for age, gender, relationship status, and education.

	Coefficients[a]	*P* value
Not experienced death in immediate family		
Religious attendance[b]		<0.001
>3x/month	−0.11	0.20
1–3x/month	−0.27	<0.001
1–6x/last 6 months	−0.24	<0.001
R^2	0.056	
Experienced death in immediate family		
Religious attendance[b]		0.002
>3x/month	−0.63	0.01
1–3x/month	−0.25	0.14
1–6x/last 6 months	−0.40	0.001
R^2	0.043	

[a] Unstandardized.
[b] Reference group: "Never".

and absence of death of a family member (Table 4). The inverse relationships between attendance at church/prayer house and depressive symptoms were greater among those experiencing the death of an immediate family member in the last twelve months (never as reference: >3x/month $B - 0.63$, $P = 0.01$; 1–3x/month $B - 0.25$, $P = 0.14$; 1–6x/last 6 months $B - 0.40$, $P = 0.001$), compared to those without a death of an immediate family member (never as reference: >3x/month $B - 0.11$, $P = 0.20$; 1–3x/month $B - 0.27$, $P < 0.001$; 1–6x/last 6 months $B - 0.24$, <0.001) (Table 4).

A three-way interaction term (attendance at church/prayer-house by death of an immediate family member by gender) in the regression model was significant ($P < 0.05$). Regression models of the relationship between attendance at church or prayer house's and depressive symptoms were then rerun separately by death and no death of a close family member, and by gender (Table 5). The inverse relationship between attendance at church/prayer house and depressive symptoms was particularly strong among men with a death of an immediate family member, displayed with gradients, compared to women. In the group without a death in their immediate family during the last twelve months, depressive symptoms coefficients for men and women were at the same level, with the exception of men attending more than three times per month, who in fact had an increase of depressive symptoms (not significant) (Table 5).

4. Discussion

We found an inverse relationship between attendance at church/prayer house and depressive symptoms after adjustment for death in immediate family, age, gender, relationship status, and education. We also found that the death of an immediate family member within the last twelve months moderated the relationship between attendance at church/prayer house and depressive symptoms in such a way that the inverse relationship was even greater among those who had

Table 5: The association between depressive symptoms and religious attendance, stratified by stressful life event and gender, controlling for age, relationship status, and education.

	Religious attendance	Coefficients	*P* values
Not experienced death in family			
Women (Overall $P < 0.001$)	>3x/month	−0.25	0.03
	1–3x/month	−0.26	<0.001
	1–6x/last 6 months	−0.23	<0.001
R^2		0.054	
Men (Overall $P < 0.001$)	>3x/month	0.08	0.55
	1–3x/month	−0.27	0.003
	1–6x/last 6 months	−0.25	<0.001
R^2		0.047	
Experienced death in family			
Women (Overall $P = 0.004$)	>3x/month	−0.49	0.11
	1–3x/month	−0.06	0.77
	1-6x/last 6 months	−0.52	0.001
R^2		0.045	
Men (Overall $P = 0.041$)	>3x/month	−0.89	0.03
	1–3x/month	−0.59	0.03
	1–6x/last 6 months	−0.25	0.15
R^2		0.041	

experienced a family death. Finally, among those experiencing the death of an immediate family member, the inverse relationship between attendance at church/prayer house and depressive symptoms appeared to be more pronounced among men.

Our study sample is characterized by considerable homogeneity, being primarily Protestant with low attendance at church/prayer house, and with individuals mostly from the middle class. Despite differences in cultural and religious contexts, the findings from this study are comparable to those reported in the USA [18]. However, among women in our sample without a death in immediate family the scores of depressive symptoms seem to be at the same level independent of high or low attendance frequency. On the other hand, a recent population-based American study reported lower depression scores the more the participants went to church [19].

Religiously involved people also had lower levels of depression in a European, Dutch sample [9]. Copland's study [8] including data from eleven different European countries (no Scandinavian countries) showed no direct association between religious indicators, for instance weekly service attendance and depression. Different measures of religious involvement and different samples regarding religious affiliation and context may partly explain the different findings, including ours.

The most frequent attendees are likely strongly affiliated to their religion. If this is correct, we found that strongly affiliated men who had experienced the death of an immediate family member over the last twelve months had a noticeably lower depressive symptoms score, with a coefficient of −0.89 (Table 5). This was also the case for the most frequent female attendees, but not as strong, with a coefficient of −0.49. This contrasts with other European findings where religiously affiliated people were more likely to experience depression than those not affiliated with religion when losing a child [20]. Also, bereaved people with strong orthodox beliefs had somewhat higher scores of depression [10]. This comparison may also indicate different religious contexts within the European environment, or different measures of religiosity. The Northern European folk-church religiosity, described by Davie as "belonging without believing" [21], may represent some differences compared to continental countries with high levels of orthodox beliefs or a high percentage of Catholics. Such beliefs may be more likely to be associated with rigid or guilt-producing religiosity [6].

In general, it is known that women are more religiously active than men [14]. From research it is also known that women often have greater health benefits from religious activity than men [5, 6, 22]. We found a significant inverse association between attendance at church/prayer house more than three times per month, and depression for women without a death in their immediate family in the last twelve months. The opposite occurred for men, as the depressive symptoms increased to some degree (cf. <3x/month), but not significantly (Table 5). On the other hand, among men who had experienced death in their immediate family, the lower scores on depressive symptoms were displayed by gradients and were remarkably lower on the values 1–3x/month and >3x/month compared to women. Thus, this association was more pronounced for men than women, even though the inverse relationship between religious attendance and depressive symptoms was greater for women with the death of an immediate family member, compared to those without such an experience. The difference may be considered notable due to the statistical significant three-way interaction

between attendance in church/prayer house, death of a close family member, and gender. As this is a cross-sectional study, we can only propose possible interpretations of such a finding. However, it could be interesting to investigate further in a longitudinal study whether women benefit more from attendance at church/prayer house than men over the long term, whereas men may turn to their church only when they are under greater stress and need religion in order to cope.

The large population-based sample involving a religiously homogenous environment is an asset of the present study. Participants were asked a wide range of questions related to health and psychosocial issues without focusing on religion. Consequently, the risk of sample bias due to providing socially desirable responses is likely to be lower than in studies focused primarily on religion that are carried out in religious areas of the world.

A limitation of the study is its cross-sectional design without the possibility to determine causal effects and directions between variables. Use of only a single measure of religious involvement (attendance) also represents a limitation, since different measures of religion may generate different findings for the relationship between religion and depression [23]. Multiple-item measures could have other psychometric advantages. Nevertheless, the design of HUNT 3 precluded inclusion of multi-item measures of religious involvement, and the measure of attendance at church/prayer house employed here is widely used internationally as a measure of religiosity. In HUNT 3, attendance at church/prayer house is usually related to participation in the setting of the evangelical Lutheran Church of Norway. In addition to attendance at religious service, the current item also includes visits at funerals, weddings, baptisms, and concerts, as well as religious meetings in prayer houses for other reasons.

5. Conclusions

In this study we found that attendance at church/prayer house was significantly and inversely related to depressive symptoms. Death of an immediate family member interacted with attendance at religious services such that the inverse relationship between religious attendance and depressive symptoms was strongest among those who had lost an immediate family member in the past 12 months. This interaction was particularly strong in men. These results add to the growing literature base examining relationships between religious involvement and depression in European settings and are the first for Scandinavian countries examining how this relationship is moderated by a major stressful life event. Attendance at church/prayer house can be considered a means of coping [24]. These findings may contribute to awareness concerning patients' coping resources and suggest that attendance at church or prayer house may be a resource for stressed patients in healthcare settings [25, 26].

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Review Article

Spiritually Integrated Treatment of Depression: A Conceptual Framework

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Many studies have found an inverse correlation between religious/spiritual involvement and depression. Yet several obstacles impede spiritually integrated treatment of depressed individuals. These include specialization and fragmentation of care, inexperience of clinicians and spiritual care providers, ideological bias, boundary and ethical concerns, and the lack of an accepted conceptual framework for integrated treatment. Here I suggest a framework for approaching these obstacles, constructed from a unified view of human experience (having emotional, existential, and spiritual dimensions); spirituality seen as a response to existential concerns (in domains such as identity, hope, meaning/purpose, morality, and autonomy in relation to authority, which are frequently distorted and amplified in depression); a rationale for locating spiritually oriented approaches within a clinician's assessment, formulation, and treatment plan; and recognition of the challenges and potential pitfalls of integrated treatment.

1. Introduction

Depressed individuals often feel not only unfortunate but also that the world is oppressive, life is meaningless, and/or God is disapproving. They may question: "Am I clinically depressed, Or lacking in faith?" "Is life as unfair and empty as it seems?" "Is God punishing me?" or "Should I take an antidepressant, or pray more?" Because depression can so closely resemble ordinary spiritual experience, some sufferers resist treatment because they feel they should have more faith. Religious traditions and the communities that interpret them at times regard depression as an illness, at times as evidence of spiritual weakness, and at times even as a punishment.

For their part, mental health professionals may hesitate to address the spiritual dimension of their patients' experience. Some view spirituality as an epiphenomenon of more basic neurobiological or evolutionary processes and as such of only peripheral interest to psychiatry. Others regard religion as a potentially harmful, immature form of wish fulfillment. Still others have ethical concerns about charging patients and/or their insurance companies for spiritually oriented interventions or about influencing patients on the basis of their own personal values. Many lack sufficient familiarity with their patients' spiritual traditions and/or experience to collaborate effectively with religious professionals and/or retain unresolved conflicts in their own relationship with spiritual authorities.

A growing literature describes the spiritual dimension of depression as experienced by its sufferers [1–3], epidemiologic and other evidence for religion as a risk and protective factor [4–6], the social dimension of depression [7, 8], the potential for spiritual growth in the face of adversity [9], ways for depressed individuals to draw upon the resources of a particular faith tradition [10], frameworks for addressing spiritual issues generally in psychotherapy [11–15], and evidence for the effectiveness of spiritual interventions in depression [16–18]. However, the literature has lacked a practical, comprehensive way of approaching the spiritually integrated treatment of depressed individuals of any spiritual tradition or of none.

What follows is a conceptual framework for approaching the complex relationship among depression, spirituality, and mental health treatment, which I more fully describe in *Depression and the Soul: A Guide to Spiritually Integrated Treatment* [19].

2. The Spiritual Dimension of Depression

Literature on caring for the whole person recognizes that human suffering includes not only cognitive, emotional, and volitional but also existential and spiritual dimensions. The National Consensus Project Clinical Practice Guidelines for Quality Palliative Care [20] aim to "...identify and address the physical, psychological, spiritual, and practical burdens of illness." Psychiatrists such as Verhagen [21] have also suggested that the World Health Organization (WHO) recognize spiritual well-being, as an important aspect of health.

However, achieving consensus on definitions of spiritual and existential distress (and by extension care) remains an elusive goal. An integrated literature review of 156 papers dealing with existential suffering in the palliative care setting found 56 definitions [22]. Common themes included the loss of meaning or purpose in life, a sense of connectedness, hope or hopelessness, feelings of loneliness, fear of being a burden to others, a sense of isolation, and an intense fear of dying. But the authors write: "The most prevalent finding in this review has been a lack of consistency in the way existential suffering is defined and understood." A Consensus Conference on Improving the Quality of Spiritual Care as a Dimension of Palliative Care proposed the following definition: "Spirituality is the aspect of humanity that refers to the way individuals seek and express meaning and purpose and the way they experience their connectedness to the moment, to self, to others, to nature and to the significant or sacred" [23]. Unfortunately, this conception is so broad as to be practically impossible to operationalize.

One important step toward a useable consensus would be to agree on the meaning of terms commonly used to describe spiritual, existential, and emotional distress: as a suggested example, the emotional dimension of patients' concerns could be said to refer to feelings, the existential dimension to the conditions of existence (e.g., in domains such as identity, hope, meaning/purpose, morality, autonomy/connection), and the spiritual to meaningful connections to something larger, transcendent, or sacred [24]. Acceptance of the distinctions drawn by such a vocabulary could help clinicians and researchers identify when particular concerns (such as a sense of isolation, or hopelessness) share, for example, two or three of these dimensions, and are therefore incapable of adequate description by only one. An obvious relationship between spiritual and existential dimensions understood in these terms is that spirituality can function to provide a response to concerns of an existential nature. An additional relevant distinction is that highlighted by the philosopher Charles Taylor between optional, voluntarily embraced ways of finding or investing meaning within an immanent frame such as one might find in nature or art, and experiences on the other hand that lay claim on one because of their ultimate significance, such as one might have with cosmic forces, moral ideals, or God [25].

3. Fostering Helpful Spirituality

Consider briefly some of the ways in which a healthy spirituality (in both immanent and ultimate forms) constitutes a helpful response to existential concerns that are frequently amplified and/or distorted in depression, in domains such as identity, hope, meaning/purpose, morality, and autonomy in relation to authority: with respect to identity, a work-oriented businessman who wonders after a heart attack if he is the same person might decide, "this experience has helped me see what I value most." Or, "I know I am loved, or worthwhile because God loves me." Coming to such transcendent answers is facilitated by a spirituality that is engaged, and transformative rather than static—whether in relation to the Four Noble Truths of Buddhism or the teaching of Jesus that one must lose one's life to save it.

With respect to hope and its important relational underpinnings, when a loss or a serious illness shakes a religious person's trust in God, he or she can become cynical or despair. Patients who ground their ultimate hopes in ideals such as compassion, truth or justice may also be vulnerable to despair if disillusioned by individuals who have represented these ideals in their lives. Whatever the objects of their faith, patients who have lost hope require a spirituality that is integrated rather than ambivalent or torn. As Judith Herman points out in her book *Trauma and Recovery* [26], a survivor of trauma needs to reconstruct a fragmented view of the world. A hope-sustaining spirituality is one that is accessible and real to the individual not only when he is in a comforting (e.g., a religious) setting but also when he is in the middle of the stress of his everyday life. The theologian Paul Tillich [27] called this the courage to be. Many traditions encourage "spiritual disciplines" (such as prayer, worship, fasting, or giving to others) that help believers to maintain a consistent and coherent connection of their whole selves with their faith.

Many individuals bring into treatment their search for purpose and the larger meaning of their suffering [28, 29]. An atheist who loses a child to cancer may question whether his/her life has any purpose. A religious trauma survivor may question whether s/he can continue to believe that God is fair or loving. Whatever their world views, patients in search of meaning need a spirituality that is contemplative and attuned rather than distracted, impulsive, or self-centered. Both existentialists such as Frankl and Crumbaugh [30] and researchers such as Robert Cloninger et al. [31] have called attention to the central role of self-transcendence in mature personality functioning. Attunement to music, art, or nature as well as prayer and worship can all help one maintain perspective and a center of gravity outside the self. Mindfulness, acceptance, and meditation as means to this end are now taught not only by Buddhist practitioners but also increasingly in psychiatric treatments such as Dialectical Behavior Therapy (DBT), addiction treatment programs, and to patients in general hospital settings.

Patients often present with struggles that have important moral aspects [32]. These are shaped by their world view, in several ways: people's understanding of God and of the universe shapes their commitments to justice, caring, honesty, or community. Philosophical or religious ways of thinking (e.g., depending on versus questioning authority) guide the way people make moral decisions. Religious traditions both articulate standards of right and wrong as well as offer

options for dealing with moral failure (e.g., confession, forgiveness, making amends). Faith-based communities and community service organizations help support virtues that are basic to clinical work, such as integrity, equanimity, humility, honesty, and caring. Regardless of differences in their world views, patients with moral concerns need a spirituality that is mature rather than developmentally delayed. Hospital chaplains often refer to the challenge of helping adults who are facing a crisis to call upon a conception of God that goes beyond what they took from Sunday School and is more consonant with their state of emotional maturity. James Fowler in his controversial book *Stages of Faith* [33] pioneered consideration of the ways that faith development, like moral development, is a developmental process. Clinicians can help patients who are otherwise mature to see this and begin to "catch up," for example, by seeing the advantages of choosing mature connection and intimacy through forgiveness over the more childish satisfactions of maintaining control, or of being "right."

The world views of religious and nonreligious individuals tend to differ most sharply on the question of their relationship to an ultimate authority. Is there an authority whom one can trust for care and direction, or does one need to rely on oneself? If God exists, is He an authority who resents His creatures' autonomy, or more like the father in Jesus' parable, more ready to receive the prodigal son home than the son imagines? Whatever one's world view, there are benefits, as Pargament's research has shown [34], to feeling loved rather than rejected by the Other. Clinicians can help patients to look at what kind of intimacy with God and others is possible. Is there a community that is more welcoming of the patient than he can see? Interpersonal therapeutic approaches and attention to the ways that spiritual communities address the dynamics of relationships with others and the Other are particularly apt here.

4. Spiritually Integrated Treatment

What is the place of spiritually oriented approaches within a clinician's assessment, formulation, and treatment plan? Table 1 outlines a general framework for intervening at the interfaces between emotional, existential, and spiritual distress in the domains of depressed individuals' core concerns, to foster a more healthy spirituality. Whereas insight-oriented and cognitive behavioral approaches can help depressed individuals to distinguish distressing emotions from their actual basis in life experience, spiritually oriented interventions can help them use their knowledge and experience of their spirituality (in its ultimate sense, where God or morality are involved) to put these experiences into a larger perspective.

In 1973, Akiskal and McKinney amassed a large body of evidence in support of a unitary hypothesis according to which the depressive syndrome is a "psychobiological final pathway" [35, page 286]. Its symptoms are familiar: persistent feelings of sadness, difficulty concentrating, indecisiveness, hopelessness, pessimism, guilt or worthlessness, fatigue, lack of energy and initiative, an impaired capacity for enjoyment, disturbances of sleep and appetite, and thoughts of death or suicide. Their conception came to dominate the field and shaped the category of Major Depressive Disorder in the Diagnostic and Statistical Manual (DSM). It also fits popular descriptions of depression by sufferers such as Solomon (*The Noonday Demon: An Atlas of Depression* [2]) and Styron (*Darkness Visible: A Memoir of Madness* [3]), whose individual illnesses seemed to take on a life of their own, eventually depriving them of rational perspective and a sense of control.

However, a number of investigators have questioned whether this model may be overly simplistic. Parker [36] has suggested that depression without psychomotor (melancholic) or psychotic features is better regarded as a spectrum of disordered responses to life that are "induced and/or maintained by predisposing factors" (page 1199). Kendler et al. [37] have similarly proposed a model of major depression that is etiologically diverse, "influenced by risk factors from multiple domains that act in developmental time" (page 115). Horowitz and Wakefield [38] go further to suggest that psychiatry's system of classification has "transformed normal sorrow into depressive disorder." And from a therapeutic point of view, Schatzberg [39] has called on clinicians to move beyond symptom control to manage the underlying vulnerabilities that contribute to recurrent depression.

Viewed from a stress diathesis perspective, it seems clear that several conditions confer a vulnerability to a depressed mood and that they differ in their etiologies as well as in their therapeutic implications. These include melancholia, demoralization, bipolar disorder, adjustment disorder, personality-related depression, angst, addiction-related depression, guilt, trauma-related depression, the "Dark night of the soul", complicated grief, and ordinary unhappiness. Obviously, the core concerns (e.g., mistrust and shame following trauma, perfectionism, a negative self-identity and self-sacrifice) of individuals with these conditions and their existential and spiritual dimensions are likely to differ.

Table 2 suggests ways that specific spiritually informed interventions can address the existential dimension of depressive concerns. For example, patients whose existential concerns center around identity, and who are therefore vulnerable to experiencing doubt or disorientation when depressed, may benefit from a humanistic emphasis on connecting with what most fulfills and best defines them. If religious, they may also benefit from grounding their identity in their relationship to God, for example, through a process of spiritual direction.

Patients with difficulty maintaining ultimate hope because their experience of the world is fragmented, and who are mistrustful when in despair, would be expected to benefit from achieving a more integrated spirituality through, for example, exploration of unresolved trauma, CBT that brings their core beliefs more in line with their experience, and interpersonal therapy or spiritual direction that focuses on their doubts about trusting God, or the future.

Depressed patients who struggle to find a sense of meaning, or who feel their life has lost its purpose would be expected to benefit from meaning-centered therapy, mindfulness, and meditation.

Table 1: A framework for intervention.

	Identity	Hope	Meaning/purpose	Morality	Connection
Emotional (I feel...)	As if I don't know who I am	Despairing	Directionless	Guilty	Lonely
Insight oriented, CBT					
Existential (I experience the world as if...)	there is nothing special about me	Life is hopeless	Life is meaningless	I am guilty	I am alone
Spiritually oriented Rx					
Spiritual (I'm inclined to believe...)	God is punishing/ignoring me	No ultimate basis for hope exists	The universe is random and empty	No ultimate basis for morality exists	I am rejected by God/ultimately alone

Table 2: The relationship of spiritually oriented interventions to depressive concerns.

Existential/clinical domain	Depressive concern	Healthy spiritual characteristic	Spiritually oriented approach
Identity	Doubt, disorientation	Engaged Transformative	Humanistic, 12 Step
Hope	Despair, mistrust	Integrated Visionary	Psychodynamic, CBT Spiritual direction, IPT
Meaning/purpose	Meaninglessness	Attuned, contemplative	Meaning centered, mindfulness, meditation
Morality	Guilt	Mature, reconciled	Forgiveness promoting, positive psychology
Authority/autonomy	Isolation, rejection	Accepted, loved	Psychodynamic, IPT, spiritual direction

Patients concerned with moral questions, such as those who feel overwhelmed by guilt when depressed, would be expected to benefit from forgiveness promoting therapy and the emphasis of positive psychology on virtues such as love.

Patients whose existential concerns center on their relationship to ultimate authority, and who feel isolated or rejected when depressed, would be expected to benefit from feeling accepted and loved by God. Potential therapeutic means to this end include psychodynamically oriented treatment focused on their distorted object relations, interpersonal therapy focused on their relationship to God, and/or spiritual direction.

Spiritually oriented approaches that address concerns in one of these domains—for example, one's relationship to God—may of course also address concerns in other areas, such as identity or hope. For example, the individual who feels loved by God, worshipful, and continually surrendered to his will may be less prone to worship lesser gods such as power or pleasure that will disappoint and leave him depressed.

There are a number of venues in which integrated treatment can be provided, ranging from the office of a clinician in a secular office or hospital, to that of a religiously committed therapist in a faith-based clinic, to that of a pastoral counselor in a church. Each presents its own challenges and opportunities for collaboration, referral, and sharing of expertise [19, (see pages 169–184)]. Elsewhere, I have distinguished four possible roles of a psychotherapist in approaching spiritual problems (such as a crisis of faith, paralyzing guilt, or religious objections to taking medication) [40].

In the most familiar and straightforward of these, a therapist would acknowledge the problem, but limit discussion to its psychological (or strictly medical) dimension. For example, he might focus on how the problem is interfering with the patient's care or address a patient's anger at God by examining his relationship with other authority figures in the patient's life.

A second possible approach would be to clarify the spiritual as well as the psychological aspects of the problem, suggest resources for dealing with the former, and consider working with an outside resource such as a religious community or other authority. This might include enlisting a hospital chaplain or clergy person to offer needed spiritual help or referring a patient to a therapist of a similar tradition. It could also include referral to organized programs that integrate beliefs and emotions, such as religiously/spiritually based cognitive behavioral or Twelve-Step programs.

In a third approach, a therapist would aim to address the problem indirectly using the patient's own philosophy of life within the treatment. This might include exploring ways the patient can make better use of his resources and tradition (e.g., by examining a range of beliefs within the patient's own denomination, or misconceptions about the spiritual nature of AA). Here it is helpful for therapists to appreciate how different world views and spiritual traditions address existential concerns, such as identity. For example, in the Judeo-Christian tradition each individual is contingent (as created), broken (sinful) and in need of healing (forgiveness and transformation), and loved unconditionally; in the Buddhist tradition, each individual is at one with the universe, unhappy but capable of self-emptying and of enlightenment; in a secular Western view, each individual is limited by bias but evolving, ultimately alone but capable of living with integrity.

A fourth approach would be to address the problem directly together using a shared perspective, ranging from the therapist's agreement on the importance of hope, meaning, world view, or a caring community to the prescriptive use of shared values, beliefs, or practices (e.g., meditation or scripture) in the treatment. This fourth approach requires particularly careful attention to transference, countertransference, boundary, and consent issues.

A number of factors are relevant in deciding which of these approaches to take. The first is the patient's need—whether for growth, adjustment, or problem solving. This in turn influences the nature, primary aims, and timing of the work—for example, psychological insight into a maladaptive pattern or resolution of a conflict. These in turn influence the degree of direct support needed and the amount of interpersonal closeness that is appropriate. Additional factors include the patient's existential concerns—for example, related to hope or identity—and the spiritual options under consideration, the importance of spirituality in his life, his presenting problem and attitude toward treatment, the concern of the patient to integrate psychological with other perspectives; the availability of outside philosophically or spiritual resources, and the therapist's own knowledge and preferred style. Dual relationships, for example, being a treater as well as a fellow member of the same religious community, complicate the transference, countertransference, and boundary aspects of taking one or another approach.

5. Remaining Challenges

The framework for integrated treatment suggested here raises a number of challenging questions: Which aspect of a depressed individual's condition should have priority, and which should receive a spiritually oriented approach? What is the relationship of the important biological and genetic components of serious depression to its spiritual dimension [41]? What is the importance of the patient's and the clinician's world view in formulating the goals of spiritual care? What boundaries are important to maintain in dealing with religious and spiritual issues, for example, regarding disclosure of the therapist's own world view? What are the pitfalls of either neglecting or overemphasizing spirituality? Partial answers are emerging from the literature on addressing spiritual issues generally in psychotherapy [42]. Fuller answers, still emerging from work with patients struggling with depressive concerns, are needed to elucidate more clearly the mechanism of action of spiritually oriented interventions and to establish best practices in providing integrated, whole person care.

6. Conclusion

Interest continues to grow in understanding the place of spirituality in depression, but consensus has been difficult to achieve about how best to approach the intertwined emotional, existential, and spiritual dimensions of patients' depressive concerns. The framework suggested here emphasizes the need for clinicians to consider a broad range of diagnostic categories and dynamic concerns arising in depressive conditions, to recognize the existential dimension of these concerns in areas such as identity and hope that are causing emotional distress, to identify corresponding goals for an appropriately helpful spirituality, and to select interventions accordingly, so as to provide individualized, comprehensive treatment.

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Research Article

Longitudinal Relationships of Religion with Posttreatment Depression Severity in Older Psychiatric Patients: Evidence of Direct and Indirect Effects

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Psychiatric patients (age 59+) were assessed before study treatment for major depressive disorder, and again after 3 months. Measures taken before study treatment included facets of religiousness (subjective religiosity, private prayer, worship attendance, and religious media use), social support, and perceived stress. Clinician-rated depression severity was assessed both before and after treatment using the Montgomery-Åsberg Depression Rating Scale (MADRS). Structural equation modeling was used to test a path model of direct and indirect effects of religious factors via psychosocial pathways. Subjective religiousness was directly related to worse initial MADRS, but indirectly related to better posttreatment MADRS via the pathway of more private prayer. Worship attendance was directly related to better initial MADRS, and indirectly related to better post-treatment MADRS via pathways of lower stress, more social support, and more private prayer. Private prayer was directly related to better post-treatment MADRS. Religious media use was related to more private prayer, but had no direct relationship with MADRS.

1. Introduction

A substantial body of research has linked religiousness with better mental health [1–3], particularly in older adulthood [4–6]. More intensely religious individuals have been found to be at lower risk for depression [7, 8] and, for those who do become depressed, to experience less severe symptoms [9–11] and faster remission [12, 13]. However, the nature of this relationship is complicated by a growing body of contrary findings that religion may be related to worse outcomes in some groups [8, 14], or that in some circumstances there may be a curvilinear relationship, with moderate levels of religiousness conferring the most benefits [9, 15]. Some of these discrepancies may be explained by the complexity of the construct of religion, which entails multiple aspects of belief and behavior such as participation in public worship services, engagement in private prayer, and perceiving order and meaning in one's life. While these phenomena may be highly correlated, they may also have distinct and even contrasting psychological implications. For example, one recent study of lifetime risk of major depression found that while more frequent attendance at religious services appeared to be a protective factor, reporting a strong relationship with God was associated with more risk of depression [16]. Another study similarly found service attendance linked with lower risk of depression, but stronger self-rated religiousness associated with greater risk [17]. Both were cross-sectional studies, however.

There is evidence that psychosocial processes, particularly social support and stress buffering, mediate a significant proportion of the relationship between religion and depression [18]. Participation in the activities of a congregation or other religious community can provide psychological as well as material support from other members [19, 20]. At the same time, religious beliefs can provide internal coping resources that help to reduce psychological stress, such as a sense of meaning and purpose, and ways of reframing negative life events [21]. Relatively few studies have directly assessed these theoretical pathways of mediation with respect to depression, but one found that congregational support and religious coping mediated the respective effects of service attendance and prayer on symptoms of depression in the general population [22]. Another found that social support and religious coping both played a role in mediating the impact of general religiousness on postoperative psychological distress in cardiac surgery patients [23].

The purpose of the present study is to examine the longitudinal relationship between baseline religious factors and outcomes following treatment for depression, and the psychosocial pathways by which they may operate. The sample consists of depressed psychiatric patients, who were assessed prior to treatment and again after three months. Pretreatment religious and psychosocial characteristics are used to construct a mediational path model of posttreatment depression severity. Based on previous research, it was hypothesized that religious factors (including service attendance, subjective religiousness, prayer frequency, and use of religious media) would be related to greater social support and less stress, which would in turn be related to less severe depression after treatment (Figure 1).

2. Materials and Method

2.1. Setting and Patients. Participants were enrolled in the Neurocognitive Outcomes of Depression in the Elderly (NCODE) study between November 1994 and December 2008. Methodological details of NCODE, a prospective cohort study conducted at Duke University Medical Center, have been described previously [24]. All participants were at least 59 years of age and patients of Duke Psychiatric Services, receiving treatment for a current episode of unipolar depression, without evidence of other major psychiatric illness. On enrollment, participants were interviewed by a geriatric psychiatrist, which included administration of the Montgomery-Åsberg Depression Rating Scale (MADRS) [25] described below, and this procedure was repeated during the course of treatment at intervals of three months or less. At or shortly after the point of enrollment, participants completed all other measures used in the present study as part of the Duke Depression Evaluation Schedule (DDES) [26], administered in-person by trained interviewers. All subjects provided informed consent before beginning any study procedures, and all study procedures were approved by the Duke University Health System Institutional Review Board.

2.2. Measures

2.2.1. Depression Severity. Severity of depression was measured using the MADRS [25], which is a clinician-rated instrument designed to be sensitive to changes resulting from treatment, and which has high interrater reliability [27]. The MADRS has a total range of 0–60, with established grades of depression severity corresponding to scores 0–6 (recovered), 7–19 (mild), 20–34 (moderate), and 35–60 (severe) [28].

2.2.2. Religious Factors. Five religious factors were measured as part of the DDES: worship attendance, religious media use, private prayer, subjective religiosity, and group affiliation. Frequency of worship attendance was measured on a 6-point scale (never, once a year or less, a few times a year, a few times a month, once a week, more than once a week). Frequency of viewing/listening to religious television or radio was measured on a 6-point scale (rarely or never, once a month, a few times a month, once a week, 2-3 times a week, daily). Frequency of private religious practice—including prayer, meditation, and Bible study—was measured on a 6-point scale (rarely or never, a few times a month, once a week, two or more times a week, daily, more than once a day). Subjective religiosity was measured with a single item on a 3-point scale of personal religious importance (very important, somewhat important, not important at all).

Participants were asked their religious group preference, including specific denomination. For Christians, these responses were coded according to definitions established previously [29] into Mainline Protestant, Conservative Protestant, and Catholic categories. Because only a small number of participants reported belonging to a non-Christian religious group, these individuals were classified together as "other religion," while those reporting no religious preference were classified as having "no religion."

2.2.3. Social Support. The Duke Social Support Index [26, 30] was administered to all participants. The present analyses use the 10-item subjective social support subscale, measuring perceptions of being included in a social network (e.g., "When you are talking with your family and friends, do you feel you are being listened to most of the time, some of the time, or hardly ever?").

2.2.4. Stress. Perceived stress were measured with a single interview item: "On a scale of 1 to 10, how would you rate the average degree of stress you have experienced during the past six months? One means no stress whatsoever and a 10 means you had stress so severe that you were unable to cope with everyday activities."

2.2.5. Vascular Health. The presence and severity of comorbid vascular health conditions was measured with a series of 4 questions in which participants were asked whether they currently had specific vascular health conditions ("high sugar or diabetes," "heart trouble," "high blood pressure or hypertension," and "hardening of the arteries"). For each vascular condition reported, participants were asked whether

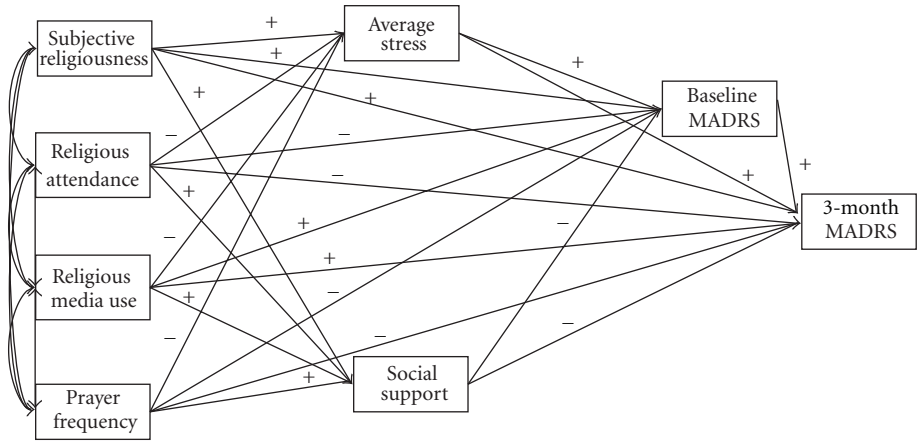

Figure 1: Theoretical path model for effects of religious factors on depression severity. MADRS: Montgomery-Åsberg Depression Rating Scale.

it interfered with their activities "not at all," "a little," or "a lot." Responses to these items were added to create a combined 0–12 scale of vascular comorbidity severity.

2.2.6. Demographics. Self-reported demographic characteristics included sex, age, race (recoded as White or non-White), and years of education (treated as a proxy for socioeconomic status).

2.3. Analyses. Structural equation modeling (SEM) [31] was used to assess the direct longitudinal relationships between baseline religious factors (subjective religiousness, religious attendance, religious media use, and prayer frequency) and depression severity after three months, as well as their indirect effects through the mediating paths of social support, stress, and baseline depression severity. A theoretical path model was constructed and specified using a series of linear equations, with SAS 9.1 PROC CALIS. The initial model was examined and refined to produce an optimized path model that was both theoretically coherent and provided a strong fit with the data. All SEM analyses were conducted based on a partial correlation matrix which treated all other variables described above (sex, age, race, education, religious denomination, and vascular health) as covariates in all model equations.

2.3.1. Theoretical Model. In the initial theoretical model (Figure 1), all religious factors were treated as exogenous variables. Social support and average stress were treated as independent outcomes of these religious factors. Baseline MADRS was treated as an outcome of social support, average stress, as well as all religious factors. Finally, 3-month MADRS was predicted by all model variables. Thus, religious factors were theorized to operate on final depression severity both directly and indirectly through paths of social support, average stress, and initial depression severity.

2.3.2. Multiple Imputation of Missing Data. Initial screening for missing data indicated that 9.6% of participants would be excluded due to listwise deletion. Multiple imputation of missing values, using the Markov Chain Monte Carlo (MCMC) method, was performed on variables in the model except for 3-month MADRS with PROC MI in SAS 9.1. The MCMC method imputes for each missing data point a series of randomly selected values based on the observed joint distributions of all other variables included in the model [32, 33]. Consistent with multiple imputation theory [34], five independent imputations were run, and all SEM analyses were performed separately on each of these imputed datasets and parameter estimates aggregated using SAS 9.1 PROC MIANALYZE.

3. Results

To be included in the present analyses, participants were required to have MADRS assessments both at enrollment and after 3 months of treatment, as well as having been administered with the DDES contemporaneous with the baseline MADRS. Data imputation and all analyses were based on 386 participants meeting these criteria. Descriptive statistics for raw data prior to imputation are presented in Table 1. Bivariate correlations between model variables are summarized in Table 2.

SEM results for the initial theoretical model (Figure 1), $\chi^2(1) = 7.65$, $P = .006$, GFI = 0.995, AGFI = 0.820, RMSEA = 0.128, indicated relatively poor model fit [31, 35, 36]. Modification of the model, guided by theory as well as by previous empirical findings, produced a more parsimonious model (Figure 2). Based on comparison of model fit indexes, several nonsignificant paths among mediators were removed. More significantly, the position of the prayer frequency in the model was altered. While model statistics showed that including prayer improved model fit, it was empirically unrelated to the psychosocial mediators specified in the model, in contrast with the other religious factors. Optimal fit was achieved by treating prayer as endogenous factor predicted by each of the other religious factors. While this approach differs slightly from the initial model, it is

Table 1: Descriptive statistics.

			N^a
Demographics			
Female, *n* (%)	254	(65.8)	386
White, *n* (%)	329	(85.2)	386
Age (years), mean (SD)	69.40	(7.26)	386
Education (years), mean (SD)	13.65	(2.95)	386
Vascular comorbidity[b], mean (SD)	1.46	(1.86)	384
Depression			
MADRS at baseline, mean (SD)	25.88	(7.84)	386
MADRS at 3 months, mean (SD)	12.57	(8.67)	386
Mediators			
Social support[c], mean (SD)	22.99	(3.81)	364
Average stress[d], mean (SD)	6.60	(2.08)	378
Religious factors			
Subjective religiousness[e], mean (SD)	1.58	(0.67)	380
Religious attendance[f], mean (SD)	2.67	(1.78)	380
Religious media use[f], mean (SD)	1.68	(1.93)	379
Prayer frequency[f], mean (SD)	3.08	(1.81)	378
Mainline Protestant, *n* (%)	152	(40.4)	376
Conservative Protestant, *n* (%)	129	(34.3)	376
Catholic, *n* (%)	36	(9.6)	376
Other religious affiliation, *n* (%)	33	(8.8)	376
No religious affiliation, *n* (%)	26	(6.9)	376

[a] *N* with nonmissing data prior to imputation.
[b] Scored on a 0–12 scale.
[c] Scored on a 10–30 scale.
[d] Scored on a 1–10 scale.
[e] Scored on a 0–2 scale.
[f] Scored on a 0–5 scale.

theoretically consistent with other research that treats prayer as a behavioral factor influenced by more general forms of religious engagement [37, 38]. Model statistics indicated very good fit for this optimized model, $\chi^2(8) = 10.55$, $P = .229$, GFI = 0.993, AGFI = 0.972, RMSEA = 0.020.

4. Discussion

These results show a complex relationship between religion and severity of depression following treatment among older adults. While the results are generally in support of the hypothesis that stress and social support serve as psychosocial mediators of the relationship between religion and depression severity outcomes, they also indicate that religion has some unique effects not mediated by other variables in the current model. Furthermore, certain elements of religion appeared to have both harmful and beneficial effects on depression, via different mediating paths.

Among the baseline religious factors in this model, only prayer frequency showed a significant direct relationship with depression severity after 3 months. Other religious factors (subjective religiousness, religious attendance, and religious media use) were found to be related to prayer frequency, average stress, and social support, which were in turn significantly related to 3-month depression severity, and thus appeared to be related only indirectly. While all of the significant effects of religious attendance, religious media use, and prayer frequency observed in this model showed inverse associations with depression severity, subjective religiousness appeared to be associated with worse depression through the paths of higher average stress and baseline depression severity, as well as with less severe depression through the path of higher prayer frequency. Overall, the final model supports the hypotheses that religion is longitudinally related to depression severity both directly and indirectly through its influence on other key psychosocial mediators, and that the net effect of these religious factors is beneficial after accounting for these direct and indirect pathways.

There were noteworthy differences between the associations of religious factors and depression severity before and after treatment. While subjective religiousness and religious attendance were both related directly to baseline depression severity, they were only indirectly and more weakly related to depression after treatment. By contrast, baseline prayer frequency was unrelated to baseline depression, but was significantly related to lower severity 3 months later. Religious media use showed no direct relationship to depression severity at either point, but was related to prayer frequency, which in turn was related to 3-month depression severity. Because the associations of religious factors with pre-treatment depression severity are cross-sectional, there is some ambiguity in their interpretation. It is possible that being in an acute state of depression had an influence on patients' religious practices, for example, by discouraging them from attending worship services, or increasing subjective religiousness. Another possible interpretation of these findings is that there are different specific facets of religiousness at work in influencing the severity of a depressive episode, distinct from those influencing response to treatment. Alternatively, it is possible that certain elements of religiousness influence the threshold of severity at which individuals decide to seek treatment. More research is needed to address these possible explanations.

Consistent with previous research [30, 39], lower reported stress and higher perceived social support at baseline were related to lower depression severity after 3 months, and these mediators appeared to partially account for the association of religious factors with depression severity. These results are consistent with the hypothesis that attending religious worship provides one with more opportunities to receive community support, and also helps to reduce stress. It is less clear why greater subjective religiousness appears to be associated with more stress and worse baseline depression, although this is consistent with findings from some other recent studies [16, 17]. One speculative interpretation is that individuals for whom religion is a highly central element of personal identity may be more prone to interpret their problems as signs of moral failure or divine punishment, particularly if they are also depressed, eliciting more intense feelings of stress than those who attribute their problems to more mundane causes.

It is especially noteworthy that the relationship between more frequent prayer and less severe depression after 3

Table 2: Bivariate correlations between study variables.

	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) subjective religiousness	0.47***	0.41***	0.60***	0.04	0.08	0.13**	0.03
(2) religious attendance		0.29***	0.43***	−0.14**	0.21***	−0.15**	−0.06
(3) religious media use			0.41***	0.06	−0.02	0.06	0.05
(4) prayer frequency				−0.002	0.11*	0.06	−0.05
(5) average stress					−0.19***	0.18***	0.23***
(6) social support						−0.15**	−0.25***
(7) Baseline MADRS							0.13**
(8) 3-Month MADRS							

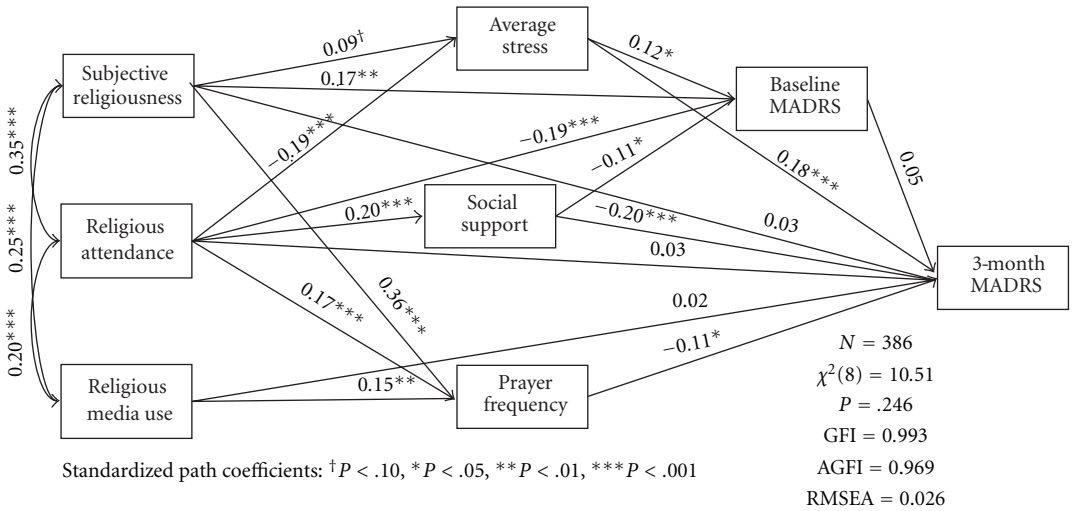

Figure 2: Path model with standardized coefficients for structural equation model of religious factors, social support, stress, and baseline and 3-month depression severity. MADRS: Montgomery-Åsberg Depression Rating Scale. Based on a partial correlation matrix controlling for gender, race, age, education, religious denomination, and vascular comorbidity. All variables except 3-month MADRS were measured at baseline. Error terms for endogenous variables are not reported.

months did not appear to be mediated by any stress-buffering effect, and that it also provided a pathway for indirect beneficial effects of subjective religiousness, religious attendance, and religious media use that were likewise independent of stress and social support. The mechanism by which prayer might ameliorate depression severity is not clear from this study. Recent research suggests that engaging in regular meditation may cause biological changes promoting better health in regions of the brain that are also related to depression [40, 41]. To the extent that prayer engages similar processes, this may suggest a potential biological mediator for this relationship. While there are physiological similarities in the practice of specific types of meditational [42] and ritual [43] prayer with meditative practice, the general category of prayer encompasses a wide range of other specific forms [44, 45] which were not differentiated by the measures used in this study, and thus further research is necessary to explore this hypothesis. Another possibility is that prayer helps people with depression to cope better with their illness and the factors that may have precipitated that illness. A natural next step suggested by these results is to examine more closely the specific types of prayer used by older adults in coping with depression, while at the same time measuring biomarkers known to influence treatment outcomes, to assess the hypothesis that certain prayer practices have physiological effects that are independent of the social support and cognitive coping facets of religion.

A further possibility is that prayer interacted in some way with the treatment that the patients were receiving for their depression, improving the effectiveness of that treatment. For example, it may have provided time for reflection on elements of therapy, or may have in some way promoted medication adherence. Since treatment details were not collected as part of this study, it is unfortunately not possible to examine these possibilities more closely with the present data. Regardless of the precise mechanism at work, the finding of a pattern of independent longitudinal effects on depression severity via multiple paths for each of the four religious factors measured in this study serves to highlight the complex and multifaceted nature of religion as a construct, and to reinforce the importance of taking multiple forms of religiousness into account when modeling its relationship with mental health. While the specific focus of this study

is on late life depression, it is likely that these facets of religion operate in a similar way earlier in life. Nevertheless, the general pattern of increasing religiousness during older adulthood [37], alongside possible differences in the etiology of some forms of late life depression, compared with those developing earlier [46], make it important to empirically evaluate the applicability of this model in younger adults.

Limitations. Although depression severity outcomes were measured after 3 months of treatment, measurement of both the religious factors and the psychosocial mediators was conducted only at the time of the initial assessment. This leaves open questions of directionality among those model variables. For example, it is plausible that more perceived stress and worse initial depression contribute to increased subjective religiousness by prompting to patients to engage in more intense religious coping. A more comprehensive longitudinal study, ideally following individuals' religiousness, perceptions of stress, and social support prior to becoming depressed, would be needed to fully test these possibilities. Additionally, data regarding medication adherence and substance use were not available, making it impossible to test the possibility that religious factors influenced treatment outcomes by way of these potential mediators. Other limitations relate to the representativeness of the sample used in this study. Participants were receiving treatment at a major academic medical center, and may differ in important ways from depressed patients treated in other settings, or who never seek treatment. Furthermore, all patients were residents of the Southeastern US. This region is both more religious overall and more homogeneous in terms of religious group affiliation than other regions of the US [47], and thus the importance of religious factors in mental health outcomes seen here may not be fully generalizable to patients from other areas.

5. Conclusions

This study has both theoretical and methodological implications regarding research in religion and mental health. Theoretically, it provides evidence of a relationship with late life depression that is partially mediated through psychosocial pathways of stress buffering and social support, but also appears to have unique effects not explained by these factors. Methodologically, it demonstrates some of the complexity of the construct of religion, and its potentially multidirectional relationship with important outcomes. The present results contribute to a growing body of findings demonstrating that different facets of religiousness may have either harmful or beneficial relationships with mental health. Research that conceptualizes religiousness as a single construct, or that relies on a single facet such as worship service attendance, is thus likely to produce an incomplete picture of this relationship. In particular, this study suggests that subjective religiousness may be related to depression via multiple pathways in contrary directions, while private prayer appears to have a relationship that cannot be accounted for by any association with stress buffering. More research is needed to fully understand this network of relationships, as well as to identify other facets of religiousness that may impact mental health, and potential mechanisms to account for the residual relationships not explained by stress and social support.

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