Are Religiosity and Spirituality Useful Constructs in Drug Treatment Research?

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Are Religiosity and Spirituality Useful Constructs in Drug Treatment Research?

Douglas Longshore, PhD
M. Douglas Anglin, PhD
Bradley T. Conner, PhD

Abstract

Religiosity and spirituality (R/S) have been shown to be related to better outcomes in many health service areas, including drug abuse treatment. The latter area, however, lacks a fully emergent empirical framework to guide further study. Moreover, although scientists have tested isolated hypotheses, no comprehensive process model has been designed and validated, limiting conceptual development as well. This paper reviews the relevant R/S and health research literature with a primary focus on drug treatment processes. Then a conceptual model is suggested to guide future incremental study of R/S assessment and intervention development. Implications for addiction health services include increased efforts to empirically validate R/S interventions, to increase practitioner competencies in this area, and to disseminate relevant research findings.

Introduction

Higher measurement scores of religiosity and spirituality (R/S) are associated with better health in many domains, according to the limited studies conducted to date, among drug abusers.[1–4] Less clear are the answers to many related questions: What are the reasons for this connection? What are the characteristics of those presenting with diverse health and behavioral health issues who might most benefit from an R/S approach? What empirically supported guidance can be offered to healthcare providers and pastoral counselors who wish to strengthen beneficial aspects? At present, scientific responses to these questions are fragmentary. Dimensions of R/S, particularly in the drug treatment field, have not yet been tested as correlates or predictors of better health in a fully systematic way. Thus, there is no cumulative empirical framework to guide further study. Moreover, although scientists have tested isolated hypotheses regarding processes by which R/S

Address correspondence to M. Douglas Anglin, PhD, Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, University of California, 1640 S. Sepulveda Boulevard, Suite 200, Los Angeles, CA 90025-7535, USA. Phone: +1-310-6179922; Fax: +1-310-4737885; Email: doug_anglin@hotmail.com.

Douglas Longshore, PhD, Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, University of California, Los Angeles, CA, USA.

Bradley T. Conner, PhD, Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, University of California, Los Angeles, CA, USA. Phone: +1-310-2675379; Fax: +1-310-4737885; Email: bconner@ucla.edu

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might lead to better health, no comprehensive process model has been validated that explicates potential underlying mechanisms.[5] Accordingly, within drug treatment, there is currently no useful conceptual framework specifically focusing on R/S to guide future research and to advance theoretical development. Given recent governmental initiatives that have increased funding of faith-based initiatives for health and behavioral problems, research for the development and evaluation of these efforts needs to keep pace with such policy changes and their effects on the delivery of health services.

The idea that R/S might affect health was long regarded as "folklore" relegated to "the fringes of the research community."[6,7(p. 1475)] It was commonly believed that religiosity and spirituality could not or should not be studied scientifically.[8] Although many people dependent on drugs, and frequently the clinicians who treat them, have been convinced that R/S is critical to recovery,[9] R/S had historically been neglected in the training and clinical practice of healthcare providers[10] and drug treatment counselors,[9,11] with the possible exception of spirituality dimensions related to 12-step group participation (discussed below).

In recent years, however, health scientists have more widely acknowledged the connection between R/S and health.[12] Courses on the role of R/S in health and medical practice are now taught at one third of the nation's medical schools, and the American Psychological Association has published a series of influential texts on R/S.[13,14] The Fetzer Institute and the National Institute on Aging have also launched initiatives to promote research on R/S and health, including the development of a battery of instruments of known psychometric properties that are potentially applicable across a variety of studies.[15] Moreover, faith leaders have come to recognize the need for science-based "core competencies" in working with substance users[16] and have called for dialogue and "mutual learning" on the interaction between R/S and health.[17,18]

Some features of R/S may be impossible to capture by scientific methods, as the existence of divine or supernatural power is, by definition, unverifiable by science. In open scientific inquiry, "one must always recognize the possibility for unknown or immeasurable factors to be at work."[19(p. 45)] However, R/S and health "can be studied in an empirically rigorous and sensitive fashion, especially by scientists working collaboratively with religious scholars and practitioners."[20(p. 25)] Results of such collaboration can inform understanding of processes by which R/S affects health. Researchers can, in other words, "study the footprints left by faith."[21(p. 170)] Doing so may lead to new insights for research and for both clinical and pastoral care.

As a starting point for narrowing the gaps in the R/S health services research noted above, this paper has three purposes: first, to provide a review of the literature, emphasizing findings that identify important dimensions and correlates of R/S relating to health and health services so as to improve understanding of the underlying relationships; second, to propose an initial, exploratory conceptual model to guide future study of R/S issues; third, given the likelihood that research and model development will proceed on an incremental basis, to recommend to health services researchers that aspects of the model should be tested by extending studies to include ongoing data collection with R/S measures whenever practical.

Historical Perspectives on the Role of Religiosity and Spirituality for Health

The following literature review encompasses definitions of R/S; R/S and health; research issues including measurement, as well as potential mediators and moderators of their influence; R/S in health services, potential pathways from R/S to improved health, application of process models in drug treatment research generally, and the development of an R/S specific initial conceptual model; and R/S applicability in health services and health services research. For brevity and focus, only findings from relatively recent peer-reviewed publications are reported; accordingly detailed information on sample size, sample characteristics, or research methodology is not provided.

Religiosity and spirituality defined

Religiosity, as typically defined, encompasses a belief in god, various dimensions of involvement in organized religion, such as denominational affiliation (e.g., Protestant, Roman Catholic, or Jewish), frequency of attendance at services, acceptance of doctrinal beliefs and norms, and social interaction with fellow congregants. Spirituality emphasizes an inner quality that "facilitates connectedness with the self, other people, and nature."[22(p. 557)] While R/S are frequently linked concepts, many people view themselves as spiritual rather than religious,[4,19] and the distinction between involvement in organized religion and a person's "inner quality" requires operationalizing instrument definitions clearly. There is also some disagreement regarding whether belief in a supreme being or sacred realm is an essential element of spirituality.[23,24] Without such belief, spirituality may be difficult to distinguish from purely humanist beliefs and personal characteristics such as self-efficacy and optimism.[25] Accordingly, good psychometric construction and assessment is essential to understanding how each concept is related to health. In keeping with the exploratory purposes of this review, a broad theological definition of spirituality as a "transcendent sense of self" has been adopted.[26] This transcendent sense gives coherence and meaning to life and connects individuals to something beyond their personal needs and material existence.[12,27,28]

Research in religiosity/spirituality and health

R/S has been found to be related to health indicators such as reduced morbidity and mortality, better subjective health, and lower psychological distress.[19,29,30] Such relationships persist after adjustment for demographic characteristics, health behaviors, social ties, and other psychosocial factors.[1,31,32] Similarly, although the quality of research on R/S and alcohol and drug use is uneven and findings are mixed, studies have found that R/S is negatively related to substance use and positively related to recovery.[33,34] In one study, higher R/S at treatment entry predicted abstinence at 6-month follow-up;[35] in another study, higher scores predicted greater abstinence motivation and treatment success.[36] Several studies of 12-step programs have shown increases in R/S during program participation.[37–39] Despite this accumulation of research, however, a well-articulated empirical framework of the relationship between R/S and health, especially with respect to drug use, is still lacking.

One important constraint in this regard concerns the "lexicon" of potentially important dimensions underlying R/S principals. Some R/S dimensions have received more attention than others. Among the dimensions most commonly studied are denominational affiliation, beliefs proscribing substance use/abuse, frequency of attendance at religious services or other church-sanctioned social events, and frequency of prayer. Dimensions less studied include religious contributions to coping style, religious social support, and core spiritual beliefs and values. Moreover, particular R/S dimensions may be more influential on some contextual issues or practices than on others.[20,40] For example, the buffer effect of R/S on psychological stress may depend on strength of spiritual beliefs more than frequency of attendance at religious services or prayer.[34] Furthermore, R/S may also have adverse effects.[7,41,42] R/S may lead to feelings of guilt and shame, passivity, and coping in the form of prayer for vengeance and adverse "righteous anger."[1,32,36,43] Accordingly, R/S dimensions must be tested systematically in a multivariate context in order to compare the magnitude and direction of their association with health processes and outcomes.

A second issue concerns the operationalization and measurement of R/S dimensions. Given the diversity of potential R/S elements noted above, there are a plethora of measures for each construct. Many have excellent psychometric properties, but their applications to real-world conditions have not led to a consensus of primary items or on agreed methods of "pruning" elements that have few

demonstrable contributions to predicting outcomes (see, e.g., references [1–4,15,19]). As noted, this review primarily focuses on literature published since 1995. Many of these articles provide an historical context relevant to the themes to be discussed (see, e.g., references 3,5,6).

Early efforts to develop instrument standardization in this research area have, as previously noted, typically focused on religion and religiosity, with denomination often a particular focus as well as church attendance, participation in church-related activities, and subjective assessments of the meaning of religion to the individual. Research from this era, as reported in the publications referenced, suggested a real but modest relationship to physical health functioning, with perhaps more support for beneficial mental health effects. Some argued that social support provided by church involvement was the likely primary mechanism of action.[1] Subsequent work included efforts to deconstruct the particular dimensions underlying the concept of religiosity and relate them to processes that might explain their individual or synergistic effect.[3,5,6] Such efforts were conceptual analyses that provide an initial basis for approaching a more formal meta-analysis effort.

Accordingly, despite frequent agreement on the conceptual underpinnings of R/S, operationalizing their dimensions in measures having reliable and valid psychometrics has resulted in diverse approaches and different instruments. Some instruments have been designed with the intent of general applicability and others within the frame of the outcome variables of interest. Harris and colleagues[44] suggest that research would benefit by using multisample, multimethod samples and including a diversity of measures, both objective and subjective, with the concomitant measurement of potential mediating and moderating conditions. This goal is, of course, laudable but typically constrained by the resources available for any one study.

To this end, further evaluation of measures and their construction, operationalization, psychometric properties, and applicability, along with closely reasoned inferences about mechanisms of their relationship to underlying attitudes and behavior, are warranted. Drug abuse and treatment researchers can often relate, adapt, or modify the methodological developments in the general health literature to focus on R/S relationships to treatment processes and resultant outcomes. Suitable instrumentation for the area is a crucial first step. Koenig and colleagues[3] provide thorough reviews of instrument development and application in general health areas, and Miller[4] focuses specifically on measures for alcohol and other drug use. At best, R/S research in the addictions field may need to select existing measures having good psychometrics and adapt them to the populations and treatment recovery processes of interest.

One major deficiency in the extant literature is that much of the relevant research has been cross-sectional, not longitudinal.[1,44,45] Only scattered information exists on how changes in R/S are related to subsequent improvement in health or the pattern of that improvement. Accordingly, researchers have not fully elucidated how dimensions of R/S might change over time—that is, whether they change in incremental steps or in a transformative "conversion experience." Most important, researchers do not know how change and stability in R/S are related to the recuperative process or how to guide people through that process. Because less attention has been directed to R/S aspects in drug research, many observations regarding the relationships among R/S and general health are likely similar to those between R/S and drug abuse and its treatment.[4,46,47]

As noted, even less information exists on change in R/S and how the degree, rate of change, and duration may potentially affect recovery.[19,23] Studies[38,39] have found that baseline R/S predicted treatment success and abstinence, but other studies have found baseline R/S unrelated to those outcomes.[48,52] Only a few studies have examined the degree of change occurring in measures of R/S over the treatment process and the degree to which that change may affect outcomes. Quite possibly, R/S change rather than baseline levels may be a more robust predictor of health status,[49,50] especially among clients for whom baseline R/S is low. Moreover, Larson and colleagues[19] noted the importance of distinguishing sudden change from incremental change. Sudden change may signal a fundamental transformation, as in the previously noted "conversion experience."[51,52] Many writers

on addiction have described the importance of catharsis, redemption, or "huge emotional displacements and rearrangements."[9(p. 19)] But, sudden change may also be unstable,[52] whereas incremental change may be more enduring.

Religiosity/spirituality in health services

Studies have examined elements of R/S as components of health services in a wide range of practice settings, including clinical care, 12-step programs, and faith-based organizations.

Clinical care Some providers have augmented conventional clinical care with R/S components such as prayer, meditation, denominational ritual, and Bible study.[19] Their rationale is twofold. First, clients who are highly religious or spiritual may view life events and stressors through an R/S schema and use R/S language in forming their "cognitive construction of the world." [19(p. 105)] If care providers acknowledge that schema and employ (or at least accept) that language, clients may be more likely to seek care and comply with intervention protocols. Second, an intervention that incorporates a client's R/S beliefs may be more effective, at least partly because the client has stronger expectations for success. In particular, cognitive behavioral therapy (CBT) is "readily adaptable" to R/S content.[53(p. 167)] inasmuch as CBT deals largely with appraisal, belief, and expectancy. However, findings have been mixed in studies comparing CBT interventions with and without R/S content. Probst and colleagues[54(p.96)] tested a faith-based CBT protocol that "gave Christian religious rationales for the procedures, used religious arguments to counter irrational thoughts, and used religious imagery procedures." Clients randomly assigned to this protocol reported significantly better improvement on depression, social adjustment, and general symptomatology than clients assigned to the nonreligious version of the same protocol or to a wait-list control group. On the other hand, Johnson and Ridley[55] found no outcome differences between clients receiving CBT and faith-based CBT for depression. A meta-analysis by McCullough[56] found no added benefit of faith-based over standard counseling in five studies of depression and concluded that research is needed on a wider range of outcomes, including drug abuse recovery processes and outcomes.

12-Step programs There is a large body of research on Alcoholics Anonymous, Narcotics Anonymous, and other 12-step programs in which spiritual growth is a central tenant.[40] Outcomes from that research are not uniform, but many studies suggest that affiliation with 12-step programs, especially when measured in the form of active participation rather than mere attendance, is positively related to improved recovery.[5,57–61] In addition, increases in R/S measures often occur during treatment and 12-step participation, and such increases predict subsequent abstinence from drug use and drinking.[62]

In the culture of recovery, many drug users, treatment providers, and faith leaders believe that R/S is critical to success. Prior studies have documented a relationship between R/S and health, but there is no systematic account of the magnitude, direction, and stability of associations between various dimensions of R/S and health outcomes, including drug use outcomes. Similarly, studies of faith-based health services are mixed and inconclusive, in part because outcomes have not been examined in relation to particular R/S dimensions. McCullough and Larson[5] have called for longitudinal "natural history" studies of R/S and for conceptual models to guide research on R/S processes. Larson and colleagues[19] urged a "logical sequence" of research, in which longitudinal designs "provide the information necessary to initiate clinical trials and other intervention studies."

Pathways from religiosity/spirituality to health

Scientists have tested isolated hypotheses regarding processes by which R/S might lead to better health, but no comprehensive model of these processes has been validated.[5] It is possible that some

of the R/S effect may not be direct but is accomplished through intervening or mediating variables and that the R/S effect also depends, at least partly, on moderating variables.

Mediators As one example, the relationship between R/S and health may be mediated by social support,[23,39] especially when one's social network includes clergy or fellow congregants whose support is grounded in R/S precepts, for example, having someone to pray with.[1,63] That is, it may be important to distinguish "secular" and "religious" social support. In addition, coping strategies such as active coping and denial may mediate R/S. Again, it may be important to distinguish secular coping and religious coping inasmuch as the latter predicts outcomes of health events "above and beyond the effects of [secular] coping."[45(p. 124)] Other R/S mediators suggested in prior studies[12,16,19,46] include optimism, self-esteem, sense of coherence, (low) psychological distress, and (low) thought suppression. Finally, in the domain of drug problems, R/S may provide a source of motivation for and confidence in recovery.[4,39,52] Thus, abstinence motivation and abstinence self-efficacy may be important mediators.

Moderators A considerable body of research has shown that social support may buffer the effects of stress or other psychological states on health.[64] Social network members may help the person interpret stressors in a more positive light and handle them more effectively. A relationship between R/S and drug abuse recovery may be most apparent when one's social network provides support specifically for recovery, and that relationship may be strongest when that support is grounded in R/S.[65] Similarly, as suggested by Bickel and colleagues[66] and Phillips and colleagues,[67] self-efficacy may take on a moderator role. R/S may have a stronger effect among people who feel less capable of abstinence on their own (i.e., those scoring lower on measures of abstinence self-efficacy).

Additionally, the relationship between R/S and health may be especially moderated by certain demographic variables such as gender, age, and ethnicity. Using gender as an example, some research has found that women attend religious services and pray more often than men.[68] In the general population, women score higher than men on most R/S measures in the Fetzer battery of R/S measures.[69] Gender differences have also been found in drug users, with men more likely to report more severe drug use and more serious associated problems than women.[70] These findings raise the possibility that variability in R/S for women may be range-restricted and, therefore, the R/S–health relationship might be attenuated. However, other studies have found that the R/S–health relationship may actually be stronger for women than for men.[12,32,35] Such conflicting findings emphasize the need for more comprehensive research on heterogeneous demographic samples.

Application of religiosity and spirituality in drug treatment research

A number of conceptual models representing the drug treatment process and critical points of intervention have been proposed in recent years. Perhaps one of the most thorough is that of Simpson,[71] which links inputs to staged treatment processes that serially affect treatment outcomes. While R/S concepts are not explicitly displayed, they can be readily subsumed under the input of baseline patient attributes, within treatment as components of interrelated interventions, and in outcomes under social support. Thus, while this model is heuristic, the level of conceptualization emphasizes broad categories rather than distinct elements but does allow for their inclusion. It also suggests the importance of a multivariate context in which more specific behavioral change models can be tested.

Similarly, the Transtheoretical Stages of Change model proposed by Prochaska and DiClemente[72] can subsume mechanisms that involve R/S precepts. This model posits four stages in attitudinal and behavior change for many types of behavior. First is the precontemplation stage, where a problem is evident, but no internal or behavioral efforts are being made to alleviate it. The

subsequent stage is contemplation, where issues surrounding the problem become more salient and consideration of alternatives surface. Next is the action stage, where efforts are initiated to deal with the problem, including self-initiated efforts and informal and/or formal treatment. Finally, the maintenance stage is achieved, where efforts have resulted in attitudinal and behavioral change and stability becomes a primary goal. R/S precepts can be applied at each stage to both initiate and accelerate movement into the next stage.

More specific models of an R/S contribution to the recovery process have been developed and applied to studies of Alcoholics Anonymous 12-step groups (AA). Tonigan reviews direct and indirect effects of spirituality as related to AA affiliation, group dynamics, and AA practices.[39] Defined in this way, spirituality had indirect effects on abstinence at 10-year follow-up through concurrently reported AA practices.

Carrico and colleagues present a more complicated model in their research on AA recovery processes.[73] A joint measure of R/S as related to "acceptance-based responding," defined by intrapersonal coping approaches, self efficacy, and processes of change and to extra-personal behaviors of meeting attendance, reading AA materials, and having a sponsor. These elements were, in turn, related to acceptance-based responding and 12-step involvement at the 1- and 2-year follow-ups.

As noted, any comprehensive conceptual model of the relationship between R/S and health must account for variables that could mediate or moderate the magnitude and direction of that relationship. Also essential is the differentiation of R/S dimensions that might affect health to varying degrees and possibly in opposite directions. Even at the specific level of R/S conceptualization, multiple points of view have been expressed. Ellison and Levin[1] have called for tests of the various direct and indirect effects of R/S on health through path analytic and structural equation models that are theoretically grounded. A comprehensive model will enable investigators to test R/S predictors in a multivariate context, to test competing hypotheses in the same dataset, and to not only identify possible leverage points for clinical and pastoral intervention (i.e., variables that are both mutable and strongly related to outcomes) but also areas that warrant further research attention.

Further, the literature already offers guidance for model development. Levin and Chatters[30] identified five models of R/S and mental illness, including "suppressor," "prevention," and "moderator" models. As implied in their labels, the models represent alternative mechanisms for the R/S effect. Health risks are directly affected by R/S in the prevention model, for example, and R/S buffers the effect of health risks on mental illness in the moderator model. Each model has four components: poor health, religion, mediating factors, and mental illness. No further details or operational definitions are provided. Thus, the models are quite global and serve mainly as heuristic devices. Alternatively, R/S has been incorporated into coping theory by several investigators.[7,74,75] In a model proposed by Dull and Skokan,[76] R/S has direct effects on health as well as indirect effects through problem appraisal and psychosocial resources such as optimism and sense of control. Pargament[77] has developed the concept of religious coping in which positive coping strategies (e.g., viewing a stressor as part of God's plan) are distinguished from negative coping strategies (e.g., stressor as God's punishment). Findings suggest that health outcomes are related to religious coping even after nonreligious coping is taken into account.[16]

Although informative, these proposed global models and the major drug treatment process models lack sufficient detail to suggest near-term R/S research studies, and coping models include only some of the potentially relevant variables and paths. Accordingly, McCullough and Larson[5] and Pargament,[21] among others, have called for further model development. To contribute to that effort, this article proposes a conceptual model that reflects the previously stated goals and the contributions of faith leaders and health scientists. Descriptive accounts of R/S and health in the pastoral literature[78] and the sociology of religion[79] have been reviewed. Health psychology literature was also searched for conceptual models of R/S and health, as noted above. Because

coping theory informs much of that literature, coping theory was used as a starting point and then expanded to cover a range of R/S dimensions and additional psychosocial factors suggested in the scientific and pastoral literature.

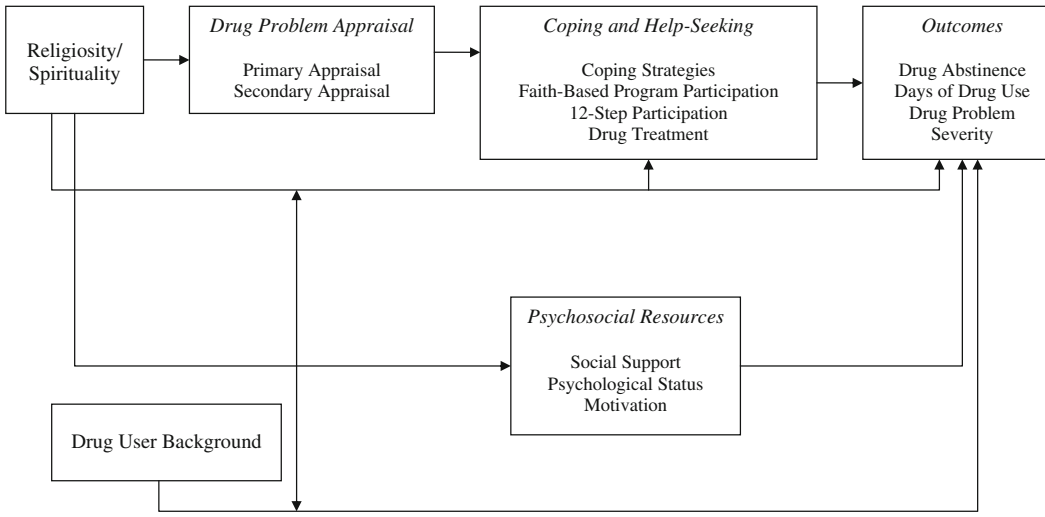
Figure 1 presents the resulting conceptual model based on the literature review and the criteria discussed above. Coping theory is represented on the top path from R/S to outcomes. R/S predicts drug problem appraisal (perceived problem severity and abstinence self-efficacy), which leads to coping and help seeking (faith-based program participation, 12-step participation, and drug treatment), and finally to outcomes such as drug abstinence and reduced drug use. On a second path, R/S predicts outcomes through contributions from three classes of psychosocial mediators suggested in the models above and in prior empirical research: social support, psychological status, and motivation.[80] These classes may be mutually interacting and may include tangible and instrumental supports such as shelter, transportation, education, counseling, and encouragement by others in recovery, as well as fulfillment of other individual needs that help to maintain sobriety. Depending on environment and context, the religious community can be a major provider of such supports.

A direct path from R/S to drug use outcomes is shown to acknowledge the possibility that "something inherent within the religious and spiritual experience contributes to or detracts from" health outcomes.[23(p. 66)] That is, R/S "may offer unique solutions" to problems which seem beyond the reach of one's personal resources and which may not be reducible to "mundane mediators."[21(p. 240–242)] In accord with this possibility, Tix and Frazier[45] found that the relationship between religious coping and life satisfaction was only partially mediated by psychosocial resources.

Background factors such as gender, age, ethnicity, drug use history, and psychiatric issues (e.g., stress) are included in the model as covariates that may contribute to outcomes, as has often been found in the general treatment evaluation literature. Finally, two sets of moderator effects are shown. In the first, R/S and background factors interact in predicting drug use outcomes. This interaction is suggested in prior studies showing, for example, that the adverse effects of stress may

Figure 1

Conceptual model: Posited direct, mediator, and moderator influences of R/S on drug treatment outcomes



be buffered by R/S.[30] In the second, R/S and psychosocial resources interact in predicting outcomes. As one example, social support, especially from recovery-oriented peers as in 12-step participation, may strengthen the relationship between R/S and drug treatment outcomes.[19] Additional moderator effects are possible and could be testable in an adapted model. However, rather than trying to represent such possibilities in all their complexity, the model focuses on two primary sets of factors—background and psychosocial resources—shown to interact with R/S in the extant literature. Mediator and moderator hypotheses for the model were drawn from that literature.

Discussion

This extended review of findings from the religiosity and spirituality literature provides a synopsis of the history of diverse ideas applied to health and human behavior from a number of disparate perspectives. From these initially fragmented approaches, themes have begun to emerge, measures have been developed, and a variety of findings observed, ultimately leading to attempts to present models to explain processes underlying such linkages, their mediators and modifiers, and the overall relationship to health outcomes. Although at a lagged pace, these same steps have begun to be applied to drug use and its treatment so that R/S models can be incorporated within more heuristic drug treatment process models, such as that proposed by Simpson[71] in one broadly encompassing model, by Prochaska and DiClemente[72] in the Transtheoretical Stages of Change conceptualization, and by Tonigan[39] in studies of Alcoholics Anonymous.

From the extant literature, following the precepts of other modeling development efforts, the authors propose an initial comprehensive model linking relevant concepts pertinent to R/S issues, including mediators, modifiers, and contexts in order to guide further research on R/S, health, behavioral health, and health services. The model was empirically derived and is, arguably, logically based. Since the application of R/S measures and studies of process and outcome are still nascent in the drug treatment field, alternate underlying mechanisms by which R/S produces its effects must wait further development. The conceptual model as developed not only suggests a perspective within which R/S concepts and measures can be embedded but also emphasizes critical areas where incremental testing can be applied, particularly regarding drug treatment processes and outcomes. Similarly, an assessment of the value of contributions from research is informed by examining new studies or results within the overall context of this or other appropriate models.

One such incremental research analyses is exemplified in the companion article by Conner and colleagues in this issue,[81] which examines the relationship of R/S adherence and outcomes among participants in an ongoing study. As this study illustrates, relevant measures can be selected and easily introduced into ongoing research studies at low cost but with potentially high return. Although secondary analyses of existing datasets or data obtained from ongoing studies may not contain the full range of variables suggested by the conceptual model, pieces of the model may be tested incrementally and findings aggregated over time. Such an approach calls for multiple analytic strategies, including fully developed theoretical models that can be tested (such as in multilevel modeling and structural equation modeling) and more specific relational analyses of select variables in both cross-sectional and longitudinal studies. With the accumulation of incremental findings, pilot data become available to support the testing of larger portions of the model with the full resources of a dedicated study allowing longitudinal data collection from a large and diverse population.

Implications for Addiction Health Services

As noted, the topics of religiosity and spirituality have been relatively neglected in formal addiction health services research. Yet, this emerging area of research and extant research in related fields has yielded a literature of its own that is sufficient to lead to initial model formulation and

empirical validation. This relatively comprehensive review of the literature and the accompanying initial conceptual model act as a useful and specific R/S guide to research planning and development. Particularly, the model could increase the efficiency of future research design by enabling researchers to take into account the full range of effects and associations that merit attention. Since alternative viewpoints and contradictory findings have hampered R/S research in drug abuse treatment, inroads have to be made incrementally to provide a foundation for securing funding for more focused and comprehensive efforts. An important first step would be to conduct an in-depth and comprehensive meta-analysis of the studies cited (as well as those outside the scope of this review) in refining the proposed conceptual model, developing an empirically based foundation of core constructs regarding R/S, and supporting future intervention development and research.

Further efforts could proceed with low-cost data collection as an overlay within ongoing studies, whose findings would provide pilot data and justification to develop targeted, fully designed studies that address R/S within their specific aims. Recent governmental faith-based initiatives have brought this issue more into the public and research view, and both the Substance Abuse and Mental Health Services Administration and the National Institute on Drug Abuse have solicited service and research proposals to extend efforts in this area. While these projects are coming to fruition, intermediate efforts to capitalize on available data can refine measures, examine specific hypotheses, and produce findings to guide developments in the area. An accumulation of both psychometric, methodological, and process and outcome findings, even if limited, can substantiate the worth of more comprehensive studies through well-planned and well-funded research projects.

In addition, a number of actions can heighten interest in this area and develop inroads leading to specific R/S interventions. These include efforts: (1) to disseminate research findings concerning R/S and resultant behavioral improvements in drug treatment; (2) to provide appropriate staff training for optimizing base levels of these concepts as well as targeted methods to enhance and stabilize them during treatment, and (3) to further develop and evaluate applications of various empirically derived methods within specialty and community drug treatment settings to advance the field.

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References

1. Ellison CG, Levin JS. The religion-health connection: evidence, theory, and future directions. *Health Education and Behavior*.1998;25:700–720. doi:10.1177/109019819802500603.
2. Flynn PM, Joe GW, Broome KM. Looking back on cocaine dependence: reasons for recovery. *American Journal on Addictions*. 2003;12:398–411.
3. Koenig HG, McCullough ME, Larson DB. *Handbook of Religion and Health*. Oxford: Oxford University Press; 2001.
4. Miller WR. Researching the spiritual dimensions of alcohol and other drug problems. *Addiction*. 1998;93:979–990. doi:10.1046/j.1360-0443.1998.9379793.x.
5. McCullough ME, Larson DB. Future directions in research. In: Koenig HG, ed. *Handbook of Religion and Mental Health*. New York: Academic; 1998:95–107.
6. Levin JS. Religion and health: is there an association, is it valid, and is it causal? *Social Science and Medicine*. 1994;38:1475–1482. doi:10.1016/0277-9536(94)90109-0.
7. Chatters LM. Religion and health: public health research and practice. *Annual Review Public Health*. 2000;21:335–367. doi:10.1146/annurev.publhealth.21.1.335.
8. Stark R. On the incompatibility of religion and science: a survey of American graduate students. *Journal of the Scientific Study of Religion*. 1963;3:3–20. doi:10.2307/1385002.
9. Ringwald CD. *The Soul of Recovery: Uncovering the Spiritual Dimension in the Treatment of Addictions*. Oxford: Oxford University Press; 2002.
10. Puchalski CM, Larson DB. Developing curricula in spirituality and medicine. *Academic Medicine*. 1998;73:970–974. doi:10.1097/00001888-199809000-00015.
11. Lukoff D, Lu FG, Turner RP. From spiritual emergency to spiritual problem—the transpersonal roots of the new DSM-IV category. *Journal of Humanistic Psychology*. 1998;38:21–50. doi:10.1177/00221678980382003.

12. Emmons RA. *The Psychology of Ultimate Concerns: Motivation and Spirituality in Personality*. New York: Guilford; 1999.
13. Miller WR, Delaney HD. *Judeo-Christian Perspectives on Psychology: Human Nature, Motivation, and Change*. Washington, DC: American Psychological Association; 2005.
14. Richards PS, Bergin AE. *A Spiritual Strategy for Counseling and Psychotherapy*. Washington, DC: American Psychological Association; 1997.
15. Fetzer Institute/National Institute on Aging. *A Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research*. A Report of a National Working Group. Kalamazoo, MI: Fetzer Institute. *Psychology*. 1999;30:761–785.
16. Center for Substance Abuse Treatment. *Core Competencies for Clergy and Other Pastoral Ministers in Addressing Alcohol and Drug Dependence and the Impact on Family Members*. Rockville, MD: Center for Substance Abuse Treatment; 2004.
17. Shea J. *Spirituality and Health Care: Reaching for a Holistic Future*. Chicago: The Park Ridge Center for Health, Faith, and Ethics; 2000.
18. Weaver AJ. Mental health professionals working with religious leaders. In: Koenig HG, ed. *Handbook of Religion and Mental Health*. New York: Academic; 1998:349–364.
19. Larson DB, Swyers JP, McCullough ME. *Scientific Research on Spirituality and Health: A Consensus Report*. Washington, DC: National Institute for Healthcare Research; 1997.
20. Miller WR, Thoresen CE. Spirituality, religion, and health. *American Psychologist*. 2003;58:24–35. doi:10.1037/0003-066X.58.1.24.
21. Pargament KI. Is religion nothing but...? Explaining religion versus explaining religion away. *Psychological Inquiry*. 2002;13:239–244. doi:10.1207/S15327965PLI1303_06.
22. Musgrave CF, Allen CE, Allen GJ. Spirituality and health for women of color. *American Journal of Public Health*. 2002;92:557–560.
23. Hill PC, Pargament KI. Advances in the conceptualization and measurement of religion and spirituality. *American Psychologist*. 2003;58:64–74. doi:10.1037/0003-066X.58.1.64.
24. Pardini DA, Plante TG, Sherman A, et al. Religious faith and spirituality in substance abuse recovery: determining the mental health benefits. *Journal of Substance Abuse Treatment*. 2000;19:347–354. doi:10.1016/S0740-5472(00)00125-2.
25. Martin JE, Carlson CR. Spiritual dimensions of health psychology. In: Miller WR, Martin JE, eds. *Behavior Therapy and Religion: Integrated Spiritual and Behavioral Approaches to Change*. Newbury Park, CA: Sage; 1988:57–110.
26. Komonchak JA, Collins M, Lane DA. *The New Dictionary of Theology*. Wilmington, DE: Michael Glazier; 1987.
27. Getsinger SH. Spiritual dimensions in rehabilitation from addiction. *Journal of Ministry in Addiction and Recovery*. 1998;5:13–29. doi:10.1300/J048v05n01_02.
28. Simmons R. *Understanding Christian Drug and Alcohol Recovery: A Step by Step Guide*. Los Angeles: Free N One Books; 2001.
29. Ellison CG, Boardman JD, Williams DR, et al. Religious involvement, stress, and mental health: findings from the 1995 Detroit Area Study. *Social Forces*. 2001;80:215–249. doi:10.1353/sof.2001.0063.
30. Levin JS, Chatters LM. Research on religion and mental health: an overview of empirical findings and theoretical issues. In: Koenig HG, ed. *Handbook of Religion and Mental Health*. New York: Academic; 1998:33–50.
31. Idler EL, Kasl SV. Religion among disabled and nondisabled persons II: attendance at religious services as a predictor of the course of disability. *Journal of Gerontology: Social Sciences*. 1997;52B:S306–S316.
32. Strawbridge WJ, Cohen RD, Shema SJ, et al. Frequent attendance at religious services and mortality over 28 years. *American Journal of Public Health*. 1997;87:957–961.
33. Gorsuch RL. Religious aspects of substance abuse and recovery. *Journal of Social Issues*. 1995;51:65–83.
34. Kendler KS, Liu X, Gardner CO, et al. Dimensions of religiosity and their relationship to lifetime psychiatric and substance use disorders. *American Journal of Psychiatry*. 2003;160:496–503. doi:10.1176/appi.ajp.160.3.496.
35. Avants SK, Warburton LA, Margolin A. Spiritual and religious support in recovery from addiction among HIV-positive injection drug users. *Journal of Psychoactive Drugs*. 2001;33:39–45.
36. Piedmont R. Spiritual transcendence as a predictor of psychological outcome from an outpatient substance abuse program. *Psychology of Addictive Behaviors*. 2004;18:213–222. doi:10.1037/0893-164X.18.3.213.
37. Kaskutas LA, Bond J, Humphreys K. Social networks as mediators of the effect of Alcoholics Anonymous. *Addiction*. 2002;97:891–900. doi:10.1046/j.1360-0443.2002.00118.x.
38. Kus RJ. *Spirituality and Chemical Dependency*. New York: Harrington Park; 1995.
39. Tonigan JS. Spirituality and alcoholics anonymous. *Southern Medical Journal*. 2007;110(4):437–440.
40. Kendler KS, Gardner CO, Prescott CA. Religion, psychopathology, and substance use and abuse: a multimeasure, genetic-epidemiologic study. *American Journal of Psychiatry*. 1997;154:322–329.
41. Pargament KI, Brant CR. Religion and coping. In: Koenig HG, ed. *Handbook of Religion and Mental Health*. New York: Academic; 1998:111–128.
42. Pargament KI, Koenig HG, Tarakeshwar N, et al. Religious coping methods as predictors of psychological, physical and spiritual outcomes among medically ill elderly patients: a two-year longitudinal study. *Journal of Health Psychology*. 2004;9:713–730. doi:10.1177/1359105304045366.
43. King M, Speck P, Thomas A. The effect of spiritual beliefs on outcome from illness. *Social Science and Medicine*. 1999;48:1291–1299. doi:10.1016/S0277-9536(98)00452-3.
44. Harris AH, Thoresen CE, McCullough ME, et al. Spirituality and religiously oriented health interventions. *Journal of Health Psychology*. 1999;4:413–433.
45. Tix AP, Frazier PA. The use of religious coping during stressful life events: main effects, moderation, and mediation. *Journal of Consulting and Clinical Psychology*. 1998;66:411–422. doi:10.1037/0022-006X.66.2.411.
46. Avants SK, Margolin A. Development of spiritual self-schema (3-S) therapy for the treatment of addictive and HIV risk behavior: a convergence of cognitive and Buddhist psychology. *Journal of Psychotherapy Integration*. 2004;14:253–289. doi:10.1037/1053-0479.14.3.253.
47. Booth J, Martin JE. Spirituality and religious factors in substance use, dependence, and recovery. In: Koenig HG, ed. *Handbook of Religion and Mental Health*. New York: Academic; 1998:175–200.

48. Pringle JL, Emptage NP, Barbetti V. *Spirituality in Addiction Treatment*. Presentation at the Annual Meeting of the American Public Health Association, November 6–10, 2004, Washington, DC.
49. Connors GJ, Giegel JL, Walitzer KS. *Changes on Dimensions of Spirituality Among Substance Abusers During and Following Treatment*. Presented at the Annual Meeting of the College on Problems of Drug Dependence, June 14–19, 2003, Bal Harbour, FL.
50. Richard AJ, Bell DC, Carlson JW. Individual religiosity, moral community, and drug user treatment. *Journal for the Scientific Study of Religion*. 2000;39(2):240–246. doi:10.1111/0021-8294.00019.
51. Paloutzian RF, Richardson JT, Rambo LR. Religious conversion and personality change. *Journal of Personality*. 1999;67:1047–1079. doi:10.1111/1467-6494.00082.
52. Spahr JH. The role of the conversion experience in alcoholism recovery. *Studies in Formative Spirituality*. 1987;8:223–241.
53. Miller WR (ed). *Integrating Spirituality into Treatment: Resources for Practitioners*. Washington, DC: American Psychological Association; 1998.
54. Probst LR, Ostrom R, Watkins P, et al. Comparative efficacy of religious and nonreligious cognitive-behavioral therapy for the treatment of clinical depression in religious individuals. *Journal of Consulting and Clinical Psychology*. 1992;60:94–103. doi:10.1037/0022-006X.60.1.94.
55. Johnson WB, Ridley CR. Sources of gain in Christian counseling and psychotherapy. *The Counseling Psychologist*. 1992;20:159–175. doi:10.1177/0011000092201020.
56. McCullough ME. Research on religion-accommodative counseling: review and meta-analysis. *Journal of Counseling Psychology*. 1999;46:92–98. doi:10.1037/0022-0167.46.1.92.
57. Kissin W, McLeod C, McKay J. The longitudinal relationship between self-help group attendance and course of recovery. *Evaluation and Program Planning*. 2003;26:311–323. doi:10.1016/S0149-7189(03)00035-1.
58. Morgenstern J, Labouvie E, McCrady BS, et al. Affiliation with Alcoholics Anonymous after treatment. *Journal of Clinical and Consulting Psychology*. 1997;65:768–777. doi:10.1037/0022-006X.65.5.768.
59. Ringwald CD. Spirituality: an evidence-based practice for treatment and recovery. *Counselor: The Magazine for Addiction Professionals*. 2003;4:32–37.
60. Tonigan JS, Connors GJ, Miller WR. Alcoholics Anonymous involvement (AAI) scale: reliability and norms. *Psychology of Addictive Behaviors*. 1996;10:75–80. doi:10.1037/0893-164X.10.2.75.
61. Weiss RD, Griffin ML, Gallop RJ, et al. The effect of 12-step self-help group attendance and participation on drug use outcomes among cocaine-dependent patients. *Drug and Alcohol Dependence*. 2005;77:177–184. doi:10.1016/j.drugalcdep.2004.08.012.
62. Connors GJ, Walitzer KS, Giegel JL. *AA Participation, Spirituality, and Alcohol Treatment Outcome*. Presented at the Annual Meeting of the Research Society on Alcoholism, June 2003, Ft. Lauderdale, FL.
63. Krause N. Exploring race differences in a comprehensive battery of church-based social support measures. *Review of Religious Research*. 2002;44:126–149. doi:10.2307/3512512.
64. Heaney CA, Israel BA. Social networks and social support. In: Glanz K, Rimer BK, Lewis FM, eds. 3rd edn. *Health Behavior and Health Education*. San Francisco: Jossey-Bass; 2002:185–209.
65. Bazargan S, Sherkat DE, Bazargan M. Religion and alcohol use among African-American and Hispanic inner-city emergency care patients. *Journal for the Scientific Study of Religion*. 2004;43:419–428. doi:10.1111/j.1468-5906.2004.00244.x.
66. Bickel CO, Ciarrocchi JW, Sheers JJ, et al. Perceived stress, religious coping styles, and depressive affect. *Journal of Psychology and Christianity*. 1998;17:33–42.
67. Phillips RE, Pargament KI, Lynn QK, et al. Self-directing religious coping: a deistic God, abandoning God, or no God at all? *Journal for the Scientific Study of Religion*. 2004;43:409–418. doi:10.1111/j.1468-5906.2004.00243.x.
68. Levin JS, Taylor RJ. Age differences in patterns and correlates of the frequency of prayer. *The Gerontologist*. 1997;37:75–88.
69. Idler EL, Musick MA, Ellison CG, et al. Measuring multiple dimensions of religion and spirituality for health research. *Research on Aging*. 2003;25:327–365. doi:10.1177/0164027503025004001.
70. Mathew RJ, Georgi J, Wilson WH, et al. A retrospective study of the concept of spirituality as understood by recovering individuals. *Journal of Substance Abuse Treatment*. 1996;13:67–73. doi:10.1016/0740-5472(95)02022-5.
71. Simpson D. A conceptual framework for drug treatment process and outcomes. *Journal of Substance Abuse Treatment*. 2004;27:99–121. doi:10.1016/j.jsat.2004.06.001.
72. Prochaska JO, DiClemente CC. *The Transtheoretical Approach: Crossing Traditional Boundaries of Therapy*. Malabar, FL: Krieger; 1994.
73. Carrico AW, Gifford EV, Moos RH. Spirituality/religiosity promoted acceptance-based responding and 12-step involvement. *Alcohol and Drug Dependence*. 2007;89:66–73. doi:10.1016/j.drugalcdep.2006.12.004.
74. Lazarus RS, Cohen JB. Environmental stress. In: Altman I, Wohlwill JF, eds. *Human Behavior and Environment (Vol 2)*. New York: Plenum; 1997.
75. Wenzel L, Glanz K, Lerman C. Stress, coping, and health behavior. In: Glanz K, Rimer BK, Lewis FM, eds. 3rd edn. *Health Behavior and Health Education*. San Francisco: Jossey-Bass; 2002:210–239.
76. Dull VT, Skokan LA. A cognitive model of religion's influence on health. *Journal of Social Issues*. 1995;51:49–64.
77. Pargament KI. *The Psychology of Religion and Coping: Theory, Research, and Practice*. New York: Guilford; 1997.
78. Lattimore VL. A theology of addiction: spiritual, psychological, and social roots. *Journal of Ministry in Addiction and Recovery*. 1997;4:47–62. doi:10.1300/J048v04n01_05.
79. George LK, Ellison CG, Larson DB. Explaining the relationship between religious involvement and health. *Psychological Inquiry*. 2002;13:190–200. doi:10.1207/S15327965PLI1303_04.
80. Oman D, Thoresen CE. Does religion cause health? Differing interpretations and diverse meanings. *Journal of Health Psychology*. 2002;7:365–380. doi:10.1177/1359105302007004326.
81. Conner BT, Anglin MD, Annon J, et al. Effect of religiosity and spirituality on drug treatment outcomes. *Journal of Behavioral Health Services and Research*. 2008; 36(2).