December 2011 Article of the Month

This month's article selection is by Chaplain John Ehman,
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Ironson, G., Stuetzle, R., Ironson, D., Balbin, E., Kremer, H., George, A., Schneiderman, N. and Fletcher, M. A. "**View of God as benevolent and forgiving or punishing and judgmental predicts HIV disease progression**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 414-425.

SUMMARY and COMMENT: Outcomes research into religion/spirituality and health often focuses on behavioral risk factors for healthy people and uses relatively easy-to-quantify variables such as worship service attendance, but this month's study looks at an already-ill population to investigate the potential role of religious/spiritual *beliefs*: namely, one's view of God -- "a key variable...that has yet to be adequately studied" [p. 414] -- independent of one's health behaviors or active participation in organized religion. To do so, the authors employ a newly developed 12-item measure, the View of God Scale, which they present in full [--see p. 423].

The purpose of this research was to:

> ...determine whether a positive or negative view of and relationship to God could predict HIV disease-progression over an extended period (4 years) while adjusting for potential covariates, and to investigate potential mechanisms. A secondary aim was to compare the effect size of View of God variables to other more established predictors of disease-progression (e.g., depression, coping), and to determine whether View of God predicts CD4 and Viral Load [VL] change above these other predictors. Finally, we tested whether these other established predictors were still important predictors of health after adjusting for View of God. [pp. 415-416]

A diverse group of 101 HIV+ individuals were enrolled between 1997-2000 and "seen every 6 months for 4 years, completing interviews, questionnaires and undergoing phlebotomy to assess disease-progression makers" [p. 416].

> The major finding of this study was that one's View of God, both positive and negative, predicts disease-progression in HIV. A Positive View of God predicted better health as measured by key markers of disease progression (CD4 number and VL), and a Negative View of God predicted more rapid deterioration. The effects of View of God were significant and substantial. The effect sizes for Positive View of God predicting change in CD4 and VL...were similar to those found for depression...and coping..., the best psychological predictors of disease progression to date.... Even more striking were the effect sizes for Negative View of God, which were larger for VL...and much larger for CD4.... Those who viewed God as merciful/benevolent/ forgiving had five times better

> preservation of CD4 cells than those who did not view God positively. Those who viewed God as harsh/judgmental/punishing lost CD4-cells at more than twice the rate of those who did not view God negatively. In addition, View of God added independent predictive power above more traditionally studied variables. Thus, these effects were found even after taking into account mood (i.e., depression, optimism, hopelessness), coping, health behaviors (treatment adherence, risky sex, alcohol/cocaine use), social support, and church attendance. [p. 420]

Among other results: "avoidant coping and depression added the most unique variance not accounted for by View of God," though the influence of established predictors varied with some complexity according to the presence of positive or negative views [--see pp. 419-420]. The authors do note, however, that people can hold both positive and negative views of God at the same time [--see p. 421].

The "positive" or "negative" domains of the View of God Scale are reminiscent of -- but should not be confused with -- the language of positive/negative *religious coping*, so prevalent in the spirituality & health care literature. The latter generally refers to religious struggle as assessed by the Brief RCOPE measure, and while that instrument was used to help test the View of God Scale [--see p. 416], and while there is indeed some "conceptual overlap" between the measures, the present authors are clear that the View of God Scale operates out of a "different construct" [p. 420].

The results of this study are quite strong, but the authors do address nicely the limits here, including the fact that their work "does not imply that View of God *causes* disease-progression" [p. 422] and does not make any claim about people who are non-theists. Still, the Discussion section [pp. 420-422] offers useful speculation about what may lie behind the results, suggesting areas for further study. For example, one's view of God may affect "interpretation of personal challenges as either opportunities for growth or adversity" [p. 421] or may affect stress levels and therefore the production of neurohormones that are associated with HIV disease progression. Perhaps, too, some factors may be affecting *both* one's view of God and disease progression, like "[a]ttachment, stable dispositions/personality, life experience, and religious upbringing" [p. 422].

Ironson and colleagues close with some discussion of clinical implications, revolving around clinicians' awareness that indications of a patient's view of God may have very practical consequences for his/her health. However, they bring into play the idea of the potential for patients to *change beliefs*, and state in passing that, "they have the power of choice over their beliefs" [p. 423]; but this reader would hold that such an assertion about human capacity for intentional change in belief raises debatable issues that go beyond the scope of the present research.

The article contains a sound bibliography of 66 references, and the authors' own previous research is well represented. Tables augment the statistical detail of the text, and one table that gives a qualitative illustration of "the effect of change in View of God" [p. 421]. For readers not versed statistics, the overall narrative is clear, informative, and thought-provoking. The provision of the actual View of God Scale in an appendix is also very helpful.

One final note -- an aside, really: In making their point that "people often turn to God to cope during crises such as experiencing traumatic events, being diagnosed with a life-threatening illness, or when facing social rejection due to having a stigmatized disease," the authors reference the old saying that "there are 'no atheists in a foxhole'" [p. 415]. The point is taken. Nevertheless, this adage carries with it a dismissive connotation about the integrity of atheists' beliefs and seems out of place in the present-day literature.

Suggestions for the Use of the Article for Discussion in CPE:

Our featured article seems suited for everyone but perhaps students who are completely new to reading research. For those who have little familiarity with statistics, they can merely skip the Methods section [pp. 416-417] and much of the Results section [pp. 417-420], and stick to the very readable introduction [pp. 414-

416] and then the Discussion section [pp. 420-423]. The key terms *CD4* and *Viral Load* are not defined, however, and may require some explanation from any basic source on HIV. Discussion of this article would be a good opportunity to invite a physician or nurse specializing in immunodeficiency disease to connect with a CPE program. The most obvious line of discussion would pursue students' sense of the importance of patients' beliefs in a benevolent/forgiving or punishing/judgmental God. How does this dynamic come up in pastoral care conversation, and how do students deal with it? Do they recognize the potential for such views of God to affect health? The heart of a discussion, though, could turn on the authors' speculations about what may underlie the relationship between views of God and the results of the study, as explored on pp. 420-421, regarding coping, stress, physiological responses, self-image, and personality. Another topic could be the observation that people my hold both positive and negative views of God, at the same time [--see p. 421]. What other contrasting but not exclusive views might patients tend to hold? (Recall, for instance, the finding from our November 2004 Article-of-the-Month that patients may score high in both positive religious coping and negative coping.) Finally, students could think through the items on the View of God Scale [p. 423] and perhaps consider how views of God may mean one thing psychologically and another theologically.

Related Items of Interest:

I. The lead author of our featured article is Gail H. Ironson, MD, PhD, Professor of Psychology and Psychiatry at the University of Miami and a prolific researcher, having published over 100 articles. She and Dr. Heidemarie Kremer have recently published a fine overview on HIV as a book chapter, "**Coping, spirituality, and health in HIV**," in *The Oxford Handbook of Stress, Health, and Coping*, ed. by Folkman, S. [New York: Oxford University Press, 2011]; see pp. 289–318. Dr. Ironson and her co-authors have made significant contributions to the spirituality & health literature, especially regarding HIV/AIDS. To read more of this work, see the following examples:

> Carrico, A. W., Ironson, G., Antoni, M. H., Lechner, S. C., Duran, R. E., Kumar, M. and Schneiderman, N. "**A path model of the effects of spirituality on depressive symptoms and 24-h urinary-free cortisol in HIV-positive persons**." *Journal of Psychosomatic Research* 61, no. 1 (July 2006): 51-58. [(Abstract:) OBJECTIVE: The present investigation examined the associations among spirituality, positive reappraisal coping, and benefit finding as they relate to depressive symptoms and 24-h urinary-free-cortisol output. METHODS: Following an initial screening appointment, 264 human-immunodeficiency-virus-positive men and women on highly active antiretroviral therapy provided 24-h urine samples and completed a battery of psychosocial measures. RESULTS: Spirituality was associated with higher positive reappraisal coping and greater benefit finding. Benefit finding and positive reappraisal coping scores were, in turn, both related to lower depressive symptoms. Finally, we determined that benefit finding was uniquely predictive of decreased 24-h urinary-free cortisol output. CONCLUSION: Positive reappraisal coping and benefit finding may co-mediate the effect of spirituality on depressive symptoms, and benefit finding may uniquely explain the effect of spirituality on 24-h cortisol output.]
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> Ironson, G. and Hayward, H. "**Do positive psychosocial factors predict disease progression in HIV-1? A review of the evidence**." *Psychosomatic Medicine* 70, no. 5 (June 2008): 546-554. [(Abstract:) Adding to a traditional stress perspective, behavioral medicine has been focusing increasingly on investigating the potential impact of positive psychosocial factors on disease course in HIV. Dispositional optimism, active coping, and spirituality show the most evidence for predicting slower disease progression, although the data are not entirely consistent. Findings for the role of social support are mixed, although indications are that it may be particularly helpful at later stages of illness. Many of the other constructs (positive affect, finding meaning, emotional expression/processing, openness, extraversion, conscientiousness, altruism, and self-efficacy) have only been examined in one or two studies; results are preliminary but suggestive of protective effects. Plausible behavioral and biological mechanisms are discussed (including health behaviors,

neurohormones, and immune measures) as well as suggestions for clinicians, limitations, future directions, and a discussion of whether these constructs can be changed. In conclusion, investigating the importance and usefulness of positive psychosocial factors in predicting disease progression in HIV is in its beginning scientific stages and shows good initial evidence and future promise.]

Ironson, G. and Kremer, H. "**Spiritual transformation, psychological well-being, health, and survival in people with HIV**." *International Journal of Psychiatry in Medicine* 39, no. 3 (2009): 263-281. [(Abstract:) OBJECTIVES: Although Spiritual Transformation (ST) occurs in a sizable proportion of people with HIV (about 39%), there is little research on the potential benefits of ST with respect to psychological well-being, health, and survival in this population. Our study attempts to fill this gap. METHOD: Using a mixed method approach, we related interviews of 147 people with HIV (identifying the presence/absence of ST) to questionnaires measuring demographics, medical history, treatment adherence, physical symptoms, and psychological well-being (i.e., stress, coping, life attitude, and spirituality), and assessments of CD4-counts and viral load and survival 3 to 5 years later. RESULTS: At comparable times since HIV-diagnosis and antiretroviral medications prescribed, the presence of ST was significantly associated with better treatment success (undetectable viral loads, higher CD4 counts), better medication adherence, fewer symptoms, less distress, more positive coping, different life attitudes (i.e., existential transcendence, meaning/purpose in life, optimism, death acceptance), more spiritual practices, and increased spirituality. ST was also associated with substance-use recovery and with being African American. Survival up to 5 years was 5.35 times more likely among participants with ST (p(f) = .044). According to a Cox-regression adjusted for baseline CD4-counts, age, race-ethnicity, gender, education, years since HIV-diagnosis, and a history of substance-use problems, ST still reduced the risk of death (HR = 0.07, 95% CI = 0.01-0.53, p = .010). CONCLUSIONS: ST has associated benefits for psychological well-being, health, and survival.]

Ironson, G., Solomon, G. F., Balbin, E. G., O'Cleirigh, C., George, A., Kumar, M., Larson, D. and Woods, T. E. "**The Ironson-Woods Spirituality/Religiousness Index is associated with long survival, health behaviors, less distress, and low cortisol in people with HIV/AIDS**." *Annals of Behavioral Medicine* 24, no. 1 (2002): 34-48. [(Abstract:) The purpose of this study was to determine the reliability and validity of an instrument that measures both spirituality and religiousness, to examine the relation between spirituality and religiousness and important health outcomes for people living with HIV and to examine the potential mediators of these relations. One aim was to determine whether subscales of spirituality, religiousness, or both would be independently related to long survival in people living with AIDS. The Ironson-Woods Spirituality/Religiousness (SR) Index is presented with evidence for its reliability and validity. Four factors were identified on the Ironson-Woods SR Index (Sense of Peace, Faith in God, Religious Behavior, and Compassionate View of Others). Each subscale was significantly related to long survival with AIDS. That is, the long-term survivor (LTS) group (n = 79) scored significantly higher on these factors than did the HIV-positive comparison (COMP) group (n = 200). Long survival was also significantly related to both frequency of prayer (positively) and judgmental attitude (negatively). In addition, the Ironson-Woods SR Index yielded strong and significant correlations with less distress, more hope, social support, health behaviors, helping others, and lower cortisol levels. The relation between religious behavior and health outcomes was not due to social support. Further analyses were conducted, which identified urinary cortisol concentrations and altruistic behavior as mediators of the relation between SR and long survival.]

Ironson, G., Stuetzle, R. and Fletcher, M. A. "**An increase in religiousness/spirituality occurs after HIV diagnosis and predicts slower disease progression over 4 years in people with HIV**." *Journal of General Internal Medicine* 21, Suppl. 5 (December 2006): S62-68. [(Abstract:) BACKGROUND: Most studies on religion/spirituality predicting health outcomes have been limited to church attendance as a predictor and have focused on healthy people. However, confronting a major medical crisis may be a time when people turn to the sacred. OBJECTIVE:

The purpose of this study was to determine the extent to which changes in spirituality/religiousness occur after HIV diagnosis and whether changes predict disease progression. DESIGN/PARTICIPANTS: This longitudinal study examined the relationship between changes in spirituality/religiousness from before with after the diagnosis of HIV, and disease progression (CD4 and viral load [VL] every 6 months) over 4 years in 100 people with HIV. Measures included change in religiousness/spirituality after diagnosis of HIV, religiousness/spirituality at various times in one's life, church attendance, depression, hopelessness, optimism, coping (avoidant, proactive), social support, CD4/VL, and health behaviors. RESULTS: Forty-five percent of the sample showed an increase in religiousness/spirituality after the diagnosis of HIV, 42% remained the same, and 13% decreased. People reporting an increase in spirituality/religiousness after the diagnosis had significantly greater preservation of CD4 cells over the 4-year period, as well as significantly better control of VL. Results were independent of (i.e., held even after controlling for) church attendance and initial disease status (CD4/VL), medication at every time point, age, gender, race, education, health behaviors (adherence, risky sex, alcohol, cocaine), depression, hopelessness, optimism, coping (avoidant, proactive), and social support. CONCLUSIONS: There is an increase in spirituality/religiousness after HIV diagnosis, and this increase predicts slower disease progression; medical personnel should be aware of its potential importance.]

Kremer, H. and Ironson, G. "**Everything changed: spiritual transformation in people with HIV**." *International Journal of Psychiatry in Medicine* 39, no. 3 (2009): 243-262. [(Abstract:) OBJECTIVES: Spiritual Transformation (ST) is accompanied by dramatic changes in spiritual beliefs along with major changes in behaviors, self-view, and attitudes. This study examined types of ST, as well as its antecedents and consequences in people with HIV. METHOD: Qualitative content analysis was used to analyze interviews about ST in people's lives in two samples: people with chronic HIV-disease (chronic disease sample, n = 74) and people with HIV who identified themselves as spiritual (spiritual sample, n = 73). RESULTS: ST occurred in 39% of the chronic disease and 75% of the spiritual sample. These STs were generally positive (95%) and enduring (M = 8.71 +/- 7.43 years). ST was most frequently associated with spiritual experience (in particular near-death experience), substance-use recovery, and HIV/AIDS-diagnosis. Main antecedents were substance-use disorder, education/upbringing, and desire to change. Further themes were depression/helplessness, confrontation with illness/death, social support, and lifestyle. The top six consequences include spiritual intensification, more spiritual practices, positive feelings toward self, recovery from substance-use, finding new meaning and purpose in life, and increased self-knowledge. In the spiritual sample, there was a common pattern of hitting rock bottom with drugs, having a spiritual experience (in particular a near-death experience), and joining a drug program. CONCLUSIONS: Positive ST occurs in a sizable proportion of people with HIV. Importantly, ST often results in an enduring substance-use recovery, and an improved quality of life as indicated by enhanced gratitude, appreciation, joy, sense of peace, and reduced fear of death.]

Kremer, H., Ironson, G. and Kaplan, L. "**The fork in the road: HIV as a potential positive turning point and the role of spirituality**." *AIDS Care* 21, no. 3 (March 2009): 368-377. [(Abstract:) We interviewed 147 HIV-positive people regarding their key life-changing experiences - involving profound changes in attitudes, behaviors, beliefs (including spiritual beliefs), or self-views - to determine the prominence of HIV as the key positive/negative turning point. HIV was the key turning point, for 37% (26% positive, 11% negative), whereas for 63% of our sample it was not. Characteristics associated with perceiving HIV as the most positive turning point included having a near-death experience from HIV, increasing spirituality after HIV diagnosis, and feeling chosen by a Higher Powerto have HIV. Notably, perceived antecedents of viewing HIV as the key positive turning point were hitting rock bottom and calling on a Higher Power. Conversely, viewing HIV as the most negative turning point was associated with declining spirituality after diagnosis. Spirituality can both negatively and positively affect coping with HIV. Promoting positive spiritual coping may offer new counseling approaches. Further, for the majority of the participants, HIV is not the key turning point, which may be an indicator of the normalization of HIV with the advent of effective treatment.]

Kremer, H., Ironson, G. and Porr, M. "**Spiritual and mind-body beliefs as barriers and motivators to HIV-treatment decision-making and medication adherence? A qualitative study**." *AIDS Patient Care & STDs* 23, no. 2 (February 2009): 127-134. [(Abstract:) We examined spiritual/mind-body beliefs related to treatment decision-making and adherence in 79 HIV-positive people (35% female, 41% African American, 22% Latino, 24% White) who had been offered antiretroviral treatment by their physicians. Interviews (performed in 2003) identified spiritual/mind-body beliefs; the Adult AIDS Clinical Trials Group (ACTG) questionnaire assessed adherence and symptoms/side effects. Decision-making was influenced by health-related spiritual beliefs (e.g., calling on God/Higher Power for help/protection, God/Higher Power controls health) and mind-body beliefs (e.g., mind controls body, body tells when medication is needed). Participants believing God/Higher Power controls health were 4.75 times more likely to refuse, and participants with mind-body beliefs related to decision-making were 5.31 times more likely to defer antiretrovirals than those without those beliefs. Participants believing spirituality helps coping with side effects reported significantly better adherence and fewer symptoms/side effects. Fewer symptoms/side effects were significantly associated with the beliefs mind controls body, calling on God/Higher Power for help/protection, and spirituality helps adherence. Spiritual/mind-body beliefs as barriers or motivators to taking or adhering to treatment are important, since they may affect survival and quality of life of HIV-positive people.]

Lockenhoff, C. E., Ironson, G. H., O'Cleirigh, C. and Costa, P. T. Jr. "**Five-factor model personality traits, spirituality/religiousness, and mental health among people living with HIV**." *Journal of Personality* 77, no. 5 (October 2009): 1411-1436. [(Abstract:) We examined the association between five-factor personality domains and facets and spirituality/religiousness as well as their joint association with mental health in a diverse sample of people living with HIV (n=112, age range 18-66). Spirituality/religiousness showed stronger associations with Conscientiousness, Openness, and Agreeableness than with Neuroticism and Extraversion. Both personality traits and spirituality/religiousness were significantly linked to mental health, even after controlling for individual differences in demographic measures and disease status. Personality traits explained unique variance in mental health above spirituality and religiousness. Further, aspects of spirituality and religiousness were found to mediate some of the links between personality and mental health in this patient sample. These findings suggest that underlying personality traits contribute to the beneficial effects of spirituality/religiousness among vulnerable populations.]

Woods, T. E. and Ironson, G. H. ."**Religion and spirituality in the face of illness: how cancer, cardiac, and hiv patients describe their spirituality/religiosity**." *Journal of Health Psychology* 4, no. 3 (May 1999): 393-412. [(Abstract:) This study reports the results of semi-structured interviews conducted with 60 medically ill (cancer, myocardial infarction, HIV/AIDS) people in an attempt to define what people facing a life-threatening illness mean when they say they are 'spiritual' or 'religious'. Questions were asked about beliefs and affective, behavioral, and somatic realms. Subjects initially self-identified as considering themselves to be spiritual, religious, or both. While some similarities existed between the groups (e.g. amount of time spent in prayer, beliefs set the tone for their life, give them a sense of well-being, guidance, a sense of right and wrong, a connection to God, and a sense they will live on in some form), significant differences were discovered in overall belief systems, as well as in interpretation of the mechanisms whereby subjects' beliefs impacted their health and their recovery. Those identifying as spiritual described recovery and healing as happening through them whereas those identifying as religious were more likely to say it happens to them. In addition, significant differences existed between the groups in their overall view of God, self, world, and others. Implications for future studies are discussed.]

II. This study may recall for some readers our September 2009 Article-of-the-Month: Murphy, P. E. and Fitchett, G., "**Belief in a concerned God predicts response to treatment for adults with clinical depression**,"

Journal of Clinical Psychology 65, no. 9 (September 2009): 1000-1008; though belief in a concerned God is not exactly the same as a view of God as benevolent and forgiving.

III. Our featured article is from a special theme issue of the *Journal of Behavioral Medicine* (vol. 34, no. 6, December 2011) on Spirituality in Behavioral Medicine Research. This is an especially rich collection of articles on a *variety of topics*, brought together by guest editors David H. Rosmarin, Amy Wachholtz and Amy Ai. Other articles in the issue are:

Ai, A. L., Wink, P. and Shearer, M. "**Secular reverence predicts shorter hospital length of stay among middle-aged and older patients following open-heart surgery**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 532-541. [(Abstract:) This study explored the role of both traditional religiousness and of experiencing reverence in religious and secular (e.g., naturalistic, moralistic) contexts in postoperative hospital length of stay among middle-aged and older patients undergoing open-heart surgery. Reverence was broadly defined as "feeling or attitude of deep respect, love, and awe, as for something sacred." Information on demographics, faith factors, mental health, and medical comorbidities was collected from 400 + patients (age 62 ± 12) around 2 weeks before surgery via personal interview. Standardized medical indices were retrieved from the Society of Thoracic Surgeons' national database. Hierarchical multiple regression showed that reverence in secular contexts predicted shorter hospitalization, after controlling for key demographics, medical indices, depression, and psychosocial protectors. Other hospital length of stay predictors included female gender, older age, more medical comorbidities, low left ventricular ejection fraction, long perfusion time, and coronary bypass graft surgery. Secular reverence exerts a protective impact on physical health.]

Benjamins, M. R., Ellison, C. G., Krause, N. M. and Marcum, J. P. "**Religion and preventive service use: do congregational support and religious beliefs explain the relationship between attendance and utilization?**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 462-476. [(Abstract:) Religious individuals are more likely to engage in healthy practices, including using preventive services; however, the underlying mechanisms have not been adequately explored. To begin addressing this, the current study examines the association between religious attendance, four aspects of congregational support, two health-related religious beliefs, and the use of preventive services (cholesterol screening, flu shot, and colonoscopy) among a national sample of Presbyterian adults (n = 1,076). The findings show that two aspects of congregational support are relevant to these types of behavioral health. First, church-based health activities are significantly related to the use of cholesterol screenings and flu shots (OR = 1.13, P < .05; OR = 1.10, P < .05, respectively). Second, discussing health-related issues with fellow church members is also significantly associated with reporting a cholesterol screening (OR = 1.15, P < .05), as well as moderately predictive of colonoscopy use (OR = 1.10, P < .10). Neither of the religious beliefs related to health, such as the God locus of health control scale or beliefs about the sanctity of the body, are related to preventive service use in this population. Although attendance is predictive of service use in unadjusted models, the association appears to be explained by age rather than by the congregational or belief variables. These findings contribute to a more nuanced understanding of the various ways in which religion might impact health behaviors and may also help to shape and refine interventions designed to improve individual well-being.]

Dezutter, J., Wachholtz, A. and Corveleyn, J. "**Prayer and pain: the mediating role of positive re-appraisal**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 542-549. [(Abstract:) The present study explored in a sample of Flemish pain patients the role of prayer as a possible individual factor in pain management. The focus on prayer as a personal religious factor fits with the current religious landscape in Western-Europe where personal religious factors are more important than organizational dimensions of religion. Our study is framed in the transactional theory of stress and coping by testing first, whether prayer was related with pain severity and pain tolerance and second, whether cognitive positive re-appraisal was a mediating mechanism in the

association between prayer and pain. We expected that prayer would be related to pain tolerance in reducing the impact of the pain on patient's daily life, but not necessarily to pain severity. A cross-sectional questionnaire design was adopted in order to measure demographics, prayer, pain outcomes (i.e., pain severity and pain tolerance), and cognitive positive re-appraisal. Two hundred and two chronic pain (CP) patients, all members of a Flemish national patients association, completed the questionnaires. Correlational analyses showed that prayer was significantly related with pain tolerance, but not with pain severity. However, ancillary analyses revealed a moderational effect of religious affiliation in the relationship between prayer and pain severity as well as pain tolerance. Furthermore, mediation analysis revealed that cognitive positive re-appraisal was indeed an underlying mechanism in the relationship between prayer and pain tolerance. This study affirms the importance to distinguish between pain severity and pain tolerance, and indicates that prayer can play a role in pain management, especially for religious pain patients. Further, the findings can be framed within the transactional theory of stress and coping as the results indicate that positive re-appraisal might be an important underlying mechanism in the association between prayer and pain.]

Greeson, J. M., Webber, D. M., Smoski, M. J., Brantley, J. G., Ekblad, A. G., Suarez E. C. and Wolever, R. Q. "**Changes in spirituality partly explain health-related quality of life outcomes after Mindfulness-Based Stress Reduction**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 508-518. [(Abstract:) Mindfulness-Based Stress Reduction is a secular behavioral medicine program that has roots in meditative spiritual practices. Thus, spirituality may partly explain Mindfulness-Based Stress Reduction outcomes. Participants (N = 279; M (SD) age = 45(12); 75% women) completed an online survey before and after an 8-week Mindfulness-Based Stress Reduction program. Structural equation modeling was used to test the hypothesis that, following Mindfulness-Based Stress Reduction, the relationship between enhanced mindfulness and improved health-related quality of life is mediated by increased daily spiritual experiences. Changes in both spirituality and mindfulness were significantly related to improvement in mental health. Although the initial mediation hypothesis was not supported, an alternate model suggested that enhanced mindfulness partly mediated the association between increased daily spiritual experiences and improved mental health-related quality of life (indirect effect: â = 0.07, P = 0.017). Effects on physical health-related quality of life were not significant. Findings suggest a novel mechanism by which increased daily spiritual experiences following Mindfulness-Based Stress Reduction may partially explain improved mental health as a function of greater mindfulness.]

Holt, C. L., Wang, M. Q., Caplan, L., Schulz, E., Blake, V. and Southward, V. L. "**Role of religious involvement and spirituality in functioning among African Americans with cancer: testing a mediational model**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 437-448. [(Abstract:) The present study tested a mediational model of the role of religious involvement, spirituality, and physical/emotional functioning in a sample of African American men and women with cancer. Several mediators were proposed based on theory and previous research, including sense of meaning, positive and negative affect, and positive and negative religious coping. One hundred patients were recruited through oncologist offices, key community leaders and community organizations, and interviewed by telephone. Participants completed an established measure of religious involvement, the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-SP-12 version 4), the Positive and Negative Affect Schedule (PANAS), the Meaning in Life Scale, the Brief RCOPE, and the SF-12, which assesses physical and emotional functioning. Positive affect completely mediated the relationship between religious behaviors and emotional functioning. Though several other constructs showed relationships with study variables, evidence of mediation was not supported. Mediational models were not significant for the physical functioning outcome, nor were there significant main effects of religious involvement or spirituality for this outcome. Implications for cancer survivorship interventions are discussed]

Holt-Lunstad, J., Steffen, P. R., Sandberg, J. and Jensen, B. "**Understanding the connection between spiritual well-being and physical health: an examination of ambulatory blood**

pressure, inflammation, blood lipids and fasting glucose." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 477-488. [(Abstract:) Growing research has demonstrated a link between spiritual well-being and better health; however, little is known about possible physiological mechanisms. In a sample of highly religious healthy male and female adults (n = 100) ages 19–59 (m = 28.28) we examined the influence of spiritual well-being, as measured by the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being (FACIT-Sp-Ex), on physiological risk factors for heart disease. Specifically we examined 24-h ambulatory blood pressure (BP), inflammation (hs-C-reactive protein), fasting glucose, and blood lipids. Regression analyses reveal that higher levels of spiritual-wellness (total FACIT-Sp-Ex score) was significantly related to lower systolic ambulatory BP (â = −.345; P < .001), diastolic ambulatory BP (â = −.24; P = .02), hs-C-reactive protein (â = −.23; P = .04), fasting glucose (â = −.28; P = .006), and marginally lower triglycerides (â = −.21; P = .09) and VLDL (â = −.21; P = .10) controlling for age, gender, and church attendance. Results remained generally consistent across the Meaning, Peace, Faith and Additional Spiritual Concerns subscales of the FACIT-Sp-Ex. Spiritual well-being may be cardio protective.]

Kristeller, J. L., Sheets, Johnson, V. T. and Frank, B. "**Understanding religious and spiritual influences on adjustment to cancer: individual patterns and differences**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 550-561. [(Abstract:) Higher levels of religious and spiritual engagement have been shown to be associated with better adjustment in dealing with serious illness. Nevertheless, the pattern of such engagement may vary substantially among individuals. This paper presents exploratory research with the goal of identifying subgroups of individuals with non-terminal cancer who vary along multiple dimensions of religious/spiritual (R/S) involvement and well-being. Cluster analysis utilized both R/S (FACIT-Sp) and quality of life variables (e.g., FACT-G) to identify subgroups within 114 individuals (Median age = 65; 59% female) under care for cancer. Additional R/S and adjustment variables were used to explore further distinctions among these groups. Four clusters were identified: High R/S (45%), with the lowest depression; Low R /High S (25%), also with good adjustment; Negative Religious Copers (14%), with the highest depression; and Low R/S (16%), with the poorest adjustment to cancer. The results support the value of differentiating patterns of religious and spiritual engagement in relation to well-being, with implications for matching psycho-social interventions with individuals.]

Masters, K. S. and Knestel, A. "**Religious motivation and cardiovascular reactivity among middle aged adults: is being pro-religious really that good for you?**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 449-461. [(Abstract:) Religiousness has been observed to have a beneficial relationship with blood pressure, however, specific aspects of religiousness that interact with physiological mechanisms to influence this relationship are not known. This study explored laboratory cardiovascular reactivity (blood pressure, heart rate) to psychological stress among middle aged community dwelling individuals grouped by religious motivation (Intrinsic, Pro-religious, Non-religious). Measures of personality, cynical hostility, aggression, sense of coherence, and compassion were administered. Results indicated that the Pro-religious group demonstrated dampened reactivity compared to the other research groups. However, the Pro-religious also demonstrated a less positive psychological profile (e.g., greater cynicism, aggression, and neuroticism; less compassion and sense of coherence) and poorer self-reported health compared with the Intrinsic group and behavioral observations demonstrated that the Pro-religious were unreliable in keeping appointments and appeared rushed during the experiment. These findings indicate a complicated interface between personality, coping, and religious motivation in response to stressors and emphasize the need for naturalistic and longitudinal investigations of individuals who vary in terms of religious motivation.]

McIntosh, D. M., Poulin, M. J., Silver R. C., and Holman, E. A. "**The distinct roles of spirituality and religiosity in physical and mental health after collective trauma: a national longitudinal study of responses to the 9/11 attacks**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 497-507. [(Abstract:) Researchers have identified health implications of religiosity and

spirituality but have rarely addressed differences between these dimensions. The associations of religiosity and spirituality with physical and mental health were examined in a national sample (N = 890) after the September 11, 2001 terrorist attacks (9/11). Health information was collected before 9/11 and health, religiosity, and spirituality were assessed longitudinally during six waves of data collection over the next 3 years. Religiosity (i.e., participation in religious social structures) predicted higher positive affect (â = .12), fewer cognitive intrusions (â = −.07), and lower odds of new onset mental (incidence rate ratio [IRR] = .88) and musculoskeletal (IRR = .94) ailments. Spirituality (i.e., subjective commitment to spiritual or religious beliefs) predicted higher positive affect (â = .09), lower odds of new onset infectious ailments (IRR = 0.83), more intrusions (â = .10) and a more rapid decline in intrusions over time (â = −.10). Religiosity and spirituality independently predict health after a collective trauma, controlling for pre-event health status; they are not interchangeable indices of religion.]

Park, C. L., Wortmann, J. H. and Edmondson, D. "**Religious struggle as a predictor of subsequent mental and physical well-being in advanced heart failure patients**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 426-436. [(Abstract:) Patients with congestive heart failure (CHF) often report high levels of religiousness, which may mitigate the stressfulness of their condition. However, religious struggle, reflecting negative attitudes toward God and a strained meaning system, may be detrimental to well-being. Little is known about religious struggle in those with CHF, particularly in relation to physical health and well-being over time. We examined associations of religious struggle and subsequent mental and physical well-being in 101 endstage CHF patients who completed questionnaires twice over 3 months. Religious struggle predicted higher number of nights subsequently hospitalized, higher depression, and marginally lower life satisfaction. When controlling for baseline levels of well-being, effectively assessing change in those outcomes, religious struggle remained a significant predictor of hospitalization and also emerged as a marginally significant predictor of lower physical functioning. Struggle was unrelated to health-related quality of life. Post-hoc analyses suggest that these effects were particularly strong for those endorsing greater religious identification. Religious struggle appears to have a potentially negative impact on well-being in advanced CHF; therefore, helping patients to address issues of struggle may meaningfully lessen the personal and societal costs of CHF.]

Perez, J. E., Smith, A. R., Norris, R. L., Canenguez, K. M., Tracey E. F. and DeCristofaro, S. B. "**Types of prayer and depressive symptoms among cancer patients: the mediating role of rumination and social support**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 519-530. [(Abstract:) We examined the association between different types of prayer and depressive symptoms—with rumination and social support as potential mediators—in a sample of predominantly White, Christian, and female ambulatory cancer patients. In a cross-sectional design, 179 adult cancer outpatients completed measures of prayer, rumination, social support, depressive symptoms, and demographic variables. Type and stage of cancer were collected from electronic medical charts. Depressive symptoms were negatively correlated with adoration prayer (r = −.15), reception prayer (r = −.17), thanksgiving prayer (r = −.29), and prayer for the well-being of others (r = −.26). In the path analysis, rumination fully mediated the link between thanksgiving prayer and depressive symptoms (â for indirect effect = −.05), whereas social support partially mediated the link between prayer for others and depressive symptoms (â for indirect effect = −.05). These findings suggest that unique mechanisms may link different prayer types to lower depressive symptoms among cancer patients. (Erratum available online from the journal.)]

Pirutinsky, S., Rosmarin, D. H., Holt, C. L., Feldman, R. H., Caplan, L. S., Midlarsky, E. and Pargament, K. I. "**Does social support mediate the moderating effect of intrinsic religiosity on the relationship between physical health and depressive symptoms among Jews?**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 489-496. [(Abstract:) Previous research in the general population suggests that intrinsic religiosity moderates (mitigates) the effect of poor physical health on depression. However, few studies have focused specifically on the Jewish community. We therefore examined these variables in a cross-sectional sample of 89 Orthodox and

123 non-Orthodox Jews. Based on previous research suggesting that non-Orthodox Judaism values religious mental states (e.g., beliefs) less and a collectivist social religiosity more, as compared to Orthodox Judaism, we hypothesized that the moderating effect of intrinsic religiosity would mediated by social support among non-Orthodox but not Orthodox Jews. As predicted, results indicated that the relationship between physical health and depression was moderated by intrinsic religiosity in the sample as a whole. Furthermore, this effect was mediated by social support among non-Orthodox Jews, but not among the Orthodox. The importance of examining religious affiliation and potential mediators in research on spirituality and health is discussed.]

Rosmarin, D. H., Wachholtz, A. and Ai, A. "**Beyond descriptive research: advancing the study of spirituality and health**." *Journal of Behavioral Medicine* 34, no. 6 (December 2011): 409-413. [(Abstract:) The past three decades have witnessed a surge in research on spirituality and health. This growing body of literature has linked many aspects of spirituality as well as religion to both positive and negative indices of human functioning. However, studies have primarily been descriptive, focusing on identifying associations between spirituality and health, rather than explanatory, focusing on identifying mechanisms underlying observed relationships. Earlier research is also limited by failure to control for salient covariates, apply prospective design, and use sophisticated measurements with well-defined and empirically-validated factors. Recent research, however, is advancing the study of spirituality and health by examining not only whether religious factors are relevant to human health, but also how spirituality may functionally impact medical and psychological wellbeing and illness. This article introduces a special issue on Spirituality and Health containing 12 full-length research reports to further this welcomed, emerging trend. (This is the introductory article, by the guest editors of the theme issue.]
