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August 2015 Article of the Month

This month's article selection is by Chaplain John Ehman,
University of Pennsylvania Medical Center-Penn Presbyterian, Philadelphia PA.

Koenig, H. G. "**Religion, spirituality, and health: a review and update.**" *Advances in Mind-Body Medicine* 29, no. 3 (Summer 2015): 19-26.

[Note: This journal's website [website](#) is often out of date and lags behind the print issues.]

SUMMARY and COMMENT: As a new academic year approaches, ACPE supervisors may find this month's article helpful for introducing the subject of spirituality & health research. [Harold Koenig](#), MD, is one of the most sought-after speakers in the US and internationally on the subject, and his presentations usually include -- if not turn on -- the power of an analysis showing the percentage of studies supporting a positive relationship between spirituality/religion and mental/physical health, resting largely on the literature survey behind the *Handbook of Religion and Health* [see Items of Related Interest, §II (below)]. So it is with the present article, a concise summary of the basic numbers of articles up through 2010, paired with a brief review of some of the latest recent research in the field. [For another option of a similar, introductory article by Koenig, see Items of Related Interest, §I (below)]. The target audience here is "[p]ractitioners and researchers in the area of alternative and integrative medicine" [p. 19], but the piece is suitable for broad readership.

Koenig begins with a note about definitions of spirituality and religion and hits a couple of points characteristic of his particular approach to this research: namely, his focus on religion as "a construct that is more specific, distinct, agreed on, and easily measured and quantified [than spirituality]" and his concern that measures of spirituality which include indicators of psychological or social health may lead to "tautological and uninterpretable associations between spirituality and mental- or social-health outcomes" [p. 21]. He goes on to offer short commentaries on his literature analysis (the numbers being nicely presented in a table on p. 20), with mental health covered in terms of well-being, meaning & purpose, hope, optimism, self-esteem, depression, suicide, anxiety, and substance abuse; health behaviors in terms of exercise, diet, cigarette smoking, and sexual behavior; and physical health in terms of coronary heart disease (CHD), cancer, and overall mortality. This is obviously a limited selection of domains, especially regarding physical health, but it is sufficient for Koenig to make his case. There is a polemical overtone here against "critics" [p. 22], yet the principal thrust is that rigorous empirical findings speak for themselves. This quantitative review has a persuasive appeal but, importantly, the author acknowledges its limitations, saying that it "must be considered in light of the fact that human emotions and behavior are nonlinear and complex and are adaptive phenomena" and that "[c]lassical reductionist linear statistical methods used in the vast majority of studies reported in this article may not be the best for a real understanding of religious or spiritual effects on health" [pp. 25-26].

The article also addresses a sample of research "within the past year (2014)" [p. 23] on depression, suicide, parent & child well-being, anxiety, and substance use, viral load in HIV, cystic fibrosis, and spiritual needs. The studies cited are:

Balboni, M. J., Sullivan, A., Enzinger, A. C., Epstein-Peterson, Z. D., Tseng, Y. D., Mitchell, C., Niska, J., Zollfrank, A., VanderWeele, T. J. and Balboni, T. A. "Nurse and physician barriers to spiritual care provision at the end of life." *Journal of Pain & Symptom Management* 48, no. 3 (September 2014): 400-410. [Note: cited as part of our [May 2014 Article-of-the-Month](#) Items of Related Interest.]

Ellison, C. G., Bradshaw, M., Flannelly, K. J. and Galek, K. C. "Prayer, attachment to God, and symptoms of anxiety-related disorders among US adults." *Sociology of Religion* 75, no. 2 (2014): 208-233.

Henry, S. M., Ironson, G., Gonzalez, B. and Schneiderman, N. "Buffers of impact of bereavement or divorce on viral load in HIV: role of religious coping and social support" [abstract only]. *Annals of Behavioral Medicine* 47, no. 1, suppl. (2014): s260.

Johnson, J. R., Engelberg, R. A., Nielsen, E. L., Kross, E. K., Smith, N. L., Hanada, J. C., Doll O'Mahoney, S. K. and Curtis, J. R. "The association of spiritual care providers' activities with family members' satisfaction with care after a death in the ICU." *Critical Care Medicine* 42, no. 9 (September 2014): 1991-2000. [Note: our Network's [September 2014 Article-of-the-Month](#).]

Kleiman, E. M. and Liu, R. T. "Prospective prediction of suicide in a nationally representative sample: religious service attendance as a protective factor." *British Journal of Psychiatry* 204 (2014): 262-266.

Kremer, H. and Ironson, G. "Longitudinal spiritual coping with trauma in people with HIV: implications for health care." *AIDS Patient Care & STDs* 28, no. 3 (March 2014): 144-154. [Note: cited in our [Summer 2014 Newsletter](#) under item #11.]

Miller, L., Bansal, R., Wickramaratne, P., Hao, X., Tenke, C. E., Weissman, M. M. and Peterson, B. S. "Neuroanatomical correlates of religiosity and spirituality: a study in adults at high and low familial risk for depression." *JAMA Psychiatry* 71, no. 2 (February 2014): 128-135.

Reynolds, N., Mrug, S., Britton, L., Guion, K., Wolfe, K. and Gutierrez, H. "Spiritual coping predicts 5-year health outcomes in adolescents with cystic fibrosis." *Journal of Cystic Fibrosis* 13, no. 5 (September 2014): 593-600. [Note: our Network's [July 2014 Article-of-the-Month](#).]

Wen, M. "Parental participation in religious services and parent and child well-being: findings from the National Survey of America's Families." *Journal of Religion & Health* 53, no. 5 (October 2014): 1539-156.

Koenig then highlights current research at his home institution of Duke University: two studies, "one examining the efficacy of religious cognitive-behavioral therapy (CBT) for the treatment of major depressive disorder (MDD) and a second study examining the association between religiosity and telomere length in caregivers" [p. 25]. The idea of telomere studies has been brewing for years [see Items of Related Interest, §3 (below)], and the announcement of work at Duke is noteworthy. The fact that Koenig features this research, and also promotes Duke's [Center for Spirituality, Theology and Health](#) and its [Crossroads](#) newsletter seems here appropriately informative and not a taking of liberties as author.

This small article is essentially an icebreaker, an interest rouser for a new or skeptical audience, but there is value in that. It shows the magnitude of the research in the field and points to clinical relevance, even at a cellular level regarding telomere length: "If religious factors are linked to slower telomere shortening in female caregivers, the majority of whom report that religion is important to them, then novel preventive strategies to support and enhance religious resources might be developed to provide hope and relief, helping to maintain health and possibly extending caregiver longevity" [p. 25]. Koenig wants his audience to realize that "[m]uch exciting new research is now being done that is documenting the importance of R/S [religion/spirituality] to the health of medical and psychiatric patients, providing a rationale for identifying and addressing spiritual needs" [p. 26]. Research chaplains may sometimes forget how many people still need to be reached with such a basic message.

Suggestions for the Use of the Article for Student Discussion:

This is an "icebreaker" article, with a very high level view of the literature. As such, and because of its brevity, it might be combined with another article reporting specific research, perhaps one of the recent studies that Koenig cites and that had been featured as an Article-of-the-Month. (The study by [Johnson, J. R., et al.](#), for instance, is itself relatively short and has a chaplain co-author.) But, using this as a solo article, discussion could begin with a question to the students about whether they were aware of the magnitude of the spirituality & health literature and what it means to think of this literature in terms of cumulative analysis instead of single studies. What subsections of Koenig's analysis most catch the students' attention, and are they in the area of mental health, physical health, or health behaviors? Does the section on recent research about Spiritual Needs [see pp. 24-25] strike a chord? And, what about the brief description of the work being done at Duke on telomeres? Considering methodology, what does the group think of Koenig's point about the measurability of *religion vis-a-vis spirituality* [see pp. 20-21]. Finally, the group could discuss the thought-provoking statement regarding Limitations [pp. 25-26].

Related Items of Interest:

I. An alternative review of the pre-2010 literature would be:

Koenig, H. G. "**Religion, Spirituality, and Health: The Research and Clinical Implications.**" *ISRN Psychiatry* 2012 (2012): 278730 [electronic journal article designation]. [(Abstract:) This paper provides a concise but comprehensive review of research on religion/spirituality (R/S) and both mental health and physical health. It is based on a systematic review of original data-based quantitative research published in peer-reviewed journals between 1872 and 2010, including a few seminal articles published since 2010. First, I provide a brief historical background to set the stage. Then I review research on R/S and mental health, examining relationships with both positive and negative mental health outcomes, where positive outcomes include well-being, happiness, hope, optimism, and gratefulness, and negative outcomes involve depression, suicide, anxiety, psychosis, substance abuse, delinquency/crime, marital instability, and personality traits (positive and negative). I then explain how and why R/S might influence mental health. Next, I review research on R/S and health behaviors such as physical activity, cigarette smoking, diet, and sexual practices, followed by a review of relationships between R/S and heart disease, hypertension, cerebrovascular disease, Alzheimer's disease and dementia, immune functions, endocrine functions, cancer, overall mortality, physical disability, pain, and somatic symptoms. I then present a theoretical model explaining how R/S might influence physical health. Finally, I discuss what health professionals should do in light of these research findings and make recommendations in this regard.]

This review ([available freely online from Hindawi Publishing](#)) does not contain the update of more recent research as is found in our featured article, but it is more detailed and presents diagrams of theoretical models of causal pathways connecting religion to health. The text is actually less than 15 pages, with the other 18 pages containing a massive bibliography of 601 references.

II. The *Handbook of Religion and Health* is in print in two editions from the Oxford University Press: the first edition is by Harold G. Koenig, Michael E. McCullough, and David B. Larson, published in 2001; and the second edition is by Harold Koenig, Dana King, and Verna B. Carson, published in 2012. As pointed out in our featured article [p. 21], these volumes work out of approximately 3,300 studies prior to 2010 and take into account "approximately 75% of the published research on the topic that was written in English." The second edition is more than just an update; it is a significant revision of the text of the earlier volume and actually has been marketed as a companion volume to the first. The work remains valuable even now in such a rapidly developing field, giving background and context to current research.

III. Research focusing on the effect of meditation practice on telomeres has been brewing for years. For a good introduction to the subject, see our [October 2009 Article-of-the-Month](#). For more recent articles, see the following:

Hoge, E. A., Chen, M. M., Orr, E., Metcalf, C. A., Fischer, L. E., Pollack, M. H., De Vivo, I. and Simon, N. M. "**Loving-Kindness Meditation practice associated with longer telomeres in women.**" *Brain, Behavior, & Immunity* 32 (August 2013): 159-163. [(Abstract:) Relatively short telomere length may serve as a marker of accelerated aging, and shorter telomeres have been linked to chronic stress. Specific lifestyle behaviors that can mitigate the effects of stress might be associated with longer telomere lengths. Previous research suggests a link between behaviors that focus on the well-being of others, such as volunteering and caregiving, and overall health and longevity. We examined relative telomere length in a group of individuals experienced in Loving-Kindness Meditation (LKM), a practice derived from the Buddhist tradition which utilizes a focus on unselfish kindness and warmth towards all people, and control participants who had done no meditation. Blood was collected by venipuncture, and Genomic DNA was extracted from peripheral blood leukocytes. Quantitative real time PCR was used to measure relative telomere length (RTL) (Cawthon, 2002) in fifteen LKM practitioners and 22 control participants. There were no significant differences in age, gender, race, education, or exposure to trauma, but the control group had a higher mean body mass index (BMI) and lower rates of past depression. The LKM practitioners had longer RTL than controls at the trend level ($p=.083$); among women, the LKM practitioners had significantly longer RTL than controls, ($p=.007$), which remained significant even after controlling for BMI and past depression. Although limited by small sample size, these results offer the intriguing possibility that LKM practice, especially in women, might alter RTL, a biomarker associated with longevity.]

Jacobs, T. L., Epel, E. S., Lin, J., Blackburn, E. H., Wolkowitz, O. M., Bridwell, D. A., Zanesco, A. P., Aichele, S. R., Sahdra, B. K., MacLean, K. A., King, B. G., Shaver, P. R., Rosenberg, E. L., Ferrer, E., Wallace, B. A. and Saron, C. D. "**Intensive meditation training, immune cell telomerase activity, and psychological mediators.**" *Psychoneuroendocrinology* 36, no. 5 (June 2011): 664-681. [(Abstract:) BACKGROUND: Telomerase activity is a predictor of long-term cellular viability, which decreases with chronic psychological distress (Epel et al., 2004). Buddhist traditions claim that meditation decreases psychological distress and promotes well-being (e.g., Dalai Lama and Cutler, 2009). Therefore, we investigated the effects of a 3-month meditation retreat on telomerase activity and two major contributors to the experience of stress: Perceived Control (associated with decreased stress) and Neuroticism (associated with increased subjective distress). We used mediation models to test whether changes in Perceived Control and Neuroticism explained meditation retreat effects on telomerase activity. In addition, we investigated whether two qualities developed by meditative practice, increased Mindfulness and Purpose in Life, accounted for retreat-related changes in the two stress-related variables and in telomerase activity. METHODS: Retreat participants ($n=30$) meditated for ~6 h daily for 3 months and were compared with a wait-list control group ($n=30$) matched for age, sex, body mass index, and prior meditation experience. Retreat participants received instruction in concentrative meditation techniques and complementary practices used to cultivate benevolent states of mind (Wallace, 2006). Psychological measures were assessed pre- and post-retreat. Peripheral blood mononuclear cell samples were collected post-retreat for telomerase activity. Because there were clear, a priori hypotheses, 1-tailed significance criteria were used throughout. RESULTS: Telomerase activity was significantly greater in retreat participants than in controls at the end of the retreat ($p<0.05$). Increases in Perceived Control, decreases in Neuroticism, and increases in both Mindfulness and Purpose in Life were greater in the retreat group ($p<0.01$). Mediation analyses indicated that the effect of the retreat on telomerase was mediated by increased Perceived Control and decreased Neuroticism. In turn, changes in Perceived Control and Neuroticism were both partially mediated by increased Mindfulness and Purpose in Life. Additionally, increases in Purpose in Life directly mediated the telomerase group difference, whereas increases in Mindfulness did not. CONCLUSIONS: This is the first study to link meditation and positive psychological change with

telomerase activity. Although we did not measure baseline telomerase activity, the data suggest that increases in perceived control and decreases in negative affectivity contributed to an increase in telomerase activity, with implications for telomere length and immune cell longevity. Further, Purpose in Life is influenced by meditative practice and directly affects both perceived control and negative emotionality, affecting telomerase activity directly as well as indirectly.]

Schutte, N. S. and Malouff, J. M. "**A meta-analytic review of the effects of mindfulness meditation on telomerase activity.**" *Psychoneuroendocrinology* 42 (April 2014): 45-48.

[(Abstract:) The enzyme telomerase, through its influence on telomere length, is associated with health and mortality. Four pioneering randomized control trials, including a total of 190 participants, provided information on the effect of mindfulness meditation on telomerase. A meta-analytic effect size of $d=0.46$ indicated that mindfulness meditation leads to increased telomerase activity in peripheral blood mononuclear cells. These results suggest the need for further large-scale trials investigating optimal implementation of mindfulness meditation to facilitate telomerase functioning.]

If you have suggestions about the form and/or content of the site, e-mail Chaplain John Ehman (Network Convener) at john.ehman@uphs.upenn.edu .

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