

INTRODUCTION

IBCSR Research Review (IRR) is published by the Institute for the Bio-Cultural Study of Religion, a non-profit research institute dedicated to the scientific study of religion using biocultural techniques. *IRR* briefly annotates and furnishes online information about scientific research articles related to brain, behavior, culture, medicine, and religion published in English in leading journals. It also lists relevant books. Articles in press are listed without annotation. Annotations for articles aim to supply a preliminary understanding of the methods and results of a research study, or the argument of a paper. Annotations typically furnish more detail for articles in the scientific study of religion related to religion, brain, and behavior, than for articles in the area of spirituality and health, in accordance with IBCSR research priorities.

Articles for this issue were located by searching the following databases: H. W. Wilson Applied Science and Technology, ATLA Religion Database, H. W. Wilson General Science, PubMed, EBSCO Psychology and Behavioral Sciences Collection, PsycARTICLES, PsycINFO, ScienceDirect, and Web of Science. The search terms were altruism, god, goddess, meditat*, prayer, relig*, ritual, spiritu*, and yoga, tailored to the database being searched. Books were located on Amazon.com. Articles not directly relevant to the scientific study of religion were excluded, as were correspondence and reviews. From a universe of 948 articles, 146 articles have been retained from 81 journals. There are 69 pre-publication citations from 48 journals.

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PART 1: ARTICLES IN RELIGION, BRAIN, AND BEHAVIOR

1.1 SCIENTIFIC STUDY OF RELIGION: COGNITIVE NEUROSCIENCE

Barnby, Joseph M., Neil W. Bailey, Richard Chambers & Paul B. Fitzgerald. 2015. How similar are the changes in neural activity resulting from mindfulness practice in contrast to spiritual practice? *Consciousness and Cognition* 36. 219–232.
doi:10.1016/j.concog.2015.07.002.

Meditation and spiritual practices are conceptually similar, eliciting similar subjective experiences, and both appear to provide similar benefits to the practicing individuals. However, no research has examined whether the mechanism of action leading to the beneficial effects is similar in both practices. This review examines the neuroimaging research that has focused on groups of meditating individuals, groups who engage in religious/spiritual practices, and research that has examined groups who perform both practices together, in an attempt to assess whether this may be the case. Differences in the balance of activity between the parietal and prefrontal cortical activation were found between the three groups. A relative prefrontal increase was reflective of mindfulness, which related to decreased anxiety and improved well-being. A relative decrease in activation of the parietal cortex, specifically the inferior parietal cortex, appears to be reflective of spiritual belief, whether within the context of meditation or not. Because mindful and spiritual practices differ in focus regarding the “self” or “other” (higher being), these observations about neurological components that reflect spirituality may continue work towards understanding how the definition of “self” or “other” is represented in the brain, and how this may be reflected in behavior. Future research can begin to use cohorts of participants in mindfulness studies which are controlled for using the variable of spirituality to explicitly examine how functional and structural similarities and differences may arise.

Zeidan, Fadel, Nichole M. Emerson, Suzan R. Farris, Jenna N. Ray, Youngkyoo Jung, John G. McHaffie & Robert C. Coghill. 2015. Mindfulness Meditation-Based Pain Relief Employs Different Neural Mechanisms Than Placebo and Sham Mindfulness Meditation-Induced Analgesia. *Journal of Neuroscience* 35(46). 15307–15325.

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doi:10.1523/jneurosci.2542-15.2015.

Mindfulness meditation reduces pain in experimental and clinical settings. However, it remains unknown whether mindfulness meditation engages pain-relieving mechanisms other than those associated with the placebo effect (e.g., conditioning, psychosocial context, beliefs). To determine whether the analgesic mechanisms of mindfulness meditation are different from placebo, researchers randomly assigned 75 healthy, human volunteers to four days of one of the following exercises: (1) mindfulness meditation, (2) placebo conditioning, (3) sham mindfulness meditation, or (4) book-listening control intervention. Intervention efficacy was assessed using psychophysical evaluation of experimental pain and functional neuroimaging. Importantly, all cognitive manipulations (i.e., mindfulness meditation, placebo conditioning, sham mindfulness meditation) significantly attenuated pain intensity and unpleasantness ratings when compared to rest and the control condition. Mindfulness meditation reduced pain intensity and pain unpleasantness ratings more than placebo analgesia. Mindfulness meditation also reduced pain intensity and pain unpleasantness ratings more than sham mindfulness meditation. Mindfulness-meditation-related pain relief was associated with greater activation in brain regions associated with the cognitive modulation of pain, including the orbitofrontal, subgenual anterior cingulate, and anterior insular cortex. In contrast, placebo analgesia was associated with activation of the dorsolateral prefrontal cortex and deactivation of sensory processing regions (secondary somatosensory cortex). Sham mindfulness meditation-induced analgesia was not correlated with significant neural activity, but rather by greater reductions in respiration rate. This study is the first to demonstrate that mindfulness-related pain relief is mechanistically distinct from placebo analgesia. The elucidation of this distinction confirms the existence of multiple, cognitively driven, supraspinal mechanisms for pain modulation. The authors thus conclude that mindfulness meditation produces greater pain relief and employs distinct neural mechanisms than placebo cream and sham mindfulness meditation. Specifically, mindfulness meditation-induced pain relief activated higher-order brain regions, including the orbitofrontal and cingulate cortices. In contrast, placebo analgesia was associated with decreased pain-related brain activation. These findings demonstrate that mindfulness meditation reduces pain through unique mechanisms and may foster greater acceptance of meditation as an adjunct pain therapy.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Baumard, Nicolas & Coralie Chevallier. 2015. The nature and dynamics of world religions: A life-history approach. *Proceedings. Biological Sciences / The Royal Society* 282(1818). doi:10.1098/rspb.2015.1593.

In contrast with tribal and archaic religions, world religions are characterized by a unique emphasis on extended prosociality, restricted sociosexuality, delayed gratification, and the belief that these specific behaviors are sanctioned by some kind of supernatural justice. Here, researchers draw on recent advances in life history theory to explain this pattern of seemingly unrelated features. Life history theory examines how organisms adaptively allocate resources in the face of trade-offs between different life-goals (e.g., growth versus reproduction, exploitation versus exploration). In particular, recent studies have shown that individuals, including humans, adjust their life strategy to the environment through phenotypic plasticity: in a harsh environment, organisms tend to adopt a 'fast' strategy, pursuing smaller but more certain benefits, while in more affluent environments, organisms tend to develop a 'slow' strategy, aiming for larger but less certain benefits. Reviewing a range of recent research, these researchers show that world religions are associated with a form of 'slow' strategy. This framework explains both the promotion of 'slow' behaviors such as altruism, self-regulation and monogamy in modern world religions, and the condemnation of 'fast' behaviors such as selfishness, conspicuous sexuality and materialism. This ecological approach also explains the diffusion pattern of world religions: why they emerged late in human history (500-300 BCE), why they are currently in decline in the most affluent societies, and why they persist in some places despite this overall decline.

Boden, Matthew Tyler. 2015. Supernatural beliefs: Considered adaptive and associated with psychological benefits. *Personality and Individual Differences* 86. 227–231. doi:10.1016/j.paid.2015.06.023.

Supernatural beliefs include peculiar beliefs, which are often considered a sign/symptom of psychopathology (e.g., Psi, remote viewing), religious/spiritual beliefs (e.g., angels), and fate beliefs (e.g., everything happens for a reason). The present researchers addressed limitations in the empirical literature by investigating, among a psychologically healthy community sample (n=189) the perceived adaptivity of supernatural peculiar, religious/spiritual and fate beliefs. Results demonstrated that supernatural beliefs were considered adaptive (important, having a positive impact, serving understanding and hedonic functions). Perceived adaptivity, especially the understanding function, was consistently associated with psychological benefits (more life satisfaction, emotional clarity and positive affect, less negative affect, depression and perceived stress). Perceived adaptivity and associations with psychological benefits did not differ by belief type. The current study suggests that supernatural beliefs, broadly, and peculiar beliefs, specifically, are potentially adaptive in several ways, and associated with psychological benefits.

Decety, Jean, Jason M. Cowell, Kang Lee, Randa Mahasneh, Susan Malcolm-Smith, Bilge Selcuk & Xinyue Zhou. 2015. The Negative Association between Religiousness and Children's Altruism across the World. *Current Biology* 25(22). 2951–2955.
doi:10.1016/j.cub.2015.09.056.

Prosocial behaviors are ubiquitous across societies. They emerge early in ontogeny and are shaped by interactions between genes and culture. Over the course of middle childhood, sharing approaches equality in distribution. Since 5.8 billion humans, representing 84% of the worldwide population, identify as religious, religion is arguably one prevalent facet of culture that influences the development and expression of prosociality. While it is generally accepted that religion contours people's moral judgments and prosocial behavior, the relation between religiosity and morality is a contentious one. Here, researchers assessed altruism and third-party evaluation of scenarios depicting interpersonal harm in 1,170 children aged between 5 and 12 years in six countries (Canada, China, Jordan, Turkey, USA, and South Africa), the religiousness of their household, and parent-reported child empathy and sensitivity to justice. Across all countries, parents in religious households reported that their children expressed more empathy and sensitivity for justice in everyday life than non-religious parents. However, religiousness was inversely predictive of children's altruism and positively correlated with their punitive tendencies. Together these results reveal the similarity across countries in how religion negatively influences children's altruism, challenging the view that religiosity facilitates prosocial behavior.

Heiphetz, Larisa, Elizabeth S. Spelke & Liane L. Young. 2015. In the name of God: How children and adults judge agents who act for religious versus secular reasons. *Cognition* 144. 134–149.
doi:10.1016/j.cognition.2015.07.017.

Many people are guided by religious beliefs, but judgments of religiously and secularly motivated individuals remain unclear. Researchers investigated reasoning about religiously versus secularly motivated characters among 5- to 10-year-olds and adults. In Study 1, theist and non-theist children reported similar attitudes toward theists; however, large differences emerged between theist and non-theist adults. Study 2 obtained similar results using a continuous, rather than forced choice, measure of preference. Additionally, Studies 2–3 tested two explanations for the stronger influence of religious background on adults' versus children's responses. Study 2 did not find strong evidence for the theistic majority account, which posits that the greater perceived prevalence of theists as compared with non-theists influenced children's responses more than adults' responses. The results of Study 3 were consistent with the intuition account, which argues that non-theist adults had overridden the teleological intuitions that may have influenced children's responses in Studies 1–2 and potentially led children to prefer characters whose beliefs were in line with children's own intuitions. The degree to which teleological intuitions persisted implicitly among adults predicted those adults' pro-theist preferences. These findings offer connections between religious judgments and other areas of social cognition, such as social preferences and teleology.

Johnson, Kathryn A., Adam B. Cohen, Rebecca Neel, Anna Berlin & Donald Homa. 2015. Fuzzy people: The roles of kinship, essence, and sociability in the attribution of personhood to nonliving,

nonhuman agents. *Psychology of Religion and Spirituality* 7(4). (Nature and Evolution of Totemism, Shamanism, Religions, and Spirituality). 295–305.
doi:10.1037/rel0000048.

Evolutionary theories of religion have focused almost exclusively on anthropomorphic representations of God and of God as having a mind. However, religious beliefs extend to notions about material entities as well and, these researchers propose, religious cognition can involve many distinct cognitive systems and social motivations including kin care, essentialist beliefs, and social exchange. The authors refer to the elevation of the social status of nonliving and nonhuman material entities as personification. In three studies the researchers assess variability in the personification of a range of nonliving nonhuman entities. In Study 1, perceived kinship and the attribution of an inner essence, spirit, or soul to a particular target were important positive predictors of the personification of material nonliving or nonhuman entities whereas sociability was not. In Study 2, personification was compared among European Americans, Hispanic Americans, and American Indians to show that these perceptions can vary by cultural group. In Study 3, variation in personification was related to individual differences in beliefs about the soul or evolution. In all, the authors show the importance of perceived kinship bonds and essentialist beliefs in the personification of fetuses, the dead, animals, and objects, over and above the attribution of mental attributes. This is a new focus for understanding religious cognition.

Kanazawa, Satoshi. 2015. Where do Gods come from? *Psychology of Religion and Spirituality* 7(4). (Nature and Evolution of Totemism, Shamanism, Religions, and Spirituality). 306–313.
doi:10.1037/rel0000033.

Religiosity—belief in supernatural beings—is culturally universal, thus quite likely part of universal human nature. How can evolutionary psychology explain it? The author surveys one extant theory of religiosity as an evolutionary byproduct of a cognitive bias, variously known as the animistic bias or the agency-detector mechanism, and presents a new theory, proposing that religiosity may be a tertiary adaptation that was selected because of its effect on secondary adaptations such as subjective well-being and the sense of meaning and purpose in life, which in turn facilitated primary adaptations to maximize survival and reproductive success. Although more studies are necessary to adjudicate between these two explanations, both theories suggest that religiosity is deeply evolutionarily familiar. The Savanna-IQ Interaction Hypothesis suggests that more intelligent individuals may be less religious than less intelligent individuals.

Lee, Yueh-Ting, Michelle Beddow, Xin Ni Chan & Changjiang Xu. 2015. Evolutionary and cross-cultural investigation of Totemism and Daoism. *Psychology of Religion and Spirituality* 7(4). (Nature and Evolution of Totemism, Shamanism, Religions, and Spirituality). 278–285.
doi:10.1037/rel0000029.

This article aims to examine the evolutionary relationship between totemism and Daoism cross-culturally. A total of 519 people participated (195 Americans and 324 Chinese), which included 95 students at a Midwestern university and 100 individuals from Amazon Mechanical Turk (MTurk). There were 268 on-campus participants from a university on the East coast in mainland China, whereas 56 completed it online from East China. Participants were asked to complete the Daoist Thinking Style Questionnaire and Lee's Totemic Thinking Questionnaire. The researchers found that totemism was significantly correlated with Daoism, and that this relationship varied cross-culturally—more so for Americans than for the Chinese, which was moderated by the interaction between religiosity and Daoism. This may suggest that human beings survive and function well because of a close spiritual attachment to animals, plants, and other natural things, objects, or phenomena.

Palmer, Craig T., Ryan O. Begley & Kathryn Coe. 2015. Totemism and long-term evolutionary success. *Psychology of Religion and Spirituality* 7(4). (Nature and Evolution of Totemism, Shamanism, Religions, and Spirituality). 286–294.
doi:10.1037/rel0000035.

This paper proposes that the clan Totemism existing in many traditional cultures, and described as religious by many ethnographers, provides evidence about the early evolutionary function of religion in the sense that it provides evidence of the effects of religion that caused it to become widespread in our species. However, this paper also proposes that evolutionary explanations of Totemism have failed to fully appreciate the reason clan Totemism acts as a kind of window into the past. This is the fact that the behaviors constituting clan Totemism could not have taken their form when first studied by anthropologists if they had not been copied from ancestors to descendants for many generations. This new multigenerational approach to clan Totemism combines four points about Totemism that have been recognized by others, but whose implications have not heretofore been fully comprehended.

Salazar, Carles. 2015. Religious Symbolism and the Human Mind. *Method & Theory in the Study of Religion* 27(1). 82–96.
doi:10.1163/15700682-12341326.

The purpose of this paper is to assess Durkheim's approach to religion and the validity of the time-honored principle of the social determination of mental representations. The thesis to be defended is that Durkheim was essentially right in understanding religious ritual as a symbolic language. But he was wrong both in his social deterministic theory of mental representations and in his definition of religion as an exclusively social phenomenon. As current evolutionary sciences have amply demonstrated, human mental architecture has been shaped by a long evolutionary process and cannot be easily reconfigured through cultural indoctrination. Two consequences can be derived from this. First, religious ideas can successfully colonize human minds thanks to their ability to parasitize on biologically evolved human cognitive structures. Second, due to their counterintuitive properties, this colonization can only succeed if those ideas are culturally transmitted through a special language.

Winkelman, Michael. 2015. Shamanism as a biogenetic structural paradigm for humans' evolved social psychology. *Psychology of Religion and Spirituality* 7(4). (Nature and Evolution of Totemism, Shamanism, Religions, and Spirituality). 267–277.
doi:10.1037/rel0000034.

The features of shamanism found cross-culturally identify the foundations for a biogenetic paradigm. Similarities of shamanic ritual with chimpanzee displays involving ritualized bipedal charges, communal vocalizations and drumming point to the hominid ritual foundations and community dynamics from which shamanism emerged. Hominid collective rituals expanded over human evolution in enhanced capacities for mimesis, music, and dance, factors selected for as part of an enhanced behavioral and symbolic capacity for ritual participation. Ritual practices produce changes in consciousness and experience of self that reflect access to basic structures of consciousness, exemplified in out-of-body experiences. Shamanism engages our innate psychology to produce symbols, reflected in concepts of animism, animal spirit identities and powers, and animal totemic groups. This innate psychology of shamanism is based in symbolic processes produced by the cross-modal integration of innate processing modules for the natural world (animal species) self-representation, inference of mental processes, and identification with social references.

1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY AND CULTURE

Ataria, Yochai. 2015. Where do we end and where does the world begin? The case of insight meditation. *Philosophical Psychology* 28(8). 1128–1146.
doi:10.1080/09515089.2014.969801.

This paper examines the experience of where the borders of a person ends and the rest of the world begins, that is, the sense of boundaries. Since meditators are recognized for their ability to introspect about the bodily level of experience, and in particular about their sense of boundaries, 27 senior meditators (those with more than 10,000 hours of experience) were interviewed for this study. The main conclusions of this paper are that (a) the boundaries of the so-called "physical body" (body-as-object) are not equivalent to the individual's sense of boundaries; (b) the

sense of boundaries depends upon sensory activity; (c) the sense of boundaries should be defined according to its level of flexibility; (d) the sense of body ownership (the sense that it is one's own body that undergoes an experience) cannot be reduced to the sense of boundaries; nevertheless, (e) the sense of ownership depends on the level of flexibility of the sense of boundaries.

- Baines, Susannah & Chris Hatton. 2015. The Impact of the Birth of a Child with Intellectual Disabilities on Pre-Existing Parental Christian Faith from the Perspective of Parents Who Have Parented Their Child to Adulthood. *Journal of Applied Research in Intellectual Disabilities* 28(6). 524–535.
doi:10.1111/jar.12147.

Faith in the lives of UK families with an adult with intellectual disabilities is an under-researched area with little existing literature. Research in the United States with Christian parents suggests that they draw on their faith for coping and understanding. In this study, grounded theory methodology was used to examine the impact on pre-existing parental faith of the birth of a child with intellectual disabilities from the perspective of parents who have parented their children to adulthood. Seventeen parents or couples took part in semistructured qualitative interviews about their faith. Results indicated that the majority of parents after their child were diagnosed with intellectual disabilities went through a period of flux when they questioned the role of God in the disability. It was found that the positive or negative connotations of the attempts at meaning-making did not impact on the eventual outcome for the parents. They eventually put such existential questions aside, accepted their child, and continued in their faith.

- Goplen, Joanna & E. Ashby Plant. 2015. A Religious Worldview: Protecting One's Meaning System Through Religious Prejudice. *Personality & Social Psychology Bulletin* 41(11). 1474–1487.
doi:10.1177/0146167215599761.

For some people, religion strongly influences their worldviews. The present researchers propose that religious outgroups threaten the foundational beliefs of people with strong religious worldviews (RWVs) by endorsing alternative belief systems and that this threat contributes to religious prejudice. To examine these ideas, a measure of RWV strength was developed and the role of RWV threat in religious prejudice was measured. Across five studies, strength of RWV was related to religious prejudice, including derogation and denial of alternative religious viewpoints, as well as support for suppressing, avoiding, and even aggressing against religious outgroups. These responses were strongest toward religious outgroups whose worldviews were the most different, and therefore most threatening. Mediation analyses revealed that strong RWV people expressed heightened prejudice because of the worldview threat posed by religious outgroup members. These findings indicate that the avoidance and subjugation of religious outgroups can serve as a worldview protection strategy for some people.

- Khoury-Kassabri, Mona, Nabieh Khoury & Rabab Ali. 2015. Arab youth involvement in delinquency and political violence and parental control: The mediating role of religiosity. *American Journal of Orthopsychiatry* 85(6). 576–585.
doi:10.1037/ort0000079.

This study examines the involvement of Arab youth at risk from East Jerusalem in delinquent behaviors, such as crimes against a person, public disorder offenses, and political violence. The contribution of religiosity and parental control factors in explaining these different types of youth involvement in illegal behaviors is assessed. A total of 161 young males, aged 15-21, participated in the study. The researchers found that the greater the parental control and the more religious the adolescent, the less likely they are to engage in delinquent behaviors and political violence. The relationship between parental control and youth involvement in delinquency and political violence was mediated by youth level of religiosity, after controlling for age and family socioeconomic status.

- Koenig, Laura B. 2015. Change and Stability in Religiousness and Spirituality in Emerging Adulthood. *Journal of Genetic Psychology* 176(6). 369–385.

doi:10.1080/00221325.2015.1082458.

The author investigated the change and stability of different aspects of religiousness and spirituality, as well as whether personality traits may help explain why individuals increase or decrease in religiousness and spirituality during emerging adulthood. Self-report measures of childhood and current religiousness were completed by 224 college-aged participants. A subset of participants also completed a measure of personality and measures of religious and spiritual belief trajectories by rating the importance of each belief at successive age brackets across their lifespan. Analyses of mean-level, rank-order, and individual-level stability and change in religiousness indicated that while average religiousness scores decreased, there was still moderate to high rank-order stability in scores. Additionally, service attendance was less stable and decreased more than importance of religion in daily life. Examination of the trajectories of religiousness and spirituality over time showed similar differences: religiousness decreased, on average, whereas spirituality increased slightly, but significantly, across successive age brackets. Personality traits did not significantly predict change in religiousness over time, although openness predicted change in spirituality. Conclusions include the idea that religiousness in emerging adulthood is comprised on different components that change at different rates.

Okun, Morris A., Holly P. O'Rourke, Brian Keller, Kathryn A. Johnson & Craig Enders. 2015. Value-Expressive Volunteer Motivation and Volunteering by Older Adults: Relationships with Religiosity and Spirituality. *Journals of Gerontology Series B-Psychological Sciences and Social Sciences* 70(6). 860–870.

doi:10.1093/geronb/gbu029.

This study investigates the interplay among religiosity, spirituality, value-expressive volunteer motivation, and volunteering. Researchers examined religiosity and spirituality as predictors of value-expressive volunteer motivation and volunteering and whether religiosity moderated the relations between (a) spirituality and value-expressive volunteer motivation and (b) value-expressive volunteer motivation and volunteering. After applying multiple imputation procedures to data from the Wisconsin Longitudinal Study among participants 64-67 years old who survived beyond 2004 (n=8,148), the researchers carried out regression analyses to predict value-expressive volunteer motivation and volunteering from religiosity and spirituality controlling for demographic variables, physical, emotional, and cognitive health, health risk behaviors, and personality traits. They found that both religiosity and spirituality were significant positive predictors of value-expressive volunteer motivation. Value-expressive volunteer motivation and religiosity were significant positive predictors, whereas spirituality was a significant negative predictor, of volunteering. Religiosity amplified the relation between value-expressive volunteer motivation and volunteering but did not moderate the relation between spirituality and value-expressive volunteer motivation.

Ramey, Steven. 2015. When Acceptance Reflects Disrespect. *Method & Theory in the Study of Religion* 27(1). 59–81.

doi:10.1163/15700682-12341324.

The late Hans Penner critiqued the Phenomenology of Religion 25 years ago for confusing the subject and its object. His critique remains relevant to contemporary methods that accept participant statements uncritically. Beginning with a detailed analysis of one lived religion article and expanding to a broader critique, this essay illustrates the contradictions that remain in lived religion methodologies and similar approaches to the study of religion. While reflecting respect for practitioners and expanding the concept of religion, these methods ignore the agency of participants to represent themselves strategically and reinforce common discourse on religion, only expanding the category at its safe margins. The agendas that drive various studies work at cross purposes because of the inherent contradictions, and the dichotomy between scholars (and people like scholars) and practitioners that often results contradicts the rhetoric of respect and treating everyone equally.

Shepperd, James A., Wendi A. Miller & Colin Tucker Smith. 2015. Religiousness and aggression in adolescents: The mediating roles of self-control and compassion. *Aggressive Behavior* 41(6). 608–621.

doi:10.1002/ab.21600.

Although people have used religion to justify aggression, evidence suggests that greater religiousness corresponds with less aggression. Researchers explored two explanations for the religion-aggression link. First, most major religions teach self-control (e.g., delaying gratification, resisting temptation), which diminishes aggression. Second, most major religions emphasize compassionate beliefs and behavior (i.e., perspective taking, forgiveness, a broader love of humanity) that are incompatible with aggression. First, the researchers tested whether self-control and compassion mediated the relationship between religion and aggression (direct and indirect) in a longitudinal study of 1,040 adolescents in the United States. Structural equation analyses revealed that self-control and compassion together completely mediated the religion-aggression relationship for both types of aggression.

Smith, Brandt A. & Michael A. Zárate. 2015. The effects of religious priming and persuasion style on decision-making in a resource allocation task. *Peace and Conflict: Journal of Peace Psychology* 21(4). 665–668.

doi:10.1037/pac0000125.

The present research examined the effects of religious priming and charismatic leadership on decision-making in a resource allocation task. Religious priming took the form of having participants write one to two paragraphs about the importance of religion in the formation of social values. Confederates were trained to behave in either a charismatic or non-charismatic manner. After being primed with religion, participants were more compliant with a confederate leader and allocated more funds to hydro-fracture mining instead of a solar energy research project. Further, participants were more likely to comply with the confederate when they were first primed with religion. Implications of this study and future directions are discussed.

Zeng, Xianglong, Cleo P. K. Chiu, Rong Wang, Tian P. S. Oei & Freedom Y. K. Leung. 2015. The effect of loving-kindness meditation on positive emotions: a meta-analytic review. *Frontiers in Psychology* 6. 1693.

doi:10.3389/fpsyg.2015.01693.

While it has been suggested that loving-kindness meditation (LKM) is an effective practice for promoting positive emotions, the empirical evidence in the literature remains unclear. Here, researchers provide a systematic review of 24 empirical studies (n=1759) on LKM with self-reported positive emotions. The effect of LKM on positive emotions was estimated with meta-analysis, and the influence of variations across LKM interventions was further explored with subgroup analysis and meta-regression. The meta-analysis showed that (1) medium effect sizes for LKM interventions on daily positive emotions in both wait-list controlled RCTs and non-RCT studies; and (2) small to large effect sizes for the on-going practice of LKM on immediate positive emotions across different comparisons. Further analysis showed that (1) interventions focused on loving-kindness had medium effect size, but interventions focused on compassion showed small effect sizes; (2) the length of interventions and the time spent on meditation did not influence the effect sizes, but the studies without didactic components in interventions had small effect sizes. A few individual studies reported that the nature of positive emotions and individual differences also influenced the results. In sum, LKM practice and interventions are effective in enhancing positive emotions, but more studies are needed to identify the active components of the interventions, to compare different psychological operations, and to explore the applicability in clinical populations.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

Barrett, Frederick S., Matthew W. Johnson & Roland R. Griffiths. 2015. Validation of the revised Mystical Experience Questionnaire in experimental sessions with psilocybin. *Journal of Psychopharmacology* 29(11). 1182–1190.
doi:10.1177/0269881115609019.

The 30-item revised Mystical Experience Questionnaire (MEQ30) was previously developed within an online survey of mystical-type experiences occasioned by psilocybin-containing mushrooms. The rated experiences occurred on average eight years before completion of the questionnaire. The current paper validates the MEQ30 using data from experimental studies with controlled doses of psilocybin. Data were pooled and analyzed from five laboratory experiments in which participants (n=184) received a moderate to high oral dose of psilocybin (at least 20 mg/70 kg). Results of confirmatory factor analysis demonstrate the reliability and internal validity of the MEQ30. Structural equation models demonstrate the external and convergent validity of the MEQ30 by showing that latent variable scores on the MEQ30 positively predict persisting change in attitudes, behavior, and well-being attributed to experiences with psilocybin while controlling for the contribution of the participant-rated intensity of drug effects. These findings support the use of the MEQ30 as an efficient measure of individual mystical experiences. A method to score a “complete mystical experience” that was used in previous versions of the mystical experience questionnaire is validated in the MEQ30, and a stand-alone version of the MEQ30 is provided for use in future research.

Barrett, Justin L., Brianna Bentley & Ryan G. Hornbeck. 2015. Examining Special Patient Rituals in a Chinese Cultural Context: A Research Report. *Journal of Cognition and Culture* 15(5). 530–541.
doi:10.1163/15685373-12342164.

Is reasoning about religious ritual tethered to ordinary, nonreligious human reasoning about actions? E. Thomas Lawson and Robert N. McCauley’s ritual form hypothesis (RFH) constitutes a cognitive approach to religious ritual—an explanatory theory that suggests people use ordinary human cognition to make specific predictions about ritual properties, relatively independent of cultural or religious particulars. Few studies assess the credibility of RFH and further evidence is needed to generalize its predictions across cultures. Towards this end, the present researchers assessed culturally Chinese “special patient” rituals in Singapore. Findings strongly support RFH predictions for special patient ritual repeatability, reversibility, sensory pageantry and emotionality.

Dees, Sarah. 2015. An Equation of Language and Spirit: Comparative Philology and the Study of American Indian Religions. *Method & Theory in the Study of Religion* 27(3). 195–219.
doi:10.1163/15700682-12341338.

Scholars of religion frequently distinguish between the religions practiced by American Indians and non-Natives, raising a question about the role of religion in constructing and preserving notions of human difference. The present article locates key assumptions about the inherent distinction of Indigenous religions in early anthropological and linguistic research on American Indians. The author demonstrates that as anthropologists studied Native cultures in the late nineteenth century, they drew on evolutionary theories of language in order to construct racialized cultural classifications. Analysis of language provided a framework and foundation for research on American Indian religions. In this article, the writings produced by the Bureau of American Ethnology (BAE) are focused on, led by the influential anthropologist John Wesley Powell, who directed the Bureau from 1879 to 1902. Drawing on philology, the science of language, BAE researchers outlined a perceived essential difference between spiritual capacities of American Indians and non-Natives.

Elfenbein, Caleb. 2015. Contingency in the Age of Religion: The Hajj and Religion-Making in Colonial and Postcolonial India. *Method & Theory in the Study of Religion* 27(3). 247–277.
doi:10.1163/15700682-12341342.

In Union of India v. Bhikan (2012), the Indian Supreme Court ruled that government hajj subsidies violated the Indian Constitution's secular principles. What is notable about this decision is that the Supreme Court based the ruling on its own interpretation of the Qur'an, privileging direct access to scripture over historically established practices surrounding the pilgrimage in discerning what "Islam says" about the state's proper role in the hajj. Archival and legal research shows that Union of India v. Bhikan is merely the latest moment in over a century of colonial and postcolonial debates about pilgrimage management. This article employs the theoretical and methodological insights of Jonathan Z. Smith and Talal Asad to explore this history and its effects, using the matter of hajj administration to identify the concrete implications of different methods of "religion-making," or the construction of religion as an object for consideration and regulation, in the public sphere.

- Laack, Isabel. 2015. Sound, Music and Religion: A Preliminary Cartography of a Transdisciplinary Research Field. *Method & Theory in the Study of Religion* 27(3). 220–246.
doi:10.1163/15700682-12341339.

Sound and music play a vital role in many religious and spiritual practices around the world. However, they have not been studied considerably in the field of religion or in related disciplines thus far. This article begins to bridge this gap by drawing a preliminary cartography of the research field and proposing a transdisciplinary methodological basis for further studies. It includes a survey of the state of research and firmly locates the field within the secular study of religion rather than within phenomenological, theological or religious approaches. The key concepts "sound," "music" and "religion" are introduced, and the manner in which common perceptions of these concepts have prevented us from noting some of the most interesting phenomena, especially in contemporary religiosity, is discussed. Finally, a spectrum of potential research perspectives that could be covered by future studies is proposed.

- Lane, Justin E. 2015. Semantic network mapping of religious material: testing multi-agent computer models of social theories against real-world data. *Cognitive Processing* 16(4). 333–341.
doi:10.1007/s10339-015-0649-1.

Agent-based modeling allows researchers to investigate theories of complex social phenomena and subsequently use the model to generate new hypotheses that can then be compared to real-world data. However, computer modeling has been underutilized in regard to the understanding of religious systems, which often require very complex theories with multiple interacting variables. This paper presents an example of how computer modeling can be used to explore, test, and further understand religious systems, specifically looking at one prominent theory of religious ritual. The process is continuous: theory building, hypothesis generation, testing against real-world data, and improving the model. In this example, the output of an agent-based model of religious behavior is compared against real-world religious sermons and texts using semantic network analysis. It finds that most religious materials exhibit unique scale-free small-world properties and that a concept's centrality in a religious schema best predicts its frequency of presentation. These results reveal that adjustments need to be made to existing models of religious ritual systems and provide parameters for future models. The paper ends with a discussion of implications for a new multi-agent model of doctrinal ritual behaviors as well as propositions for further interdisciplinary research concerning the multi-agent modeling of religious ritual behaviors.

- MacKendrick, Kenneth G. & Matt Sheedy. 2015. The Future of Religious History in Habermas's Critical Theory of Religion. *Method & Theory in the Study of Religion* 27(2). 151–174.
doi:10.1163/15700682-12341328.

In Discovering Religious History in the Modern Age, Hans Kippenberg argues that the history of religions is the creative work-product of a cultural and political identity crisis, one in which the comparative history of religions became a means for some European scholars to uncouple from an increasingly halfhearted attachment to Christianity and re-experience their own history in a dynamic new form. A future for religion was thus found in the creation of innovative categories for the re-imagining of the past. For this reason, Kippenberg rightly posits that the early scholars of religion are best read as "classical theorists of a modern age in which past religion still has a future" (xvi). The

authors of this article argue that the influential critical social theorist Jürgen Habermas, one of the most vocal proponents of the unfinished project of Enlightenment and the conceptual architect of post-metaphysical thinking, has much in common with these early scholars of religion.

Oviedo, Lluís. 2015. Religious Cognition as a Dual-Process: Developing the Model. *Method & Theory in the Study of Religion* 27(1). 31–58.
doi:10.1163/15700682-12341288.

Several authors in the field of the cognitive science of religion have resorted to “dual-process” models in their own developments. These models distinguish between non-conscious (fast, intuitive, and automatic) and conscious (slow, reflective and controlled) forms of religious reasoning. Most of the published studies focus only on the first of those two processes when dealing with religion. The present pages offer a summary of the current state of dual-process research, their application to religion to the date, and a plea for their broader use, aimed at building a more integrated view of religion as a combination of both cognitive dimensions. The developments on ‘heuristics’ might contribute to a better understanding of several features of the religious mind.

Soliman, Tamer M., Kathryn A. Johnson & Hyunjin Song. 2015. It’s Not “All in Your Head”: Understanding Religion from an Embodied Cognition Perspective. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science* 10(6). 852–864.
doi:10.1177/1745691615606373.

Theorists and researchers in the psychology of religion have often focused on the mind as the locus of religion. In this article, researchers suggest an embodied cognition perspective as a new dimension in studies of religion as a complement to previous research and theorizing. In contrast to the Cartesian view of the mind operating distinctly from the body, an embodied cognition framework posits religion as being grounded in an integrated and dynamic sensorimotor complex (which includes the brain). In this article, the authors review relevant but disparate literature in cognitive and social psychology to demonstrate that embodied cognition shapes the way that people represent the divine and other spiritual beings, guides people’s moral intuitions, and facilitates bonding within religious groups. Moreover, commitments to a religious worldview are sometimes manifested in the body. The authors suggest several promising future directions in the study of religion from an embodied cognition perspective.

Wiebe, Donald & Luther H. Martin. 2015. Documenting the Delusion: A Case Study. *Method & Theory in the Study of Religion* 27(3). 279–291.
doi:10.1163/15700682-12341340.

This paper documents the lack of interest in creating an environment to promote a naturalistic study of religious thought and behavior at the Department for the Study of Religion (DSR) of the University of Toronto. The authors conclude that the Toronto DSR exemplifies the point made in the essay about the self-deception and delusion that characterizes many departments for the study of religion about their academic or scientific credibility.

Wiles, Lee. 2015. Mormonism and the World Religions Discourse. *Method & Theory in the Study of Religion* 27(1). 1–30.
doi:10.1163/15700682-12341265.

This article examines the ways in which the status of Mormonism within academic comparative religion discourses is quite different from that which has evolved among Latter-day Saint leaders and within the burgeoning field of Mormon studies. Whereas Mormonism is a quasi-Christian New Religious Movement in most world religions textbooks and reference works, some scholars of Mormonism have advanced the expanding Church of Jesus Christ of Latter-day Saints into the position of world religion. In doing so, they have adopted the terminology of a broader taxonomy largely without regard for maintaining its established demarcations. This classificatory tension, which will likely increase in the future, reveals some of the underlying logics, semantic confusions, and power dynamics of

comparative religion discourses, ultimately problematizing the categories of Christianity, world religion, and New Religious Movement as currently constituted.

A CALL FOR HILBERT QUESTIONS IN THE STUDY OF RELIGION

What are the Hilbert Questions?

RBB takes its inspiration for this endeavor from the eminent mathematician David Hilbert (1862-1943). At the 1900 International Congress of Mathematicians in Paris, Hilbert listed 10 discipline-defining questions. His goal was to focus the attention of mathematicians on clearly stated questions central to the discipline of mathematics. These questions were never intended to remain static; in fact, the revision of Big Questions and previous intellectual positions in a discipline is a marker of its health. In this spirit, we similarly hope to accumulate a list of clearly formulated, fundamental Big Questions in order to focus a community of inquirers on the most pressing puzzles in the biological, evolutionary, and cognitive sciences of religion.

Requirements for submission:

- 1) The question must be stated clearly.
- 2) The question must really be fundamental and its theoretical implications capable of reconfiguring how scholars understand religion.
- 3) The question must be relevant to actual religion, rather than abstractions of religion. To sharpen one's questions, it might behoove one to talk to those who have not embraced the bio-cultural study of religion—these can be fruitful conversations.
- 4) The question must include some proposed method to answer it. Collaborative efforts are anticipated. Please detail how collaboration on the question would have to work.
- 5) The question must be stated in one thousand words or fewer.
- 6) Submissions are due by February 15th, 2016 to rbbsubmit@ibcsr.org.

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Religion, Brain and Behavior (RBB) is the flagship journal in the bio-cultural study of religion. It welcomes submissions from a wide variety of relevant disciplines, from cognitive science to evolutionary theory to religious studies.



PART 2: ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Assari, Shervin, Maryam Moghani Lankarani, Mohammad Reza Malekahmadi, Cleopatra Howard Caldwell & Marc Zimmerman. 2015. Baseline Religion Involvement Predicts Subsequent Salivary Cortisol Levels Among Male But not Female Black Youth. *International Journal of Endocrinology and Metabolism* 13(4). e31790.
doi:10.5812/ijem.31790.

Compared to Whites, Blacks are exposed to higher levels of chronic stress in the United States. As a result, major Black-White differences exist in the baseline and response of cortisol. Yet, the potential association between baseline religiosity and subsequent cortisol levels of Blacks are not known. In the current study researchers aimed to determine the association between baseline religious behaviors and daytime salivary cortisol level among male and female Black youth. With a longitudinal design, data came from wave 1 (1994) and wave 6 (2000) of a cohort from an urban area in the Midwest of the United States. The study followed 227 Black adolescents (109 males and 118 females) for six years. Socio-demographics and religious behaviors (frequency of participation in religious activities) were measured at baseline. Base morning cortisol level at wave 6 was the outcome. Researchers fitted a linear regression model to test the association between baseline religiosity at wave 1 and cortisol level at wave 6, while baseline age, socio-economics, and psychological symptoms were controlled. In the pooled sample, frequency of participation in religious activities at baseline was negatively associated with mean cortisol level at follow up among all, males, but not females. Frequency of participation in religious activities remained a significant predictor of subsequent cortisol level while the effect of age, socioeconomic, and psychological symptoms were controlled. The researchers could only find such an association among male Black youth but not female Black youth. The authors conclude that religiosity has been used as a coping mechanism among Blacks. Religiosity may also be related to stress regulation among Black youth. Future studies need to test complex associations between race, sex, religiosity, chronic stress, coping, and function of hypothalamo-pituitary-adrenal (HPA). It is not known whether male Black youth who are and those who are not religious differently cope with stress associated with daily discrimination and living in disadvantaged neighborhoods.

Bai, Z., J. Chang, C. Chen, P. Li, K. Yang & I. Chi. 2015. Investigating the effect of transcendental meditation on blood pressure: A systematic review and meta-analysis. *Journal of Human Hypertension* 29(11). 653–662.
doi:10.1038/jhh.2015.6.

Some evidence from previous randomized controlled trials and systematic reviews has demonstrated a positive association between hypertension and transcendental meditation (TM). However, other trials and reviews showed the effect of TM on blood pressure (BP) was unclear but did not use subgroup analysis to rigorously investigate this relationship. The American Heart Association has stated that TM is potentially beneficial but did not give a standard indication. The present study explored several subgroup analyses in systematic reviews to investigate the effect of TM on BP. The current researchers undertook a literature review of randomized controlled trials of TM as a primary intervention for BP. Two reviewers independently used the Cochrane Collaboration's quality assessment tool to assess each study's quality. Twelve studies with 996 participants indicated an approximate reduction of systolic and diastolic BP of -4.26 mm Hg and -2.33 mm Hg, respectively, in TM groups compared with control groups. Results from subgroup analysis suggested that TM had a greater effect on systolic BP among older participants, those with higher initial BP levels, and women, respectively. In terms of diastolic BP, it appears that TM might be more efficient in a short-term intervention and with individuals experiencing higher BP levels. However, some biases may have influenced the results, primarily a lack of information about study design and methods of BP measurement in primary studies.

- Chang, Mei-Ying. 2015. Qigong Effects on Heart Rate Variability and Peripheral Vasomotor Responses. *Western Journal of Nursing Research* 37(11). 1383–1403. doi:10.1177/0193945914535669.

Population aging is occurring worldwide, and preventing cardiovascular event in older people is a unique challenge. The aim of this study was to examine the effects of a 12-week qigong (eight-form moving meditation) training program on the heart rate variability and peripheral vasomotor response of middle-aged and elderly people in the community. This was a quasi-experimental study that included the pre-test, post-test, and nonequivalent control group designs. Seventy-seven participants were recruited. The experimental group (n=47) performed 30 min of eight-form moving meditation 3 times per week for 12 weeks, and the control group (n=30) continued their normal daily activities. After 12 weeks, the interaction effects indicated that compared with the control group, the experimental group exhibited significantly improved heart rate variability and peripheral vasomotor responses.

- Dareng, Eileen O., Elima Jedy-Agba, Patience Bamisaye, Fatima Isa Modibbo, Lawal O. Oyeneyin, Ayodele S. Adewole, Olayinka B. Olaniyan, Patrick S. Dakum, Paul D. Pharoah & Clement A. Adebamowo. 2015. Influence of Spirituality and Modesty on Acceptance of Self-Sampling for Cervical Cancer Screening. *PloS One* 10(11). e0141679. doi:10.1371/journal.pone.0141679.

Whereas systematic screening programs have reduced the incidence of cervical cancer in developed countries, the incidence remains high in developing countries. Among several barriers to uptake of cervical cancer screening, the roles of religious and cultural factors such as modesty have been poorly studied. Knowledge about these factors is important because of the potential to overcome them using strategies such as self-collection of cervico-vaginal samples. In this study researchers evaluate the influence of spirituality and modesty on the acceptance of self-sampling for cervical cancer screening. The research team enrolled 600 participants in Nigeria between August and October 2014 and collected information on spirituality and modesty using two scales. Principal component analysis was used to extract scores for spirituality and modesty and logistic regression models to evaluate the association between spirituality, modesty and preference for self-sampling. Some 581 (97%) women had complete data for analysis. Most (69%) were married, 50% were Christian and 44% were from the south western part of Nigeria. Overall, 19% (110/581) of the women preferred self-sampling to being sampled by a health care provider. Adjusting for age and socioeconomic status, spirituality, religious affiliation and geographic location were significantly associated with preference for self-sampling, while modesty was not significantly associated. The multivariable OR for association with self-sampling were 0.88 (0.78-0.99, 0.03) for spirituality, 1.69 (1.09-2.64, 0.02) for religious affiliation, and 0.96 (0.86-1.08, 0.51) for modesty.

- Fradelos, Evangelos C., Foteini Tzavella, Evmorfia Koukia, Ioanna Papathanasiou, Victoria Alikari, John Stathoulis, Georgios Panoutsopoulos & Sofia Zyga. 2015. Integrating Chronic Kidney Disease Patient's Spirituality in their Care: Health Benefits and Research Perspectives. *Materia Socio-Medica* 27(5). 354–358. doi:10.5455/msm.2015.27.354-358.

Patients who suffer from chronic renal disease face problems in many aspects of their life; problems such as physical and social as well as mental such as stress, anxiety, depression. In addition, they exhibit spiritual needs, which relate and influence the psychological adaptation to the illness. The aim of this article is to examine evidence from the international literature regarding the possible relation of spirituality and health outcomes, mostly in the complex codex of a chronic and life treating disease such as CKD. The authors found that spirituality is a very debatable issue and the term has no single and widely agreed definition. The key components of spirituality were "meaning," "hope," "relatedness/connectedness," and "beliefs/beliefs systems." Spirituality has been characterized as the quest for meaning in life, mainly through experiences and expressions of mind, in a unique and dynamic process different for each individual. For many individuals, spirituality and religion are important aspects of their existence,

constituting a source support contribute to wellbeing and coping with life's daily difficulties. The authors conclude that considering, assessing and addressing chronic kidney disease patient's spirituality and spiritual needs is necessary and it can have a positive outcome in health related quality of life, mental health and life expectancy.

- Ginting, Henndy, Gerard Naring, Linda Kwakkenbos & Eni S. Becker. 2015. Spirituality and Negative Emotions in Individuals With Coronary Heart Disease. *Journal of Cardiovascular Nursing* 30(6). 537–545.
doi:10.1097/JCN.0000000000000201.

Many individuals with coronary heart disease (CHD) experience disease-related anxiety, depressive symptoms, and anger. Spirituality may be helpful to cope with these negative emotions. Research findings on the role of spirituality in dealing with negative emotions are inconsistent. In this study, researchers examined the associations between 7 dimensions of spirituality (i.e., meaningfulness, trust, acceptance, caring for others, connectedness with nature, transcendent experiences, and spiritual activities) and negative emotions among individuals with CHD in Indonesia, controlling for perceived social support as well as demographic and clinical characteristics. In total, 293 individuals with CHD were recruited from the 3 largest hospitals in Bandung, Indonesia. They completed the Spiritual Attitude and Involvement List, the Beck Depression Inventory-II, the Trait Anxiety Scale of the State Trait Anxiety Inventory, the Multidimensional Anger Inventory, and the Multidimensional Scale of Perceived Social Support. Hierarchical linear regression analyses indicated that a higher overall level of spirituality was associated with lower levels of depressive symptoms, less anxiety, and less anger. Specifically, a higher level of trust was significantly associated with both less depressive symptoms and less anxiety. Higher levels of caring for others and spiritual activities were associated with less anxiety, and a higher level of connectedness with nature was associated with less anger. These findings underscore the importance of specific dimensions of spirituality as a potentially independent buffer against negative emotions in individuals with CHD.

- Heidari, Jabbar, Hedayat Jafari & Ghasem Janbabaei. 2015. Life Quality Related to Spiritual Health and Factors Affecting It in Patients Afflicted by Digestive System Metastatic Cancer. *Materia Socio-Medica* 27(5). 310–313.
doi:10.5455/msm.2015.27.310-313.

Spiritual health is of the basic elements in chronic patients. This concept can be considered as an important approach in promoting physical and spiritual health, and life quality. The present study studies life quality related to metastatic phase gastrointestinal (digestive) cancer referring to Mazandaran Medical Science University Educational Center in Iran. The research has been done by descriptive-analytical method with 250 patients through available sampling method. The data was collected via a spiritual health and life quality questionnaire. The highest relationship between age & spirituality was related to ages over 60. There was a meaningful statistical relationship between spirituality & life quality scale, between spirituality and respiratory disorder, anorexia, exhaustion, and financial problems.

- Jim, Heather S. L., James E. Pustejovsky, Crystal L. Park, Suzanne C. Danhauer, Allen C. Sherman, George Fitchett, Thomas V. Merluzzi, et al. 2015. Religion, spirituality, and physical health in cancer patients: A meta-analysis. *Cancer* 121(21). 3760–3768.
doi:10.1002/cncr.29353.

Although religion/spirituality (R/S) is important in its own right for many cancer patients, a large body of research has examined whether R/S is also associated with better physical health outcomes. This literature has been characterized by heterogeneity in sample composition, measures of R/S, and measures of physical health. In an effort to synthesize previous findings, a meta-analysis of the relation between R/S and patient-reported physical health in cancer patients was performed. A literature search yielded 2,073 abstracts, which were independently evaluated by pairs of raters. The meta-analysis was conducted for 497 effect sizes from 101 unique samples encompassing more than 32,000 adult cancer patients. R/S measures were categorized into affective, behavioral, cognitive, and 'other' dimensions. Physical health measures were categorized into physical well-being, functional well-being, and physical

symptoms. Overall R/S was associated with overall physical health; this relation was not moderated by sociodemographic or clinical variables. Affective R/S was associated with physical well-being, functional well-being, and physical symptoms. Cognitive R/S was associated with physical well-being and functional well-being. 'Other' R/S was associated with functional well-being. In conclusion, the results of the current meta-analysis suggest that greater R/S is associated with better patient-reported physical health. These results underscore the importance of attending to patients' religious and spiritual needs as part of comprehensive cancer care.

Kimball, Richard & Michael Wissner. 2015. Religion, Poverty, and Politics: Their Impact on Women's Reproductive Health Outcomes. *Public Health Nursing* 32(6). 598–612.
doi:10.1111/phn.12196.

This study sought to explore the relationship(s) between U.S. states of selected social determinants of health (SDH) and three women's reproductive health outcomes including abortion, teen births, and infant mortality rates (IMR). The data from multiple population surveys were used to establish on a state-by-state basis, the interactions between selected SDH (religion, voting patterns, child poverty, and GINI) and their policy effects on three women's reproductive health outcomes (abortion, teen births, and IMRs) using publicly available national databases. Child poverty rates and the GINI coefficient were analyzed. Religiosity information was obtained from the Pew Forum's surveys. Voting results were collected from the 2008 congressional and presidential races and were used as proxy measures for conservative- versus liberal-leaning policies and policy makers. Using multiple regression analysis, higher IMRs were associated with higher religiosity scores. Lower abortion rates were associated with voting conservatively and higher income inequality. Higher teen birth rates were associated with higher child poverty rates and voting conservatively. This study shows that selected SDH may have substantial impacts on women's reproductive health outcomes at the state level. Significant inequalities exist between liberal and conservative states that affect women's health outcomes.

Lau, Way K. W., Mei-Kei Leung, Chetwyn C. H. Chan, Samuel S. Y. Wong & Tatia M. C. Lee. 2015. Can the neural-cortisol association be moderated by experience-induced changes in awareness? *Scientific Reports* 5. 16620.
doi:10.1038/srep16620.

Cortisol homeostasis is important for cognitive and affective functions that depend on cortisol-sensitive brain regions including the hippocampus and prefrontal cortex. Recent studies have shown that training induces changes in the brain. Researchers report the findings of a longitudinal study that verified the moderation effect of experience-induced changes in awareness on the neural-cortisol association in cortisol-sensitive brain regions. These findings provide the first piece of evidence that planned behavioral experience can moderate the neural-cortisol association. A range of changes in awareness was achieved in a sample of 21 Chinese participants, divided into two groups: Awareness-based compassion meditation (ABCM) (n=10) and relaxation (n=11). The researchers observed that changes in awareness were significant moderators of hippocampal-cortisol changes. Furthermore, a significant negative association between changes in plasma cortisol level and the resting-state synchrony of the right hippocampal and insular-frontal-operculum regions was observed. These novel findings shed light on the inter-relationships between changes in hippocampal-cortisol levels and changes in awareness and preliminarily identify the neural underpinnings of interventions for cortisol-related abnormal functioning for further study.

Martires, Joanne & Michelle Zeidler. 2015. The value of mindfulness meditation in the treatment of insomnia. *Current Opinion in Pulmonary Medicine* 21(6). 547–552.
doi:10.1097/MCP.0000000000000207.

Insomnia is the most common reported sleep disorder with limited treatment options including pharmacotherapy and cognitive behavioral therapy for insomnia. Pharmacotherapy can be complicated by tolerance and significant side-effects and cognitive behavioral therapy for insomnia providers are limited in number. This article reviews mindfulness meditation as an additional therapy for insomnia. Both mindfulness-based stress reduction (MBSR) and

mindfulness-based therapy for insomnia (MBTI) have been studied in the treatment of insomnia. Randomized controlled studies of MBSR and MBTI have shown overall reduction in sleep latency and total wake time and increase in total sleep time after mindfulness therapy using both patient reported outcome and quantitative measures of sleep. Mindfulness techniques have been shown to be well accepted by patients with long-lasting effects. A three-arm randomized study with MBSR, MBTI, and self-monitoring showed similar improvement in insomnia between the MBSR and MBTI groups, with possibly longer duration of efficacy in the MBTI group. Recent data show that MBTI is also an effective and accepted treatment for insomnia in older patients.

Prince, Patricia, Sandra A. Mitchell, Leslie Wehrlen, Richard Childs, Bipin Savani, Li Yang & Margaret Bevans. 2015. Spiritual Well-Being in Hispanic and Non-Hispanic Survivors of Allogeneic Hematopoietic Stem Cell Transplantation. *Journal of Psychosocial Oncology* 33(6). 635–654.
doi:10.1080/07347332.2015.1082167.

Research suggests that spiritual well-being positively contributes to quality of life during and following cancer treatment. This relationship has not been well-described in ethnically diverse survivors of allogeneic transplantation. This study compares spiritual well-being and quality of life of Hispanic (n=69) and non-Hispanic (n=102) survivors. Hispanic participants were significantly younger and reported significantly greater spiritual well-being than non-Hispanic survivors. Survivors with higher spiritual well-being had significantly better quality of life. Meaning and Peace significantly predicted quality of life. Although Hispanic survivors report greater spiritual well-being, Meaning and Peace, irrespective of ethnicity, have a salutary effect on quality of life.

Rogers, Kim A. & Megan MacDonald. 2015. Therapeutic Yoga: Symptom Management for Multiple Sclerosis. *Journal of Alternative and Complementary Medicine (New York, N.Y.)* 21(11). 655–659.
doi:10.1089/acm.2015.0015.

Multiple sclerosis (MS) is the most common autoimmune inflammatory demyelinating disease of the central nervous system, affecting over 2.3 million people worldwide. According to the National Institute of Neurological Disorders and Stroke, the age of disease onset is typically between 20 and 40 years, with a higher incidence in women. Individuals with MS experience a wide range of symptoms, including declining physical, emotional, and psychological symptoms (e.g., fatigue, imbalance, spasticity, chronic pain, cognitive impairment, bladder and bowel dysfunction, visual and speech impairments, depression, sensory disturbance, and mobility impairment). To date, both the cause and cure for MS remain unknown. In recent years, more individuals with MS have been pursuing alternative methods of treatment to manage symptoms of the disease, including mind-body therapies such as yoga, meditation, breathing, and relaxation techniques. It has been suggested that the practice of yoga may be a safe and effective way of managing symptoms of MS. Therefore, the purpose of this paper is to summarize the most relevant literature on exercise and mind-body modalities to treat MS symptoms and, more specifically, the benefits and potential role of yoga as an alternative treatment of symptom management for individuals with MS.

Salsman, John M., James E. Pustejovsky, Heather S. L. Jim, Alexis R. Munoz, Thomas V. Merluzzi, Login George, Crystal L. Park, et al. 2015. A meta-analytic approach to examining the correlation between religion/spirituality and mental health in cancer. *Cancer* 121(21). 3769–3778.
doi:10.1002/cncr.29350.

Religion and spirituality (R/S) are patient-centered factors and often are resources for managing the emotional sequelae of the cancer experience. Studies investigating the correlation between R/S (e.g., beliefs, experiences, coping) and mental health (e.g., depression, anxiety, well-being) in cancer have used very heterogeneous measures and have produced correspondingly inconsistent results. A meaningful synthesis of these findings has been lacking; thus, the objective of this review was to conduct a meta-analysis of the research on R/S and mental health. Four electronic databases were systematically reviewed, and 2,073 abstracts met initial selection criteria. Reviewer pairs applied standardized coding schemes to extract indices of the correlation between R/S and mental health. In total, 617 effect sizes from 148 eligible studies were synthesized using meta-analytic generalized estimating equations, and

subgroup analyses were performed to examine moderators of effects. The estimated mean correlation (Fisher z) was 0.19, which varied as a function of R/S dimensions: affective R/S ($z=0.38$), behavioral R/S ($z=0.03$), cognitive R/S ($z=0.10$), and 'other' R/S ($z=0.08$). Aggregate, study-level demographic and clinical factors were not predictive of the relation between R/S and mental health. There was little indication of publication or reporting biases. The correlation between R/S and mental health generally was positive. The strength of that correlation was modest and varied as a function of the R/S dimensions and mental health domains assessed. The identification of optimal R/S measures and more sophisticated methodological approaches are needed to advance research.

Sherman, Allen C., Thomas V. Merluzzi, James E. Pustejovsky, Crystal L. Park, Login George, George Fitchett, Heather S. L. Jim, et al. 2015. A meta-analytic review of religious or spiritual involvement and social health among cancer patients. *Cancer* 121(21). 3779–3788.
doi:10.1002/cncr.29352.

Religion and spirituality (R/S) play an important role in the daily lives of many cancer patients. There has been great interest in determining whether R/S factors are related to clinically relevant health outcomes. In this meta-analytic review, the authors examined associations between dimensions of R/S and social health (e.g., social roles and relationships). A systematic search of relevant databases was conducted, and data were extracted by 4 pairs of investigators. Bivariate associations between specific R/S dimensions and social health outcomes were examined in a meta-analysis using a generalized estimating equation approach. In total, 78 independent samples encompassing 14,277 patients were included in the meta-analysis. Social health was significantly associated with overall R/S and with each of the R/S dimensions. Within these dimensions, specific variables tied to social health included spiritual well-being, spiritual struggle, images of God, R/S beliefs, and composite R/S measures. None of the demographic or clinical moderating variables examined were significant. Results suggest that several R/S dimensions are modestly associated with patients' capacity to maintain satisfying social roles and relationships in the context of cancer.

Younge, John O., Rinske A. Gotink, Cristina P. Baena, Jolien W. Roos-Hesselink & Mg Myriam Hunink. 2015. Mind-body practices for patients with cardiac disease: a systematic review and meta-analysis. *European Journal of Preventive Cardiology* 22(11). 1385–1398.
doi:10.1177/2047487314549927.

Due to new treatment modalities in the last decades, a decline in cardiovascular deaths has been observed. There is an emerging field of secondary prevention and behavioral programs with increased interest in the use of mind-body practices. Until now, these have not been established in cardiovascular disease treatment programs. Researchers performed a systematic review and meta-analysis of the available evidence on the effectiveness of mind-body practices for patients with diagnosed cardiac disease. Included were randomized controlled trials (RCTs), published in English, reporting mind-body practices for patients with diagnosed cardiac disease. Two reviewers independently identified studies for inclusion and extracted data on study characteristics, outcomes (Quality of Life, anxiety, depression, physical parameters and exercise tolerance) and quality assessment. The researchers identified 11 unique RCTs with an overall low quality. The studies evaluated mindfulness-based stress reduction, transcendental meditation, progressive muscle relaxation and stress management. Pooled analyses revealed effect sizes of 0.45 for physical quality of life, 0.68 for mental quality of life, 0.61 for depression, 0.52 for anxiety, 0.48 for systolic blood pressure, and 0.36 for diastolic blood pressure.

2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Abdollahi, Abbas & Mansor Abu Talib. 2015. Spirituality Moderates Hopelessness, and Suicidal Ideation among Iranian Depressed Adolescents. *Death Studies* 39(10). 579–583.
doi:10.1080/07481187.2015.1013163.

To examine the moderating role of spirituality between hopelessness, spirituality, and suicidal ideation, 202 Iranian depressed adolescent inpatients completed measures of patient health, suicidal ideation, hopelessness, and core

spiritual experience. Structural equation modelling indicated that depressed inpatients high in hopelessness, but also high in spirituality, had less suicidal ideation than others. These findings reinforce the importance of spirituality as a protective factor against hopelessness and suicidal ideation.

- Batista, Janir Coutinho, Aglecio Luiz Souza, Heloisa Aparecida Ferreira, Fernando Canova & Dora Maria Grassi-Kassisse. 2015. Acute and Chronic Effects of Tantric Yoga Practice on Distress Index. *Journal of Alternative and Complementary Medicine* 21(11). 681–685.
doi:10.1089/acm.2014.0383.

This study was designed to evaluate the acute and chronic effects of yoga practice. Participants were 22 volunteers (7 men and 15 women). Intervention was six weeks of a tantric yoga program (TYP), 50 minutes per session, held twice a week from 8 a.m. to 9 a.m. Data were collected in the first week and at the end of the sixth week of TYP. Salivary cortisol concentration (SCC) was used to measure physiology of distress and to analyze the short- and long-term effects of TYP. Psychological distress was evaluated by applying a specific perceived stress questionnaire (PSQ). SCC decreased 24% after the first and last sessions, showing the short-term effect of yoga. Long-term effects were analyzed by daily rhythm of cortisol production. In the beginning, volunteers showed altered SCC during the day, with nighttime values higher than those at noon. After the TYP, SCC was higher in the morning and decreased during the day, with lower values before sleep. The TYP was also efficient to reduce PSQ scores. Specifically, the irritability, tension, and fatigue domains on the PSQ decreased, as did the fear and anxiety domains.

- Bergen-Cico, Dessa, Rachel Razza & Amy Timmins. 2015. Fostering Self-Regulation Through Curriculum Infusion of Mindful Yoga: A Pilot Study of Efficacy and Feasibility. *Journal of Child and Family Studies* 24(11). 3448–3461.
doi:10.1007/s10826-015-0146-2.

This study examined feasibility and efficacy of curriculum infusion of mindful yoga to foster self-regulation in support of academic performance and health promotion among emerging adolescents. Mindful yoga practices were integrated into 6th grade English Language Arts curricula (n=72 students) while another cohort of students (n=70) served as the active control group. To assess the impact of infused mindful yoga practices, self-regulation was measured using the Adolescent Self-Regulatory Inventory. Data were collected at three time-points across the year. Students who engaged in mindful yoga demonstrated significant increases in both global and long-term self-regulation compared to the control cohort; however, there were no significant changes in short-term self-regulation. Implications for integrating mindful practices into middle school curriculum are discussed with recommendations for future research.

- Buttram, Mance E. 2015. The social environmental elements of resilience among vulnerable African American/Black men who have sex with men. *Journal of Human Behavior in the Social Environment* 25(8). 923–933.
doi:10.1080/10911359.2015.1040908.

Resilience theory has been suggested as a strong framework for research on HIV prevention among men who have sex with men (MSM). Among this population, literature indicates that African American/Black MSM are particularly vulnerable to health and social disparities associated with HIV transmission risk. Conceptualizing resilience as a part of one's social environment, this qualitative study investigates the specific elements of resilience, and the associated contexts and relationships, among a sample of 21 substance-using African American/Black MSM. Data indicate that (1) elements contributing to resilience are multiple and co-occurring, including inner strengths, social relationships, diversity of experience, religion/spirituality, altruism, and creativity; (2) as an element of resilience, social support was experienced differently among men who did and did not have supportive relationships with other gay and bisexual men, which has implications for social service provision and intervention approaches; and (3) diversity of experiences and relationships is an important influencing factor on expressions of resilience. Social services or interventions that facilitate the development of these elements of resilience will likely be especially beneficial for vulnerable African American/Black MSM.

Gibbons, Jeffrey A., Jennifer K. Hartzler, Andrew W. Hartzler, Sherman A. Lee & W. Richard Walker. 2015. The Fading Affect Bias shows healthy coping at the general level, but not the specific level for religious variables across religious and non-religious events. *Consciousness and Cognition* 36. 265–276.

doi:10.1016/j.concog.2015.07.004.

The research on fading emotions has shown that unpleasant emotions fade more over time than pleasant emotions, which is a phenomenon referred to as the Fading Affect Bias (FAB). Based on the negative relation between the FAB and dysphoria, some researchers have argued that the FAB is a healthy coping mechanism. As religious variables are related to positive emotions and emotional coping, researchers examined the FAB as a healthy coping mechanism at the general and specific levels of analysis in the context of religion. General healthy coping was supported by (1) FAB effects across both religious events (REs) and non-religious events (NREs) and (2) a positive relation for spirituality and the FAB. However, specific healthy coping was not supported by a small FAB for (1) REs at high levels of positive religious coping (PRC) for NREs, (2) NREs at low levels of PRC for NREs, and (3) purely REs relative to REs involving spirituality.

Hecker, Tobias, Lars Braitmayer & Marjolein van Duijl. 2015. Global mental health and trauma exposure: the current evidence for the relationship between traumatic experiences and spirit possession. *European Journal of Psychotraumatology* 6. 29126.

Researchers present a literature review on trauma exposure and spirit possession in low- and middle-income countries (LMICs). Despite the World Health Organization's objective of culturally appropriate mental health care in the Mental Health Action Plan 2013-2020, and the recommendations of the Inter-Agency Standing Committee to consider local idioms of distress and to collaborate with local resources, this topic still receives very little attention. Pathological spirit possession is commonly defined as involuntary, uncontrollable, and occurring outside of ritual settings. It is often associated with stigmatization, suffering, and dysfunctional behavior. While spirit possession has been discussed as an idiom of distress in anthropological literature, recent quantitative studies have presented support for a strong relationship between traumatic experiences and pathological possession states. The aim of this review was to investigate this relationship systematically in LMICs, in view of the debate on how to address the mental health gap in LMICs. Twenty-one articles, published in peer-reviewed English-language journals between 1994 and 2013, were identified and analyzed with regard to prevalence of possessive trance disorders, patients' sociodemographic characteristics, and its relation to traumatic experiences. The review and analysis of 917 patients with symptoms of possessive trance disorders from 14 LMICs indicated that it is a phenomenon occurring worldwide and with global relevance. This literature review suggests a strong relationship between trauma exposure and spirit possession with high prevalence rates found especially in postwar areas in African countries.

Johnson, Jill R., Henry C. Emmons, Rachael L. Rivard, Kristen H. Griffin & Jeffery A. Dusek. 2015. Resilience Training: A Pilot Study of a Mindfulness-Based Program with Depressed Healthcare Professionals. *Explore (New York, N.Y.)* 11(6). 433–444.

doi:10.1016/j.explore.2015.08.002.

Mindfulness-based programs have been primarily used to target anxiety or the prevention of relapse in recurrent depression; however, limited research has been conducted on the use of mindfulness programs for relief of current depressive symptoms. To investigate the potential effect of resilience training (RT) on symptom relief for current or recurrent depression, and other psychological/behavioral outcomes. Participants were 40 actively working healthcare professionals age 18-65 years. RT is an eight-week mindfulness-based program that synergizes elements of mindfulness meditation with nutrition and exercise. The first 20 consecutive individuals meeting all eligibility criteria were assigned to the RT group. The next 20 consecutive eligible individuals were placed into the wait-list control group and had an eight-week waiting period before starting the RT program. Psychological/behavioral outcomes were measured before and after completion of the RT program and two months after completion. The RT group

exhibited a 63-70% reduction in depression, a 48% reduction in stress, a 23% reduction in trait anxiety, and a 52% reduction in “presenteeism” (a per-employee savings of \$1,846 over the eight-week program). All outcomes were statistically significantly different from the wait-list group. Most improvements persisted up to two months after completion of the RT program.

- Johnston, Jennifer M., Takuya Minami, Deborah Greenwald, Chieh Li, Kristen Reinhardt & Sat Bir S. Khalsa. 2015. Yoga for military service personnel with PTSD: A single arm study. *Psychological Trauma: Theory, Research, Practice, and Policy* 7(6). 555–562.
doi:10.1037/tra0000051.

This study evaluated the effects of yoga on posttraumatic stress disorder (PTSD) symptoms, resilience, and mindfulness in military personnel. Participants completing the yoga intervention were 12 current or former military personnel who met diagnostic criteria for PTSD. Results were also benchmarked against other military intervention studies of PTSD using the Clinician Administered PTSD Scale as an outcome measure. Results of within-subject analyses supported the study’s primary hypothesis that yoga would reduce PTSD symptoms but did not support the hypothesis that yoga would significantly increase mindfulness and resilience in this population. Benchmarking results indicated that, as compared with the aggregated treatment benchmark obtained from published clinical trials, the current study’s treatment effect was visibly lower, and compared with the waitlist control benchmark, the treatment effect in the current study was visibly higher.

- Jordanova, Vesna, Mike J. Crawford, Sally McManus, Paul Bebbington & Traolach Brugha. 2015. Religious discrimination and common mental disorders in England: A nationally representative population-based study. *Social Psychiatry and Psychiatric Epidemiology* 50(11). 1723–1729.
doi:10.1007/s00127-015-1110-6.

Although the impact of discrimination on mental health has been increasingly discussed, the effect of religious discrimination has not been examined systematically. Researchers studied the prevalence of perceived religious discrimination and its association with common mental disorders in a nationally representative population-based sample in England. Data from the Adult Psychiatric Morbidity Survey 2007 was used, representing all adults age 16 years and over living in private households in England. Common mental disorders were ascertained using the Revised Clinical Interview Schedule. Experience of discrimination was assessed by a computer-assisted self-report questionnaire and potential paranoid traits by the Psychosis Screening Questionnaire. From the total of 7,318 participants, 3873 (52.4 %) reported adhering to religion. 108 subjects (1.5 %) reported being unfairly treated in the past 12 months due to their religion. Non-Christian religious groups were more likely to report perceived religious discrimination compared to Christians. People who experienced religious discrimination had increased prevalence of all common mental disorders. There was a two-fold increase in the risk of common mental disorders among people who reported experience of religious discrimination independent of their ethnicity, skin color or suspected paranoid traits.

- Jun, Jung Sim, Kyoung Hag Lee & Brien L. Bolin. 2015. Stress and Spirituality on the Depressive Symptoms of Older Adults in Assisted Living: Gender Differences. *Journal of Evidence-Informed Social Work* 12(6). 588–600.
doi:10.1080/15433714.2014.966229.

In this study the authors explore the effects of stress and spirituality on the depressive symptoms of 92 older adult men and 224 older adult women who reside in assisted living facilities. Hierarchical regression reveals that stress was related to increases in depressive symptoms. The stress of women was more strongly associated with depressive symptoms than found among men. In contrast, spiritual coping was associated with a decrease in depressive symptoms among all older adults in assisted living. The spiritual coping of older adult women was not a significant predictor of decreased depressive symptoms. Through this study the authors support the use of spiritual interventions to alleviate depressive symptoms experienced by older adults in assisted living.

Kallapiran, Kannan, Siew Koo, Richard Kirubakaran & Karen Hancock. 2015. Review: Effectiveness of mindfulness in improving mental health symptoms of children and adolescents: a meta-analysis. *Child and Adolescent Mental Health* 20(4). 182–194.
doi:10.1111/camh.12113.

Mindfulness-based interventions (MBIs) are increasingly used in the management of various mental health disorders in children and adolescents. However, there is limited evidence about the efficacy of various interventions used. A systematic review was performed to examine the effects of different MBIs on mental health symptoms and quality of life in both clinical and nonclinical samples of children and adolescents using data from only randomized control trials. The studies were also assessed for quality. Based on the type of MBI, study population, and control arm, researchers had three comparisons for meta-analyses. Fifteen studies were included in the qualitative analysis but only 11 trials with comparable interventions and controls were included for meta-analyses. Mindfulness-based stress reduction/mindfulness-based cognitive therapy arm was more effective than non-active control in the nonclinical populations. Acceptance commitment therapy was comparable to active treatments in patients in the clinical range. Other MBIs were also effective improving anxiety and stress but not depression in nonclinical populations compared to non-active control.

Koenig, Harold G., Michelle J. Pearce, Bruce Nelson & Noha Daher. 2015. Effects of Religious Versus Standard Cognitive-Behavioral Therapy On Optimism in Persons with Major Depression and Chronic Medical Illness. *Depression and Anxiety* 32(11). 835–842.
doi:10.1002/da.22398.

Researchers compared the effectiveness of religiously integrated cognitive behavioral therapy (RCBT) versus standard CBT (SCBT) on increasing optimism in persons with major depressive disorder (MDD) and chronic medical illness. Participants aged 18-85 were randomized to either RCBT (n=65) or SCBT (n=67) to receive ten 50-min sessions remotely (94% by telephone) over 12 weeks. Optimism was assessed at baseline, 12 and 24 weeks by the Life Orientation Test-Revised. Religiosity was assessed at baseline using a 29-item scale composed of religious importance, individual religious practices, intrinsic religiosity, and daily spiritual experiences. Mixed effects growth curve models were used to compare the effects of treatment group on trajectory of change in optimism. In the intention-to-treat analysis, both RCBT and SCBT increased optimism over time, although there was no significant difference between treatment groups. Analyses in the highly religious and in the per protocol analysis indicated similar results. Higher baseline religiosity predicted an increase in optimism over time, and higher baseline optimism predicted a faster decline in depressive symptoms over time, both independent of treatment group. RCBT and SCBT are equally effective in increasing optimism in persons with MDD and chronic medical illness. While baseline religiosity does not moderate this effect, religiosity predicts increases in optimism over time independent of treatment group.

Mitchell, Melanie & Gary Heads. 2015. Staying Well: A Follow Up of a 5-Week Mindfulness Based Stress Reduction Programme for a Range of Psychological Issues. *Community Mental Health Journal* 51(8). 897–902.
doi:10.1007/s10597-014-9825-5.

For this study, 112 women and 37 men, with an average age of 50 years, were referred for MBSR training with a range of chronic psychological issues. All participants completed the Warwick-Edinburgh Mental Wellbeing Scale before and after the mindfulness training program. A significant overall effect of pre/post training was found and this difference was not related to a specific disorder. The results suggest that a “brief” dose of MBSR can have a positive impact on measures of well-being in a manner that is not related to patient characteristics. A follow-up of 28 participants confirms that participation in the 5-week Living Mindfully MBSR program significantly enhances psychological well-being immediately after training, and this benefit is maintained up to 4 years after training. Continued practice in mindfulness meditation showed an insignificant relationship to well-being scores at follow up.

Qualitative data suggest that the 5 week MBSR is an effective means of developing emotion regulation and psychological well-being.

2.3 SPIRITUALITY & HEALTH: METHOD AND THEORY

Best, Megan, Phyllis Butow & Ian Olver. 2015. Do patients want doctors to talk about spirituality? A systematic literature review. *Patient Education and Counseling* 98(11). 1320–1328. doi:10.1016/j.pec.2015.04.017.

The aim of this systematic literature review was to ascertain the patient perspective regarding the role of the doctor in the discussion of spirituality. Researchers conducted a systematic search in ten databases on original research including patient reports of discussion of spirituality in a medical consultation. Following the search, 54 studies comprising 12,327 patients were included. In the majority of studies over half the sample thought it was appropriate for the doctor to enquire about spiritual needs in at least some circumstances, but patient preferences were not straightforward. The authors conclude that, while a majority of patients express interest in discussion of religion and spirituality in medical consultations, there is a mismatch in perception between patients and doctors regarding what constitutes this discussion and therefore whether it has taken place.

Camargos, Mayara Goulart de, Carlos Eduardo Paiva, Eliane Marçon Barroso, Estela Cristina Carneseca & Bianca Sakamoto Ribeiro Paiva. 2015. Understanding the Differences Between Oncology Patients and Oncology Health Professionals Concerning Spirituality/Religiosity: A Cross-Sectional Study. *Medicine* 94(47). e2145. doi:10.1097/MD.0000000000002145.

This study investigated whether spirituality/religiosity (S/R) plays an important role in the lives of cancer patients and in the work of health professionals who provide care for these patients. The correlations between spiritual quality of life (QOL) and the other QOL domain scores of patients and health professionals were also assessed. Moreover, QOL domain scores were compared between patients and health professionals. In this cross-sectional study, 1050 participants (525 oncology patients and 525 health professionals) were interviewed. Quality of life was assessed with the World Health Organization quality of life spiritual, religious, and personal beliefs (WHOQOL-SRPB). To compare the groups with respect to the instruments' domains, a quantile regression and an analysis of covariance model were used. The WHOQOL-Bref and WHOQOL-SRPB domains were correlated by performing Pearson and partial correlation tests. It was demonstrated that 94.1% of patients considered it important that health professionals addressed their spiritual beliefs, and 99.2% of patients relied on S/R to face cancer. Approximately, 99.6% of the patients reported that S/R support is necessary during cancer treatment; 98.3% of health professionals agreed that spiritual and religious support was necessary for oncology patients. Positive correlations between spiritual QOL and the other QOL domains were observed. When compared among themselves, patients exhibited significantly higher levels of spiritual QOL. In conclusion, S/R was an important construct in the minds of cancer patients and health professionals. Both groups often use S/R resources in their daily lives, which seems to positively affect their perceptions of QOL.

Epstein-Peterson, Zachary D., Adam J. Sullivan, Andrea C. Enzinger, Kelly M. Trevino, Angelika A. Zollfrank, Michael J. Balboni, Tyler J. VanderWeele & Tracy A. Balboni. 2015. Examining Forms of Spiritual Care Provided in the Advanced Cancer Setting. *American Journal of Hospice & Palliative Medicine* 32(7). 750–757. doi:10.1177/1049909114540318.

Spiritual care (SC) is important to the care of seriously ill patients. Few studies have examined types of SC provided and their perceived impact. This study surveyed patients with advanced cancer (n=75) and oncology nurses and physicians (n=339). Frequency and perceived impact of eight SC types were assessed. Spiritual care is infrequently provided, with encouraging or affirming beliefs the most common type (20%). Spiritual history taking and chaplaincy

referrals comprised 10% and 16%, respectively. Most patients viewed each SC type positively, and SC training predicted provision of many SC types. In conclusion, SC is infrequent, and core elements of SC spiritual history taking and chaplaincy referrals represent a minority of SC. Spiritual care training predicts provision of SC, indicating its importance to advancing SC in the clinical setting.

Eriksen, Christine & Tamara Ditrich. 2015. The relevance of mindfulness practice for trauma-exposed disaster researchers. *Emotion, Space and Society* 17. 63–69.
doi:10.1016/j.emospa.2015.07.004.

This paper aims to raise awareness of vicarious trauma amongst disaster researchers, and suggests ways to prevent vicarious traumatization from happening and/or reaching incapacitating levels. The paper examines the potential of mindfulness practice, grounded in Buddhist meditation, as a set of contemplation tools through which optimal level of functionality can be maintained or restored. The relevance of the emphasis in mindfulness on understanding suffering, non-attachment, non-judgement, and full participation in the present moment are related to the context of disaster research. The paper demonstrates the potential for increased researcher resilience through acknowledgement and understanding of impermanence, as well as skillful observation of external and internal phenomena in trauma without forming attachment to the pain and suffering.

Gomez-Castillo, Blanca J., Rosemarie Hirsch, Hunter Groninger, Karen Baker, M. Jennifer Cheng, Jayne Phillips, John Pollack & Ann M. Berger. 2015. Increasing the Number of Outpatients Receiving Spiritual Assessment: A Pain and Palliative Care Service Quality Improvement Project. *Journal of Pain and Symptom Management* 50(5). 724–729.
doi:10.1016/j.jpainsymman.2015.05.012.

Spirituality is a patient need that requires special attention from the Pain and Palliative Care Service team. This quality improvement project aimed to provide spiritual assessment for all new outpatients with serious life-altering illnesses. Measures were the percentage of new outpatients receiving spiritual assessment (Faith, Importance/Influence, Community, Address/Action in care, psychosocial evaluation, chaplain consults) at baseline and following intervention. The interventions included encouraging clinicians to incorporate adequate spiritual assessment into patient care and implementing chaplain co-visits for all initial outpatient visits. Following intervention, it was found that the quality improvement interventions increased spiritual assessment (baseline vs. post-interventions): chaplain co-visits (25.5% vs. 50%), Faith, Importance/Influence, Community, Address/Action in care completion (49% vs. 72%), and psychosocial evaluation (89% vs. 94%).

Gorski, Paul C. 2015. Relieving burnout and the “martyr syndrome” among social justice education activists: The implications and effects of mindfulness. *Urban Review* 47(4). 696–716.
doi:10.1007/s11256-015-0330-0.

Activist burnout, which causes activists to disengage from their activism, is a formidable barrier to the sustainability of social justice movements, including those focused on social justice in educational contexts. However, the cultures of these movements often disregard the importance of self-care, seeing it as self-indulgence, putting activists at even higher risks of burnout. In this study, one of the first to assess the impact of specific self-care strategies on activist burnout, data from interviews with 14 social justice education activists are analyzed in order to uncover how they used mindfulness practices such as yoga, tai-chi, and meditation to cope with burnout. The analysis revealed a variety of ways in which mindfulness mitigated their burnout experiences. It revealed, as well, a shared perception that, beyond helping to sustain their activism, mindfulness made them more effective activists.

Kaur, Devinder, Murali Sambasivan & Naresh Kumar. 2015. Impact of emotional intelligence and spiritual intelligence on the caring behavior of nurses: a dimension-level exploratory study among public hospitals in Malaysia. *Applied Nursing Research* 28(4). 293–298.
doi:10.1016/j.apnr.2015.01.006.

The purpose of this research is to study the impact of individual factors such as emotional intelligence (EI) and spiritual intelligence (SI) on the caring behavior of nurses. A cross-sectional survey using questionnaire was conducted by sampling 550 nurses working in seven major public hospitals in Malaysia. Data were analyzed using structural equation modeling (SEM). The main findings are: (1) critical existential thinking and transcendental awareness dimensions of SI have significant impacts on assurance of human presence dimension of caring behavior; (2) personal meaning production and conscious state expansion dimensions of SI have significant impacts on perception of emotion and managing own emotions dimensions of EI; and (3) managing own emotions dimension of EI has significant impacts on respectful deference to other and assurance of human presence dimensions of caring behavior of nurses.

Kligler, Benjamin, Michele Buonora, Jonathan Gabison, Emilie Jacobs, Alison Karasz & M. Diane McKee. 2015. "I Felt Like It Was God's Hands Putting the Needles In": A Qualitative Analysis of the Experience of Acupuncture for Chronic Pain in a Low-Income, Ethnically Diverse, and Medically Underserved Patient Population. *Journal of Alternative and Complementary Medicine* 21(11). 713–719.
doi:10.1089/acm.2014.0376.

The objective of this research was to examine the experience of patients from a low-income, ethnically diverse medically underserved population receiving acupuncture for chronic pain. Participants were 37 adults with chronic neck or back pain or osteoarthritis who participated in a previous acupuncture trial. Intervention in this research was up to 14 weekly acupuncture treatments. The themes grouped naturally into three domains of the acupuncture experience: the decision-making process, the treatment experience, and the effect of acupuncture on health. Regarding decision-making, important factors were a willingness to try something new even if you do not necessarily believe in it or have specifically positive expectations; a sense that medications were not working for their pain, that they also caused significant adverse effects, and that natural strategies might be preferable; and a feeling of desperation. Cost and access were significant barriers to acupuncture treatment. Regarding the process of acupuncture, the open and personal communication with the acupuncturist was an important factor, as were the sense that the process of acupuncture related to a natural process of healing or correction within the body and that part of making acupuncture successful required being open to the power of the mind to generate a positive outcome. Regarding the effect of treatment, notable aspects were the deep sense of rest and relaxation participants reported during treatment as well as the benefit they experienced for conditions other than pain.

Shipherd, Jillian C. & Joanne M. Fordiani. 2015. The Application of Mindfulness in Coping with Intrusive Thoughts. *Cognitive and Behavioral Practice* 22(4). 439–446.
doi:10.1016/j.cbpra.2014.06.001.

Across a variety of disorders, clients present with clinically significant intrusive thoughts. These thoughts can be problematic in their own right, with many clients reporting difficulty focusing on other therapeutic interventions due to problems with attention and increased distress that often accompany the experience of intrusive thoughts. Thus, cognitive-behavioral therapists can find value in learning thought management strategies that can be used with a variety of clients. Despite the increase in attention within the scientific literature and popular media on mindfulness-based interventions, many clinicians are unaware that it is possible to bring these skills into therapy as an adjunct to ongoing cognitive behavioral therapy (CBT). Thus, researchers provide an overview of how to teach brief mindfulness skills (5-10 minute trainings). Video segments will teach how to introduce these skills to clients, as well as highlight three skills that have been found to be particularly useful for coping with intrusive thoughts: observation of thoughts; nonjudgment of thoughts; and being larger than your thoughts. The benefits and challenges of using these skills will also be discussed.

Sinclair, Shane, Shelagh McConnell, Shelley Raffin Bouchal, Naree Ager, Reanne Booker, Bert Enns & Tak Fung. 2015. Patient and healthcare perspectives on the importance and efficacy of

addressing spiritual issues within an interdisciplinary bone marrow transplant clinic: A qualitative study. *BMJ Open* 5(11). e009392.
doi:10.1136/bmjopen-2015-009392.

The purpose of this study was to use a qualitative approach to better understand the importance and efficacy of addressing spiritual issues within an interdisciplinary bone marrow transplant clinic from the perspectives of patients and healthcare providers. Participants were recruited from the bone marrow transplant clinic of a large urban outpatient cancer care center in western Canada. Focus groups were conducted with patients (n=7) and healthcare providers (n=9) to explore the importance of addressing spiritual issues across the treatment trajectory and to identify factors associated with effectively addressing these needs. Data were analyzed using the qualitative approach of latent content analysis. Addressing spiritual issues was understood by patients and healthcare providers, as a core, yet under addressed, component of comprehensive care. Both sets of participants felt that addressing basic spiritual issues was the responsibility of all members of the interdisciplinary team, while recognizing the need for specialized and embedded support from a spiritual care professional. While healthcare providers felt that the impact of the illness and treatment had a negative effect on patients' spiritual well-being, patients felt the opposite. Skills, challenges, key time points and clinical indicators associated with addressing spiritual issues were identified. Despite a number of conceptual and clinical challenges associated with addressing spiritual issues patients and their healthcare providers emphasized the importance of an integrated approach whereby basic spiritual issues are addressed by members of the interdisciplinary team and by an embedded spiritual care professional, who in addition also provides specialized support. The identification of clinical issues associated with addressing spiritual needs provides healthcare providers with clinical guidance on how to better integrate this aspect of care into their clinical practice, while also identifying acute incidences when a more targeted and specialized approach may be of benefit.

Skipper, Tara, Analise O'Donovan, Elizabeth Conlon & Bonnie Clough. 2015. An examination of the factor structure of the Effects of Meditation scale. *Personality and Individual Differences* 86. 57–62.
doi:10.1016/j.paid.2015.06.007.

Researchers examined the reliability and validity of the Effects of Meditation (EOM) scale, which measures Experiences During Meditation (EOM-DM) and the Effects of Meditation in Everyday Life (EOM-EL). Adult meditators (n=254) completed questionnaires on the effects of meditation, compassion towards self and others, flow, satisfaction with life, and psychological distress. Confirmatory factor analysis was used to assess the factor structure and reliability of the EOM scales. A shortened 18-item version of the EOM-DM scale replicated the five-factor structure of the original 29-item scale. The seven-factor structure of the EOM-EL was not confirmed, with data revealing a single-factor scale. Validity of the scales was demonstrated by showing that individuals reporting greater cognitive, mystical and fewer negative emotions during meditation reported greater self-compassion, flow and less psychological distress and more benefits from meditation in everyday life than individuals less engaged during meditation.

Sleeboom-Faulkner, Margaret. 2015. Translating “Asian” Modes of Healing and Biomedicine. *Medical Anthropology* 34(6). 572–585.
doi:10.1080/01459740.2015.1092442.

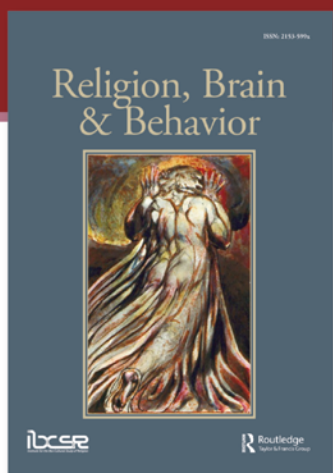
This review article discusses the “translation of Asian modes of healing and medicine” in six recently published books by raising seven questions. They serve both to review the volumes and to ask how researchers have moved from understanding systems of healing in terms of tradition and modernity, science and non-science, globalization and locality, innovation and cultural heritage, to translating them in terms of assemblages, products, modes of resistance, social (dis-)harmony, and ecological balance. The questions span subjects ranging from the meaning of “Asian” in Asian modes of healing, the object of healing and classifications of systems of healing to their relation with “biomedicine,” modernization and the state, the extents to which communities share healing tradition, and their existential meaning in context.

Tornøe, Kirsten Anne, Lars Johan Danbolt, Kari Kvigne & Venke Sørli. 2015. The challenge of consolation: Nurses' experiences with spiritual and existential care for the dying. A phenomenological hermeneutical study. *BMC nursing* 14. 62.
doi:10.1186/s12912-015-0114-6.

A majority of people in Western Europe and the USA die in hospitals. Spiritual and existential care is seen to be an integral component of holistic, compassionate and comprehensive palliative care. Yet, several studies show that many nurses are anxious and uncertain about engaging in spiritual and existential care for the dying. The aim of this study is to describe nurses' experiences with spiritual and existential care for dying patients in a general hospital. Individual narrative interviews were conducted with nurses in a medical and oncological ward. Data were analyzed using a phenomenological hermeneutical method. Analysis of results indicated that the nurse participants felt that it was challenging to uncover dying patients' spiritual and existential suffering, because it usually emerged as elusive entanglements of physical, emotional, relational, spiritual and existential pain. The nurses' spiritual and existential care interventions were aimed at facilitating a peaceful and harmonious death. The nurses strove to help patients accept dying, settle practical affairs and achieve reconciliation with their past, their loved ones, and with God. The nurses experienced that they had been able to convey consolation when they had managed to help patients to find peace and reconciliation in the final stages of dying. This was experienced as rewarding and fulfilling. The nurses experienced that it was emotionally challenging to be unable to relieve dying patients' spiritual and existential anguish, because it activated feelings of professional helplessness and shortcomings. The authors conclude that, although spiritual and existential suffering at the end of life cannot be totally alleviated, nurses may ease some of the existential and spiritual loneliness of dying by standing with their patients in their suffering.

Vlasblom, Jan P., Jenny T. van der Steen, Martin N. Walton & H. Jochemsen. 2015. Effects of Nurses' Screening of Spiritual Needs of Hospitalized Patients on Consultation and Perceived Nurses' Support and Patients' Spiritual Well-being. *Holistic Nursing Practice* 29(6). 346–356.
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There is an undeniable relationship between spirituality and health, and taking a spiritual history is a simple way to increase the focus on spiritual care. This is a pre/posttest intervention study. Questionnaires were administered before implementation of a spiritual assessment (pretest, n=106), and afterward (posttest, n=103). Despite a difficult implementation process, the number of consultation requests for the Department of Spiritual and Pastoral Care increased from 2 in the pretest period to 33 in the posttest period. After adjusting for patient characteristics, researchers found no differences between pretest and posttest measurements on the FACIT-Sp-12 total score or nurses' support regarding dealing with illness. A significant decrease on the subscale Faith of the FACIT-Sp-12 and on nurses' support regarding questions about purpose and meaning (97%-83%) was found, however. In conclusion, taking a spiritual history may contribute to the spiritual care of patients in a general hospital in the shape of more frequent referrals to the spiritual caregiver (chaplain), but further research is needed to determine whether this also means that nurses provide less spiritual care.



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