Religious Service Attendance and Implications for Clinical Care, Community Participation and Public Health

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Abstract. We review the evidence concerning associations between religious service attendance and subsequent health and well-being outcomes. The evidence-base for a link between religious service attendance and health has increased substantially over the past two decades. The interpretation and implications of this research require careful consideration. It would be inappropriate to universally promote service attendance solely on the grounds of the associations with health. Nevertheless, a more nuanced approach, both within clinical care and within public health, may be possible - one that encouraged participation in religious community for those who already positively self-identified with a religious or spiritual tradition, and encouraged other forms of community participation for those who did not. Discussion is given to potential future research directions, and the challenges and opportunities for public health community promotion efforts.

Key Words: Religious service attendance; community; social support; spirituality; mental health; randomized encouragement trial

Introduction

Religious and spiritual traditions have, for millennia, provided practices, rituals, services and communities wherein individuals come together to make sense of life, support one another, and seek the transcendent. Increasingly rigorous research indicates that religious service attendance is associated with a number of important health and well-being outcomes. (1-8) Aksoy et al. (9) contribute further to this literature and raise the challenging question of the implications of such research for public health. In this commentary, we summarize some of the existing
evidence for associations between service attendance and health, and discuss clinical and public health implications, future research directions, and the challenges and opportunities for public health community promotion efforts.

The Evidence

Over the past decades, the evidence has become increasingly strong for effects of religious service attendance on health.(1-8) Much of the early research on this connection was methodologically weak, employing cross-sectional data which is insufficient to discern the direction of causation. With such cross-sectional data, concerns about reverse causation – whether religious participation promotes health, or whether it is only the healthy who can attend services – cannot be addressed. For example, while service attendance may protect against depression, there is also evidence that those who become depressed are more likely to stop attending services, but these cannot be distinguished with cross-sectional data.(10-12)

However, increasingly sophisticated research designs using longitudinal data with control for baseline physical and mental health outcomes have been used to address these methodological challenges. Analyses of major epidemiologic cohorts, with sample sizes in the tens-of-thousands, have examined these relationships and suggested service attendance is associated with reduced all-cause mortality rates (6,8,13-18). Such analyses, now also including those of Aksoy et al., likewise suggest evidence for similar beneficial effects concerning psychological distress and mental well-being.(7-9,11,19-21). Meta-analytic estimates from rigorous longitudinal studies indicate a 27% (95%CI:16%-37%) reduction in all-cause mortality
risk(6) and a roughly 33% (95%CI:19%-42%) reduction in the odds of subsequent depression(7,19) for those attending services at least weekly versus not at all.

While many of these studies control for baseline physical and mental health and for numerous other social, demographic, and economic variables, unmeasured confounding is always a possibility. However sensitivity analyses(22) indicate that to explain away the meta-analytic estimate for mortality, an unmeasured confounder associated with both increased attendance and reduced mortality by risk-ratios of 2.08-fold each, above and beyond the measured covariates, could suffice, but weaker confounding could not. Such strong unmeasured confounding, above and beyond everything already controlled for, seems unlikely given the few risk factors that approach this degree of effect. Likewise, even to shift the confidence interval for the mortality estimate to include within it the possibility of no effect, unmeasured confounding risk-ratios for increased attendance and reduced mortality of 1.67-fold each could suffice, but weaker confounding could not. Likewise, fairly similarly strong confounding would be needed to explain away the estimates for depression.(19)

Other longitudinal studies with control for baseline confounders and outcomes have likewise indicated evidence for effects of religious service attendance on better outcomes for suicide, smoking, substance use disorders, cancer and cardiovascular disease survival, divorce, social support, meaning and purpose, life satisfaction, charitable giving, volunteering, and civic engagement.(1-5,8,9,16,20,23-30) In some cases, the more rigorous longitudinal evidence comes from only a few studies and is not yet suitable for meta-analytic synthesis.(3,31) The evidence-base for such outcomes, although not yet as definitive as for all-cause mortality and depression, is nevertheless rapidly expanding.
The studies to date indicate that it is the social or communal aspects of religion that have especially powerful associations with health and well-being. The most robust evidence concerning longitudinal associations with health arises when considering religious service attendance as the exposure - rather than private religious practices, affiliation, or self-assessed religiosity or spirituality. Analyses have found inconsistent associations with these other religious/spiritual variables, with effect size estimates considerably smaller.\(^3,6,17,21,32\) Such was also the case in the study of Aksoy et al.\(^9\) in which service attendance was robustly associated with mental well-being, but the associations with religious importance and affiliation were more mixed and depended in part on minority religious status. For religious service attendance, however, the evidence for an effect on many outcomes is now relatively strong.

This body of research on religion and health prompts further consideration of potential clinical and public health implications.

**Implications for Clinical Care and Individual Community Involvement**

The clinical implications of this research should not be interpreted as leading to a universal “prescription” of religious service attendance, which Aksoy et al.\(^9\) note would be inappropriate. People’s religious commitments are generally not shaped by concerns of health, but rather by values, experiences, relationships, truth claims, evidence and systems of meaning. On the other hand, however, individuals who already positively self-identify with a religious
tradition may welcome and benefit from discussions about, and even encouragement towards, religious community participation.

In determining whether such discussions might be appropriate, clinicians could potentially pose neutral questions such as, “Are religion or spirituality important to you in thinking about health and illness, or at other times?” and “Do you have, or would you like to have, someone to talk to about religious or spiritual matters?” Longer spiritual history assessments are also available, but require more time. However, the simple questions above could be integrated into a social history, and can be asked even if the clinician and patient view religious matters very differently. For patients who positively identify with a religious or spiritual tradition, clinicians could also inquire about and even encourage communal involvement, when appropriate. For patients without such beliefs and affiliations, other forms of community involvement could likewise be encouraged.

Such conversations within clinical care must also be sensitive to those who may have suffered past negative experiences or even abuse from religious communities. The relatively neutral questions above may help uncover such painful past experiences which can then prompt empathy, support, and referrals to appropriate specialists.

Both anecdotal evidence and studies of patient experience suggest that when these issues are handled in a patient-centered fashion, raising questions of religion or spirituality within the clinical context can be nearly universally positive. Moreover, it is desired by a large proportion of patients. For the roughly half of all Americans who report a religious affiliation but do not participate in a community, such discussions of religious community may be appropriate and help promote health.
This more sensitive nuanced approach is not a universal prescription, but rather respects and encourages other forms of community participation for those who do not self-identify as religious. This approach also helps address prior objections about such discussions (40,41) concerning clinicians and patients having different beliefs, the topic being too sensitive, the instrumentalizing of religion, lack of clinician training, and concerns about proselytization and abuse of power. The two neutral questions above can be posed without the clinician and patient sharing the same beliefs; referrals to a chaplain can be made as appropriate. While matters of religion/spirituality can be sensitive, so too are other topics in clinical settings, such as sexual behaviors and mental health issues. Rather than instrumentalizing religion, the approach above acknowledges that religious commitments are typically shaped by concerns other than health but also recognizes that, with respect to communal participation for those who already positively self-identify with a religious tradition, there will generally be consonance between health-related, social, and spiritual ends.

Lack of clinician training certainly does require attention as prior training in spiritual care is one of the strongest predictors of clinicians providing such care. (37) While many medical schools now offer electives in spiritual care (42), this is not likely sufficient as few participate. As part of the core curriculum, a one-session training module that reviews neutral spiritual-assessment questions in the context of existing epidemiologic evidence may more powerfully facilitate an approach to raising issues of service attendance and other forms of community participation within clinical contexts.

For those still not convinced, one might also turn the question around: given the strength of the evidence on service attendance and health, are we doing harm if this information is withheld? A sensible approach to navigating these challenging issues within medicine is
possible. It is perhaps time that clinical practice start taking these issues seriously and wrestle with the implications.

**Implications for Public Health and Community Health Promotion Activities**

The challenges concerning the implications of the service attendance research are perhaps yet greater still when considering community public health promotion activities. If outreach efforts are made at the community level, it may no longer be possible to have the more nuanced assessment concerning an individual’s specific religious affiliation or lack thereof, or to be sufficiently attentive to past abuse in religious settings.

Various alternative approaches could include more targeted tradition-specific promotion activities. Materials could be tailored to each specific religious tradition, describing the research on service attendance, noting the theological understanding of the importance of community within that tradition, listing local communities inviting participation, and ideally also offering resources or contact information for those who have experienced abuse within religious contexts.(3) Such promotional material could be sent to lists of those who have previously indicated a particular religious affiliation.

Other efforts to promote community participation more broadly might also be pursued wherein the health benefits of community participation could be put forward, with a list of local community opportunities provided, including, but not restricted to, religious service attendance.

While such efforts in the United States at present are limited, the practice of “social prescribing” saw dramatic increase in clinical and public health contexts within the United Kingdom over a few short years.(43) Neglect of these opportunities, and of community life and
service attendance as social determinants of health, is itself perilous. Of the recent increase in suicide rates within the United States, extrapolation of estimates from epidemiologic studies of service attendance suggest that approximately 40% of the rise in suicide rates between 1999 and 2014 may be attributable to declining service attendance. Neglecting community participation and service attendance promotion efforts, when these are appropriate, might well result in adverse effects on the public’s health.

Future Research Directions

A number of future research directions may facilitate community participation and service attendance promotion efforts. Aksoy et al. (9) rightly note that randomization of religious participation itself will often be unethical and infeasible. However, person-centered encouragement interventions, such as those described above, could be amenable to randomized trial evaluation. (3) Within clinical contexts, practice-level group-randomized trials could involve interventions that study providing training to implement spiritual-history-assessment and, when appropriate, community-engagement encouragement. Likewise, individual-level randomized encouragement trials of tradition-specific outreach materials, or community-level group-randomized trials of broad social-participation encouragement could be implemented. As such promotion efforts would likely only change participation for a small minority, relatively large sample sizes would be required to have adequate power to detect effects. Any concerns about negative spillover effects on non-religious individuals by promoting religious participation (9, 45) could be addressed by collecting outcome data on other members of the community. Such spillover might conceivably be negative, or positive, because of, for example, increased
intolerance or, alternatively, increased volunteering or charitable activities within communities.\(4,8,30,44\)

Further research could also examine which forms of non-religious community participation most powerfully affect health and well-being. Research suggests the effect sizes for other forms of social participation, while not as strong,\(17,28,46\), are still meaningful.\(47\) However, a better understanding of which forms contribute to health would be valuable. Some research suggests participation in arts and education organizations and religious communities most powerfully promotes life satisfaction and happiness.\(48\) Other research suggests participation in volunteering organizations may be especially effective in promoting health and well-being.\(49\) We would speculate that participation in communal activities that more closely resemble religious communities in having a shared set of values, a common purpose, a set of caring relationships, and a history that extends beyond the life of the individual may most powerfully affect health and well-being. However, further research on these questions is needed.

Research should also explore how the effects of religious service attendance vary cross-culturally, or within minority communities, and whether service attendance in fact helps serve as a buffer for stresses experienced by minority communities. Aksoy et al.\(9\) make some important contributions in this regard. However, considerable work remains to be done, because, as noted by Aksoy et al., most of the existing longitudinal research has been carried out in the west, and in predominantly Christian contexts. Further research could also investigate whether other religious or spiritual practices across traditions might also contribute to health and well-being.\(50\) though, as noted above, the existing research suggests communal and social forms of participation seem to be especially powerful.
Challenges and Opportunities Following COVID-19

Many of these possibilities for community promotion may seem theoretical in the face of social distancing and isolation during the COVID-19 pandemic. However, limitations of community participation may in fact be partially responsible for the documented increasing psychological distress (51,52), exacerbating pre-pandemic trends, as western societies continue to become more individualistic. Our experience of COVID-19 may itself prompt reflection upon the importance of community, and on the role of religion in life and society (53). Community participation in the United States has declined dramatically over the past decades (54). While religious service attendance in the United States is still comparatively high when contrasted with other forms of community involvement, these rates too have been declining (54,55). The world post-COVID will require extensive efforts to rebuild society and community life. The strategies above to promote community participation, religious or otherwise, may prove critical in revitalizing our communities, thereby also promoting health and well-being.
References

1. Koenig H, Koenig HG, King D, Carson VB. Handbook of religion and health. New York, NY: Oxford University Press.

2. Idler EL. Religion as a Social Determinant of Public Health. New York, NY: Oxford University Press, 2014.

3. VanderWeele, T.J. Religion and health: a synthesis. In: Balboni, M.J. and Peteet, J.R. (eds.). Spirituality and Religion within the Culture of Medicine: From Evidence to Practice. New York, NY: Oxford University Press, 2017, p 357-401.

4. VanderWeele TJ. Religious communities and human flourishing. Current Directions in Psychological Science, 2017;26:476-481.

5. Oman D, editor. Why religion and spirituality matter for public health: Evidence, implications, and resources. Cham, Switzerland: Springer; 2018.

6. Chida Y, Steptoe A, Powell LH. Religiosity/spirituality and mortality: a systematic quantitative review. Psychother Psychosom. 2009;78(2):81-90.
7. Garssen B, Visser A, Pool G. Does spirituality or religion positively affect mental health? Meta-analysis of longitudinal studies. The International Journal for the Psychology of Religion. 2021; 31:4-20.

8. Chen Y, Kim ES, VanderWeele TJ. Religious service attendance and subsequent health and well-being throughout adulthood: evidence from three prospective cohorts. International Journal of Epidemiology, 2020;49:2030–2040.

9. Aksoy O, Bann D, Fluharty ME, Nandi A. Religiosity and mental wellbeing among members of majority and minority religions: findings from Understanding Society, The UK Household Longitudinal Study. Am J Epidemiol, in press.

10. Maselko J, Hayward RD, Hanlon A, Buka S, Meador K. Religious service attendance and major depression: a case of reverse causality?. American journal of epidemiology. 2012 Mar 15;175(6):576-83.

11. Li S, Okereke OI, Chang SC, Kawachi I, VanderWeele TJ. Religious service attendance and lower depression among women—a prospective cohort study. Annals of Behavioral Medicine. 2016 Dec 1;50(6):876-84.

12. VanderWeele TJ, Jackson JW, Li S. Causal inference and longitudinal data: a case study of religion and mental health. Social psychiatry and psychiatric epidemiology. 2016 Nov;51(11):1457-66.
13. Hummer RA, Rogers RG, Nam CB, Ellison CG. Religious involvement and US adult mortality. Demography 1999;36(2):273-285.

14. Schnall E, Wassertheil-Smoller S, Swencionis C, et al. The relationship between religion and cardiovascular outcomes and all-cause mortality in the Women's Health Initiative Observational Study. Psychol Health 2010;25(2):249-263.

15. Bagiella E, Hong V, Sloan RP. Religious attendance as a predictor of survival in the EPESE cohorts. Int J Epidemiol 2005;34:443-451.

16. Li, S., Stamfer, M., Williams, D.R. and VanderWeele, T.J. Association between religious service attendance and mortality among women. JAMA Internal Medicine, 2016;176(6):777-785.

17. VanderWeele TJ, Yu J, Cozier YC, et al. Religious service attendance, prayer, religious coping, and religious-spiritual identity as predictors of all-cause mortality in the Black Women's Health Study. Am J Epidemiol 2017;185:515-522.

18. Idler E, Blevins J, Kiser M, Hogue C. Religion, a social determinant of mortality? A 10-year follow-up of the Health and Retirement Study. PLoS One. 2017 Dec 20;12(12):e0189134. doi: 10.1371/journal.pone.0189134.
19. VanderWeele TJ. Effects of religious service attendance and religious importance on depression: examining the meta-analytic evidence. The International Journal for the Psychology of Religion, 2021:21-26.

20. Chen, Y. and VanderWeele, T.J. Associations of religious upbringing with subsequent health and well-being from adolescence to young adulthood: an outcome-wide analysis. American Journal of Epidemiology, 2018; 187:2355–2364.

21. Balbuena L, Baetz M, Bowen R. Religious attendance, spirituality, and major depression in Canada: A 14-year follow-up study. The Canadian Journal of Psychiatry. 2013 Apr;58(4):225-32.

22. VanderWeele TJ, Ding P. Sensitivity analysis in observational research: introducing the E-value. Annals of internal medicine. 2017 Aug 15;167(4):268-74.

23. Wilcox, W.B., and Wolfinger, N.H. Soul Mates: Religion, Sex, Love, and Marriage among African Americans and Latinos. New York, NY: Oxford University Press, 2016.

24. Johnson, B.R., Jang, S.J., Larson, D.B., and Li, S.D. Does adolescent religious commitment matter?: a reexamination of the effects of religiosity on delinquency. Journal of Research in Crime and Delinquency, 2001;38:22-44.
25. Krause N, Hayward RD. Religion, meaning in life, and change in physical functioning during late adulthood. Journal of Adult Development, 2012;19: 158–169.

26. Strawbridge WJ, Cohen RD, Shema SJ, Kaplan GA. Frequent attendance at religious services and mortality over 28 years. American Journal of Public Health, 1997;87(6):957–961.

27. Li, S., Kubzansky, L.D., VanderWeele, T.J. Religious service attendance, divorce, and remarriage among U.S. Nurses in mid and late life. PLoS One, 2018;13(12): e0207778.

28. VanderWeele TJ, Li S, Tsai A, Kawachi I. Association between religious service attendance and lower suicide rates among US women. JAMA Psychiatry, 2016;73:845-851.

29. Lim C, Putnam RD. Religion, social networks, and life satisfaction. American Sociological Review, 2010;75:914–933.

30. Putnam RD, Campbell DE. American Grace. New York, NY: Simon & Schuster, 2012.

31. VanderWeele TJ. On the promotion of human flourishing. Proceedings of the National Academy of Sciences. 2017;114(31):8148-56.

32. Musick MA, House JS, Williams DR. Attendance at religious services and mortality in a national sample. Journal of Health and Social Behavior, 2004;45(2):198–213.
33. Puchalski CM, Romer AL. Taking a spiritual history allows clinicians to understand patients more fully. J Palliat Med 2000;3:129-137.

34. Koenig HG. Religion, spirituality, and medicine: Application to clinical practice. JAMA 2000;284(13):1708.

35. Nicklin DE. Medicine and religion (Letter to the Editor). N Engl J Med 2000;343:1340.

36. Phelps AC, Lauderdale KE, Alcorn S, et al. Addressing spirituality within the care of patients at the end of life: perspectives of advanced cancer patients, oncologists, and oncology nurses. J Clin Oncol 2012;30:2538-2544.

37. Balboni MJ, Sullivan A, Amobi A, et al. Why is spiritual care infrequent at the end of life? Spiritual care perceptions among patients, nurses, and physicians and the role of training. J Clin Oncol 2013;30:2538-2544.

38. Steinhauer KE, Christakis EC, Clipp EC, et al. Factors considered important at the end of life by patients, family, physicians, and other care providers. JAMA 2000;284:2476-2482.

39. Silvestri GA, Knittig S, Zoller JS, Nietert PJ. Importance of faith on medical decisions regarding cancer care. J Clin Oncol. Apr 1 2003;21(7):1379-1382.
40. Sloan RP, Bagiella E, Powell T. Religion, spirituality, and medicine. Lancet 1999;353(9153):664-667.

41. Sloan RP, Bagiella E, VandeCreek L, et al. Should physicians prescribe religious activities? N Engl J Med 2000;342:1913-1916.

42. Koenig HG, Hooten EG, Lindsay-Calkins E, Meador KG (2010). Spirituality in medical school curricula: Findings from a national survey. International Journal of Psychiatry in Medicine 40(4):391-398.

43. HS England. Social prescribing and community-based support: summary guide. January 31, 2019 (https://www.england.nhs.uk/wp-content/uploads/2020/06/social-prescribing-summary-guide-updated-june-20.pdf). Last Accessed: April 5, 2021.

44. VanderWeele TJ, Li S, Kawachi I. Religious service attendance and suicide rates - Reply. JAMA Psychiatry, 2017;74:197-198.

45. Krieger N. Religious Service Attendance and Suicide Rates. JAMA Psychiatry 2017;74(2):197.
46. Chang SC, Glymour M, Cornelis M, Walter S, Rimm EB, Tchetgen Tchetgen E, Kawachi I, Kubzansky LD. Social integration and reduced risk of coronary heart disease in women: The role of lifestyle behaviors. Circulation research. 2017;120(12):1927-37.

47. Shor E, Roelfs DJ. The longevity effects of religious and nonreligious participation: a meta-analysis and meta-regression. J Scie Study Relig 2013;52(1):120-145.

48. Fancourt D, Steptoe A. Community group membership and multidimensional subjective well-being in older age. J Epidemiol Community Health. 2018 May 1;72(5):376-82.

49. Kim ES, Whillans AV, Lee MT, Chen Y, VanderWeele TJ. Volunteering and subsequent health and well-being in older adults: an outcome-wide longitudinal approach. American Journal of Preventive Medicine. 2020 Aug 1;59(2):176-86.

50. Yaden DB, Zhao Y, Peng K, Newberg AB. Rituals and Practices in World Religions Religion, Spirituality and Health: A Social Scientific Approach. Cham, Switzerland: Springer, 2020.

51. VanderWeele, T.J., Fulks, J., Plake, J.F., and Lee, M.T. National well-being measures before and during the COVID-19 pandemic in online samples. Journal of General Internal Medicine, 2021;36:248-250.
52. Ettman, C. K., Abdalla, S. M., Cohen, G. H., Sampson, L., Vivier, P. M., & Galea, S.  
Prevalence of depression symptoms in us adults before and during the COVID-19 pandemic.  
JAMA Network Open, 2020;3(9), e2019686.

53. Christakis N. Apollo's Arrow: The Profound and Enduring Impact of Coronavirus on the  
Way We Live. New York, NY: Little, Brown Spark, 2020.

54. Putnam RD. Bowling Alone. New York, NY: Simon and Schuster, 2000.

55. Gallup Poll. https://news.gallup.com/poll/1690/religion.aspx, Last Accessed: April 5, 2021.