Review Article

Tobacco—not for the body: epidemiologic understanding of tobacco use among members of the Church of Jesus Christ of Latter-day Saints from a Mormon perspective

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Abstract: The role of religion as a factor affecting smoking has received very little attention in epidemiologic research despite other risk factors for smoking being well-documented and thoroughly researched. Previous research on the intersection of tobacco use and religion has focused primarily on the global faiths of Islam, Judaism, and Buddhism. This paper attempts to describe why members of the Church of Jesus Christ of Latter-day Saints abstain from tobacco use, by addressing the current state and landscape of epidemiologic literature from a Mormon perspective. The methodology to prepare this manuscript was a hand search performed in October 2021 using the Google Scholar portal for combinations of the terms "Mormon", "health", "public health", "tobacco", "nicotine", and "addiction". Inclusion criteria did not include any time limits, thus many of the identified articles were performed prior to the year 2000. Key informant interviews and personal experience with the subject matter also guided construction of the narrative. Latter-day Saint doctrine dictates the complete abstinence of tobacco along with abstinence from alcohol and certain other substances in a revelation known as the Word of Wisdom, which is recorded in one of the faiths standard works of scripture. While the Church focuses its attention on addiction recovery services, individual members of the Church participate in charitable organizations like the Church's Relief Society and minister one-by-one to those in need. Beyond individual gains, community tobacco abstinence, as is practiced by Latter-day Saints, has notable and quantifiable advantages for population health. In large part due to the many social aspects of the Church of Jesus Christ of Latter-day Saints, as with other Christian denominations, tobacco use decreases with regular church attendance while tobacco cessation increases. Public health and tobacco control are intimately connected to faith and spirituality within the context of the Church of Jesus Christ.

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Previous examinations

Smoking prevalence continues to dramatically decline in high-income countries across the globe (1). Many of these same countries across the world are seeing massive shifts away from organized religion (2). However, religion continues to be an important lens through which many people see the world (3) especially in regards to smoking status (4). Health inequities and disparities persist when observed through adherence to religion or lack thereof. This was particularly noticeable following the second World War when religion was effectively banned in East Germany, setting up ideal conditions for a natural experiment (5). Previous research on the intersection of tobacco use and religion has focused on the global faiths

of Islam (6-10), Judaism (11-16), and Buddhism (17-19) to name a few. Additionally, there is literature about tobacco use in countries and regions where state-sponsored religion is most prevalent (20-23). Although the role of Christianity in mediating tobacco use and even its cultivation has been explored in some sub-populations (24,25), this paper attempts to describe the rationale and justification for epidemiologic observations of a specific community of faith (26,27). What is currently represented in the scientific literature about why members of the Church of Jesus Christ of Latter-day Saints abstain from tobacco use will be explored. Although epidemiologic literature is replete with examples of the health outcomes of Latter-day Saints, a preliminary literature review revealed no health-related paper explaining the doctrinal perspectives of why Latter-day Saints do not use tobacco. The purpose of this manuscript is to fill that gap through an exploration of why members of the Church of Jesus abstain from tobacco, by addressing the current state and landscape of epidemiologic literature from a Mormon perspective.

Members of the Church of Jesus Christ of Latter-day Saints, hereafter referred to as either Latter-day Saints or members of the Church of Jesus Christ, have historically been known as "Mormons" or more recently by the acronym "LDS". However, in keeping with the style guide produced by the Church (28), the term "Latter-day Saints" will be used for the purposes of this manuscript. As one of many Christian traditions, the Church of Jesus Christ has a specified doctrinal basis for the converts to cease tobacco use and members of the church to abstain from using tobacco in any form.

Epidemiological justifications

As the foundation of public health inquiry and innovation, epidemiology and ethnography represent two important fields that can work in tandem to create healthier societies. Agar specifically detailed the use of ethnography in the field of addiction studies in the journal *Substance Use & Misuse* (29). Communities of faith often represent a very specific culture that can have the potential to impact the health of its members (12,13). The study of communities of faith as the setting for formal public health intervention has also been explored for at least the century (14,15). Cochrane described major religious "assets" in public health across the world (30). Church-based public health programming seeks to capitalize on these existing assets to increase efficiency and keep costs minimal (31). Some of the often-overlapping aims of religion and public health discussed are labeled as both tangible and intangible (28,32). Tangible examples include health systems and orphanages with religious affiliations. Intangible examples of religious health assets are what public health researchers may call social capital, community resilience, and collective efficacy (33). Cochrane also made the case for the inclusion of religion as a significant area of future public health research as it plays such an integral part of many people's identities.

An in-depth discussion of previously hypothesized mechanisms for the health outcomes of religious identity or participation is beyond the scope of this review. Some researchers follow the models laid out by Kenneth Pragament to describe how religion can be either protective or harmful through processes like "religious coping" (34,35). A few previously published reviews of the potential mechanisms of action related to religion and community health merit inclusion here (36). Peterson *et al.* identified seven key elements of health promotion in religious settings: (I) partnerships; (II) positive health values; (III) availability of services; (IV) access to facilities; (V) community-focused intervention; (VI) health behavior change; and (VII) supportive relationships. Each of these elements can be described in various cultures and communities across religious contexts (37). Other health issues that have been targeted for health behavior change in faith communities include physical activity (38), nutrition (39), weight loss (40), and HIV prevention (41) among others. Gandy *et al.* describe the protective factors communities of faith specifically provide to those identifying as LGBTQ+ (42).

Thus far, most calls for increased cultural awareness, competency, and humility by public health professionals in relation to faith and religious identity have come from the field of nursing (43-45). This is perhaps best exemplified by the field of "faith community nursing" which ascended in research literature as early as the 1980s (46,47). While nursing represents a very specific skillset that has the ability to provide individualized medical and lifestyle intervention, religious competency and cultural humility are necessary for epidemiology to properly understand the health of populations. Both protective factors and risk factors can be identified in the epidemiologic profile of any religious community. What follows is first a wide view of the protective influence Christianity may have on health, then a specific focus on the doctrine of the Church of Jesus Christ of Latter-day Saints that may be acting as a protective factor for the historically low smoking rate among congregants (48,49).

Methods

Due to a recent surge in research interest and scientific inquiry into the role of spirituality and religiosity in health behaviors and epidemiology there was no shortage of frameworks for this narrative review to apply (50-54). Furthermore, there have been recent efforts exploring the role of religion in substance use, of which tobacco is a worldwide leader (55), that can be found in scientific literature (36,56,57). This review began with communications with experts known to the author in the field of tobacco control as well as experts in the doctrine and theology of the Church of Jesus Christ of Latter-day Saints. Themes were identified by key informant interviews and served as a background to inform special inquiry into specific areas of strength and potential limitations in the literature. An initial hand search strategy was created which involved using the Google Scholar portal to search for combinations of the terms "Mormon", "health", "public health", "tobacco", "nicotine", and "addiction" was used to identify key manuscripts within tobacco use literature that either focused on or referenced Latter-day Saint religious identity. Inclusion criteria did not include any time limits, thus many of the identified articles were performed prior to the year 2000. Abstracts were reviewed and excluded if they did not have a specific focus on tobacco or nicotine use as a health behavior among Latter-day Saints. Full-text reviews followed for all abstracts that were not excluded in the abstract review phase. Personal experience was then applied to draft a manuscript describing findings. The justification for using each of the methods described in this manuscript can be found in Green *et al.*' 2006 clinical update entitled "Writing Narrative Literature Reviews for Peer-reviewed Journals: Secrets of the Trade" (58).

Discussion

The discussion section of this narrative review is broken down into narrowing lenses going from the subtopics of *Substance use and Christianity*, which reviews the literature in reference to Christianity as a whole. The next subsection, *Latter-day Saints and tobacco abstinence*, reviews the literature around tobacco use as a health behavior specifically within the context of the doctrine of the Church of Jesus Christ of Latter-day Saints and Latter-day Saint populations. The conclusion of this article includes identified gaps in the literature, areas for potential inquiry, and limitations and barriers to studying tobacco use in Latter-day Saint congregations.

Substance use and Christianity

The role of religion as a factor affecting smoking has received very little attention in epidemiologic research despite other risk factors for smoking being well-documented and thoroughly researched. The dearth of this important demographic connection is further bewildering given the established techniques and strategies for testing hypotheses in this area (59). The Church of Jesus Christ of Latter-day Saints is a Christian denomination (60) and as such, follows many of the same religious traditions common to all Abrahamic religions (Christianity, Islam, and Judaism). This narrative describes the Christian perspective viewed through the lens of Latter-day Saint theology, but many of the principles described could be applied to Muslim or Jewish believers as well.

The Holy Bible contains multiple health codes believed to be given by God to protect religious adherents from certain ailments (61,62). The book of Leviticus contains guidance on how to prepare food for consumption and specific commandments to avoid eating certain meats and fishes (Leviticus 11, King James Version). Grains, beans, and lentils are recommended in times of famine by Ezekiel (Ezekiel 4). Proverbs advises against the overconsumption of simple carbohydrates like honey (Proverbs 25:16) and even warns against overeating, a practice known biblically as gluttony (Proverbs 28:7). On the note of substances, Leviticus also commands certain priests to abstain from "strong drink" which is often interpreted as alcohol (Leviticus 10:9), and the New Testament contains warnings about becoming drunk (Ephesians 5:18).

The reasons for all health codes given through the Prophets by revelation are not always to religious adherents, much less known to the scientific community. Isaiah reminds Christians everywhere that God's commandments are not always logical to mankind's limited perspective: "*For my thoughts are not your thoughts, neither are your ways my ways, saith the Lord. For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts*" (Isaiah 55:8-9). Because Christians believe that all people were created "in [God's] image" (Genesis 1:27) the rationale for keeping God's health codes is similar to following a vehicle's user manual created by the manufacturer. Just as the manufacturer of a vehicle will recommend a maintenance schedule and specify certain fuel and oil grades, Christians believe God has recommended certain healthy habits for the proper maintenance of both

the physical and spiritual bodies of all people. Nutritional and dietary science is constantly evolving, but biblical health codes offer what many believe to be a sort of nutritional guide given by God.

Being a 19th century invention, conventional cigarette smoking presents certain challenges to a religious tradition as old as Christianity. Although tobacco has been cultivated for at least the last 6,000 years, manufactured cigarettes—the deadliest product ever marketed for mass consumption (63)—have only been available to consumers for less than 175 years (64). The manufactured cigarette was perfected to create dependence even before nicotine was identified as an addictive substance and long before addiction science was a recognized field (65). The mainstream Christian perception here would likely be one of abstinence from tobacco simply to avoid addiction. Different traditions within Christianity may claim different reasons to abstain from tobacco use, but an individual's lived experience with spirituality and religion can be a large determinant of if this approach can be protective or harmful depending on the context of the behavior (34,35). The mechanisms behind religious coping are not fully understood, but religion is a relevant aspect of an individual's cultural background.

Complicating the issue of tobacco use and health behavior is the addictive nature of nicotine. Although addiction researchers argue that addiction and free will are not mutually exclusive (66), most lay people who are not addiction experts believe that addiction leads to the loss of free will (67). The idea of free will is a critical topic in Christianity that informs our collective understanding of addiction within the Christian framework. Because Christianity emphasizes compassion and empathy, tobacco cessation is a natural outgrowth for tobacco control programs in a majority Christian society. This suggests that smoking and smoking cessation cannot be considered to be controlled by smokers' reasonable decisions and free will alone. The tactic of blaming smokers' health consequences solely on the use of their free will to smoke cigarettes has been pursued for decades by tobacco companies (68). But because Christianity can be such a large faith with many different traditions, a multi-faceted approach ranging from tobacco abstinence to smoking cessation can be employed across various Christian faith traditions.

Latter-day Saints and tobacco abstinence

One of the primary doctrinal features of the Church of Jesus Christ of Latter-day Saints is a belief in an open canon of scripture. Most mainstream Christian traditions believe only in the Bible as authorized scripture. Latter-day Saints believe the Bible to be the word of God, but they also believe in other books of scripture believed to be recorded by the hands of prophets including the Book of Mormon (containing the teachings of prophets on the American continents), Doctrine & Covenants (containing the teachings of modern prophets since the early nineteenth century), and the Pearl of Great Price (containing more teachings of Abraham and Moses) (69). Many Christian traditions believe in the prophets of the Old Testament as the mouthpiece for God: "*Surely the Lord God will do nothing, but he revealeth his secret unto his servants the prophets*" (Amos 3:7). Latter-day Saints believe God continues to reveal truth to prophets, and thus their own canon grows through the inclusion of new revelations in the book of the Doctrine & Covenants—abbreviated D&C.

The primary reason for low smoking prevalence among Latter-day Saints, is a health code known to the faith's believers as the "Word of Wisdom" which is contained in the Doctrine & Covenants. Originally published in 1833, the 89th section of one of the faith's holy books of scripture outlines what is known to members of the faith as the "Word of Wisdom" (70). This faith-specific health code, believed to be a direct revelation from God, contains a warning that could easily be applied to the tactics pursued by tobacco companies and their subsequent litigation in the second half of the twentieth century: "*Behold, verily, thus saith the Lord unto you: In consequence of evils and designs which do and will exist in the hearts of conspiring men in the last days, I have warned you, and forewarn you, by giving unto you this word of wisdom by revelation*" (D&C 89:4). The Word of Wisdom proceeds to caution against substance use, the consumption of "strong drink", and advises adherents to eat grains and fruits while limiting the consumption of meat.

Epidemiologic literature has attempted to describe some of the health benefits enjoyed by Latter-day Saints. Academic research has highlighted specific reductions in cancer mortalities among Latter-day Saints as far back as 1968 (71). Enstrom and Breslow found members of the Church of Jesus Christ enjoyed a longer than average life expectancy of about 6 years for women and 10 years for men (72). All-cause mortality analysis in prospective cohort studies and descriptive observational studies have shown significant benefits for Latter-day Saints relative to the general population in the United States (73-78). The health benefits of living the Word of Wisdom have been covered

outside peer-reviewed publications as well including the in *Washington Post* (79) and the *Huff Post* (80) among others (81).

Specific to the topic of tobacco the text of the Word of Wisdom reads, "*And again*, *tobacco is not for the body*, *neither for the belly*, *and is not good for man*, *but is an herb for bruises and all sick cattle*, *to be used with judgment and skill*" (D&C 89:8). Latter-day Saints believe in specific providence through following this guidance such as continued health including the promises to receive, "*health in their navel and marrow to their bones… wisdom… knowledge… and [the ability] to run and not be weary*, *and walk and not faint*" (D&C 89:18-20). With a concluding promise that, "*the destroying angel shall pass by them*, *as the children of Israel*, *and not slay them*" (D&C 89:21). It should be noted here that Latter-days Saints do not believe the blessings and promises of this revelation are exclusive to baptized members of the church, but are available to all who keep this code of health as revealed from Heaven.

As a result of the Word of Wisdom many members of the Church of Jesus Christ are classified as never smokers. However, as an evangelizing church—that is, a church that relies on unpaid missionaries and conversion to increase its membership—smoking cessation plays an important role in the faith. To become a member of the Church through baptism, tobacco users must stop all forms of tobacco use including both smoking and smokeless tobacco. Gallup has consistently found members of the Church of Jesus Christ to have the lowest prevalence of smoking amongst all religious affiliations (82). It is common epidemiological practice to use the geographic region of the Mountain West, and more specifically Utah, as a proxy for studying members of the Church of Jesus Christ. According to the US Centers for Disease Control and Prevention, the adult smoking rate in Utah was 8.0% in 2019 compared to the national rate of 16.0% (83). The youth smoking rate in Utah was a mere 2.2% in 2019 compared to the national average of 6.0% (84). In 2012 a Gallup poll found about 8% of Americans who identified as "Mormon" were current smokers: a rate less than half the national rate of about 20% in the same time period (82).

The most recent prevalence estimates for cigarette smoking among Latter-day Saints is displayed primarily within the context of 1996 Utah Health Status Survey (85). This data indicated that 9.2% of Latter-day Saint men and 4.1% of Latter-day Saint women currently smoked cigarettes. This was compared to smoking rates of 24.5% and 23.1% of non-Latter-day Saints, respectively. This equates to non-Latter-day Saint men smoking at a rate 2.7 times higher, and non-Latter-day Saint women smoking at a rate 5.6 times higher than their Latter-day Saint counterparts. An analysis of smoking-attributable cancer rates using the same dataset evaluated both crude mortality and years of potential life lost (YPLL). This study showed a corresponding smoking-attributable crude mortality discrepancy of 2,034 YPLL, and a corresponding smoking-attributable YPLL discrepancy of 24,097 in Utah over the four-year study period. These numbers are astronomical when considering that the only identified difference between the control population and the study population was affiliation with the Church of Jesus Christ of Latter-day Saints (86).

Rates of former smoking status are also higher among Latter-day Saints than non-Latter-day Saints. This, coupled with historically lower rates of baseline current smoking status, indicates that Latter-day Saints also quit smoking more than non-Latter-day Saints. Merrill *et al.* identified male and female former smoking status rates of 16.3% and 7.8% among Latter-day Saints compared to former smoking states rates of 27.0% and 20.0%, respectively (48). These findings should be further examined given the dated nature of the data utilized in the analysis. Another potential mechanism that may be contributing to low tobacco use within the church and high tobacco cessation among converts to the faith is the Church's emphasis on weekly service attendance. A study by West *et al.* found that of those who attended church services weekly, 7.0% were former smokers compared to 23.7% of those who attended services less than weekly (87). This finding makes logical sense given the current understanding of cigarette smoking and its addictive nature. The more often and consistently someone attempts to quit smoking, the higher the likelihood of their success (88). Those who attend weekly services at the Church of Jesus Christ would likely be more likely to attempt to quit smoking compared to those who do not attend at least weekly given what we currently know about the influence of societal norms in behavior change (89). The norm in Latter-day Saint culture is non-tobacco use.

The Church of Jesus Christ of Latter-day Saints has engaged in various forms of addiction recovery support services since at least 1919 (90), but currently operates addiction recovery programs under the name of "Family Services" (91). The Church has adopted a 12-step program based upon the program originally designed for Alcoholics Anonymous (AA) World Services. Although the program as administered by the Church of Jesus Christ is authorized to be reprinted from the AA framework, it is not necessarily

endorsed by the corporation. As a worldwide leader and pioneer in addiction recovery AA was founded with the support of Episcopal clergyman Dr. Samuel Shoemaker in 1935 (92). AA is designed to help those who experience addiction overcome their ailment. Although the AA program has at times been met with skepticism from both the media and scientific community for its close ties to spiritualism and religion, it has been shown to be effective in both initial and sustained behavior change (56,93-97). The Church's adoption of the AA framework is not unprecedented as many churches of different denominations have served as both the venue and facilitators of AA programs (98,99).

The mechanisms of behavior change in AA have been discussed previously (100,101), but it remains unknown how applicable these hypothesized mechanisms are in tobacco cessation. Evaluating tobacco cessation programs within the AA framework, such as the program offered by the Church, can lead to the discovery of mechanisms that may be applicable to other faith-based interventions. Addiction recovery support services are offered by the Church for any addiction, but there are support groups for specific concerns such as alcohol and pornography. The program is offered in 17 languages worldwide, and through the COVID-19 pandemic has transitioned to telephone and videoconference support group formats (102). The worldwide reach of the Church's addiction recovery program provides fertile ground for future research. Cross-cultural examinations may provide researchers with a unique opportunity to study the ethnography of both the self-described identity of a smoker (103) and the mechanisms of addiction recovery in relation to social capital within a congregation (104).

Individual members of the Church of Jesus Christ of Latter-day Saints are encouraged to regularly engage in service activities. Women play a significant role in both local and global leadership in the Church of Jesus Christ of Latter-day Saints. Specifically, the Church sponsors a women's organization known as the Relief Society. The Relief Society was originally organized by Emma Smith—the wife of the Church's founder Joseph Smith—in 1842 in Nauvoo, Illinois (105). Organized under the mantra of, "Charity never faileth" (1 Corinthians 13:8), the Relief Society's purpose is to assist the members of the Church in the organization of their service activities (106). It is also notable that the Church's Relief Society is among the oldest and largest women's organizations in the world.

Since April 2017 Jean B. Bingham has served as the General Relief Society President, leading this large multinational organization and its more than 6 million women worldwide (107). In the Church of Jesus Christ of Latter-day Saints, women hold equal standing with men and lead out in their own individual one-on-one ministry. Most notable to tobacco cessation, the Church's addiction recovery program is one of nearly 75% of addiction treatment programs in the US with a faith-based element as classified by researchers in 2019 (108). As members and friends of the Church of Jesus Christ of Latter-day Saints attempt to stop using tobacco products it is important to understand the doctrinal background and operational context the Church can provide.

Within the setting of spiritual conversion and religious adherence it is therefore clear and well-established that members of the Church of Jesus Christ attain disproportionately better health outcomes than their non-religious peers. In large part due to the many social aspects of the Church of Jesus Christ of Latter-day Saints, as with other Christian denominations, tobacco use decreases with regular church attendance while tobacco cessation increases (109). Public health and tobacco control are intimately connected to faith and spirituality within the context of the Church of Jesus Christ.

Conclusions

There were a number of barriers and limitations to conducting this narrative review. The first and most prominent limitation is the lack of data and research on the mechanisms of the causal relationship between religion and health. Without data, whether quantitative or qualitative, hypothesis-driven scientific inquiry is impossible. One potential solution to this limitation would be to pursue research in hospitals and emergency departments where Latter-day Saints are highly concentrated: the Western United States, Oceania, and Western Africa (110). A similar structural strategy was proposed by Kantrow *et al.* (111) and Rigotti *et al.* (112) with notable success. Some researchers have attempted to quantify the Church of Jesus Christ's impact on morbidity and mortality (48,86). However, this research has almost exclusively come from the research community within the Church and specifically within the most active adherents to the faith and faculty of Brigham Young University. The role of Brigham Young University, a university wholly and operated by the Church, is well-established in the research community across many fields. But the majority of the scientific literature about the Church and health can be attributed to only a few researchers over the last half century. But the literature on the correlations

and causal relationships of the Church on health outcomes would benefit greatly from an increased interest in why this faith community appears to live longer (113,114) and experience fewer community health disparities (24) than their neighbors. Additional limitations of this review include the overwhelming stigma against discussing religion and science in the same breath (115), and potential bias of a sole author given their experiences with faith and religion.

Latter-day Saint doctrine dictates the complete abstinence of tobacco along with abstinence from alcohol and certain other substances. The same doctrine that prohibits the use of tobacco—known as the Word of Wisdom—also encourages proper nutrition and adequate sleep. Despite being originally recorded in 1833, many of the themes found in the Word of Wisdom have been shown to offer immense physical and mental benefits by researchers in fields ranging from dietetics to psychology (116). While the Church focuses its attention on addiction recovery services, individual adherents to the faith participate in charitable organizations like the Church's Relief Society and minister one-by-one to those in need. Behavioral support has proven to be a key ingredient in sustained tobacco cessation (117-120), and as such the one-on-one ministry offered by Latter-day Saints likely contributes significantly to the success of the Church's cessation programs. Tobacco cessation offers immense benefits to individual health. Beyond individual gains, community tobacco abstinence as is practiced by Latter-day Saints has notable and quantifiable advantages for population health.

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References

1. Jha P. The hazards of smoking and the benefits of cessation: a critical summation of the epidemiological evidence in high-income countries. Elife 2020;9:e49979.
2. Inglehart RF. Giving Up on God: The Global Decline of Religion. Foreign Aff 2020;(5):110-8.
3. VanderWeele TJ, Balboni TA, Koh HK. Health and Spirituality. JAMA 2017;318:519-20.
4. Garrusi B, Nakhaee N. Religion and smoking: a review of recent literature. Int J Psychiatry Med 2012;43:279-92.
5. Nunziata L, Toffolutti V. "Thou Shalt not Smoke": Religion and smoking in a natural experiment of history. SSM - Popul Health 2019;8:100412.
6. Ghouri N, Atcha M, Sheikh A. Influence of Islam on smoking among Muslims. BMJ 2006;332:291-4.
7. Muhamad N, Mizerski D. The Effects of Following Islam in Decisions about Taboo Products. Psychol Mark 2013;30:357-71.
8. Dagli E. Islamic beliefs and practices in tobacco control. In: Lu R, Mackay J, Niu S, et al. editors. Tobacco: The Growing Epidemic. London: Springer; 2000:931-2.
9. Attarabeen O, Alkhateeb F, Larkin K, et al. Tobacco Use among Adult Muslims in the United States. Subst Use Misuse 2019;54:1385-99.
10. Attarabeen O, Alkhateeb F, Sambamoorthi U, et al. Impact of Cognitive and Social Factors on Smoking Cessation

Attempts among US Adult Muslim Smokers. Innov Pharm 2020. doi: 10.24926/iip.v11i3.3382.
11. Knishkowy B, Verbov G, Amitai Y, et al. Reaching Jewish ultra-orthodox adolescents: results from a targeted smoking prevention trial. Int J Adolesc Med Health 2012;24:173-9.
12. Luboshitz T. "The Secret of that Herb": Mystical Smoking from Italian Sabbateanism to Hasidism. Mod Jud - J Jew Ideas Exp 2021;41:317-38.
13. Aberbach M. Smoking and the Halakhah. Tradit J Orthodox Jew Thought 1969;10:49-60.
14. Siegel RS. Smoking: A Jewish Perspective. Proceedings of the Committee on Jewish Law and Standards; 2000.
15. Kopel E, Keinan-Boker L, Enav T, et al. Cigarette smoking and correlates among ultra-orthodox Jewish males. Nicotine Tob Res 2013;15:562-6.
16. Galper Grossman S. Vape Gods and Judaism—E-cigarettes and Jewish Law. Rambam Maimonides Med J 2019;10:e0019.
17. Ugen S. Bhutan: the world's most advanced tobacco control nation? Tob Control 2003;12:431-3.
18. Vanphanom S, Phengsavanh A, Hansana V, et al. Smoking prevalence, determinants, knowledge, attitudes and habits among Buddhist monks in Lao PDR. BMC Res Notes 2009;2:100.
19. Yong HH, Hamann SL, Borland R, et al. Adult smokers' perception of the role of religion and religious leadership on smoking and association with quitting: A comparison between Thai Buddhists and Malaysian Muslims. Soc Sci Med 2009;69:1025-31.
20. Al Zaben F, Khalifa DA, Sehlo MG, et al. Religious involvement and health in dialysis patients in Saudi Arabia. J Relig Health 2015;54:713-30.
21. El Awa F. Middle East: religion against tobacco. Tob Control 2003;12:249-50.
22. Islam N, Al-Khateeb M. Challenges and opportunities for tobacco control in the Islamic countries-a case-study from Bangladesh. East Mediterr Health J 1995;1:230-5.
23. Himelfarb I, Esipova N. Commitment to Islam in Kazakhstan and Kyrgyzstan: An Item Response Theory Analysis. Int J Psychol Relig 2016;26:252-67.
24. Donald A. Barr MD. Health Disparities in the United States [Internet]. JHU Press; [cited 2022 Aug 21]. Available online: https://www.press.jhu.edu/books/title/12197/health-disparities-united-states
25. Tayua SN. Tobacco and Christianity: a case study on the impact of Tobacco growing on Anglican Christianity in Madi/West Nile diocese [Internet] [Master's Thesis]. Western Kentucky University; 1975. Available online: https://kyuspace.kyu.ac.ug/handle/20.500.12504/884
26. Young S, Patterson L, Wolff M, et al. Empowerment, Leadership, and Sustainability in a Faith-Based Partnership to Improve Health. J Relig Health 2015;54:2086-98.
27. Brewer LC, Williams DR. We've Come This Far by Faith: The Role of the Black Church in Public Health. Am J Public Health 2019;109:385-6.
28. Style Guide — The Name of the Church [Internet]. newsroom.churchofjesuschrist.org. 2010 [cited 2022 Aug 21]. Available online: http://newsroom.churchofjesuschrist.org/style-guide2
29. Agar MH. Ethnography: an overview. Subst Use Misuse 1997;32:1155-73.
30. Religion, Public Health and Church for the 2Ist Century - Cochrane - 2006 - International Review of Mission - Wiley Online Library [Internet]. [cited 2022 Aug 21]. Available online: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1758-6631.2006.tb00538.x
31. Campbell MK, Hudson MA, Resnicow K, et al. Church-based health promotion interventions: evidence and lessons learned. Annu Rev Public Health 2007;28:213-34.
32. Chatters LM, Levin JS, Ellison CG. Public health and health education in faith communities. Health Educ Behav 1998;25:689-99.
33. Duh-Leong C, Dreyer BP, Huang TT, et al. Social Capital as a Positive Social Determinant of Health: A Narrative Review. Acad Pediatr 2021;21:594-9.
34. Pargament KI. The Psychology of Religion and Coping: Theory, Research, Practice. Guilford Press; 2001:566.
35. Pargament KI, Smith BW, Koenig HG, Perez L. Patterns of Positive and Negative Religious Coping with Major Life Stressors. J Sci Study Relig 1998;37:710-24.
36. Walton-Moss B, Ray EM, Woodruff K. Relationship of spirituality or religion to recovery from substance abuse: a systematic review. J Addict Nurs 2013;24:217-26; quiz 227-8.
37. Peterson J, Atwood JR, Yates B. Key elements for church-based health promotion programs: outcome-based literature review. Public Health Nurs 2002;19:401-11.
38. Hardison-Moody A, Edwards MB, Bocarro JN, et al. Shared Use of Physical Activity Facilities Among North Carolina Faith Communities, 2013. Prev Chronic Dis 2017;14:E11.
39. Schoenthaler AM, Lancaster KJ, Chaplin W, et al. Cluster Randomized Clinical Trial of FAITH (Faith-Based Approaches in the Treatment of Hypertension) in Blacks. Circ Cardiovasc Qual Outcomes 2018;11:e004691.
40. Fitzgibbon ML, Stolley MR, Schiffer L, et al. Obesity

reduction black intervention trial (ORBIT): 18-month results. Obesity (Silver Spring) 2010;18:2317-25.
41. Francis SA, Liverpool J. A review of faith-based HIV prevention programs. J Relig Health 2009;48:6-15.
42. Gandy ME, Natale AP, Levy DL. "We shared a heartbeat": Protective functions of faith communities in the lives of LGBTQ+ people. Spiritual Clin Pract 2021;8:98-111.
43. May I, George N. Faith Community Nursing: Faith Element Enhances Cardiovascular Risk Reduction Program Outcomes. J Christ Nurs 2021;38:38-46.
44. Ziebarth D, Hunter C. Moving Toward a Virtual Knowledge Platform for Faith Community Nurses. Comput Inform Nurs 2016;34:503-12.
45. Dayer-Berenson L. Cultural competencies for nurses: impact on health and illness [Internet]. Burlington, Mass.: Jones & Bartlett Learning; 2014 [cited 2022 Aug 21]. Available online: http://site.ebrary.com/id/10869903
46. Westberg GE, McNamara JW. The Parish Nurse: Providing a Minister of Health for Your Congregation. Augsburg Books; 1990:144.
47. Dyess S, Chase SK, Newlin K. State of research for Faith Community Nursing 2009. J Relig Health 2010;49:188-99.
48. Merrill RM, Hilton SC, Daniels M. Impact of the LDS church's health doctrine on deaths from diseases and conditions associated with cigarette smoking. Ann Epidemiol 2003;13:704-11.
49. de Diego Cordero R, Badanta Romero B. Health Impacts of Religious Practices and Beliefs Associated with The Church of Jesus Christ of Latter-Day Saints. J Relig Health 2017;56:1371-80.
50. Razaeian M. A narrative review on religion epidemiology with emphasis on suicide behavior. J Rafsanjan Univ Med Sci 2018;16:869-82.
51. Ransome Y. Religion, Spirituality, and Health: New Considerations for Epidemiology. Am J Epidemiol 2020;189:755-8.
52. Kawachi I. Invited Commentary: Religion as a Social Determinant of Health. Am J Epidemiol 2020;189:1461-3.
53. Koenig HG, Al-Zaben F, VanderWeele TJ. Religion and psychiatry: recent developments in research. BJPsych Adv 2020;26:262-72.
54. Oman D. Elephant in the Room: Why Spirituality and Religion Matter for Public Health. In: Oman D, editor. Why Religion and Spirituality Matter for Public Health: Evidence, Implications, and Resources [Internet]. Cham: Springer International Publishing; [cited 2022 Aug 25]. 2018:1-16. (Religion, Spirituality and Health: A Social Scientific Approach). Available online: https://doi.org/10.1007/978-3-319-73966-3_1
55. Schroeder SA. Epilogue to Special Issue on Tobacco and Other Substance Use Disorders: Links and Implications. Am J Drug Alcohol Abuse 2017;43:226-9.
56. Hai AH, Franklin C, Park S, et al. The efficacy of spiritual/religious interventions for substance use problems: A systematic review and meta-analysis of randomized controlled trials. Drug Alcohol Depend 2019;202:134-48.
57. Chitwood DD, Weiss ML, Leukefeld CG. A Systematic Review of Recent Literature on Religiosity and Substance Use. J Drug Issues 2008;38:653-88.
58. Green BN, Johnson CD, Adams A. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. J Chiropr Med 2006;5:101-17.
59. Hussain M, Walker C, Moon G. Smoking and Religion: Untangling Associations Using English Survey Data. J Relig Health 2019;58:2263-76.
60. Madsen TG. The Meaning of Christ—The Truth, The Way, The Life: An Analysis of BH Roberts' Unpublished Masterwork. Brigham Young University Studies 1975;15:259-92.
61. Hasel GF. Health and healing in the Old Testament. Andrews University Seminary Studies (AUSS) 1983;21:8.
62. Genung VM. Health perspectives of world religions: an exploratory investigation. Thesis (M.S.N.)--University of Texas at Arlington; 2002.
63. Smith EA, Malone RE. An argument for phasing out sales of cigarettes. Tob Control 2020;29:703-8.
64. Musk AW, de Klerk NH. History of tobacco and health. Respirology 2003;8:286-90.
65. Courtwright DT. Addiction and the science of history. Addiction 2012;107:486-92.
66. Vohs KD, Baumeister RF. Addiction and free will. Addict Res Theory 2009;17:231-5.
67. Vonasch AJ, Clark CJ, Lau S, et al. Ordinary people associate addiction with loss of free will. Addict Behav Rep 2017;5:56-66.
68. Roh S. Scientific Evidence for the Addictiveness of Tobacco and Smoking Cessation in Tobacco Litigation. J Prev Med Public Health 2018;51:1-5.
69. Davies WD. Reflections on the Mormon "Canon." Harv Theol Rev 1986;79:44-66.
70. Smith J Jr. The Doctrine and Covenants: Of the Church of Jesus Christ of Latter-Day Saints, Containing the Revelations. Deseret News; 1876:496.
71. Enstrom JE. Cancer mortality among Mormons in California during 1968--75. J Natl Cancer Inst 1980;65:1073-82.

72. Enstrom JE, Breslow L. Lifestyle and reduced mortality among active California Mormons, 1980-2004. Prev Med 2008;46:133-6.
73. Lyon JL, Nelson S. Mormon health. Dialogue 1979;12:84-96.
74. Enstrom JE. Health practices and cancer mortality among active California Mormons. J Natl Cancer Inst 1989;81:1807-14.
75. Merrill RM, Thygerson AL. Religious preference, church activity, and physical exercise. Prev Med 2001;33:38-45.
76. Simmerman SR. The mormon health traditions: An evolving view of modern medicine. J Relig Health 1993;32:189-96.
77. Toney M, Keller C, Hunter L. Regional Cultures, Persistence and Change: A Case Study of the Mormon Culture Region. Soc Sci J 2003;40:431-45.
78. Mason PB, Xu X, Bartkowski JP. The Risk of Overweight and Obesity Among Latter-Day Saints. Rev Relig Res 2013;55:131-47.
79. Tumulty K. Mormonism good for the body as well as the soul? - The Washington Post [Internet]. The Washington Post. 2012 [cited 2022 Aug 22]. Available online: https://www.washingtonpost.com/blogs/she-the-people/post/mormonism-good-for-the-body-as-well-as-the-soul/2012/06/20/gJQARk3IqV_blog.html
80. Harrison MI. Run and Not Be Weary: Why Mormons Don't Drink | HuffPost Religion. HuffPost [Internet]. 2017 Dec 6 [cited 2022 Aug 23]; Available online: https://www.huffpost.com/entry/why-mormons-dont-drink_b_8247912
81. Glowatz E. 4 Mormon Health Habits To Copy Even If You're Not An LDS Church Member [Internet]. Medical Daily. 2016 [cited 2022 Aug 21]. Available online: https://www.medicaldaily.com/4-mormon-health-habits-copy-even-if-youre-not-lds-church-member-405829
82. Newport F, Himelfarb I. In U.S., Strong Link Between Church Attendance, Smoking [Internet]. Gallup. 2013 [cited 2022 Aug 22]. Available online: https://news.gallup.com/poll/163856/strong-link-church-attendancesmoking.aspx
83. BRFSS Prevalence & Trends Data: Home | DPH | CDC [Internet]. 2019 [cited 2022 Aug 21]. Available online: https://www.cdc.gov/brfss/brfssprevalence/index.html
84. Utah Department of Health, Bureau of Health Promotion. 2021 Utah Adolescent Health Report [Internet]. Salt Lake City, Utah: Utah Department of Health; Available online: https://health.utah.gov/wp-content/uploads/2021-Utah-Adolescent-Health-Report.pdf
85. 1996 Utah Health Status Survey Report: Health Care Access and Utilization. 1996:83.
86. Merrill RM, Lyon JL. Cancer incidence among Mormons and non-Mormons in Utah (United States) 1995-1999. Prev Med 2005;40:535-41.
87. West DW, Lyon JL, Gardner JW. Cancer risk factors: an analysis of Utah Mormons and non-Mormons. J Natl Cancer Inst 1980;65:1083-95.
88. Perski O, Herd N, Brown J, et al. Does consistent motivation to stop smoking improve the explanation of recent quit attempts beyond current motivation? A cross-sectional study. Addict Behav 2018;81:12-6.
89. Edberg M, Krieger L. Recontextualizing the social norms construct as applied to health promotion. SSM Popul Health 2020;10:100560.
90. Ludlow DH. Encyclopedia of Mormonism [Internet]. Vol. 3. New York: Macmillan; Available online: https://www.archive.bookofmormoncentral.org/sites/default/files/jesus_christ.pdf
91. Name Changes Announced for LDS Charities, Family Services - Church News and Events [Internet]. [cited 2022 Aug 21]. Available online: https://www.churchofjesuschrist.org/church/news/name-changes-announced-for-lds-charities-family-services?lang=eng
92. History of A.A. | Alcoholics Anonymous [Internet]. [cited 2022 Aug 21]. Available online: https://www.aa.org/aa-history
93. Kelly JF. Is Alcoholics Anonymous religious, spiritual, neither? Findings from 25 years of mechanisms of behavior change research. Addiction 2017;112:929-36.
94. Kaskutas LA, Turk N, Bond J, Weisner C. The role of religion, spirituality and Alcoholics Anonymous in sustained sobriety. Alcohol Treat Q 2003;21:1-16.
95. Morjaria A, Orford J. The Role of Religion and Spirituality in Recovery from Drink Problems: A Qualititative Study of Alcoholics Anonymous Members and South Asian Men. Addict Res Theory 2002;10:225-56.
96. Oakes KE, Allen JP, Ciarrocchi JW. Spirituality, Religious Problem-Solving, and Sobriety in Alcoholics Anonymous. Alcohol Treat Q 2000;18:37-50.
97. Vaillant GE. Alcoholics Anonymous: cult or cure? Aust N Z J Psychiatry 2005;39:431-6.
98. Straussner SLA, Byrne H. Alcoholics Anonymous: Key Research Findings from 2002-2007. Alcohol Treat Q 2009;27:349-67.
99. Linquist M. Locus of control, self-efficacy, and spiritual coping style among members of alcoholics anonymous. Theses Diss [Internet]. 2013 Jan 1; Available online:

https://digitalcommons.pepperdine.edu/etd/412
100. Bell JS, Islam M, Bobak T, et al. Spiritual awakening in 12-step recovery: Impact among residential aftercare residents. Spiritual Clin Pract. 2022. Available online: https://doi.org/10.1037/scp0000296
101. Kelly JF, Hoeppner B, Stout RL, et al. Determining the relative importance of the mechanisms of behavior change within Alcoholics Anonymous: a multiple mediator analysis. Addiction 2012;107:289-99.
102. Find Christ and Connection Through the Addiction Recovery Program [Internet]. newsroom.churchofjesuschrist.org. 2021 [cited 2022 Aug 24]. Available online: http://newsroom.churchofjesuschrist.org/article/find-christ-connection-through-addiction-recovery-program
103. Cain C. Personal Stories: Identity Acquisition and Self-Understanding in Alcoholics Anonymous. Ethos 1991;19:210-53.
104. Murphy DMA. Sobriety, Social Capital, and Village Network Structures. SSRN Electron J [Internet]. 2022 [cited 2022 Aug 22]; Available online: https://www.ssrn.com/abstract=4156811
105. Barlow SH, Bergin AE. Religion and Mental Health from a Mormon Perspective. In: Handbook of Religion and Mental Health. 1st ed. San Diego, California, USA; 1998:225-44.
106. Arrington LJ. The economic role of pioneer Mormon women. West Humanit Rev 1955;9:145-64.
107. The Church of Jesus Christ of Latter-day Saints. Jean B. Bingham [Internet]. 2021 [cited 2022 Aug 21]. Available online: https://www.churchofjesuschrist.org/learn/jean-b-bingham?lang=eng
108. Grim BJ, Grim ME. Belief, Behavior, and Belonging: How Faith is Indispensable in Preventing and Recovering from Substance Abuse. J Relig Health 2019;58:1713-50.
109. Brown QL, Linton SL, Harrell PT, et al. The influence of religious attendance on smoking. Subst Use Misuse 2014;49:1392-9.
110. Dmm1169. English: The Church of Jesus Christ of Latter-day Saints membership record count by country as of December 31, 2019 or the latest data or estimate available for country data not published by the church for that year. [Internet]. 2021 [cited 2022 Aug 24]. Available online: https://commons.wikimedia.org/wiki/File:2019_LDS_Worldwide_Members.png
111. Kantrow SP, Jolley SE, Price-Haywood EG, et al. Using the emergency department to investigate smoking in young adults. Ann Epidemiol 2019;30:44-49.e1.
112. Rigotti NA, Arnsten JH, McKool KM, et al. Smoking by patients in a smoke-free hospital: prevalence, predictors, and implications. Prev Med 2000;31:159-66.
113. Jarvis GK, Northcott HC. Religion and differences in morbidity and mortality. Soc Sci Med 1987;25:813-24.
114. Grundmann E. Cancer morbidity and mortality in USA Mormons and Seventh-day Adventists. Arch Anat Cytol Pathol 1992;40:73-8.
115. Barnes ME, Truong JM, Grunspan DZ, et al. Are scientists biased against Christians? Exploring real and perceived bias against Christians in academic biology. PLoS One 2020;15:e0226826.
116. Badanta B, Lucchetti G, de Diego-Cordero R. "A temple of god": A qualitative analysis of the connection between spiritual/religious beliefs and health among Mormons. J Relig Health 2020;59:1580-95.
117. Roberts NJ, Kerr SM, Smith SM. Behavioral interventions associated with smoking cessation in the treatment of tobacco use. Health Serv Insights 2013;6:79-85.
118. Laniado-Laborín R. Smoking cessation intervention: an evidence-based approach. Postgrad Med 2010;122:74-82.
119. Crain D, Bhat A. Current treatment options in smoking cessation. Hosp Pract (1995) 2010;38:53-61.
120. Rigotti NA, Kruse GR, Livingstone-Banks J, et al. Treatment of Tobacco Smoking: A Review. JAMA 2022;327:566-77.

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