Relationships between Sabbath Observance and Mental, Physical, and Spiritual Health in Clergy

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Abstract

Keeping the Sabbath, that is, setting a day apart for rest and spiritual rejuvenation, has been related to better mental health and less stress in cross-sectional studies. However, for clergy, keeping Sabbath can be complicated by needing to work on Sundays and the round-the-clock nature of clergy work. Nevertheless, numerous studies demonstrating high depression rates in clergy populations suggest clergy need to attend to their mental health. Religious denomination officials interested in preventing depression in clergy may be tempted to recommend Sabbath keeping, although recommending other forms of rest and rejuvenation, including connecting with others, is also possible.

This study examined the relationships of Sabbath-keeping as well as multiple other forms of rest and rejuvenation (vacation, sleep, relaxing activities, and social support) to mental and physical health and spiritual well-being using survey data from 1316 United Methodist clergy. Appropriate regression analyses (logistic, linear, and Poisson) were used to determine which clergy were more likely to keep the Sabbath and examined the relationships between Sabbath-keeping and multiple well-being outcomes. Receiving more social support was strongly associated with Sabbath-keeping. Sabbath-keeping was not significantly related to mental or physical health, after adjusting for covariates such as social support, although Sabbath-keeping was significantly related to higher quality of life and spiritual well-being—the original purpose of Sabbath-keeping—in clergy. To adequately test whether Sabbath-keeping could promote mental health for clergy beyond other forms of rejuvenation, intervention studies are needed.

KEYWORDS

Clergy; Sabbath; Spiritual well-being; Mental health; Physical health; Social Support

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Introduction

Religion can empower individuals by connecting them to a community and something beyond themselves, thereby providing the capacity to work together for a higher purpose. It is no surprise, then, that the majority of research focused on religiosity and health has shown a positive relationship between the two. For example, religious involvement is associated with better mental health outcomes, such as fewer symptoms of depression, greater life satisfaction, and decreased anxiety [1, 2, 3, 4, 5, 6, 7]. Religious involvement can also provide a support system that meets many diverse needs, including comfort and aid in a time of crisis and even potentially encouraging healthy behaviors such as less alcohol use [3, 8].

A number of studies have suggested that religious or spiritual activities benefit health. Scheff [9] argued that religious rituals such as prayer offer a form of cathartic release based on interpersonal communication between the participant and God. Regular meditation has been shown to improve quality of life as well as reduce symptoms of anxiety, depression, pain, hypertension, and menopausal symptoms in cancer patients [10, 11, 12, 13, 14, 15, 16]. Anastasi and Newberg also showed a significant reduction in anxiety in college students who recited the Rosary on a weekly basis when compared with students in the control group who watched a religious video every week [17].

What is the Sabbath? Observing the Sabbath is a ritual that has not only prompted recent research but has also become more prominent in popular literature. Indeed, one popular book encouraging Christians to keep the Sabbath is aptly entitled 24/6: A Prescription for a Healthier, Happier Life [18]. Sabbath-keeping is a Judeo-Christian tradition and a time to celebrate the world's six-day creation and honor God's rest on the seventh day. According to White et al., truly recognizing the Sabbath means "virtuous rest," which is more than just a day off; instead, it is rest that orients hearts and minds towards God [19]. However, the degree to which one actually recognizes and celebrates the Sabbath depends largely on one's personal theology.

For many present-day Christians, observing the Sabbath is not a regular practice. A notable exception is members of the Seventh-day Adventist Church (a Protestant Christian denomination), who view the Sabbath as central to the faith and a sacred covenant. Indeed, the church "has embedded in its very name the importance of observing the

seventh day of the week" [20]. For Seventh-day Adventists, the week leading up to the Sabbath includes completing all household tasks, such as buying and preparing food and laundering clothes, before sundown Friday [21]. The Sabbath day becomes the hub of the wheel around which the entire week turns, and, when Friday night approaches, the home is prepared for spending the next 24 h with God and loved ones.

Honoring the Sabbath has taken place for centuries among many Christian traditions and societies, such as Puritan New England, where businesses closed and everyone went to church. John Wesley, the founder of the Methodist movement, kept the Sabbath, and, indeed, early Methodists in both England and America were "deeply concerned" with observation of the Sabbath day [22]. However, taking time away from a demanding schedule or job can be difficult in modern society, where work is often considered virtuous and rest is ascribed little value. The pace of our lives has become hectic, and, with the advent of laptops, smartphones, and tablets, work can be done anywhere, anytime. In 2016, following a series of interventions to increase Sabbath-keeping among North Carolina clergy, 57% of United Methodist (UM) clergy participating in the Duke Clergy Health Initiative survey reported that they kept an intentional Sabbath at least one week in the past four weeks [23]. This indicates that 43% of UM clergy in the state were not keeping Sabbath, and these rates are presumably higher in areas without interventions to promote Sabbath-keeping.

How do clergy observe the Sabbath? Because many clergy engage in religious work on the designated Sabbath days for their religion, it is interesting to consider how they do or do not observe the Sabbath themselves. For Seventh-day Adventist (SDA) clergy, keeping the Sabbath can be challenging. Carter interviewed five SDA clergy regarding their practice and experience of the Sabbath [20]. One primary tenet of the SDA church is that the Sabbath can only be observed on the seventh day of the week, which is Saturday [20]. However, Saturday is also the day when SDA religious services and other activities take place, including the weekly worship service and pastoral visitations. How can an SDA pastor truly experience rest on a day filled with activity? Based on Carter's interviews with study participants, there was often a difference between the pastors' ideal of practicing the Sabbath versus the reality of the experience. All interviewees agreed that the Sabbath experience was a paradox, meaning that it was simultaneously restful and energizing as well as stressful and draining. However, all pastors accepted this situation as "part of the pastoral calling" [20].

For most Christian ministers, Sunday is the busiest day of the week, comprising worship services, Sunday school, and other church activities. Thus, many Christian ministers observe the Sabbath on Saturday or Monday. Eugene Peterson, a Presbyterian minister, reports that he and his wife pack a lunch every Monday, drive to a trailhead in the mountains, and, before emerging from the car, read a passage from the Bible and pray [24]. Their hike becomes a silent contemplation of God and nature until they stop for lunch. In accounts from United Methodist clergy (UMC), who are this study's population, one pastor declares Mondays technology-free days and avoids work-related tasks, including answering non-emergency emails and phone calls [25]. Cliff Wall, also a United Methodist pastor, indicates that he and his family have become more intentional about Sabbath observance. They study the Bible, pray, eat at home together, avoid shopping, and

encourage their kids to complete homework assignments before the Sabbath so they can enjoy the day, too [26].

The state of clergy health. In the 1950s, studies with Protestant clergy indicated that this group had the lowest disease rates and "lived longer and healthier lives than people in any other profession" [27]. After searching through four centuries of mortality data from several European countries and the United States, King and Bailar published data in 1969 indicating that, overall, clergy lived longer than non-clergy [28]. During that time period, chronic diseases were less likely to kill people, and yet clergy, when compared to non-clergy, died sooner of chronic illnesses such as heart disease and diabetes.

In today's society, clergy are still disproportionately affected by these chronic diseases. In 2008, UMC in North Carolina were found to have higher rates of diabetes, arthritis, and hypertension than comparable North Carolinians [29]. Most notable, however, is the higher rate of obesity among clergy. In 2002, the Pulpit and Pew research project conducted a national survey of more than 2500 religious leaders and found that an astounding 76% of clergy were either overweight or obese [30]. That same year, the Evangelical Lutheran Church of America (ELCA) reported that ELCA pastors were more overweight and sedentary than the average American [31, 32, 33]. A study of UMC across the United States found an obesity rate of 42% in 2015 [34], similar to the 40% obesity rate found for UMC in North Carolina [29]. In comparison, the state obesity rate for demographically similar non-clergy North Carolinians was only 29%.

The causes of this unhealthy trend in clergy are not completely established, but the answer is likely behavioral with multiple contributing factors. Among the probable factors are eating dinners out (on average, clergy spend four evenings away from home per week for work), the frequent presence of food at church meetings paired with hopeful expectations of parishioners that the pastor will enjoy their food (and the fact that pastors do indeed enjoy it), and the sedentary nature of clergy work, which involves many meetings and can include driving long distances to conduct hospital visits [35]. When clergy try to lose weight, stress may make it harder to do so; chronic stress can lead to higher levels of glucocorticoid secretion. One way to regulate higher levels of glucocorticoids is to consume highly caloric, energy-dense food, or "comfort foods," that stimulate pleasure centers in the brain and decrease the stress-induced systemic arousal [36].

Many factors, taken together, can create a great deal of stress for clergy. Clergy have a unique set of responsibilities and play many roles, such as counselor, mentor, mediator, fundraiser, administrator, and community leader [37, 38]. Simply put, there are high expectations on clergy, and many are on call 24/7 [35]. A recent paper comparing burnout across 84 studies of six occupations found that clergy exhibit moderate levels of emotional exhaustion, depersonalization (distancing themselves from parishioners), and feelings of low accomplishment at work, which is comparable to the burnout levels of people in other potentially stressful professions such as law enforcement and social work [39]. These findings suggest that there is a need to prevent burnout among clergy.

Observing the Sabbath and associations with health and spiritual well-being. A handful of studies have associated better mental health with Sabbath-keeping. Anhalt studied symptoms of stress in 48 graduate students and compared those who observed the Jewish Sabbath to those who did not [40]. Participants provided ratings for stress and

discomfort every two days for two weeks; both groups experienced similar stress overall, but students who observed the Sabbath reported feeling significantly lower stress on the Sabbath day. Two studies have demonstrated a positive association between personal relationships and Sabbath observance, specifically deeper connections with others and greater marital intimacy, which was associated with improved feelings of mental well-being [41, 42].

Other studies have investigated aspects of Sabbath-keeping, such as ceasing and rest, and their associations with burnout and basic psychological needs. Among Protestant clergy who observed the Sabbath, Lee reported that both rest and ceasing were positively correlated with autonomy and negatively correlated with emotional exhaustion [43]. White et al. explored the relationship between Sabbath-keeping and rest in both mental health clinicians and graduate students in mental health fields who had a Judeo-Christian background [19]. Almost half (48.8%) of survey participants indicated that they observed the Sabbath, which was defined as "at least one day per week off from work" and therefore may not have been a religious observance per se [19]. Respondents were asked to indicate practical barriers to rest. The most frequently endorsed barriers were being too busy, having many work commitments, and family needs. The authors found that Sabbath observance correlated with higher satisfaction and quality of rest.

In terms of physical health, a study was undertaken with more than 5000 Seventh-day Adventists who observed the Sabbath to explore its relationship with both physical and mental health [8]. Participants were asked to respond on a 6-point Likert scale, with higher scores translating to greater Sabbath-keeping. The average level of Sabbath-keeping among study participants was high (mean = 5.62, SD = 0.61). A significant correlation was reported between regularly observing the Sabbath and mental health but not between Sabbath-keeping and physical health. More frequent Sabbath observance was associated with better religious coping, greater religious support, a healthier diet, and more frequent exercise.

Taken together, these studies suggest a positive relationship between the observance of Sabbath and holistic health outcomes. No single study has considered mental health, physical health, and spiritual well-being in the same population, which would allow one to understand potential patterns between Sabbath-keeping and different aspects of well-being, holding constant the same group of participants. In addition, many of the existing studies do not take into account nonreligious forms of rest such as sleep, vacation-taking, having a regular day off, and devoting time to hobbies or other interests.

Denominational leaders want their clergy to experience positive spiritual well-being as well as good mental and physical health. Studies reporting that clergy have compromised physical and mental health have concerned denominational leaders and prompted interest in possible solutions, including taking vacations, having a regular day off per week, and regularly observing the Sabbath. In 2010, some administrators in the United Methodist Church contacted ministers known to skip vacations to ensure they took entitled time off [44]. The General Board of Discipleship for the United Methodist Church also issued guidelines for pastor-parish relations and leading congregations in 2008, indicating that one role of the Staff/Pastor-Parish Relations Committee is to "encourage, if not require, the pastor and staff to take Sabbath time each week, use their vacation days, and make

sufficient time for their families" [45]. The Episcopal, Baptist, and Lutheran churches have introduced health initiatives that emphasize the need for clergy to keep the Sabbath. In 2016, the Evangelical Lutheran Church in America launched a wellness reformation, inviting church leaders to make meaningful life changes that reflect good health [46]. Given this strong denominational interest, more studies examining the relationship between Sabbath-keeping and multiple health outcomes are needed.

The present study. We sought to investigate the relationships between Sabbath-keeping and mental, physical, and spiritual well-being. We also sought to put Sabbath-keeping to a difficult test: Does Sabbath-keeping exhibit a significant relationship with outcomes even after controlling for other kinds of rest, such as sleep and vacation? Our goal in answering these questions was to inform the recommendations that denominational officials make for the clergy they supervise while simultaneously seeking to understand the relationships between one particular spiritual practice and health and well-being.

Methods

Procedure

Data were obtained from the 2014 wave of the Duke Clergy Health Initiative Longitudinal Survey, a study that was initiated in 2008. We only used data from 2014 because questions related to the variables of interest were not available in previous waves. All UMC from both the North Carolina and Western North Carolina Conferences were invited to participate (N = 2380) if they met the broad inclusion criteria of being full- or part-time pastors (elders, local, and student pastors) appointed to churches or district superintendents, bishops, extension ministers, deacons, or those who were once retired but had returned to serving a church. Exclusion criteria were few; only clergy without current appointments or not identifying as United Methodist were excluded. All eligible clergy currently serving in UMC parishes were sent recruitment letters and a prepaid $25 incentive, along with a link to the online survey.

Participants could respond to either a paper version (2.9%) of the survey or a telephone interview (0.1%), but 97.0% chose to complete the online version. In 2014, 1788 clergy completed the survey for a response rate of 75%. For the current study, we included only participants appointed to a church; they could be full-time or part-time. All participants gave informed consent. All study procedures and protocols were approved by the Duke University Arts & Sciences Institutional Review Board.

Measures

Sabbath-keeping. The participants' keeping of the Sabbath was measured using a survey question that we developed for this study in consultation with UMC pastors. The question is, "In the past 4 weeks, in how many of the weeks did you keep a full day of intentional Sabbath?" We sought to understand the relationship between health and different degrees of Sabbath-keeping, including no Sabbath-keeping. A categorical variable was created indicating high Sabbath-keeping (3 or 4 weeks with a Sabbath day) vs. low Sabbath-keeping (1 or 2 weeks with a Sabbath day) vs. non-Sabbath keeping (0 weeks with a Sabbath day).

Spiritual well-being. We used the Clergy Spiritual Well-Being Scale to assess two kinds of spiritual well-being: (a) feeling God's presence in daily life (Cronbach's $\alpha = 0.91$) and (b) feeling God's presence in ministry (Cronbach's $\alpha = 0.91$). For example, one item asks, "During the past six months, how often have you. .. experienced the presence and power of God in the ordinary?" and another item asks, ".. . felt the presence and power of God in planning worship?" Participants responded to 14 items based on a 5-point Likert scale with response options ranging from 1 (Never) to 5 (Always). Sums of the scores were calculated for the two subscales (7 items each).

Physical and mental health functioning. The Medical Outcomes Study Short Form (MOS SF)-12 is a 12-item health functioning measure that generates a Physical Health Composite Score and a Mental Health Composite Score. Norms for the U.S. population and specific subgroups are available for the SF-12 (Version 1), which was used in this study [47, 48]. The SF-12 has shown good reliability, internal consistency, and construct validity with summary scales, discriminating between symptomatic and non-symptomatic groups [49, 50, 51, 47]. Survey items asked participants to indicate the degree to which physical problems interfered with daily activities over the previous four weeks. The SF-12 also yields a continuous score of mental health functioning, which consists of items such as how often emotional problems have interfered with daily activities or social events. Scores range from 0 to 100, where higher scores indicate better functioning, with a mean of 50 and a standard deviation of 10.

Body mass index (BMI). Participants' BMI was computed using self-reported height and weight and the standard formula for BMI categories from the National Heart, Lung, and Blood Institute in which a BMI of 30 kg/m2 or above is classified as obese and a BMI between 25 kg/m2 and 29.9 kg/m2 is classified as overweight [52].

Positive mental health. Mental health was measured using the Mental Health Continuum-Short Form (MHC-SF), which consists of 14 items [53, 54, 55]. Scores were coded following the measure's instructions. To be categorized as having flourishing mental health, individuals had to indicate experiencing 'every day' or 'almost every day' at least 1 of the 3 signs of hedonic well-being (e.g., feeling happy or satisfied with life) and at least 6 of the 11 signs of psychological well-being (e.g., feeling like one is growing and has meaning in life) and social well-being (e.g., feeling like one belongs and is contributing to society) during the past month.

Depression symptoms. Symptoms of depression were measured using the Patient Health Questionnaire (PHQ-9), which consists of nine items on the frequency of depression symptoms during the past two weeks. Example items include, "Over the last two weeks, how often have you been bothered by. .. little interest or pleasure in doing things?" and "... feeling tired or having little energy?" Scores can range from 0 to 27. Based on previous validation studies, depression was defined as a score of 10 or higher [56, 57].

Anxiety symptoms. The Generalized Anxiety Disorder 7-item Scale (GAD-7) is a tool used to screen for the presence and severity of generalized anxiety [58]. Respondents indicate how often (0 = not at all, 1= several days, 2= over half the days, 3= nearly every day) they experienced each of the 7 indicators of anxiety over a period of two weeks. Possible scores ranged from 0 to 21. We dichotomized scores using a cut-off score of 10 and higher to indicate moderate or high levels of anxiety [58].

Burnout. Work-related burnout was measured using the Maslach Burnout Inventory (MBI), which consists of 22 items comprising three subscales, specifically emotional exhaustion, depersonalization, and low personal accomplishment [59, 60]. Emotional exhaustion is regarded as the basic stress component of burnout and refers to depletion of one's emotional and physical resources (Cronbach's $\alpha = 0.91$). Depersonalization represents a negative and detached attitude toward patients or clients (Cronbach's $\alpha = 0.79$). Low personal accomplishment refers to feelings of incompetence, low efficacy, and lack of productivity (Cronbach's $\alpha = 0.84$). Scores were summed for each subscale and, using cut-off scores defined in the MBI manual, we dichotomized the three measures to indicate higher burnout: (a) ≥17 for moderate/high emotional exhaustion (possible range of 0–54); (b) ≥6 for moderate/high depersonalization (possible range of 0–30); and (c) ≤39 for low/moderate personal accomplishment (possible range of 0–48).

Quality of life (QOL), Quality of life was assessed using the 16-item Flanagan Quality of Life Scale (QOLS) [61, 62, 63, 64]. The QOLS measures quality of life as determined by several domains, including material and physical well-being, relationships with other people, personal development and fulfillment, and recreation as well as social, community, and civic activities. Participants responded to items based on a 7-point Likert scale. The sum score has a possible range of 16 to 112 (Cronbach's $\alpha = 0.92$).

Life chaos Life unpredictability was measured using the six-item Life Chaos Scale, which reflects lack of stability, organization, and ability to anticipate and plan for the future. The scale includes items such as "My life is unstable" and "My daily activities from week to week are unpredictable" (Cronbach's $\alpha = 0.70$) [65].

Demands on pastor's time. Demands on pastor's time is a study-created item that reads, "How much of your time do you think your church members expect you to make available to them?" Participants responded on a 7-point Likert scale. The score was dichotomized to identify extremely high demands by church members on a pastor's time, namely, "All of my time, 24 hours a day, 7 days a week" and "Nearly all of my time with a day off not really feeling acceptable," versus less extreme response options.

Vacation. Vacation time was measured using the survey question, "How many vacation days have you taken in the last 12 months? Do not include holidays like July 4th and Memorial Day, and do not include regular intentional Sabbath or weekend days. (Estimates are fine.)"

Sleep. Sleep was measured using the survey question, "On average, how many hours of sleep do you usually get in a 24-hour period? (For example: 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, etc.)."

Relaxing activities. Relaxing activities were measured using the survey question, "About how many hours per week do you spend on activities that you find personally relaxing, such as needlework, sports, going to the movies, gardening, or just relaxing and taking it easy?"

Social support. Social support was measured using a single item from the Brief Risk Factor Surveillance System, which is an annual telephone survey sponsored by the Centers for Disease Control and Prevention and conducted by each state in the United States. The item is "How often do you get the social and emotional support you need?" with response options ranging from "always" to "never." Although this is a single-item measure, it has

been tested and used on the Centers for Disease Control and Prevention annual survey since at least the year 2000 [66, 67].

Financial stress. Financial stress was measured using the survey question, "How stressful is your current financial situation for you?" A binary variable was created indicating high financial stress (extremely or very stressful) versus low financial stress (moderately, slightly, or not at all stressful).

Analyses

We summarized sociodemographics, occupational characteristics, rest-related behaviors, support and stress factors (social support, financial stress, life chaos, and demands on time) as well as physical health, mental health, and spiritual well-being outcomes by the three Sabbath-keeping levels. We reported median, first and third quartiles, and range for continuous and score variables as well as frequencies and percentages for categorical variables. We also reported mean and standard deviation for some continuous variables. Differences by Sabbath-keeping level were tested for statistical significance using the Kruskal-Wallis test for continuous and score variables and the chi-square test for categorical variables. Any significant findings in Table 1 indicate a difference between any two of the three levels of Sabbath-keeping. We examined these findings and, based on patterns, conducted a few specific tests comparing high Sabbath-keepers to combined low and non-Sabbath keepers as well as some comparing non-Sabbath-keepers to combined low and high Sabbath-keepers.

To understand factors associated with Sabbath-keeping, and separately to examine the relationship of Sabbath-keeping to health and spiritual well-being, we fitted a series of multivariable regression models in two stages. In the first stage, we examined the relationship between the potential predictors and Sabbath-keeping (number of days per four weeks) in order to assess who is more likely to keep the Sabbath. We used a Poisson regression model to account for the discrete nature of the outcome (0, 1, 2, 3, or 4 weeks with a Sabbath day); we therefore report the effects of predictors as mean ratios.

In the second stage, when estimating the relationship between Sabbath-keeping and health and well-being outcomes, we selected the most appropriate multivariable regression model for each outcome. Specifically, we used logistic regression for binary outcomes and linear regression for continuous and score outcomes. (Although we used Poisson regression in the first stage of the analysis when predicting the number of Sabbath-keeping weeks, we used these other regression analyses for the health and well-being outcomes based on a likelihood ratio test, which indicated that the health and well-being outcome data were dispersed differently than the Sabbath-keeping data.)

All models in both stages were adjusted for a priori demographic and other factors potentially related to Sabbath-keeping as well as potentially related to the health and well-being outcomes of interest. The variables are gender, age, race, marital status (married vs. not married), education, being bivocational ("Do you currently work at any job other than your conference appointment?"), vacation time, amount of sleep, time spent on relaxing activities, social support, financial stress, life chaos, and demands on pastor's time. The models fitted for the health and spiritual well-being outcomes enabled us to determine the relationship of Sabbath-keeping to the outcomes, above and beyond demographics and variables that are typically important in predicting physical and mental health.

Effect estimates were reported as mean ratios, mean differences, and odds ratios for Poisson, linear, and logistic models, respectively, together with 95% confidence intervals and p-values. Analyses were performed using SAS 9.4 (SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27,513 USA) and Stata/SE 14.2 (StataCorp, 4905 Lakeway Drive, College Station, Texas 77,845 USA).

Results

A total of 1316 participants were included in the analyses. Table 1 depicts sociodemographic and health variables by level of Sabbath-keeping. These findings describe high, low, and non-Sabbath keepers but are bivariable only (i.e., they do not control for other variables).

In terms of sociodemographics, participants who reported keeping the Sabbath less were more likely to report being employed in the UMC quarter- or half-time ($p < 0.001$). Participants who reported keeping zero days of Sabbath for the previous four weeks reported lower worship attendance in their congregations ($p = 0.001$), were less likely to have a master's or doctoral degree ($p = 0.002$), and had less pastoral income ($p = 0.001$). Participants who reported keeping 0 days of Sabbath were more likely to be local pastors instead of elders or having any other ordination status ($p = 0.008$).

Those who reported keeping Sabbath three to four days/month were more likely to report more rest (also in Table 1). Specifically, they were significantly more likely to report more rest in the forms of sleep, vacation, and relaxing activities ($p < 0.001$ for each kind of rest). In terms of support and stress, participants who reported keeping Sabbath three to four days/month were significantly more likely to report always getting the social support they needed ($p < 0.001$), had lower life chaos scores ($p < 0.001$), and were less likely to report extremely high demands by congregants on their time ($p = 0.001$).

Participants who reported keeping Sabbath three to four days/month were significantly more likely to report higher spiritual well-being scores ($p < 0.001$) and quality of life scores ($p < 0.001$) and were more likely to possess flourishing mental health ($p = 0.001$). Further, participants who reported keeping the Sabbath three to four days/month were significantly less likely to have scores that qualified them for depression ($p < 0.001$), anxiety ($p = 0.042$), or any of the three kinds of burnout ($p = 0.001$ for emotional exhaustion; $p = 0.009$ for depersonalization; $p = 0.012$ for lack of personal accomplishment).

Table 2 presents mean ratios from a multivariable Poisson regression model for the number of Sabbath-keeping days in the past four weeks. Race was significantly associated with differences in Sabbath-keeping ($p = 0.028$). African American clergy were estimated to keep 21% more days of Sabbath than White clergy (MR (mean ratio) 1.21, 95% CI: 0.98–1.49). Being bivocational was significantly associated with a 23% decrease (MR 0.77, 95% CI: 0.65– 0.90, $p = 0.001$) in Sabbath observance. Positive associations were found for vacation and sleep, with each additional vacation day being associated with a 1% increase in mean number of Sabbath days (MR 1.01, 95% CI: 1.00–1.02, $p = 0.002$) and each additional hour of sleep being associated with a 9% increase in mean number of Sabbath days (MR 1.09, 95% CI: 1.04–1.15, $p = 0.001$).

Social support was strongly associated with Sabbath-keeping. Compared to participants

who reported they “always” got the social and emotional support they needed, those in all other categories reported 15–30% lower mean numbers of Sabbath-keeping days per month (MR: 0.70–0.85, $p = 0.004$). For each 1-point increase on the life chaos scale, there was an associated 3% decrease in mean number of Sabbath days reported (MR: 0.97, 95% CI: 0.96– 0.99, $p < 0.001$). Compared to those with lower time demands, participants who reported experiencing extremely high demands on their time reported observing 20% fewer Sabbath days (MR: 0.80, 95% CI: 0.66–0.96, $p = 0.018$).

Tables 3 and 4 depict the results from multiple regression analyses of health and well-being outcomes with Sabbath-keeping. Adjusting for other potential predictors of health, Sabbath-keeping was significantly related to participants’ spiritual well-being and quality of life scores. However, Sabbath-keeping was not significantly associated with any of the physical or mental health outcomes. Compared to clergy who reported not keeping Sabbath in the past four weeks, those who reported keeping three or four days of Sabbath were estimated to experience more of God’s presence in daily life (spiritual well-being) by 1.8 units, whereas clergy who reported keeping one or two days of Sabbath were estimated to experience more of God’s presence in daily life by 1.1 units (on a scale of 24 units; $p < 0.001$). Similarly, the mean score for feeling God’s presence in ministry (another measure of spiritual well-being) was estimated to be higher by 1.7 units for those who reported keeping three or four days of Sabbath and by 1.0 unit for those who reported keeping one or two days of Sabbath when compared to the participants who reported keeping zero days of Sabbath (on a scale of 32 units; $p < 0.01$). Participants who reported keeping three or four days of Sabbath were estimated to experience higher quality of life by 2.0 units, whereas participants who reported keeping one or two days of Sabbath were estimated to report higher quality of life by 1.4 units ($p < 0.05$) when compared to participants who reported not keeping the Sabbath (on a scale of 80 units; $p < 0.05$).

Age and social support were significantly positively associated with better outcomes on the two kinds of spiritual well-being and quality of life, and life chaos was significantly negatively associated with the two kinds of spiritual well-being and quality of life. Social support and life chaos were also significantly related to multiple outcomes. For example, if a participant reported rarely or never receiving the social support needed, his or her physical and mental health functioning scores were estimated to be lower by 1.8 ($p < 0.001$) and 5.1 units ($p < 0.001$), respectively, when compared with a participant who reported always receiving the social support needed, with other characteristics holding constant. Also, if a participant’s life chaos score increased by 1 unit, with other factors held constant, the odds of depression and anxiety were estimated to increase by 24% ($p < 0.001$) and 36% ($p < 0.001$), respectively.

Discussion

For Christian clergy, keeping the Sabbath is one of the Ten Commandments in the Bible. That is the primary reason to keep the Sabbath and, frankly, no research finding could or should change one’s mandate to adhere to such clear scriptural guidance. However, the physical and mental health conditions of clergy are approaching crisis levels, with clergy experiencing higher rates of depression, obesity, and chronic disease than comparable

Americans [68, 69, 29, 70]. Clergy leaders are looking for ways to improve clergy health, and these ways will require behavior change on the part of clergy. Behavior change is very difficult; it requires compelling cognitive reasons, which can be made easier if there are structures in place to support the change. The fourth commandment in the Bible offers both a compelling reason and structure for behavior changes involving spiritual practice and rest. We sought to use clergy health data to inform leaders about evidence of any health benefits (or detriments) of Sabbath-keeping for clergy.

Specifically, the goal of this study was to determine whether Sabbath-keeping demonstrates a significant relationship with physical and mental health and spiritual well-being among UMC clergy, even when accounting for other forms of rejuvenation. Although other studies have not shown a relationship between Sabbath-keeping and physical health, several have suggested a positive relationship between Sabbath-keeping and better mental health [8, 71]. In the current study, we found significant bivariable relationships between keeping Sabbath and indicators of better mental health in that regular Sabbath-keepers were less likely to have scores qualifying for depression, anxiety, and burnout and were more likely to have scores qualifying for flourishing mental health. However, the relationships between Sabbath-keeping and several mental health outcomes were not significant after adjusting for sociodemographic, rest, and social support variables in the models. In addition, Sabbath-keeping was not significantly related to any of the physical health outcomes we tested (physical health functioning, BMI, obesity, and overweight or obese) in either bivariable or multivariable tests, with only one minor exception (participants reporting keeping Sabbath three to four days per month had slightly better physical health functioning scores in the unadjusted model only).

These results indicate that researchers should avoid making conclusions based on correlations alone. Even though bivariable tests showed that Sabbath-keeping related to mental health outcomes in expected ways, these relationships were not significant in multivariate models.

We included the rest variables, specifically sleep, vacation-taking, and engaging in relaxing activities, in the models in order to inform clergy supervisors as to whether—from a strictly mental and physical health standpoint—they would be better advising their clergy to spend time keeping the Sabbath or engaging in other kinds of rest, although these activities may not be mutually exclusive. Like Sabbath-keeping, these rest variables did not evidence a significant relationship with mental or physical outcomes in multivariate models, with only one exception: taking more vacation days was significantly related to less emotional exhaustion. Despite this exception, it does not appear that secular forms of rest relate to mental and Pastoral Psychology physical health outcomes for clergy. These nonsignificant results are consistent with studies on vacation-taking, which suggest that vacation has a positive impact on health and well-being but that the effects fade after individuals go back to work [72, 73]. In the Framingham studies on vacation-taking and blood pressure, one had to not have taken any vacation in 20 years in order to see a relationship between vacation-taking and coronary disease [74].

In contrast to rest, the variable that demonstrated a significant relationship with each of the 12 mental and physical health outcomes in this study was social support. The relationships between endorsing “always” receiving the social support that participants

needed and both mental and physical health outcomes were strong and in the expected direction. With the physical health outcomes of BMI and obesity, perceived social support did not show a linear relationship; rather, sometimes receiving needed social support was associated with weighing the most. The importance of social support cannot be overstated. A large range of studies has repeatedly demonstrated the benefit of perceived social support to both mental and physical health [75, 76, 77, 78]. These studies include the Grant Study, which followed Harvard undergraduate men from 1938 until they died and found that people who had the most fulfilling lives after age 70 had the most social support at that age and earlier [79]. Among clergy, a focus group study found that participants indicated that social support was one of the key ways they coped with the numerous demands of the ministry. Through friendships, they could air their troubles, make social connections, and be held accountable for personal and health goals [80]. With or without Sabbath observance, it appears that social support is important to good mental health for clergy.

Although we cannot assess this using our data, it is possible that pastors spend time during their Sabbath days fostering support. Although it may be somewhat disappointing that Sabbath-keeping was not significantly related to mental or physical health in multivariate models, Sabbath-keeping was strongly significantly related to better spiritual well-being of both kinds tested (experiencing the presence and power of God in daily life as well as feeling the presence and power of God in ministry). Keeping Sabbath one to two days per month was positively related to higher spiritual well-being when compared to no Sabbath days per month, and keeping Sabbath three to four days per month was even more strongly related to higher spiritual well-being. Sabbath-keeping is a spiritual practice, and the expectation is that it would relate to better spiritual wellbeing, as found in this study. Our findings suggest that those who keep the Sabbath report higher levels of spiritual well-being than those who do not. Of course, our data are limited in that we did not (and could not) randomly assign participants to keep the Sabbath or not, and therefore it is entirely possible that clergy with higher spiritual well-being are more likely to keep the Sabbath in the first place, as opposed to Sabbath-keeping being the cause of higher spiritual well-being. We simply do not know the direction of this relationship.

In this current study, Sabbath-keeping was significantly related to better quality of life, with quality of life measured broadly as satisfaction with one's relationships, creativity, and encouraging others. Similarly, Gioiella et al. found a positive relationship between Sabbath-keeping and quality of life as well as spiritual well-being and quality of life [81]. Possibly people who observe the Sabbath experience greater quality of life, or maybe people who feel greater quality of life keep the Sabbath more times per month.

It should be noted that a large percentage of clergy in this study (38.4%) indicated that they had kept the Sabbath one to two days in the past month and 36.5% indicated that they had kept Sabbath three to four days in the past month. These large percentages suggest that Sabbath keeping was a common practice among UMC clergy in North Carolina in 2014. At the same time, 25% of clergy reported not keeping any Sabbath days in the past month. It would be interesting to know the larger picture of their spiritual practices. In terms of who is less likely to keep the Sabbath, we found that bivocational clergy, when compared to clergy not employed outside of the UMC, kept significantly fewer days of

Sabbath per month, as did White clergy compared to African American clergy. Although difficult, anyone wanting to increase Sabbath-keeping in these groups of clergy may need to improve structures that likely impede keeping Sabbath. Of note, after adjustments, we did not find significant differences in number of days per month of Sabbath-keeping and marital status, education, gender, or reported level of financial stress.

This study has a number of limitations. First, all of the participants were UMC clergy working in North Carolina. United Methodist clergy have poor health and therefore are important to study; however, the ways in which UMC clergy observe the Sabbath are also less defined than for other clergy such as Jewish rabbis. As a result, it is uncertain which actions during Sabbath relate to higher spiritual well-being in the clergy participants in this study (if, in fact, it is Sabbath-keeping that promotes better spiritual well-being and not the other way around). It is also possible that with a diversity of ways to observe Sabbath, this study was unable to detect a clear signal between Sabbath-keeping and mental and physical health outcomes that might otherwise have been present with more clearly understood Sabbath activities. This study is additionally limited by its reliance on self-reported data and by having few survey questions about Sabbath-keeping. Future studies should ask not only about frequency of Sabbath observance but also about duration of each Sabbath day, number of consecutive months or years of Sabbath-keeping, and specific activities enacted during Sabbath. Finally, the largest limitation of this study, as noted earlier, is that we were unable to assign clergy to Sabbath-keeping or not Sabbath-keeping, thereby leaving us with the common chicken-and-egg conundrum for the spiritual well-being findings. Although it's not ethical to assign Christians to not keep their Sabbath, a Sabbath intervention study with a strong research design would provide greater understanding about how clergy keep the Sabbath, barriers to regular Sabbath-keeping, and potential well-being benefits. The current study suggests that Sabbath-keeping is less likely to impact mental and physical health than spiritual well-being, but without better measures on Sabbath-keeping duration and activities, we are unable to lay those questions to rest.

Nevertheless, to our knowledge, Sabbath-keeping has not previously been studied among the same participants across a range of physical health, mental health, and spiritual well-being outcomes and tested against other rest and rejuvenation activities. Our finding that Sabbath-keeping is significantly related to higher spiritual well-being and quality of life may encourage future studies in this area to test whether this relationship is causal or potentially reciprocal in nature. The strong relationship between social support and multiple mental health outcomes in this study reinforces the idea that what clergy do during their Sabbath days can impact their mental health and that, with or without keeping Sabbath, maintaining strong social support is likely beneficial for clergy. Denomination leaders and congregants would do well to encourage pastors to spend time with peer pastors, family, and friends as well as keep the fourth commandment, if for no other reason than being true to their faith.

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Table 1. Clergy demographics and health statuses by number of full Sabbath days in the past four weeks.

	0 days (N=330)	1 or 2 days (N=506)	3 or 4 days (N=480)	Total (N=1,316)	p
Sociodemographics and Occupation					
Employment status					<0.001[1]
1/4 time	54 (16%)	50 (10%)	44 (9%)	148 (11%)	
1/2 time	71 (22%)	69 (14%)	49 (10%)	189 (14%)	
3/4 time	14 (4%)	29 (6%)	19 (4%)	62 (5%)	
Full time	191 (58%)	358 (71%)	368 (77%)	917 (70%)	
Ordination status					0.077[1]
Elder	180 (55%)	321 (63%)	301 (63%)	802 (61%)	
Local Pastor	133 (40%)	157 (31%)	149 (31%)	439 (33%)	
Deacon	7 (2%)	17 (3%)	17 (4%)	41 (3%)	
Other	10 (3%)	11 (2%)	13 (3%)	34 (3%)	
Gender					0.065[1]
Male	244 (74%)	337 (67%)	341 (71%)	922 (70%)	
Female	86 (26%)	169 (33%)	139 (29%)	394 (30%)	
Age in years (24-85)					<0.001[2]
Median (Q1, Q3)	57 (49, 63)	56 (47, 61)	54 (44, 60)	55 (46, 62)	
Race					0.641[1]
White	295 (89%)	459 (91%)	423 (88%)	1,177 (89%)	
African-American	19 (6%)	28 (6%)	29 (6%)	76 (6%)	
Other	16 (5%)	19 (4%)	28 (6%)	63 (5%)	
Years in ministry (0-61)					0.157[2]
Median (Q1, Q3)	15 (7, 28)	15 (8, 27)	14 (6, 25)	15 (7, 26)	
Weekly worship attendance (4-2,500)					0.001[2]
Median (Q1, Q3)	75 (40, 170)	90 (50, 200)	95 (55, 230)	88 (50, 200)	
Appointment type					0.422[1]
Associate pastor	38 (12%)	65 (13%)	71 (15%)	174 (13%)	
Head pastor	44 (13%)	72 (14%)	80 (17%)	196 (15%)	
Solo pastor	241 (73%)	363 (72%)	320 (67%)	924 (70%)	

Table 1. Clergy demographics and health statuses by number of full Sabbath days in the past four weeks.

	0 days (N=330)	1 or 2 days (N=506)	3 or 4 days (N=480)	Total (N=1,316)	p
Other	7 (2%)	6 (1%)	9 (2%)	22 (2%)	
Marital status					0.488[1]
Not married	49 (15%)	61 (12%)	61 (13%)	171 (13%)	
Married	281 (85%)	445 (88%)	419 (87%)	1145 (87%)	
Educational status					0.006[1]
College or below	88 (27%)	99 (20%)	85 (18%)	272 (21%)	
Master's or doctoral	242 (73%)	407 (80%)	395 (82%)	1044 (79%)	
Bi-vocational					<0.001[1]
Yes	75 (23%)	67 (13%)	48 (10%)	190 (14%)	
Pastoral yearly income (0-$300,000)					0.003[2]
Median (Q1, Q3)	40,000 (21,312, 56,000)	43,000 (28,000, 56,000)	43,000 (34,500, 59,000)	42,000 (27,151, 56,450)	
<u>Rest and Relaxation</u>					
Vacation days in the last year (0-50)					<0.001[2]
Mean (SD)	10.2 (6.7)	10.9 (6.8)	12.7 (7.4)	11.4 (7.1)	
Median (Q1, Q3)	10 (5, 14)	10 (5, 15)	12 (7, 16)	10 (6, 15)	
Sleep hours per 24 hours (4.0-10.0)					<0.001[2]
Mean (SD)	6.6 (1.0)	6.7 (1.0)	7.0 (0.9)	6.8 (0.9)	
Median (Q1, Q3)	7.0 (6.0, 7.1)	7.0 (6.0, 7.1)	7.0 (6.1, 7.1)	7.0 (6.1, 7.1)	
Hours on relaxing activities per week (0-40)					<0.001[2]
Mean (SD)	10.3 (6.8)	9.7 (5.7)	12.0 (6.8)	10.7 (6.5)	
Median (Q1, Q3)	10 (5, 12)	8 (5, 12)	10 (8, 15)	10 (6, 14)	
<u>Support and Stress</u>					
Social support					<0.001[2]
Always	56 (17%)	94 (19%)	150 (31%)	300 (23%)	

Table 1. Clergy demographics and health statuses by number of full Sabbath days in the past four weeks.

	0 days (N=330)	1 or 2 days (N=506)	3 or 4 days (N=480)	Total (N=1,316)	p
Usually	156 (47%)	240 (48%)	215 (45%)	611 (47%)	
Sometimes	79 (24%)	128 (25%)	84 (18%)	291 (22%)	
Rarely or never	38 (12%)	42 (8%)	28 (6%)	108 (8%)	
Financial stress					0.366[1]
Moderate to low	271 (82%)	414 (82%)	405 (85%)	1,090 (83%)	
High	59 (18%)	91 (18%)	71 (15%)	221 (17%)	
Life Chaos (6-24)					<0.001[2]
Median (Q1, Q3)	13 (11, 15)	13 (11, 15)	12 (10, 14)	12 (10, 15)	
Demands on time					0.003[1]
Acceptably high to low	287 (87%)	450 (89%)	450 (94%)	1,187 (90%)	
Extremely high	43 (13%)	56 (11%)	30 (6%)	129 (10%)	
<u>Continuous Health Outcomes</u>					
Physical health functioning (22.0-61.2)					0.005[2]
Median (Q1, Q3)	49.7 (45.7, 51.8)	49.4 (45.3, 51.8)	50.1 (47.3, 52.2)	49.8 (46.2, 52.2)	
Mental health functioning (22.2-62.1)					0.003[2]
Median (Q1, Q3)	46.3 (42.4, 48.3)	46.3 (42.0, 48.3)	47.2 (44.1, 49.1)	46.3 (43.0, 48.4)	
Body mass index (18.4-67.4)					0.867[2]
Median (Q1, Q3)	28.5 (25.1, 33.0)	28.7 (25.1, 32.9)	28.5 (24.8, 33.3)	28.6 (25.1, 33.0)	
Spiritual vitality: Experiencing God's presence in daily life (6-30)					<0.001[2]
Median (Q1, Q3)	22 (17, 25)	23 (18, 26)	24 (20, 27)	23 (18, 26)	
Spiritual vitality: Feeling God's presence in ministry (8-40)					<0.001[2]
Median (Q1, Q3)	30 (24, 34)	31 (26, 34)	32 (27, 36)	31 (26, 35)	
Quality of life (32-112)					<0.001[2]
Median (Q1, Q3)	88 (78, 96)	89 (82, 96)	93 (85, 99)	90 (82, 97)	

Table 1. Clergy demographics and health statuses by number of full Sabbath days in the past four weeks.

	0 days (N=330)	1 or 2 days (N=506)	3 or 4 days (N=480)	Total (N=1,316)	p
Binary Health Outcomes					
Obesity (BMI≥30)					0.728[1]
Yes	135 (41%)	199 (40%)	201 (42%)	535 (41%)	
Overweight or obesity (BMI≥25)					0.612[1]
Yes	252 (77%)	382 (76%)	352 (74%)	986 (76%)	
Flourishing mental health					0.005[1]
Yes	216 (65%)	326 (64%)	353 (74%)	895 (68%)	
Depression (PHQ9≥10)					<0.001[1]
Yes	40 (12%)	55 (11%)	24 (5%)	119 (9%)	
Anxiety (GAD7≥10)					0.094[1]
Yes	17 (5%)	32 (6%)	16 (3%)	65 (5%)	
Burnout: Exhaustion≥17					0.006[1]
Moderate to high	141 (43%)	210 (42%)	159 (33%)	510 (39%)	
Burnout: Depersonalization≥6					0.017[1]
Moderate to high	86 (26%)	150 (30%)	104 (22%)	340 (26%)	
Burnout: Accomplishment≤39					0.043[1]
Low to moderate	189 (57%)	295 (58%)	243 (51%)	727 (55%)	

[1]Chi-Square [2]Kruskal-Wallis

Table 2. Multivariable Poisson model of number of Sabbath-keeping days in the past four weeks.

Independent Variable	Mean Ratio	Mean Ratio 95% Confidence Limits		P Value
Vacation [a]**,** days	1.01	1.00	1.02	0.002**
Sleep [a]**,** hours	1.09	1.04	1.15	0.001**
Relaxing activities [a]	1.01	1.00	1.01	0.041*
Social Support: Always	Ref	-	-	
Usually	0.85	0.76	0.95	0.004**
Sometimes	0.83	0.72	0.97	
Never and Rarely	0.70	0.56	0.88	
Financial stress: Low to Moderate	Ref	-	-	-
High	0.99	0.87	1.14	0.933
Life Chaos [a]	0.97	0.96	0.99	0.0002***
Demands on Time: Low	Ref	-	-	-
High	0.80	0.66	0.96	0.018*
Gender: Male	Ref	-	-	-
Female	0.99	0.90	1.14	0.866
Age [a]**,** years	0.99	0.99	1.00	<0.0001***
Race: White	Ref	-	-	
African American	1.21	0.98	1.49	0.028*
Other	1.27	1.03	1.57	
Marital Status: Not Married	Ref	-	-	-
Married	1.03	0.88	1.20	0.750
Education: College or Below	Ref	-	-	-
Higher Degree	0.97	0.85	1.10	0.617
Bi-vocational: No	Ref	-	-	-
Yes	0.77	0.65	0.90	0.001**

[a] Continuous variable.

* p<0.05, ** p<0.01, *** p<0.001

Table 3. Multivariable linear models of continuous health and spiritual well-being outcomes.

	Physical Health Functioning	Body Mass Index	Mental Health Functioning	Spiritual Vitality: Presence of God in Daily Life	Spiritual Vitality: Presence of God in Ministry	Quality of Life
Sabbath-keeping: None	Ref	Ref	Ref	Ref***	Ref**	Ref*
1 or 2 days per 4 weeks	-0.53	0.78	0.25	1.13	0.98	1.36
3 or 4 days per 4 weeks	-0.17	0.77	0.55	1.84	1.66	1.96
Vacation [a]**,** days	0.04	0.004	0.01	-0.02	-0.05*	0.02
Sleep [a]**,** hours	-0.29	-0.01	0.03	-0.08	-0.04	-0.22
Relaxing Activities [a]**,** hours	-0.03	0.01	0.02	-0.02	0.02	0.05
Social Support: Always	Ref***	Ref***	Ref***	Ref***	Ref***	Ref***
Usually	-0.57	0.16	-1.74	-2.73	-3.10	-6.65
Sometimes	-1.77	1.99	-3.36	-4.88	-5.58	-13.99
Never or rarely	-1.81	1.53	-5.06	-5.31	-6.16	-18.14
Financial Stress: Low to moderate	Ref*	Ref***	Ref**	Ref	Ref	Ref***
High	-0.95	2.04	-1.25	0.14	0.02	-4.37
Life Chaos [a]	-0.18***	0.04	-0.11*	-0.20***	-0.27***	-0.86***
Demands on Time: Acceptable	Ref	Ref	Ref	Ref*	Ref**	Ref
Extremely high	0.30	0.79	-0.80	0.93	1.69	0.09
Gender: Male	Ref	Ref	Ref	Ref***	Ref***	Ref
Female	-0.26	-0.66	-0.13	1.17	1.61	-0.30
Age [a]**,** years	-0.07***	0.06**	0.07***	0.07***	0.10***	0.10***
Race: White	Ref	Ref	Ref**	Ref	Ref	Ref**
African American	0.50	1.03	1.31	0.83	0.45	3.76
Other	-0.01	-0.28	-0.78	0.72	0.91	0.67
Marital Status: Not married	Ref	Ref	Ref*	Ref	Ref	Ref
Married	-0.11	-1.01	-1.00	-0.57	-0.91	1.15
Education: College or below	Ref	Ref*	Ref**	Ref***	Ref**	Ref***
Higher	0.64	-1.10	-0.96	-1.21	-1.49	-2.85
Bi-vocational: No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	0.03	0.41	-0.31	0.20	0.11	-0.93

[a] Continuous variable.

* p<0.05, ** p<0.01, *** p<0.001

For categorical variables, stars indicate overall p values.

Table 4. Multivariable logistic models of binary health outcomes.

	Obesity	Obesity or Overweight	Flourishing Mental Health	Depression	Anxiety	Burnout: Exhaustion	Burnout: Depersonalization	Burnout: Lack of Accomplishment
Sabbath-keeping: None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
1 or 2 days per 4 weeks	1.02	1.26	0.95	1.01	1.69	0.86	1.15	1.06
3 or 4 days per 4 weeks	1.24	1.28	1.02	0.70	1.60	0.82	0.90	0.99
Vacation [a]**,** days	1.00	1.01	1.02	0.99	1.01	1.04**	1.02	1.01
Sleep [a]**,** hours	0.95	0.94	0.91	1.03	0.80	0.96	0.98	0.99
Relaxing Activities [a]	1.00	0.98	1.02	0.97	0.95	0.99	1.00	0.99
Social Support: Always	Ref*	Ref*	Ref***	Ref***	Ref***	Ref***	Ref***	Ref***
Usually	0.92	1.15	0.24	1.02	0.77	2.21	1.68	2.10
Sometimes	1.49	1.69	0.08	2.16	2.03	5.61	3.67	5.54
Never or rarely	1.21	2.13	0.06	7.59	6.11	10.75	4.74	8.32
Financial Stress: Low to moderate	Ref**	Ref	Ref**	Ref*	Ref	Ref	Ref	Ref
High	1.81	1.44	0.62	1.71	1.04	1.12	0.94	1.22
Life Chaos [a]	0.99	1.01	0.84***	1.24***	1.36***	1.25	1.17***	1.09***
Demands on Time: Low	Ref	Ref	Ref	Ref**	Ref**	Ref*	Ref	Ref
High	1.37	1.38	1.37	2.14	2.72	1.73	1.51	1.03
Gender: Male	Ref	Ref***	Ref	Ref	Ref	Ref*	Ref	Ref
Female	0.88	0.53	1.27	1.25	0.97	1.36	0.90	0.80
Age [a]**,** years	1.01	1.03***	1.01*	0.98	0.95***	0.96***	0.96***	0.98***
Race: White	Ref	Ref	Ref	Ref	Ref	Ref**	Ref	Ref
African American	1.44	1.44	1.16	0.70	0.77	0.35	0.48	1.30
Other	1.21	1.34	1.01	1.05	0.89	0.77	0.58	1.78
Marital Status: Not married	Ref	Ref	Ref	Ref	Ref	Ref**	Ref*	Ref
Married	0.76	0.87	0.72	1.43	2.49	1.87	1.61	1.25
Education: College or below	Ref**	Ref*	Ref**	Ref	Ref*	Ref***	Ref***	Ref
Higher	0.61	0.63	0.56	1.09	3.00	2.07	2.47	1.02
Bi-vocational: No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.02	1.37	0.95	1.03	1.59	1.41	1.13	0.97

[a] Continuous variable.

* p<0.05, ** p<0.01, *** p<0.001

For categorical variables, stars indicate overall p values.