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David Speed and Allyson Lamont

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# (Life) Satisfaction Guaranteed? Subjective Well-Being Attenuates Religious Attendance–Life Satisfaction Association

David Speed and Allyson Lamont  
Department of Psychology, University of New Brunswick

To attend religious services, people must have the physical capacity to leave their homes. This means that the positive association between religious attendance and life satisfaction could be partialled out by the effects of physical wellness. The present study investigated whether the relationship between religious attendance and life satisfaction was attenuated when self-rated health (SRH) was included within statistical models. We used cross-sectional data from the 2015 Canadian General Social Survey ( $N = 15,195$ ), the 2017 Canadian General Social Survey ( $N = 19,116$ ), and the 2018 American General Social Survey ( $N = 1,062$ ). Results indicated that: (a) religious attendance was an inconsistent predictor of life satisfaction in Canadians; (b) religious attendance sporadically moderated the relationship between SRH and life satisfaction; (c) unhealthy individuals reported a stronger relationship between religious attendance and life satisfaction than averagely healthy and very healthy individuals; (d) the effect sizes associated with religious service attendance tended to be small and unnoteworthy; and (e) including SRH in models caused large *proportional* reductions in the relationship between religious attendance and life satisfaction, though these did not parlay to large *absolute* reductions because the initial relationship between religious attendance and life satisfaction was quite weak.

**Keywords:** religious attendance, satisfaction with life, physical well-being, Canadian–American comparisons

The act of going to religious worship is a predictor of various salutary outcomes: better self-rated health (SRH; Musick et al., 2004; Speed & Fowler, 2017), reduced mortality (Musick et al., 2004; Powell et al., 2003), more frequent health screening (Benjamins,

2005; cf., Speed, 2018), better mental wellness (Acevedo, 2010), fewer depressive symptoms (Huang et al., 2012; Krause, 2003; Krause & Hayward, 2012), lower distress (Ellison et al., 2001), and reduced substance use (Edlund et al., 2010; Yohannes et al., 2008). These findings transcend international boundaries (Garssen et al., 2021; Huang et al., 2012; Yohannes et al., 2008) suggesting that the underlying mechanism between religious attendance and well-being may not be rooted in culture.

Religious attendance has been repeatedly linked to life satisfaction—a person’s explicit and conscious evaluation of their own life (Diener et al., 2018)—in a variety of contexts and settings (Garssen et al., 2021; Habib et al., 2018; Kortt et al., 2015; Speed & Fowler, 2017). However, the exact mechanism underlying this relationship is not fully elucidated, and it is unclear as to *why* attending religious service would make individuals more content. While evidence suggests that social support (Assari, 2013; Hintikka et al., 2001; Ten Kate et al., 2017), social resources (Kortt et al., 2015), and social networks (Lim & Putnam, 2010; Sinnewe et al., 2015) are all partially responsible for the association between religious attendance and life satisfaction, they cannot fully explicate the relationship. Functionally, the religious attendance–life satisfaction relationship persists even when controlling for social factors.

While some researchers have found theological or religious variables that may explain the relationship between religious attendance and life satisfaction (Barkan & Greenwood, 2003; Childs, 2010; Levin, 2014), we believe a simpler explanation has been overlooked. Religious attendance is itself a *proxy* of the general physical functioning of the attendees (Berges et al., 2007; Koenig & Vaillant, 2009) and research has repeatedly confirmed a connection between physical wellness and religious attendance (Barkan & Greenwood, 2003; Ellison, 1991; Mukerjee & Venugopal, 2018;

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David Speed  <https://orcid.org/0000-0001-7033-2068>

Allyson Lamont  <https://orcid.org/0000-0001-8018-4855>

DAVID SPEED is the primary author. He was responsible for conceptualization, methodology, software, validation, syntax writing, formal analysis, data curation, supervision, writing, visualization, and project administration.

ALLYSON LAMONT is a student RA and is currently a master’s student. She was responsible for the background literature review, writing, reviewing, and editing; she also played a role in writing syntax and reviewing results.

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We cannot upload the used data sets as we do not own them. The Statistics Canada data sets are freely accessible through postsecondary data services at various universities. The NORC data set can be downloaded from (<https://gssdataexplorer.norc.org/>).

Correspondence concerning this article should be addressed to David Speed, Department of Psychology, University of New Brunswick, 100 Tucker Park Road, Saint John, NB E2K 5E2, Canada. Email: [dspeed@unb.ca](mailto:dspeed@unb.ca)

Musick, 1996). If an individual is not physically well, they are unable to regularly attend religious service due to their lack of functionality or mobility (Koenig & Vaillant, 2009). This means physically infirm people are *selecting out* of high levels of service attendance and, therefore, people attending religious service must essentially have a higher “baseline” of physical wellness. Simultaneously, it is noteworthy that physical wellness is a consistent predictor of life satisfaction: People who are unwell are less happy (Benyamini et al., 2004; Landau & Litwin, 2001; Siahpush et al., 2008; Zullig et al., 2006). In essence, it is unclear if the relationship between *religious attendance* and life satisfaction is inherently different from the relationship between *physical wellness* and life satisfaction.

## The Present Study

The goal of the present study is to determine if the relationship between religious attendance and life satisfaction is attenuated when accounting for subjective physical well-being. We will use nationally representative data from the 2015 Canadian General Social Survey (CGSS; Statistics Canada, 2017), the 2017 CGSS (Statistics Canada, 2019), and the 2018 American General Social Survey (AGSS; Smith et al., 2018). These three data sets were selected because they contained questions addressing religious service attendance, subjective physical well-being, and life satisfaction. While the CGSS and AGSS have dissimilar methodologies, both surveys can be used to generalize to the Canadian and American populations, respectively. Our hypotheses, analytic plan, and syntax were preregistered with the Open Science Framework (<https://osf.io/qwvgr>). While we tested the same hypotheses as the preregistration, there were modest changes to the analytical framework, which are detailed as an addendum to the preregistration. Per Section 2.2 of the Tri-Council Policy Statement, our study did not require ethics clearance as we accessed preexisting publicly available data.

## Method

### Data

Both years of the CGSS were collected by the Social and Aboriginal Statistics Division of Statistics Canada and were administered in either English or French (Statistics Canada, 2017, 2019). The goal of the CGSS is to gather data on social trends, living conditions, and the well-being of Canadians, while also providing a “snapshot” of current or emerging issues. The data used in the present study are from the public use microfiles. The 2015 (Cycle 29) and 2017 (Cycle 31) CGSS used a sampling frame based on telephone numbers (landline and mobile) and property addresses that were made available via service providers and census data. The 2015 CGSS (response rate 38.2%) and 2017 CGSS (response rate 52.4%) stratified people geographically and then conducted a simple random sample without replacement to select respondents. While the CGSS targets people 15+ years old, we were only interested in adults. Unfortunately, the 2015 CGSS released age information in blocks of 10 years (e.g., 15–24, 25–34), which meant that we were forced to exclude people younger than 25 for that specific wave of data. The 2017 CGSS did not have this issue and only people younger than 18 were excluded. While the sampling frame for the CGSS covers >86% of Canadians, people in the territories or who

were institutionalized were not represented within those data ( $N = 15,195$  for the 2015 CGSS;  $N = 19,116$  for the 2017 CGSS).

For the 2015 CGSS, 5.2% of our cases had missing data. However, the largest contributor to this total was 1.6% of respondents who did not provide *any* data other than that which was required (e.g., sex, age). In other words, this group did not *selectively* refuse to answer questions, rather they blanketly refused to answer all questions. Excluding this group of indiscriminate non-responders suggested that only 3.6% of cases had missing data. As for the 2017 CGSS, it had a missing data rate of 5.4%. The two biggest drivers for this figure were people who missed the visible minority question (1.4%) or the highest level of education question (1.1%). Please note that the percentage of missing values excludes people who were dropped because they were not in our analytical sampling frame (i.e., 18+). While Statistics Canada used computer-assisted telephone interviewing that limited the presence of out of range or missing values (Statistics Canada, 2008), we investigated data imputation regardless. However, because of the survey structure of both years—specifically their use of bootstrap errors—imputation was not possible.

The 2018 AGSS was produced by the National Opinion Research Center at the University of Chicago. Generally, the purpose of the AGSS is to monitor trends and opinions of Americans through time (Smith et al., 2018). It is a biennial survey that uses a three-stage cluster sampling design with quotas for sex, age, and employment status. Participants must be 18 years of age or older and speak either English or Spanish. While the AGSS is not a full probability sample, it closely aligns with census information and had a response rate of 59.5%. The AGSS had a sample size of  $N = 1,062$  and 9.5% of cases had missing data; however, 7.6% of missing data was income related (i.e., excluding income meant 1.9% of values were missing). We investigated if using imputed values for income substantively changed the coefficients from complete case analysis; however, after Bonferroni–Holm corrections (Abdi, 2010), there were few differences between imputed and nonimputed models, so we elected to use complete case analysis for simplicity. Please see Table 1 for power estimates,  $N$ s, and descriptive statistics.

## Measures

### Satisfaction With Life

Our primary outcome of interest was satisfaction with life (SWL), the extent to which someone is happy with their day-to-day experiences. In the CGSS, SWL was assessed with, “Using a scale of 1–11 where 1 = *very dissatisfied* and 11 = *very satisfied*, how do you feel about your life as a whole right now?” In the AGSS, SWL was assessed by the question, “All things considered, how satisfied are you with your life as a whole nowadays?” and could be answered on a 7-point scale from 1 = *completely unsatisfied* to 7 = *completely satisfied*. Please note that in both the CGSS and the AGSS data, higher scores indicated a greater SWL.

### Religious Service Attendance

Several researchers have examined the association between religious attendance and life satisfaction while treating religious attendance as a continuous variable (Assari, 2013; Habib et al., 2018; Mukerjee & Venugopal, 2018; Speed & Fowler, 2017), while others

**Table 1***Select Descriptive Statistics for Data Sets of Interest by Frequency of Religious Service Attendance*

Level of religious attendance	80% power for a Cohen's <i>d</i> of	<i>N/n</i>	<i>M/SD</i>			Percentage (%)		
			Age	SRH	SWL	Male	Minority	Single
2015 CGSS		<i>N</i> = 15,195						
Never attends religious service		7,125		3.50/1.04	8.54/1.98	50.69%	11.42%	19.48%
Attends service less than monthly	0.06	3,824		3.48/0.99	8.55/1.83	49.78%	16.21%	16.33%
Attends service less than weekly	0.09	1,429		3.49/1.01	8.67/1.96	46.46%	21.05%	13.08%
Attends service weekly or more	0.07	2,817		3.52/1.05	8.93/2.04	44.07%	29.66%	11.22%
2017 CGSS		<i>N</i> = 19,116						
Never attends religious service		9,301	46.65/17.29	3.64/1.04	8.98/1.68	52.23%	12.80%	26.91%
Attends service less than monthly	0.05	4,972	45.73/17.00	3.69/1.00	9.10/1.49	49.50%	19.73%	26.12%
Attends service less than weekly	0.08	1,721	49.27/18.42	3.66/1.04	9.20/1.52	43.41%	30.39%	21.12%
Attends service weekly or more	0.06	3,122	53.63/19.18	3.62/1.06	9.36/1.58	43.28%	33.71%	15.34%
2018 AGSS		<i>N</i> = 1,062						
Never attends religious service		335	43.60/17.34	3.22/1.07	5.34/1.11	54.06%	24.18%	35.95%
Attends service less than monthly	0.22	322	45.86/17.11	3.46/1.10	5.51/1.03	50.94%	21.45%	30.41%
Attends service less than weekly	0.26	187	46.47/16.09	3.49/1.03	5.61/0.95	45.80%	32.80%	25.22%
Attends service weekly or more	0.25	218	53.78/17.70	3.43/1.07	5.70/1.01	46.56%	29.09%	16.62%

*Note.* Age is omitted because it was categorical for the 2015 CGSS. Power estimate refers to the likelihood of detecting a difference between the “Never attends religious service” and each level of service attendance for that data set. CGSS = Canadian General Social Survey; AGSS = American General Social Survey; SRH = self-rated health; SWL = satisfaction with life.

have treated religious attendance as a categorical variable (Edlund et al., 2010; Levin et al., 1996; Steffen et al., 2017). When religious attendance is treated continuously, the underlying assumption is that the relationship between religious attendance and an outcome variable is monotonic and linear (Field, 2005). In other words, for each unit increase in attendance, there should be a consistent increase in the outcome. When this assumption is met, treating attendance as continuous is advantageous as it provides a better powered estimate of effects. However, the existing literature suggests that religion and religious attendance do not have this type of relationship with mental well-being (Brown & Gary, 1994; Dilmaghani, 2018; Galen & Kloet, 2011; Tabak & Mickelson, 2009; Tobin et al., 2018). Consequently, studies that treat religious attendance as a continuous predictor of life satisfaction or happiness (e.g., Barkan & Greenwood, 2003) are potentially misestimating the underlying relationship.

We investigated religious service attendance as a categorical variable for the present study. Fortunately, while the questions for religious attendance varied for the CGSS (“Not counting events such as weddings or funerals, during the past 12 months, how often did you participate in religious activities or attend religious services or meetings?”) and the AGSS (“How often do you attend religious services?”), we were able to code the response variables such that the same categories of attendance were assessed in the CGSS and the AGSS data. For both Canadian and American models, attendance was dummy coded on a 4-point scale (Never attends = base, <Monthly, <Weekly, ≥Weekly).

### Self-Rated Health

We tested whether including SRH in statistical models attenuated the relationship between service attendance and SWL. Coincidentally, SRH was coded the same for the CGSS and the AGSS. In the Canadian models, we used the question, “In general, would you say your health is . . . ?,” which could be answered on a 5-point scale ranging from 1 = *poor* to 5 = *excellent*. In the AGSS, SRH was

assessed with, “Would you say your own health, in general, is excellent, very good, good, fair, or poor?” which was reverse coded from 1 = *poor* to 5 = *excellent*. We realized that using a single term for SRH predicting SWL implicitly assumed that each level of religious attendance reported a similar level of association between SRH and SWL. This assumption seemed problematic as religious attendance is routinely associated with differences in SRH. Consequently, we believed it was more accurate to model SRH *per level of religious attendance*, which could be done by producing interaction terms of the dummy-coded religious attendance variable and SRH (e.g., “≥Weekly” × SRH).

### Covariates

We coded the CGSS and AGSS variables as similarly as possible to facilitate comparisons across data sets, though there were several cases where this was not feasible. In all models for all years, we controlled for sex (0 = Female, 1 = Male), age (either dummy coded as: 25–24 = base, 35–44, 45–54, 55–64, 65–74, and 75+ or as a continuous variable, and in those models, we also included an age<sup>2</sup> variable), education (≤High school = base, Postsecondary or less, Graduate school completion), minority status (0 = *White*, 1 = *Non-White*), marital status (Married = base, Widowed/Separated/Divorced, Never married), and family income. We also included an urban–rural indicator as healthcare access is easier in population centers. Our indicator for the CGSS was whether a person lived in a census metropolitan area (0 = *No*, 1 = *Yes*), and for the AGSS, we used the raw number of people living in a city (>50,000 = base; 10–50,000; < 0,000).

### Data Analysis

Our primary analytic approach has conceptual similarities with statistical mediation, insofar that we are examining how the relationship between a predictor variable and an outcome variable (religious attendance and SWL) changes with the inclusion of a

third variable (SRH). However, there has been recent discussion within the academic literature regarding the appropriateness of mediational analyses and whether they necessarily imply causality (Agler & De Boeck, 2017). We would like to clarify that we are in no way arguing for a causal relationship between any of the existing variables. The data are cross sectional, and we cannot make causal inferences from them. However, our position is that religious attendance consists of both nonreligious and religious elements, and it is incumbent on researchers to distinguish between the two. Our goal is to “partial” out the effects of religious attendance and SWL that are entangled with SRH. While the statistical approach resembles mediation, our theoretical framing is more along the lines of robust covariate control.

We used Stata 15 for all data analysis. Both the CGSS and the AGSS provided variables that accounted for their complex methodologies. The CGSS provided a probability weight and bootstrap weights, while the AGSS provided a probability weight and variables that adjusted for strata and primary sampling unit. Our analysis relied on linear regression for establishing the relationships between religious attendance and SWL, and SRH and SWL. Heteroscedasticity was addressed in the CGSS by using bootstrapped errors and in the AGSS with linearized standard error. As a follow-up specifically for the AGSS data, we compared the degree of change in the religious attendance coefficients before and after SRH was added, using the *suest* command in Stata. Unfortunately, we could not use a similar approach with the CGSS data because it used bootstrapped error estimates.

Our analytical approach and hypotheses for all data sets were as follows:

Block 1: SWL was regressed onto covariates.

Block 2: SWL was regressed onto covariates and religious attendance.

*H1*: Relative to the “Never attend” group, every level of religious attendance will be significantly and positively associated with greater SWL.

Block 3: SRH and interaction terms addressing SRH are entered.

*H2*: SRH will significantly and positively predict SWL.

*H3*: The relationship between attending religious service and SWL (*H1*) will attenuate with the inclusion of SRH. For the AGSS data, we will test the attenuation of the attendance coefficients between Block 2 and Block 3 with an adjusted Wald test, and for the CGSS data, we will describe the changes in results.

To effectively test *H3*, we standardized the relevant SRH terms (West et al., 1996) and compared attendance groups at:  $-1 SD_{SRH}$ ,  $M_{SRH}$ , and  $+1 SD_{SRH}$ . This approach has been used in other religion/spirituality health research (e.g., Speed & Fowler, 2017) and gives a greater degree of nuance to answering *H3*. Specifically, instead of asking, “Does the relationship between religious attendance and SWL change when controlling for SRH?” we are instead asking, “Does the relationship between religious attendance and SWL

change—but let us consider unhealthy people ( $-1 SD_{SRH}$ ), averagely healthy people ( $M_{SRH}$ ), and very healthy people ( $+1 SD_{SRH}$ ) separately.” The predicted differences in SWL between the “Never attend” group and the other religious attendance groups in Block 2 will be compared against *multiple* predicted SWL values from Block 3.

Due to our use of survey data to address our research question, we will make a point of distinguishing between statistical significance and practical significance. With adequate *N*, all differences across groups would be statistically significant regardless of whether these differences reflect something substantive. We will be using the convention described by Cohen (Cohen, 1992;  $d \geq 0.20$  is small,  $d \geq 0.50$  is medium, and  $d \geq 0.80$  is large) to provide context for the life satisfaction benefits of religious attendance; however, we would also acknowledge that Cohen’s guidelines are heuristics rather than rigid rules. Because of the large amount of output that is associated with our analyses, we will present the results in a narrative form with reference to Tables and Figures, as all relevant information is contained within those.

## Results

In all models, SWL was regressed onto covariates in Block 1 (results omitted) and levels of attendance in Block 2. The  $\Delta R^2$  values for religious attendance predicting SWL were quite small in all models (<0.7%). The main effects of religious attendance, presented in Table 2, show that the groups attending religious service reported higher SWL than the reference group (i.e., “Never attend”) in about half of the tested models. Relative to the “Never attend” group, lower levels of religious attendance generally did not significantly predict SWL, while higher levels of religious attendance did significantly predict SWL. However, as can be seen by Table 3, the effect sizes for Block 2 were frequently below the threshold for practical significance (Cohen’s  $d \geq 0.20$ ).

*H2* stated that SRH would positively predict SWL, which was supported in all models across all levels of religious attendance. As a point of comparison, SRH explained between 18 and 37 times *more* variability in SWL than did religious attendance. Our use of interaction terms (i.e.,  $\Delta SRH$ ) allowed each level of religious attendance to report its own unique relationship between SRH and SWL. In cases where the interaction terms were not significant, this meant that a similar SRH–SWL relationship was reported between the base group (i.e., “Never attend”) and the comparator group. In a third of all interaction terms, the coefficients were significant, suggesting that the relationship between SRH and SWL differed between the “Never attend” group and the other religious attendance groups. These interaction terms are modeled in Figures 1 through 3, where a recurring pattern can be observed. Specifically, the “gap” between the “Never attend” group and other groups was larger at  $-1 SD_{SRH}$  and smaller at  $+1 SD_{SRH}$ . This suggests that unhealthy people ( $-1 SD_{SRH}$ ) attending religious service report a greater “life satisfaction” score relative to the “Never attend” group than do averagely healthy ( $M_{SRH}$ ) and very healthy ( $+1 SD_{SRH}$ ) individuals. In other words, the association that religious attendance has with SWL is itself a function of how healthy the individual perceived themselves to be.

For the AGSS specifically for *H3*, the estimates for SWL in Block 2 were often statistically comparable to the estimates of SWL in Block 3. The only exception to this were respondents in the “<Weekly” group, who reported significantly *higher* SWL when

**Table 2**

*The Relationship Between Religious Attendance and Satisfaction With Life (SWL) When Controlling for SRH*

Predictors	<i>b</i> coefficients/robust standard error					
	2015 CGSS ( <i>N</i> = 15,195)		2017 CGSS ( <i>N</i> = 19,116)		2018 AGSS ( <i>N</i> = 1,062)	
	Block 2	Block 3	Block 2	Block 3	Block 2	Block 3
Constant	8.80/0.10***	6.72/0.15***	9.96/0.15***	7.65/0.16***	5.17/0.43***	3.60/0.48***
Never attend (base)						
<Monthly	-0.01/0.05	0.00/0.04	0.09/0.04*	0.11/0.03**	0.15/0.08†	0.16/0.07*
≥Weekly	0.07/0.07	0.06/0.06	0.20/0.05***	0.17/0.05**	0.16/0.11	0.18/0.10†
>Weekly	0.30/0.06***	0.26/0.06***	0.31/0.05***	0.24/0.04***	0.23/0.10*	0.23/0.08**
SRH <sup>Never Attend</sup>		0.64/0.03***		0.62/0.02***		0.46/0.05***
ΔSRH <sup>&lt;Monthly</sup>		0.04/0.05		-0.04/0.04		-0.15/0.07*
ΔSRH <sup>&lt;Weekly</sup>		0.03/0.07		-0.08/0.06		-0.25/0.11*
ΔSRH <sup>≥Weekly</sup>		-0.04/0.07		-0.13/0.04**		-0.02/0.08
ΔF/ΔR <sup>2</sup>	8.12/.003***	217.13/.112***	17.14/.005***	318.96/.127***	2.16/.007†	42.06/.128***

*Note.* Block 1 included sex, age, age<sup>2</sup>, marital status, minority status, education level, income, region, and population center. The SRH<sup>Never Attend</sup> variable describes the relationship between SRH and SWL for the “Never attend” group. The interaction terms (i.e., ΔSRH) are reflecting the difference in slope of the SRH–SWL relationship per other level of religious attendance. Interaction terms that are significant indicate that the SRH–SWL relationship for that level of religious attendance is different from SRH<sup>Never Attend</sup> relationship. CGSS = Canadian General Social Survey; AGSS = American General Social Survey; SRH = self-rated health.

† *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

SRH was low (−1 *SD*),  $F(1, 78) = 5.78, p = .019$ , and significantly lower SWL when SRH was high (+1 *SD*),  $F(1, 78) = 4.46, p = .038$ . This difference is evident in Figure 3, where the “<Weekly” group shows a sharp decline in SWL relative to the “Never attend” group when moving across levels of SRH. While we could not test for statistical significance with the Canadian data in the same fashion (see Data Analysis section), examining Table 3 shows a similar pattern of attenuation. For example, respondents of the 2015 CGSS who were in the “≥Weekly” group reported a trivial-to-small advantage in SWL relative to the “Never attend” group in Block

2,  $d = 0.15, 95\% \text{ CI } [0.09, 0.21]$ , but when we adjusted for SRH in Block 3, the observed relationship between religious attendance and SWL shrank. Specifically, respondents who reported poorer SRH (−1 *SD*) reported a “SWL advantage” of  $d = 0.15, 95\% \text{ CI } [0.05, 0.25]$ , but respondents who reported average levels of SRH (*M*) only reported a “SWL advantage” of  $d = 0.13, 95\% \text{ CI } [0.07, 0.19]$ , a 13.2% decline, and when people reported high levels of SRH (+1 *SD*), the “SWL advantage” shrank further to  $d = 0.11, 95\% \text{ CI } [0.02, 0.20]$ , a 25.7% decline. Similar patterns of attenuation were observed in the 2017 CGSS.

**Table 3**

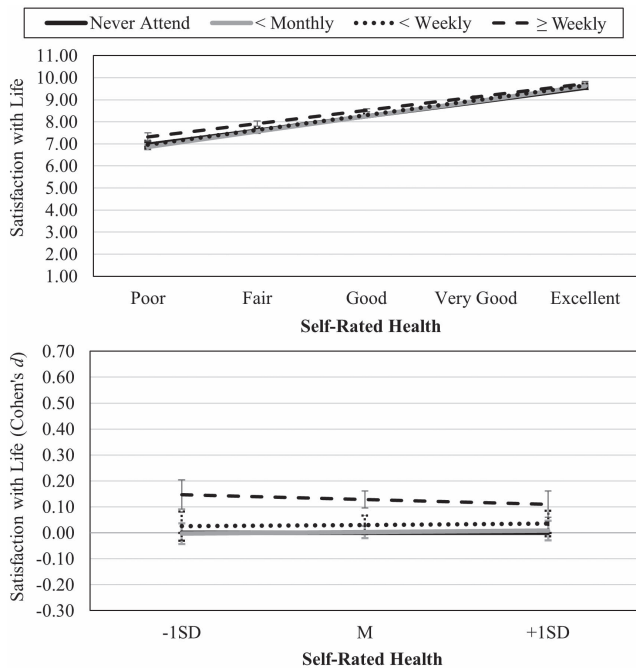
*Differences in Satisfaction With Life Scores, for People who Never Attend Religious Service Versus People who Attend Religious Service*

Level of religious attendance	Cohen’s <i>d</i> [95% CI]			
	No SRH adjustments (Block 2)	Comparisons with SRH adjustments (Block 3)		
		−1 <i>SD</i> <sub>SRH</sub>	<i>M</i> <sub>SRH</sub>	+1 <i>SD</i> <sub>SRH</sub>
2015 Canadian General Social Survey				
Never attends religious service				
Attends service less than monthly	−0.00 [−0.05, 0.04]	−0.00 [−0.08, 0.07]	0.00 [−0.04, 0.05]	0.01 [−0.05, 0.07]
Attends service less than weekly	0.04 [−0.03, 0.11]	0.03 [−0.08, 0.13]	0.03 [−0.03, 0.09]	0.04 [−0.05, 0.12]
Attends service weekly or more	0.15 [0.09, 0.21]***	0.15 [0.05, 0.25]**	0.13 [0.07, 0.19]***	0.11 [0.02, 0.20]*
2017 Canadian General Social Survey				
Never attends religious service				
Attends service less than monthly	0.06 [0.01, 0.10]*	0.11 [0.05, 0.18]***	0.07 [0.03, 0.11]***	0.02 [−0.03, 0.08]
Attends service less than weekly	0.12 [0.06, 0.18]***	0.15 [0.04, 0.26]**	0.10 [0.04, 0.16]***	0.05 [−0.03, 0.13]
Attends service weekly or more	0.19 [0.13, 0.24]***	0.22 [0.14, 0.30]***	0.15 [0.10, 0.20]***	0.07 [0.01, 0.14]*
2018 American General Social Survey				
Never attends religious service				
Attends service less than monthly	0.14 [0.00, 0.28]*	0.29 [0.08, 0.50]**	0.15 [0.02, 0.28]*	0.01 [−0.17, 0.18]
Attends service less than weekly	0.15 [−0.05, 0.35]	<b>0.43 [0.13, 0.73]**</b>	0.17 [−0.02, 0.36]†	<b>−0.09 [−0.38, 0.19]</b>
Attends service weekly or more	0.22 [0.04, 0.40]*	0.23 [−0.01, 0.48]†	0.21 [0.06, 0.37]***	0.19 [−0.01, 0.39]†

*Note.* All models included sex, age, marital status, minority status, highest education level, income, region, and population center. Significance levels indicate the “Never attend” group was different from other levels of religious attendance for life satisfaction. Bolded values indicate that the coefficient in Block 2 differed from the coefficient in Block 3 ( $p < .05$ ); this was only tested for data from the American General Social Survey and was not tested for data from the Canadian General Social Survey. Effect sizes for Cohen’s *d* are conventionally:  $d < 0.20$  is trivial,  $d \geq 0.20$  is small,  $d \geq 0.50$  is medium,  $d \geq 0.80$  is large. SRH = self-rated health.

† *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

**Figure 1**  
*Differences in Satisfaction With Life Across Levels of Religious Attendance While Controlling for Self-Rated Health in the 2015 Canadian General Social Survey*



*Note.* The bottom figure graphs the same relationship as the top figure but describes it in the context of Cohen’s *d*. In this latter case, the further each group is from 0.00, the more different they are from the ‘Never attend’ base group. Typically, differences of  $d < 0.20$  are described as trivial.

**Discussion**

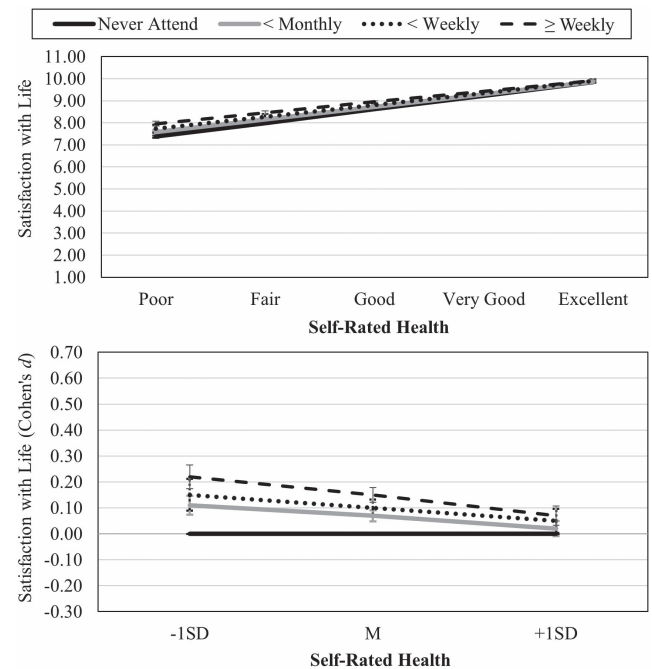
We advanced the argument that the connection between religious attendance and SWL is a repackaging of the relationship between physical wellness and life satisfaction. Specifically, people who attend religious service have the necessary physical wellness to leave their home and engage in social activities. Consequently, the relationship between high religious attendance and high life satisfaction, or *low* religious attendance and *low* life satisfaction, is potentially “piggybacking” on the relationship between physical wellness and life satisfaction. By including SRH in Block 3 for all models, we were able to assess the degree to which the initial association between religious attendance and SWL changed. We compared the coefficients for religious attendance in Block 2 to the coefficients for religious attendance in Block 3 at  $-1 SD_{SRH}$ ,  $M_{SRH}$ , and  $+1 SD_{SRH}$ . Generally, the “life satisfaction” benefits associated with religious attendance do not emerge uniformly across SRH, and it appears as though unhealthy individuals ( $-1 SD_{SRH}$ ) get the biggest “life satisfaction advantage.”

At this point though, we will take the time to delineate between statistical significance and practical significance. Even when SRH was *not* included within models, the effect sizes for religious attendance (relative to the “Never attend” group) were unimpressive (see Table 3). Most of the effect sizes did not rise to the level of what would be conventionally viewed as practically significant

(i.e.,  $d \geq 0.20$ ; Cohen, 1992). While it is correct that the “ $\geq$ Weekly” group consistently reported significantly higher levels of SWL, the salutary effects were indisputably small. It is somewhat akin to winning \$2.00 on a scratch ticket but describing yourself as a “lottery winner”; yes, it is true in a technical sense, but there is a degree of equivocation happening. While one could point out several cases where the differences in SWL between the “Never attend” group and other religious attendance groups were of  $d \geq 0.20$ , it is important to note that differences of this size were unusual and generally did not happen at higher levels of SRH.

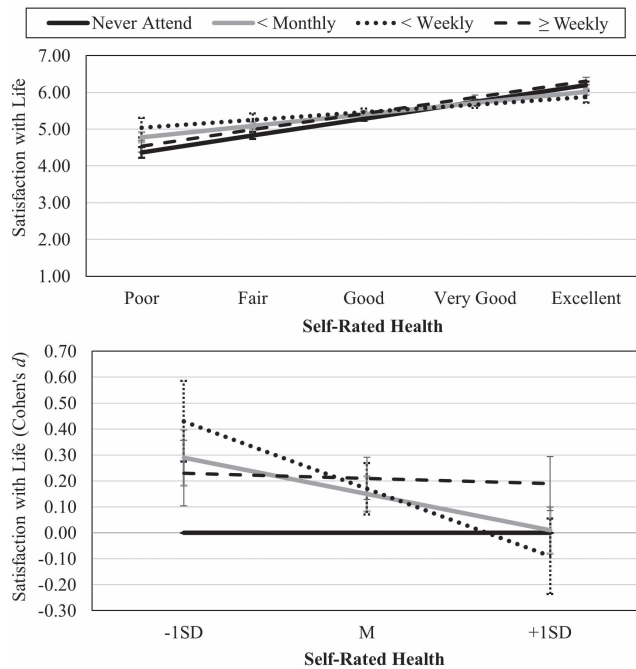
Of the 18 comparisons for the Canadian models (see Table 3), only one comparison reported an effect size of  $d \geq 0.20$  when SRH was included in the model (“Never attends religious service” vs. “Attends service weekly or more” in the 2017 CGSS). In this case, the observed effect size was  $d = 0.22$  and was only present at lower levels of SRH. In other words, the difference in life satisfaction between a “very unhealthy person who never attended religious service” and a “very unhealthy person who attended religious service on a weekly basis,” is *just* past the cusp of practical significance. When comparing very healthy Canadians ( $+1 SD_{SRH}$ ), the largest difference in SWL we observed is  $d = 0.11$ , which again is trivial (see Figures 1 and 2). These results align with research conducted by Speed (2021) and Dilmaghani (2018), who found that health differences across Canadian religious groups were notably small.

**Figure 2**  
*Differences in Satisfaction With Life Across Levels of Religious Attendance While Controlling for Self-Rated Health in the 2017 Canadian General Social Survey*



*Note.* The bottom figure graphs the same relationship as the top figure but describes it in the context of Cohen’s *d*. In this latter case, the further each group is from 0.00, the more different they are from the “Never attend” base group. Typically, differences of  $d < 0.20$  are described as trivial.

**Figure 3**  
Differences in Satisfaction With Life Across Levels of Religious Attendance While Controlling for Self-Rated Health in the 2018 American General Social Survey



*Note.* The bottom figure graphs the same relationship as the top figure but describes it in the context of Cohen's  $d$ . In this latter case, the further each group is from 0.00, the more different they are from the "Never attend" base group. Typically, differences of  $d < 0.20$  are described as trivial.

There was wider variability in the American models with respect to SWL, but the results from these models aligned with Canadian findings (see Table 3). As can be seen in the 2018 AGSS, very unhealthy Americans ( $-1 SD_{SRH}$ ) who reported attending religious services reported practical and often significant differences in SWL when compared to the "Never attend" group. While each of these effect sizes were in the small-to-medium range ( $d = 0.29$ ,  $d = 0.43$ ,  $d = 0.23$ ), this was really the "best case scenario" for the religious attendance–SWL relationship. When looking at averagely healthy Americans ( $M_{SRH}$ ) and very healthy Americans ( $+1 SD_{SRH}$ ), the effect sizes quickly deflated. However, a notable difference between the Canadian and American results was that the "≥ Weekly" group reported a consistently stronger relationship with SWL relative to the "Never attend" group. This finding is consistent with previous research suggesting that the religion–happiness relationship is itself contingent on cultural norms of a country (Stavrova et al., 2013).

At this point, it is beneficial to emphasize that the conventions surrounding effect sizes are themselves dependent on *what* is being assessed. Cohen's proposed threshold values are intended as heuristics, not ironclad rules. For example, finding a difference of  $d = 0.11$  for *mortality* rates could be quite important if one were considering bringing a new drug to market. However, our outcome measurement—SWL—is a proxy indicator of mental wellness. It is not that life satisfaction is unimportant (quite the opposite!), but it is difficult to justify the broad salutary effect of religious attendance by

citing its relationship with SWL: The effect is statistical, *not practical*. We can observe that in virtually all models, religious attendance was an inconsistent predictor of higher SWL, and it was rare if these statistical differences parlayed into practical differences. In essence, the relationship between religious attendance and life satisfaction is not *illusory* per se but consists of very few substantive elements. On this note, when we reordered the blocking for Table 2 and entered religious attendance last (analyses not shown), these results indicated that religious attendance accounted for only a tiny amount of variability:  $\Delta R^2 = .002$  (2015 CGSS),  $\Delta R^2 = .003$  (2017 CGSS), and  $\Delta R^2 = .002$  (2018 AGSS). Overall, these findings are consistent with our general hypothesis that the relationship between religious attendance and life satisfaction is entangled with the relationship between physical wellness and life satisfaction.

Granted, it is possible that we made a Type II error with respect to the AGSS data and missed a statistically significant finding. However, this is not germane to the present article for several reasons. First, much of the analyses and discussion focused on effect size rather than statistical significance, which is not affected by this issue. Second, assuming that a Type II error was made, we can do a bit of sleuthing and determine the size of this hypothetical "missed effect." As can be seen in the power column in Table 1, we had adequate power to detect trivially small effects for all Canadian models. While our power level was lower in the American models compared to the Canadian models, it was in no way poor. If we made a Type II error with respect to religious attendance and SWL, the size of this missed effect would almost certainly be  $d < 0.30$ , otherwise, we would have reliably found it.

### Limitations, Future Directions, and Conclusions

The present study had several limitations that should be recognized. Conceptualizations and measurement of attendance, SRH, and SWL were constrained to what questions were available in the CGSS and the AGSS. While the present study used items that had appeared in previous research, it is worth noting that a more detailed analysis of the central constructs may have yielded more accurate results. In a similar vein, the data from the 2015 CGSS forced us to exclude people under the age of 25 years, which may have affected our results to some extent. Additionally, our research question would have been better served by a longitudinal mediational analysis, but we did not have data with which to do this (Kaushal et al., 2021). Finally, it is important to note that we have almost certainly *overestimated* the strength of the religious attendance–SWL relationship, as we could not account for the variability attributable to social support (Speed et al., 2020). People who attend religious service report better social support, and better social support is also related to increased life satisfaction (Trepte et al., 2015). In other words, the effect sizes we reported between religious attendance and SWL are likely even smaller than what they have been estimated to be.

The present study provided evidence that the religious attendance–SWL relationship was partially driven by a selection on the predictor variable. It is plausible that people who are well enough to attend religious service report better life satisfaction in part because of their physical wellness. In contrast, people who are *not* well enough to attend religious service also report worse life satisfaction. Arguably, the potential contributor to this relationship is not the nature of attending religious service: It is the underlying



physical well-being necessary to attend religious service. While much of the literature celebrates the attendance–SWL relationship, we would question why such a weak association has had so much attention paid to it. While Canadians and Americans may report a litany of benefits from attending religious service, it would appear that (life) satisfaction is hardly guaranteed.

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