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Good for All? Hardly! Attending Church Does Not Benefit Religiously Unaffiliated

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Abstract The existing literature addressing Religion and Spirituality supports the idea that attending church is positively associated with health outcomes. However, within this literature there has been an impoverished effort to determine whether the Religiously Unaffiliated will report these positive relationships. Using representative data from Ontario ($N = 3620$), the relationships between Religious/Spiritual variables (Attendance, Prayer/Meditation, and Religiosity) and health outcomes (Happiness, Self-Rated Health, and Satisfaction with Life) were assessed. Results focused on three recurring trends: the Religiously Unaffiliated experienced attending church less positively than Christians; when compared at the highest level of Attendance, the Religiously Unaffiliated were less healthy than Christians; and when only considering the Religiously Unaffiliated, Religious/Spiritual variables were not significant and positive predictors of health outcomes. The discussion focused on the need to delineate between how Christians and the Religiously Unaffiliated experience Religious/Spiritual variables, and the need to stop over-generalizing the positive relationship between Religious/Spiritual variables and health.

Keywords Religion · Health · Happiness · Self-Rated Health · Satisfaction with Life · Attendance · Church · Religiously Unaffiliated · Non-religious · Statistical moderation · Homoscedasticity

Introduction

Religion/Spirituality (R/S) is connected with positive health outcomes within the existing health literature (Idler and Kasl 1992; Krause 2003). However, within this body of literature, it is unclear as to why people experience specific benefits from R/S (Dyer 2007; Perry 1998). A contender for explaining why subjective health is improved by R/S is that

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R/S promotes a coherent worldview (George et al. 2002; Park 2007). Coherency allows people to frame life events in a manner that promotes optimism, consistency, and engagement, all of which are positively related to subjective well-being (Antonovsky 1993). In short, R/S engenders coherency and coherency promotes positive subjective health outcomes (Jeserich 2013). Framed slightly differently, the coherency hypothesis would suggest that the benefits associated with R/S reflect an underlying valuation of those constructs (Ryan et al. 1993).

For example, attending church and being religious are positive predictors of subjective well-being (e.g. Happiness, life satisfaction, and perceived global health); because a person sees value in going to church and being religious. Similarly, Prayer/Meditation is linked to decreasing stress levels (Schnittker 2003), because the person engaging in Prayer/Meditation believe that his/her petition will be answered, or that the act of meditation is beneficial. The allure of the coherency hypothesis is that it explains complex relationships between R/S and health outcomes using an easy-to-grasp rationale. Religious/Spiritual beliefs and behaviours do not have an *inherent* benefit, they have a benefit that is contingent on a valuation of those beliefs and behaviours.

However, an intriguing issue arises if one contrasts how R/S variables are typically evaluated in general samples with why R/S variables are theorized to promote better subjective well-being. General samples often reveal that R/S variables are positively related to better health outcomes (Idler and Kasl 1992; Krause 2003; Levin and Chatters 1998), and these findings often lead to discussions regarding the salutary effects of R/S variables, or the cultural relevance of belief. Curiously, these national approaches consistently assume that the experience of R/S variables is similar between both the religious and the non-religious. This assumption is bizarre given that one group is actively identifying as "not religious". Essentially, there is an incongruence between *why* R/S is theorized to promote health and *how* R/S is investigated in large samples.

If the rationale of the coherency hypothesis is accurate, then grouping both the religious and the non-religious together *only* makes sense if these groups value R/S variables similarly. However, there is no evidence to suggest that the religious and the non-religious will experience or value R/S similarly. In fact, studies that have examined the relationship between R/S attitudes/behaviours and health outcomes have found that benefits associated with R/S are dependent on whether a person was religious (Dezutter et al. 2011; Jegindø et al. 2013). Moreover, several authors have explicitly noted that the non-religious may experience R/S differently than the religious (Gauthier et al. 2006; Krause and Wulff 2004). Furthermore, the non-religious as a group are less likely to engage in R/S variables, which is arguably an indication that those beliefs and behaviours are less likely to be valued (O'Brian-Baker and Smith 2009). The non-religious do not *necessarily* value R/S variables less than the religious, but it would appear that *assuming* both the religious and the non-religious experience R/S similarly is logically incoherent.

While one could point out that the *data* from studies have suggested that both the religious and non-religious benefit from R/S variables, caution is urged in this line of reasoning. It is important to remember that the religious outnumber the non-religious approximately 5:1 (Schwadel 2010), which has analytical consequences. It is conceivable that the non-religious (or subgroups within the non-religious) represent a group of outliers to the "R/S = better health" relationship. Linear regression models could be describing an attenuated effect of R/S on health, because of a heterogeneous population. If true, the effects of R/S may be *underestimated* for the religious and may be *overestimated* for the non-religious.

The goal of the current study is to investigate whether the Religiously Unaffiliated experience R/S variables (Attendance, Prayer/Meditation, and Religiosity) differently from Christians. As noted previously, the existing literature has largely failed to address this question. This research question has implications for understanding the effect sizes of R/S variables on health and has implications for whether R/S variables are uniformly salutary.

Methods

Data

The 2008 Canadian General Social Survey was accessed through the researchers' university (Catalogue No. 12M0022G). These data were collected from February 2008 to November 2008. Data collection occurred through random digit dialling banks. Respondents had to be 15 years of age or older, had to speak either English or French, and had to answer the survey personally (Social and Aboriginal Statistics Division 2010). Initially, researchers had planned on analysing a national sample of Canadians. However, analysing the descriptive data of the religious and non-religious revealed large variability in how the non-religious and Christians responded to questions addressing R/S variables. The non-religious in some provinces had significantly higher levels of R/S variables than the non-religious in the rest of Canada (e.g. NB), while Christians in some provinces had significantly lower levels of R/S variables than Christians in the rest of Canada (e.g. QC). Additionally, some provinces (e.g. BC) were dramatically less religious than the rest of Canada.

Researchers had previously commented upon regional variations in Canada (e.g. Gee and Veevers 1990), as well as how these regional differences elicited substantive effects on R/S (Olson and Hadaway 1999). Consequently, the authors acknowledged that there could be substantial confounds in grouping provinces together. Ultimately, it was decided that analysis would focus on a provincial sample instead of a national sample. Ontario was chosen because it was the most populous province and it had the largest number of Religiously Unaffiliated persons in Canada. While this decision adversely affected the generalizability of the current study, researchers could be more confident that what they found was less likely to be confounded by variations in religious identities.

Participants

To be eligible for selection in the study, respondents had to provide data for all questions of interest, identify as Christian or Religiously Unaffiliated, and be 20 years or older. Persons responding with "I don't know" or "Refused to state" were excluded from the study in order to maintain the continuous nature of the data. An age cut-off was implemented over concerns that younger persons (i.e. 15–19) may live with their parents and have reduced autonomy over practices regarding religious activities. There were 3620 respondents in the current study (1611 male, 2009 female), and the average age fell between 45 and 49 years of age. In terms of Religious Affiliation, there were 2786 Christians (76.96 %) and 834 Religiously Unaffiliated (23.04 %). Table 1 shows the descriptive statistics. Please note that throughout this article the term "Religiously Unaffiliated" specifically refers to these 834 persons, while the term "non-religious" is used to describe this group in general.

Table 1 Weighted descriptive statistics for variables used in regression models

	% or M/SD		
	All	Christians	Religiously Unaffiliated
Sex (% Female)	50.20 %	51.40 %	46.55 %
Minority (% White)	89.94 %	91.44 %	85.34 %
Partner (% Married)	72.34 %	73.93 %	67.49 %
Social support 1 (% Yes)	45.37 %	47.53 %	38.79 %
Happiness	4.74/0.54	4.76/0.53	4.68/0.56
Self-Rated Health	3.61/1.03	3.60/1.04	3.64/1.01
Satisfaction with Life	7.88/1.72	7.94/1.72	7.69/1.71
Age	7.82/3.15	8.16/3.18	6.80/2.80
Education	4.26/1.07	4.21/1.11	4.44/0.93
Income	9.84/2.31	9.82/2.29	9.88/2.38
Attendance	2.55/1.57	2.95/1.56	1.32/0.74
Prayer/Meditation	3.26/1.75	3.69/1.61	1.94/1.51
Religiosity	2.91/1.07	3.18/0.90	2.08/1.15
Social support 2	3.16/1.54	3.24/1.54	2.90/1.52
Social support 3	4.12/1.45	4.19/1.44	3.88/1.44
Social support 4	4.08/0.89	4.10/0.89	4.03/0.88
Social support 5	6.39/8.88	6.53/9.15	5.98/7.98
Social support 6	37.93/48.41	38.99/49.69	34.69/44.14
Social support 7	4.03/1.43	4.02/1.42	4.06/1.46
Social support 8	3.95/1.50	3.92/1.50	4.02/1.51
Social support 9	4.09/0.84	4.10/0.83	4.06/0.84
Social support 10	0.68/1.05	0.67/1.04	0.70/1.09
Social support 11	2.71/0.94	2.79/0.95	2.48/0.88
Social support 12	1.34/1.23	1.36/1.23	1.29/1.22
Mastery	26.64/3.84	26.52/3.79	27.04/3.95
N =	3620	2786	834

Social support 1 = Most relatives live in the same city or region, Social support 2 = Past month, frequency saw relatives, Social support 3 = Past month, frequency communicated with relatives by telephone, Social support 4 = Satisfaction with frequency communicate with relatives, Social support 5 = # of close friends, Social support 6 = # of other friends, not counting close friends or relatives, Social support 7 = Frequency saw any friend in the past month, Social support 8 = Frequency communicated with any friend by telephone in the past month, Social support 9 = Satisfaction with frequency of communications with friends, Social support 10 = # of new people met outside of work or school in the past month, Social support 11 = # of people known in the neighbourhood, Social support 12 = # of secular organizations person belongs to. Parenthesized words indicate which categorical level was the lowest

Measures

Demographics

A large battery of demographic covariates was controlled for, due to their potential to influence R/S and health outcomes (Koenig and Hays 1999; Krause 2003). Covariates that were controlled for were: sex (male/female), age (in 5 year increments), education level

(No schooling/elementary school, some high school, high school completion, some college/university/technical school, college/university/technical school completion, and graduate school), household income [12 categories ("No income" to "$100 000+")], marital status (no partner/partner), and race (white/non-white).

R/S Variables

There were three R/S variables of interest: a five-point item regarding church Attendance, a five-point item regarding Prayer/Meditation, and a four-point item regarding perceived Religiosity. Responses were coded so that higher scores indicated greater levels of Attendance, Prayer/Meditation, and Religiosity. As noted in the introduction, these R/S variables are often significant predictors of health.

Religious Affiliation

Only persons who identified as Religiously Unaffiliated or Christian (i.e. Roman Catholic, United Church, or Protestant) were retained for the current study. The decision to exclude non-Christian faiths was due to concerns of intragroup variability for behaviours related to R/S variables. For example, it is normative for Muslims to pray five times daily, and this may spuriously affect the relevant R/S construct. While Christians *do* represent a diverse group, the heterogeneity issue was thought less severe.

Social Support

The existing R/S-health literature rarely controls for social support as a confounding variable. This omission is problematic because R/S is linked to the promotion of social support (Koenig and Hays 1999), and social support itself is linked to the promotion of health (Powell et al. 2003). In other words, it is not always clear whether R/S variables are directly related to health, or only indirectly related to health. To mitigate this confound, 12 social support items were included that addressed network size (close friends, non-close friends, neighbours known, secular organizations belonged to, new people met outside of work/school in past month), proximity of family [living close to relatives (no/yes)], frequency of contact (frequency of seeing friends, frequency of seeing relatives, frequency of talking to close relatives on phone, frequency of talking to friends on phone), and satisfaction with communication (for both friends and relatives). For all questions, higher scores indicated greater social support.

Mastery

Like social support, mastery is rarely controlled for within the existing R/S-health literature. This omission allows for ambiguity, as R/S is related to the promotion of mastery (Ai 2005), and higher mastery is associated with better health (Spencer and Patrick 2009). To correct for this potential issue, a modified version of Pearlin and Schooler's (1978) Mastery Index was used. The Pearlin and Schooler Mastery Index consists of seven questions (e.g. "Do you sometimes feel pushed around in life?"), and each question is assessed on a five-point scale. The Mastery Index showed acceptable reliability (Cronbach's $\alpha = .75$), with greater scores indicating greater levels of Mastery.

Health Outcomes

Three health outcomes were assessed in the current study: Happiness (five-point scale), global Self-Rated Health (five-point scale), and Satisfaction with Life (ten-point scale). Each of these outcomes was a single item, and assessed on a continuous scales with higher scores indicating greater degrees of health. Measures such as these are consistent with much of the R/S literature (e.g. Diener and Clifton 2002; Greenfield and Marks 2007; Krause, 2006, etc.) and have a reasonably strong relationship with objective measures of health outcomes (e.g. Kuhn et al. 2006).

Research Questions

The current study tested a series of identical hypotheses for each of the three health outcome variables [Happiness, Self-Rated Health (SRH), and Satisfaction with Life (SWL)]. Three regression models were produced (one for each health outcome), and each regression model adhered to the following template:

Block 1 covariates were entered.
Block 2 R/S variables (Attendance, Prayer/Meditation, and Religiosity) were entered. Given the existing literature on the topic, Attendance and Religiosity were expected to have significant relationships with the outcome variables being assessed (Diener and Clifton 2002; Gauthier et al. 2006; Krause 2005).
Block 3 Religious Affiliation was entered. The Religiously Unaffiliated were the reference group (i.e. 0 = Religiously Unaffiliated, 1 = Christian).
Block 4 (forward stepwise regression) Religious Affiliation (Religiously Unaffiliated/Christian) was tested as a potential moderator for the relationship between Attendance, Prayer/Meditation, and Religiosity and health outcomes.
Hypothesis Significant moderator terms were predicted to be positive. If supported, this would suggest that R/S variables are experienced *less* positively by the Religiously Unaffiliated than by Christians, for that health outcome variable. If Block 4 was not significant then analyses did not proceed to Block 5.
Block 5 Social support and mastery covariates were entered. This will test whether the observed moderation terms of Block 4 will be subordinated to these covariates.
Hypothesis Moderator terms from Block 4 will remain significant. If supported, this would suggest that the observed moderator effects in Block 4 were robust.
Hypothesis When the Religiously Unaffiliated and Christians are compared on the highest level of a moderated R/S construct, Christians will report better health. If supported, this would suggest that high levels of R/S variables are not uniformly experienced.
Hypothesis R/S variables will not be significant positive predictors of better health in a sample consisting of the Religiously Unaffiliated. If supported, this would suggest that the Religiously Unaffiliated experience R/S variables less positively than Christians.

Data Analysis

All data analysis was done with Stata 13. Sampling weights provided by the Social and Aboriginal Statistics Division (2010) were modified to be applicable for the data subset. Data were centred (West et al. 1996), and continuous variables were standardized. This practice allowed for coefficients for categorical variables to be interpreted in terms of

changes to group membership. Coefficients for continuous variables could be interpreted as changes to standard deviation. Issues with heteroscedasticity were corrected for with robust standard errors, a practice that is often absent within the existing R/S-health literature. A power assessment was performed with G*Power (v3.1.9.2) and it was determined that the current study had adequate power ($\beta > .99$) to detect a very small effect ($f^2 = .01$) when considering the entire sample ($N = 3620$), and had adequate power ($\beta > .90$) to detect a small effect ($f^2 = .02$) when conducting subgroup analyses for the Religiously Unaffiliated group ($N = 834$).

Results

Happiness

Happiness was regressed on covariates in Block 1 (see Table 2). The overall model was significant, $F(6, 3613) = 10.63$, $p < .001$, $R^2 = .027$. Religious/Spiritual variables were entered in Block 2, $F(3, 3610) = 8.76$, $p < .001$, $\Delta R^2 = .009$, $R^2 = .036$. Both Attendance, $t = 2.87$, $p = .004$, $B = 0.06$, 95 % CI [0.02, 0.11], and Religiosity, $t = 2.43$, $p = .015$, B = 0.07, 95 % CI [0.01, 0.12], were significant positive predictors of Happiness. Religious Affiliation was entered into Block 3, $F(1, 3609) = 0.05$, $p = .825$, $\Delta R^2 = .000$, $R^2 = .036$. Identifying as Christian or as Religiously Unaffiliated was not associated with greater Happiness.

To investigate whether R/S variables were experienced differently by the Religiously Unaffiliated and Christians, interaction effects were investigated in Block 4. However, Religious Affiliation did not moderate the relationship between Attendance, Prayer/Meditation, and Religiosity. This would suggest that the Religiously Unaffiliated and Christians did not sufficiently differ in their experience of R/S variables.

It was then investigated whether R/S variables predicted Happiness in a sample consisting exclusively of the Religiously Unaffiliated. After filtering out all Christians, Happiness was regressed on R/S variables, demographic covariates, social support covariates, and Mastery. However, none of the three R/S variables (Attendance, Prayer/Meditation, and Religiosity) were significant predictors of Happiness. In other words, while the moderation terms were non-significant, the subgroup analysis suggested that the Religiously Unaffiliated experience R/S variables non-positively. This finding is supportive of the idea that the Religiously Unaffiliated and Christians represent two distinct groups.

Self-Rated Health

Self-Rated Health (SRH) was regressed onto covariates in Block 1 (see Table 3), $F(6, 3613) = 50.17$, $p < .001$, $R^2 = .089$. Religious/Spiritual variables were added in Block 2, $F(3, 3610) = 1.96$, $p = .118$, $\Delta R^2 = .002$, $R^2 = .091$. Only Religiosity was a significant positive predictor of SRH, $t = 2.26$, $p = .024$, B = 0.06, 95 % CI [0.01, 0.12]. Religious Affiliation was entered into Block 3, $F(1, 3609) = 0.06$, $p = .801$, $\Delta R^2 = .000$, $R^2 = .091$. However, Religious Affiliation did not predict SRH.

To determine whether R/S variables were experienced differently by the Religiously Unaffiliated and Christians, interaction terms were investigated in Block 4. Using forward stepwise regression, three interaction terms were entered into the model, $F(1, 3608) = 5.86$, $p = .016$, $\Delta R^2 = .002$, $R^2 = .092$. Only Attendance was moderated by

Table 2 Religious/spiritual constructs and moderator terms predicting Happiness

	B coefficients/robust standard error				
	Block 1	Block 2	Block 3	Block 4	Block 5
Constant	.000/.019	.000/.019	−.010/.047		
Sex (male)	.092/.040*	.077/.041†	.077/.041†		
Age	.033/.021	.010/.021	.010/.021		
Minority (White)	−.147/.073*	−.178/.072*	−.176/.073*		
Partner (single)	.159/.050**	.149/.050**	.149/.050**		
Education	.010/.021	.007/.020	.008/.020		
Income	.110/.023***	.113/.023***	.113/.022***		
Attendance		.064/.022**	.063/.024**		
Prayer/Meditation		−.028/.027	−.029/.028		
Religiosity		.067/.028*	.066/.028*		
Rel.ID (Unaffil.)			.013/.059		
Rel.ID*Attend					
Rel.ID*Pray./Med.					
Social support 1					
Social support 2					
Social support 3					
Social support 4					
Social support 5					
Social support 6					
Social support 7					
Social support 8					
Social support 9					
Social support 10					
Social support 11					
Social support 12					
Mastery					
$R^2/\Delta R^2$					

Rel.ID = Religious Affiliation. Unaffil. = Religiously Unaffiliated. Social support 1 = Most relatives live in the same city or region, Social support 2 = Past month, frequency saw relatives, Social support 3 = Past month, frequency communicated with relatives by telephone, Social support 4 = Satisfaction with frequency communicate with relatives, Social support 5 = # of close friends, Social support 6 = # of other friends, not counting close friends or relatives, Social support 7 = Frequency saw any friend in the past month, Social support 8 = Frequency communicated with any friend by telephone in the past month, Social support 9 = Satisfaction with frequency of communications with friends, Social support 10 = # of new people met outside of work or school in the past month, Social support 11 = # of people known in the neighbourhood, Social support 12 = # of secular organizations person belongs to. Continuous variables were standardized. Parenthesized words indicate which categorical level was the lowest

† $< .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Religious Affiliation, $t = 2.42$, $p = .016$, $B = 0.19$, 95 % CI [0.04, 0.34], and the Religiously Unaffiliated experienced Attendance negatively $t = -2.32$, $p = .020$, $B = -0.17$, 95 % CI [−0.33, −0.03]. The directionality of the observed moderation term was consistent with the relevant hypothesis. It is noteworthy that the amount of variance explained

Table 3 Religious/spiritual constructs and moderator terms predicting Self-Rated Health

	B coefficients/robust standard error				
	Block 1	Block 2	Block 3	Block 4	Block 5
Constant	.000/.018	.000/.018	−.009/.042	−.147/.070*	−.146/.071*
Sex (male)	.033/.038	.031/.038	.031/.038	.031/.038	.023/.038
Age	−.122/.019***	−.130/.020***	−.130/.020***	−.132/.020***	−.120/.020***
Minority (White)	−.290/.069***	−.294/.070***	−.292/.071***	−.287/.070***	−.134/.075†
Partner (single)	.055/.045	.053/.045	.053/.045	.052/.045	.062/.045
Education	.102/.020***	.102/.020***	.103/.020***	.102/.020***	.079/.020***
Income	.181/.022***	.182/.022***	.181/.022***	.181/.022***	.124/.022***
Attendance		.001/.024	.000/.025	−.176/.076*	−.176/.077*
Prayer/meditation		−.051/.027†	−.052/.027†	−.051/.027†	−.038/.026
Religiosity		.063/.028*	.062/.028*	.063/.028*	.061/.027*
Rel.ID (Unaffil.)			.013/.051	.147/.074*	.146/.075†
Rel.ID*Attend				.188/.078*	.189/.079*
Social support 1					.015/.038
Social support 2					.003/.022
Social support 3					−.016/.024
Social support 4					.098/.022***
Social support 5					.034/.017*
Social support 6					−.011/.021
Social support 7					.057/.021**
Social support 8					−.073/.021**
Social support 9					.017/.022
Social support 10					−.001/.018
Social support 11					.024/.018
Social support 12					.031/.020
Mastery					.237/.021***
$R^2/\Delta R^2$					

Rel.ID = Religious Affiliation. Unaffil. = Religiously Unaffiliated. Social support 1 = Most relatives live in the same city or region, Social support 2 = Past month, frequency saw relatives, Social support 3 = Past month, frequency communicated with relatives by telephone, Social support 4 = Satisfaction with frequency communicate with relatives, Social support 5 = # of close friends, Social support 6 = # of other friends, not counting close friends or relatives, Social support 7 = Frequency saw any friend in the past month, Social support 8 = Frequency communicated with any friend by telephone in the past month, Social support 9 = Satisfaction with frequency of communications with friends, Social support 10 = # of new people met outside of work or school in the past month, Social support 11 = # of people known in the neighbourhood, Social support 12 = # of secular organizations person belongs to. Continuous variables were standardized. Parenthesized words indicate which categorical level was the lowest

† $< .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

by the inclusion of one interaction term matched the variance explained by the inclusion of three R/S variables (i.e. $\Delta R^2 = .002$).

To investigate the robustness of this interaction effect, social support covariates and a Mastery Index were added in Block 5. The overall model improved, $F(13, 3595) = 16.58$, $p < .001$, $\Delta R^2 = .077$, $R^2 = .169$, and Attendance continued to be moderated by Religious Affiliation, $t = 2.41$, $p = .016$, $B = 0.19$, 95 % CI [0.04, 0.34], with the Religiously

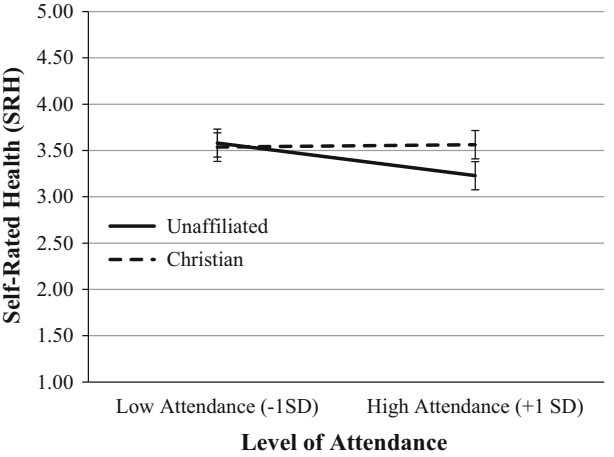

Fig. 1 Attendance predicting Self-Rated Health by Religious Affiliation

Unaffiliated continued to experience Attendance negatively $t = -2.29$, $p = .022$, $B = -0.18$, 95 % CI [−0.33, −0.03]. These results would suggest that the observed moderation term was robust, which was consistent with the relevant hypothesis (see Fig. 1).

As a follow-up to Block 5, comparisons between Christians and the Religiously Unaffiliated were made to determine whether belonging to one group conferred a health advantage. When compared at the lowest level of Attendance (i.e. "Not at all"), there were no differences between Christians and the Religiously Unaffiliated for SRH, $t = -0.77$, $p = .443$, $B = -0.04$, 95 % CI [−0.15, 0.06]. However, when compared on the highest level of Attendance (i.e. "At least once a week"), being a Christian was associated with better SRH, $t = 2.38$, $p = .017$, $B = 0.44$, 95 % CI [0.08, 0.81]. However, Christians and the Religiously Unaffiliated reported attending church at different rates, $t(2891.71) = -40.69$, $p < .001$; $M_{\text{diff}} = -1.03$, 95 % CI [−1.08, −0.98], so raw comparisons are somewhat misleading because it was unusual for a Religiously Unaffiliated person to report attending church with the same frequency as a Christian did. While occasionally Christians reported better SRH than the Religiously Unaffiliated, this only happened when the Religiously Unaffiliated report atypically high levels of Attendance.

Religiosity remained a positive predictor of SRH with the inclusion of social support and mastery covariates, $t = 2.25$, $p = .024$, $B = 0.06$, 95 % CI [0.01, 0.11], and was not moderated by Religious Affiliation. To determine whether this indicated that Religiosity was positively experienced by the Religiously Unaffiliated, Christians were filtered from the dataset. When only the Religiously Unaffiliated were considered, none of the three R/S variables were significant positive predictors of SRH in a full regression model (although Attendance was a significant negative predictor, $t = -2.34$, $p = .020$, $B = -.18$, 95 % CI [−.33, −.03]). This finding was supportive of the idea that Christians and the Religiously Unaffiliated experience R/S variables differently, which was consistent with the relevant hypothesis.

Table 4 Religious/spiritual constructs and moderator terms predicting Satisfaction with Life (SWL)

	B coefficients/robust standard error				
	Block 1	Block 2	Block 3	Block 4	Block 5
Constant	.000/.019	.000/.019	−.035/.043	−.202/.076**	−.186/.069**
Sex (male)	.101/.038**	.099/.038**	.100/.038**	.100/.038**	.067/.036†
Age	.051/.020*	.036/.021†	.034/.021	.032/.021	.060/.021**
Minority (White)	−.164/.065*	−.184/.065**	−.177/.065**	−.171/.065**	.028/.063
Partner (single)	.326/.046***	.316/.047***	.316/.047***	.315/.046***	.370/.045***
Education	−.019/.020	−.020/.020	−.018/.020	−.019/.020	−.038/.019*
Income	.123/.023***	.124/.023***	.123/.023***	.122/.023***	.047/.022*
Attendance		.054/.023*	.049/.024*	−.165/.083*	−.149/.075*
Prayer/meditation		−.077/.026**	−.080/.026**	−.080/.026**	−.067/.024**
Religiosity		.078/.027**	.074/.028**	.075/.028**	.076/.026**
Rel.ID (Unaffil.)			.047/.051	.210/.080**	.194/.073**
Rel.ID*Attend				.229/.084**	.210/.076**
Social support 1					.053/.036
Social support 2					.011/.020
Social support 3					−.006/.022
Social support 4					.084/.022***
Social support 5					.043/.018*
Social support 6					.016/.020
Social support 7					.026/.021
Social support 8					.001/.022
Social support 9					.113/.020***
Social support 10					.020/.017
Social support 11					.025/.018
Social support 12					−.014/.019
Mastery					.342/.020***
$R^2/\Delta R^2$					

Rel.ID = Religious Affiliation. Unaffil. = Religiously Unaffiliated. Social support 1 = Most relatives live in the same city or region, Social support 2 = Past month, frequency saw relatives, Social support 3 = Past month, frequency communicated with relatives by telephone, Social support 4 = Satisfaction with frequency communicate with relatives, Social support 5 = # of close friends, Social support 6 = # of other friends, not counting close friends or relatives, Social support 7 = Frequency saw any friend in the past month, Social support 8 = Frequency communicated with any friend by telephone in the past month, Social support 9 = Satisfaction with frequency of communications with friends, Social support 10 = # of new people met outside of work or school in the past month, Social support 11 = # of people known in the neighbourhood, Social support 12 = # of secular organizations person belongs to. Continuous variables were standardized. Parenthesized words indicate which categorical level was the lowest

† $< .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Satisfaction with Life

Satisfaction with Life (SWL) was regressed onto covariates in Block 1 (see Table 4). The overall model improved, $F(6, 3613) = 21.76$, $p < .001$, $R^2 = .054$. Religious/Spiritual variables were entered in Block 2, $F(3, 3610) = 6.26$, $p < .001$, $\Delta R^2 = .006$, $R^2 = .060$.

Attendance, $t = 2.35$, $p = .019$, $B = 0.05$, 95 % CI [0.01, 0.10], Prayer/Meditation, $t = -2.99$, $p = .003$, $B = -0.08$, 95 % CI [−0.13, −0.03], and Religiosity $t = 2.83$, $p = .005$, $B = 0.08$, 95 % CI [0.02, 0.13] were all significant predictors of SWL. Religious Affiliation was entered in Block 3, $F(1, 3609) = 0.83$, $p < .364$, $\Delta R^2 = .000$, $R^2 = .061$, and the results suggested that being a Christian was not associated with better or worse SWL.

To investigate whether the Religiously Unaffiliated and Christians experienced R/S variables differently from one another, interaction terms were assessed in Block 4. Using forward stepwise regression, the three moderation terms were entered, $F(1, 3608) = 7.33$, $p = .007$, $\Delta R^2 = .003$, $R^2 = .063$. Religious Affiliation only moderated Attendance $t = 2.71$, $p = .007$, $B = 0.23$, 95 % CI [0.06, 0.39], so that the Religiously Unaffiliated experienced Attendance negatively, $t = -1.99$, $p = .047$, $B = -0.16$, 95 % CI [−0.33, −0.00], while Christians experienced it positively, $t = 2.65$, $p = .008$, $B = 0.06$, 95 % CI [0.02, 0.11]. These findings were consistent with the relevant hypothesis.

To investigate the robustness of Religious Affiliation moderating Attendance's relationship with SWL, additional covariates were entered in Block 5, $F(13, 3593) = 34.35$, $p < .001$, $\Delta R^2 = .161$, $R^2 = .224$. With the inclusion of social support and mastery covariates, Attendance continued to be moderated by Religious Affiliation, $t = 2.76$, $p = .006$, $B = 0.21$, 95 % CI [0.06, 0.36], and the Religiously Unaffiliated continued to experience Attendance negatively, $t = -1.99$, $p = .047$, $B = -0.15$, 95 % CI [−0.30, −0.00], while Christians continued to experience Attendance positively, $t = 2.68$, $p = .007$, $B = 0.06$, 95 % CI [0.02, 0.11]. These findings would suggest that the observed moderation between Attendance and SWL by Religious Affiliation was reasonably robust (see Fig. 2).

To investigate whether Religious Affiliation conferred any health advantages, Christians and the Religiously Unaffiliated were compared on varying levels of Attendance. Like with SRH, when compared on the lowest level of Attendance (i.e. "Not at all"), there were no differences between the groups, $t = -0.25$, $p = .801$, $B = -0.01$, 95 % CI [−0.12, .09].

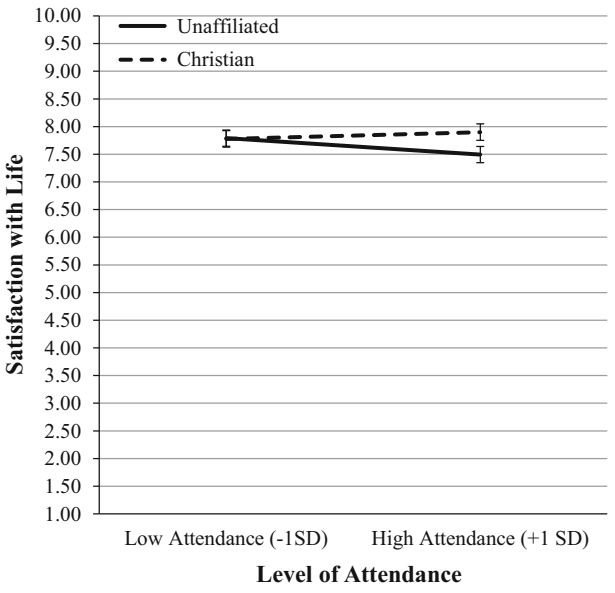

Fig. 2 Attendance predicting satisfaction with Life by Religious Affiliation

However, being a Christian was positively associated with greater SWL on the highest level of Attendance, $t = 2.90$, $p = .004$, $B = 0.52$, 95 % CI [0.17, 0.87]. However, as before, Christians were only healthier when Religiously Unaffiliated displayed atypically high levels of Attendance.

Religiosity remained a significant positive predictor of SWL in Block 5, and a follow-up analysis was conducted to determine whether this indicated that the Religiously Unaffiliated benefit from Religiosity. Using only the Religiously Unaffiliated as the population of interest, Christians were filtered from the dataset. Results indicated that none of the R/S variables were significant positive predictors of SWL in the full regression model (although Attendance was a significant negative predictor, $t = -2.05$, $p = .041$, $B = -.15$, 95 % CI [−.30, −.01]). This finding is supportive of the idea that the Religiously Unaffiliated and Christians experience R/S variables differently.

Discussion

There were three recurring findings from the current study which are of particular note. First, the relationship between Attendance and health outcomes [i.e. Self-Rated Health (SRH); Satisfaction with Life (SWL)] was moderated by Religious Affiliation. In these circumstances, the Religiously Unaffiliated experienced Attendance less positively than Christians did. Second, when Christians and the Religiously Unaffiliated were compared on the highest levels of Attendance for SRH and SWL, being Religiously Unaffiliated was associated with poorer health. However, at the lowest level of Attendance, there was no such relationship. Third, when only the Religiously Unaffiliated were considered, R/S variables were not positive predictors of any health outcomes. Each of these three findings supported the contention that R/S variables do not have a uniformly salutary effect.

Religious Affiliation as a Moderator

In the introduction, it was noted that the non-religious are fewer in numbers than Christians, and this has analytical consequences. This was demonstrated several times within the current study. Specifically, the relationship between Attendance and SRH/SWL changed substantively when considering moderation terms. For SRH, Attendance was initially a non-significant predictor in Block 2. However, when the regression model included an interaction term in Block 4, Attendance was revealed to be a negative predictor of SRH for the Religiously Unaffiliated. Even more dramatically, Attendance was initially a *positive* predictor for SWL in Block 2, but became a *negative* predictor of SWL for the Religiously Unaffiliated in Block 4. These differences are important on a conceptual basis because they illustrate that Attendance does not have the same relationship with health outcomes for the Religiously Unaffiliated as it does with Christians. However, these differences were initially "missed" because the regression model described how the substantially larger Christian group had experienced Attendance. While this analytical approach generated a valid statistical conclusion (i.e. Attendance was indeed a positive predictor of SWL), it demonstrated the issue with treating the Religiously Unaffiliated and Christians as a homogeneous group.

The current study illustrated why using general samples to investigate the relationship between R/S variables and health without considering interaction terms, is problematic. In the SRH and SWL models, a researcher would have been justified in concluding that

Attendance was either unrelated to health, or that Attendance was positively related health. However, these findings would have failed to account for ~20 % of the sample, who reported an extremely different relationship between Attendance and health outcomes. This type of specificity is critical because attending church services is almost exclusively reported as a positive predictor of health, and this discussion occurs without nuance. The findings of the current study exist as a stark counterpoint that should be considered when describing the relationship between R/S variables and health. Additionally, interaction terms remained significant even with the inclusion of social support and mastery covariates, which means that the nuanced perspective of R/S variables and health outcomes is not attributable to these common confounding variables.

That Religious Affiliation has been ignored as a potential moderator for the relationship between R/S variables and health is surprising, given that there is an obvious connection between a person's Religious Affiliation and how they would experience attending church, praying/meditating, and would value religion. Given that the explanation for why R/S variables promote subjective well-being is related to how R/S variables are *valued*, the usage of Religious Affiliation as a moderator is logical. Moreover, given the heterogeneity of the Religiously Unaffiliated as a group (O'Brian-Baker and Smith 2009), it is likely that using narrower grouping variables (e.g. atheists, secularists) would likely elicit stronger effects. Generally speaking, it is perplexing why R/S identities are not considered frequently, given that eliminating variance in the experience of R/S variables would produce stronger main effects for how Christians experience R/S variables.

Religious Affiliation and Health

Follow-up tests after significant interaction terms were necessary because the interactions did not indicate whether Religious Affiliation was associated with better or worse health. Technically, comparisons were made between Christians and the Religiously Unaffiliated at three different levels of Attendance: the provincial average for Ontario (which was the mean-centred value used in all regression models), the highest level of Attendance (i.e. "At least once a week"), and the lowest level of Attendance (i.e. "Not at all"). These findings were informative as they allowed for group differences to be investigated at varying levels of Attendance. Differences did not exist between the Religiously Unaffiliated and Christians at the lowest levels of Attendance, but emerged at moderate and higher levels of Attendance.

Given that Attendance has a positive relationship for Christians and a less positive relationship for the Religiously Unaffiliated, exploring differences between these groups is a logical avenue of investigation. While follow-up tests revealed that the Religiously Unaffiliated who reported greater levels of Attendance also reported poorer health, this comparison is of questionable utility. This is because it is atypical, although not unheard of, for the Religiously Unaffiliated to attend church frequently. In a conceptual sense, the best comparison between the groups assessed the Religiously Unaffiliated who never attended church and Christians who attend church weekly. However, even comparisons between this Christian subgroup and that Religiously Unaffiliated subgroup resulted in no differences. In other words, when Christians and the Religiously Unaffiliated demonstrated behaviour that was "typical" of their respective groups, no significant group differences emerged. This conclusion is reasonably strong given that there was adequate power throughout the study to detect even small differences. Generally speaking, Christians were no more or less healthy than the Religiously Unaffiliated.

How the Religiously Unaffiliated Experienced Religious/Spiritual Variables

In addition to investigating moderation terms, the final analysis for each outcome variable examined whether a sample consisting solely of the Religiously Unaffiliated would report a positive relationship between R/S variables and health outcomes. This approach was used to complement the moderation terms investigated within the study. While statistical moderation is an excellent tool for assessing differences between groups, a non-significant moderation term *only* indicates that the confidence intervals for the main effect overlapped with the confidence intervals for the interaction term. In other words, non-significant interaction terms in the current study only indicated that Christians and the Religiously Unaffiliated experienced an R/S construct within a degree of similarity, *not that the Religiously Unaffiliated benefitted from that R/S construct.*

By assessing only the Religiously Unaffiliated, this potential for confusion was avoided. In each of these follow-up analyses, Attendance, Prayer/Meditation, and Religiosity were regressed onto full models (i.e. models with complete covariate sets). However, for each of these regression models, the Religiously Unaffiliated sample reported a non-significant relationship between R/S variables and health outcomes. This was supportive of the general contention that R/S variables have different relationships with health outcomes for Christians and the Religiously Unaffiliated. While there was a reduction in power when analysing only the Religiously Unaffiliated, there was still acceptable power ($\alpha > .90$) to detect even a small relationship ($f^2 = .02$). However, no such relationship emerged—which suggests that these null findings are indeed an accurate reflection of the R/S-health relationship the Religiously Unaffiliated report.

While one may object that examining how the non-religious experience R/S variables is meaningless, it is important to recall two things. First, the non-religious report some levels of Attendance, Prayer/Meditation, and Religiosity (Hackett 2014; O'Brian-Baker and Smith 2009). Why the non-religious engage in these activities is an unanswered question with R/S-health research. Moreover, given that the observed pattern of moderation in the current study is one in which the Religiously Unaffiliated extracted fewer health benefits from R/S variables, this question is all the more important. As seen in the current study, when the Religiously Unaffiliated attended church services, this was *not* associated with positive health outcome. These findings are antithetical to the often reported pattern of findings within the literature. The reasons this could be happening are diverse. Were the Religiously Unaffiliated reporting negative health outcomes because of higher Attendance? Were the Religiously Unaffiliated attending church to compensate for negative health outcomes? Or were there third variables that influenced both attendance and health outcomes? In any case, it is clear that the relationship between R/S variables and health outcomes represents a valid line of inquiry for research.

Second, while some may still object that using non-religious groups to investigate R/S variables is pointless, it is important to recall that general samples are legion within the literature. Functionally, the existing literature is already including the non-religious in their research without attempting to determine whether R/S variables are experienced differently by these persons. In other words, the literature is largely assuming that the non-religious are reporting a relationship between R/S variables and health that is comparable to what Christians (or religious groups) are reporting. Given that the benefits associated with R/S variables and health are often attributed to what a person values, this analytical approach becomes all the more perplexing. Conceptually, it would be as though a researcher investigated perceptions of race relations, while failing to investigate whether those

opinions varied as a function of race. In either case, assessing the religous affiliation in conjunction with R/S variables provides valuable information regarding health outcomes.

Limitations/Future Directions

The current study was limited by a few factors that largely stem from using archival data. Social support covariates were not standardized measures, and health outcomes were limited to single item responses. While either of these measurement approaches are consistent with the existing literature on the topic, both represent issues that can and should be improved upon. More subtly, because of the heterogeneity of the Religiously Unaffiliated group, this was at best a crude moderator (Hackett 2014). Also, while the current study can only be generalized to persons from Ontario, other research using a multi-province sample has found similar results regarding the relationship between R/S, health outcomes, and Religious Affiliation (Speed 2015). The findings from this cited doctoral dissertation support the idea that the observed moderating effects are present in populations outside of Ontario.

In closing, while Attendance has been reported to have an important relationship with health outcomes, these relationships should not be accepted at face value. Going to church does not appear to have an *inherent* value that makes it beneficial to everyone. More likely, the benefits associated with R/S variables are related to what a person values. And, what a person values is reflected to some extent with how a person identifies. In order to fully appreciate the health implications of Attendance, Prayer/Meditation, and Religiosity, researchers must attempt to understand who is reporting the data. It is only through examining religion *and irreligion* that a clear understanding of health implications of R/S variables will emerge.

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