Heretic, Heal Thyself! Atheism, Nonreligion, and Health

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Religion and spirituality, whether assessed as beliefs, or attitudes and behaviors, is broadly associated with higher levels of health. However, the current literature does not clarify whether being a None (i.e., nonreligious) or an atheist is associated with poorer health outcomes. In a related vein, the current literature has also not demonstrated that "traditional" religious beliefs and behaviors (e.g., attending church, praying, or perceived religiosity) are associated with health benefits for Nones and atheists. The current study used data from the 2008 American General Social Survey (N > 600) to explore these questions. Results suggested that Nones and atheists report comparable health outcomes to Somes and theists. Comparing atheistic Nones, theistic Nones, Atheistic-Somes, and Theistic-Somes revealed that these four groups reported, at times, significantly different relationships between prayer and health, and perceived religiosity and health. The discussion focused on the need to move the research field away from describing monolithic relationships of religion and health, toward an approach that recognizes that salutary effects associated with religion are contingent on what a person believes and how he or she identifies religiously. The discussion also identified an issue with how atheism is assessed within much of the existing literature.

Keywords: atheism, nonreligion, irreligion, self-rated health, happiness

There has been a burgeoning of empirical research in the past few years on the relationship between religion/spirituality (R/S) and health outcomes. The bulk of existing research does appear to indicate an association between religious activity (e.g., church attendance) and a number of positive health outcomes (Ellison & Levin, 1998; Powell, Shahabi, & Thoresen, 2003). Specifically, church attendance appears to have a protective effect against mortality in community dwelling healthy people and can serve as a powerful coping resource for people who are sick (Jantos & Kiat, 2007). Religious activities and attitudes were inversely related to measures of physical illness severity and functional disability among patients with congestive heart failure or chronic pulmonary disease (Koenig, 2002), coronary transplant (Casar Harris et al., 1995), cancer (Park et al., 2009), spinal cord injury (Johnstone, Glass, & Oliver, 2007), and HIV (Vance, Struzick, & Raper, 2008), among others.

But if R/S is healthy, does that necessarily mean secularity is harmful? Hall, Koenig, and Meador (2008) suggested that interpreting measures of religiousness as reverse-coded measures of "secularism" reveals a "small, robust health liability" associated with a deliberately secular worldview. However, this conclusion is problematic at best. For one thing, many existing measures of religiousness do not measure secularity at all, only "high" or "low" religiosity—and thus fail to distinguish between affirmative seculars and those whose faith is vague, conflicted, or transitory. Although there have been measures developed in recent years that specifically include degrees of secularity (cf. Cragun, Hammer, & Nielsen, 2015), they are still new and not yet widely utilized.

Another critique of Hall et al. (2008) is that their conclusion does not take into consideration the effect of the social environment. Studies have shown that the benefits of religious involvement are largely limited to highly religious countries or highly religious regions of the United States (Stavrova, 2015). Moreover, the existing research relies heavily on the Judeo-Christian majority (Kier & Davenport, 2004). Within the United States, atheists, agnostics, and other secularists constitute one of the most negatively viewed minority groups (Edgell, Gerteis, & Hartmann, 2006; Edgell et al., 2016) and experience many forms of discrimination (Brewster et al., 2016; Hammer, Cragun, Hwang, & Smith, 2012). This is also likely to impact negatively on the health of these populations, because perceived discrimination has been associated with heightened stress response and unhealthy self-care behaviors (Pascoe & Smart Richman, 2009), a phenomenon known as minority stress (Meyer, 2003). Thus, it can be argued that the purported health liability associated with secularity (if such an association truly does exist) may be the result of a lack of person-culture fit and not of religious belief per se.

There are many possible reasons why conducting empirical research on the health and well-being of atheistic and secular individuals is difficult. For one thing, self-identified atheists make up a few percent of the U.S. population (although the proportion of

This article was published Online First November 27, 2017.

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people identifying as "nonreligious" is much larger; Pew Forum, 2014), and many people may be reluctant to self-identify as atheists because of negative associations with the word. The population of nonreligious persons encompasses a variety of beliefs, from antireligious atheists to spiritual-but-not-religious believers to believers who choose not to identify with a particular religion. Collectively, such individuals are a heterogeneous comparison group. Comparing religious groups with such a homogeneous collection of people makes it difficult to draw any meaningful conclusions. As a result, atheist and secular individuals are either not counted or treated as a statistical outlier in many studies. The data that do exist are often fraught with implicit biases about nonreligious persons, such as pathologizing atheism as a symptom of disrupted father–child attachments or anger at God (Exline, Park, Smyth, & Carey, 2011; Vitz, 1999).

An additional issue with the idea that "atheism is secular" and "religion is non-secular" (Hall et al., 2008) is that there is not a substantive logical case to be made for this perspective. At its most basic level, atheism is simply an absence of a belief in god(s) (Bullivant, 2013), while religion/religious identity is whether a person sees him/herself as a part of a religious tradition. These two types of identifiers, while conceptually related, are independent of each other. There is no social requirement that a person who identifies as religious must also believe in god(s), any more than there is a social requirement that a person who does not identify as religious cannot believe in god(s). Belief in god(s) from a research standpoint is not necessary to identify as being religiously affiliated. In other words, a person could have a valid religious identity and still be accurately described as being an atheist. Using Hall et al.'s (2008) classification system a person would simultaneously be both secular and nonsecular-a clear violation of the law of noncontradiction. To be fair, religiously inclined persons may protest that belief in god(s) is necessary to identify as a part of some religious traditions, but this is not how data is actually collected. In other words, researchers generally do not require participants to justify why they have identified as being a part of a religious tradition.

What is known about the health and well-being of atheists and seculars does not support the idea that a lack of R/S is not in itself a detriment to health. Data from multiple studies show no significant group differences between religious and secular individuals in terms of general health (Cragun et al., 2015; Hayward, 2016; Speed, 2017; Speed & Fowler, 2016), death anxiety (Feifel, 1974), or coping with illness or disability (Hwang, 2008; Makros & McCabe, 2003). Hayward et al. (2016) conducted a meta-analysis of 60 published studies and found no significant differences in subjective health, positive affect, humility, illicit drug use, or exercise between atheists, agnostics, and religious affiliates as determined by nonoverlap of 95% confidence intervals. Nonreligious individuals also have lower rates of obesity and lower body mass indices (BMIs; Cline & Ferraro, 2006) and fewer activities of daily living limitations than religious affiliates (Hayward et al., 2016). This research is in conceptual conflict with the broader R/S-health field: If irreligion is unhealthy, than why are the irreligious not reporting poorer health?

The current study explored the relationship between atheism and health, nonreligion and health, and whether R/S attitudes or behaviors (i.e., attending church, prayer, and perceived religiosity) positively predict health in atheists and the nonreligious. The overarching goal of the current study was to explore whether atheists and the nonreligious reported different health experiences with R/S attitudes and behaviors.

Method

Data

The current study used archival data from the 2008 American General Social Survey (GSS), which is freely available to researchers. Because archival data were used, there were no ethics procedures that the researchers were required to follow, because all data was collected by the National Opinion Research Council (Smith, Hout, & Marsden, 2016). The GSS is a biyearly representative sample of Americans. Data can ensure representativeness by allowing for probability weighting and information on sampling strata. The 2008 survey year was chosen because it was the most recent GSS survey that had all variables of interest to the current study. To be included in the current study, respondents had to provide responses to all covariates and answer at least one of the dependent variables. Persons who indicated that they "did not know" or declined to respond were excluded from the study to maintain the continuous nature of the data. Missing data was not thought to be problematic for the current study because only a few percent of respondents declined answering the relevant questions. For descriptive statistics, please see Table 1.

Measures

Self-rated health (SRH). Similar to previous research (Green & Elliott, 2010; Krause, 2006), researchers used a single-item assessment of perceived health ("Would you say your own heath, in general, is excellent, good, fair, or poor?"). Previous research has suggested that measures such as these show good test–retest reliability and have convergent validity with other assessments of health (Kuhn, Rahman, & Menken, 2006). Responses were coded so that higher levels of the variable reflected better health.

Happiness. The current study assessed happiness by asking respondents to place themselves into one of three categories (not at all happy, pretty happy, very happy). This measure was previously used by Park, Lee, Sun, Klemmack, Roff, and Koenig (2013). Responses were coded so that higher scores indicated higher levels of happiness.

Covariates. To eliminate basic confounding influences, researchers controlled for sex (male/female), age (in years), race (White, Black, other), marital status (married, widowed, divorced, separated, single/never married), education (less than high school, high school, associate/junior college, bachelor's degree, graduate), and income.

Theistic identity. The GSS contained a single item that researchers could assess theistic identity with, "What best describes your beliefs about God?" (I do not believe in God now, and I never have; I do not believe in God now, but I used to; I believe in God now, but I didn't used to; I believe in God now, and I always have). Persons who indicated that they did not currently believe in God were categorized as "atheist" and persons who currently did believe in God were categorized as "theist." Approximately 9.98% of the sample were negative atheists. Please note that this definition of atheism is consistent with negative atheism, which is the ab-

 Table 1

 Weighted Means/SDs or Percentages for Variables

Variable	Theist $(N = 530)$	Atheist $(N = 66)$	Some $(N = 974)$	None $(N = 192)$
Self-rated health	2.94/.84	3.02/.83	2.96/.81	3.04/.77
Happiness				
Not too happy	20.56%	12.72%	15.63%	17.53%
Pretty happy	49.17%	66.49%	50.65%	61.39%
Very happy	30.27%	20.79%	33.71%	21.09%
Attendance	3.95/2.66	.85/1.53	4.17/2.63	.76/1.35
Prayer	4.57/1.49	1.49/1.01	4.53/1.52	2.21/1.69
Religiosity	2.8/.87	1.27/.55	2.86/.83	1.36/.68
Sex				
Female	57.33%	27.34%	54.73%	37.81%
Male	42.67%	72.66%	45.27%	62.19%
Age	46.25/16.74	40.03/15.25	46.5/16.55	39.21/14.88
Race				
White	74.52%	87.71%	76.61%	79.59%
Black	17.03%	1.31%	15.45%	9.93%
Other	8.46%	10.97%	7.94%	10.48%
Marital Status				
Married	55.75%	48.33%	56.93%	47.46%
Widowed	5.60%	1.67%	4.98%	1.47%
Divorced	9.59%	6.49%	10.41%	7.42%
Separated	3.82%	1.22%	3.20%	1.29%
Never married	25.24%	42.29%	24.48%	42.36%
Degree	1.53/1.18	2.10/1.30	1.57/1.18	1.79/1.27
Income	5.47/4.39	6.29/4.74	5.59/4.44	6.28/4.77

Note. To be included, a respondent had to answer all questions. The average number of respondents per analysis tended to be higher. Higher values for continuous variables were always associated with higher scores. Self-rated health (1 = poor, 2 = fair; 3 = good; 4 = excellent), attendance (0 = never, 1 = less than once a year, 2 = once a year, 3 = several times a year, 4 = once a month, 5 = 2-3 times a month, 6 = nearly every week, 7 = every week, 8 = more than once a week), prayer <math>(1 = never, 2 = less than once a week, 3 = once a week, 4 = several times a week, 5 = once a day, 6 = several times a day), religiosity <math>(1 = not religious, 2 = slightly religious, 3 = moderately religious, 4 = very religious), degree <math>(1 = less than high school, 2 = high school, 3 = junior college, 4 = Bachelor's degree, 5 = graduate).

sence of a belief in god(s), rather than a belief that there are no god(s)—which would be positive atheism (Bullivant, 2013). Also note that the persons who were identified as "atheist" in the current study may not have necessarily *self*-identified as atheist but were included as atheists because they match the lexical meaning of the word. The point is important because atheism is seen as a tiny minority in the United States, when in fact atheists made up approximately 10% of the American population in the current study.

Religious identity. The GSS contained a single item that allowed persons to identify as being religiously affiliated. Persons who indicated that they were not religiously affiliated were classified as "Nones," and persons who indicated that they were religiously affiliated (e.g., Christians, Muslims, Jews) were classified as "Somes." Approximately 16.77% of the sample were Nones.

Theistic/religious identity. Researchers combined theistic identity and religious identity together to create four distinct categories. Theistic-Somes (n = 1081) were persons who believed in god(s) and identified as being religiously affiliated. Theistic-Nones (n = 109) were persons who believed in god(s) who indicated that they were not affiliated with any religion. Atheistic-Somes (n = 42) were persons who indicated that they did not believe in god(s) but identified as being religiously affiliated. And finally, Atheistic-Nones (n = 86) were persons who did not believe in god(s) and were not affiliated with any religion.

Religious attitudes/behaviors. The GSS had three items of interest to researchers, a 9-point scale assessing attendance ("How

often do you attend religious services?"), a 6-point scale assessing prayer ("How often do you pray?"), and a 4-point scale assessing perceived religiosity ("To what extent do you consider yourself a religious person?"). These measures were coded so that higher scores indicated higher levels of these variables.

Data Analysis

All data analysis was performed with Stata 13, and all figures were made with Microsoft Excel. SRH was assessed with a weighted regression model. Happiness was assessed with ordinal logistic regression using the—gologit2– module (Williams, 2006). Researchers used probability-weighted data for all analyses, which incorporated heteroscedastic-corrected *SEs* (HC1). Because survey-weighting was employed, denominator degrees of freedom for models reflected the number of strata sampled, not the number of respondents.

Whereas logistic regression would focus on membership within categories (not at all happy, pretty happy, very happy), ordinal logistic regression focuses on where the boundaries of those categories "touch" (i.e., cutpoints). The returned odds ratios (*ORs*) for coefficients reflect the probability of being in that category or a *higher category*. Ordinal logistic regression assumes that these probabilities remain consistent when moving from cutpoint to cutpoint (e.g., the probability of moving from "not at all happy" to "pretty happy" if one were male is the same as the probability of moving from "pretty happy" to "very happy" if one were male).

This assumption of parallel lines was tested at $\alpha = .01$, and variables that violated the assumption were corrected by using partial proportional odds. Because gologit2 did not support hierarchical regression, relevant *F* statistics do not describe incremental differences, but rather overall model statistics.

Results

SRH

Researchers used hierarchical linear regression to explore whether there were differences between atheist and theists, and the religiously affiliated and the religiously unaffiliated, in regard to self-perceived health.

Atheists (N = 603). Researchers regressed SRH onto demographic covariates in Block 1 of the regression model, F(10, 75) =5.22, p < .001, $R^2 = .131$. In Block 2 of the regression model, atheism was added as a covariate, F(1, 75) = 0.17, p = .679, $R^2 =$.132. However, believing in god(s) did not seem to contribute significantly to the model, t = -0.42, p = .679, B = -.07, 95% confidence interval (CI) [-.38, .25]. There were not significant differences between believers and nonbelievers in regard to their self-perceptions of health (Table 2).

Nones (N = 1184). Researchers regressed SRH onto demographic covariates in Block 1, F(10, 117) = 12.45, p < .001, $R^2 =$.109, which was significant. Researchers then added whether a person was a None in Block 2 of the regression model, F(1, 117) =0.14, p = .710, $R^2 = .109$, but the overall model did not improve. Being a None was not associated with a statistically significant difference in SRH, t = -0.37, p = .710, B = -.02, 95% CI [-.17, .12] (Figure 1).

Religious attitudes/behaviors. Using the theistic/religious grouping variable, researchers investigated the unique relationship between SRH and religious attitudes/behaviors across the four groups (Theist-Some, Theistic-None, Atheistic-Some, Atheistic-



Figure 1. Differences for atheists/theists and Somes/Nones for self-rated health while controlling for covariates.

None). From these examinations of subpopulations, researchers were able to explore how each group experienced religious attitudes/behaviors as they related to SRH (Table 3).

While attendance was not a significant predictor for any group, the associated coefficient was positive for every group except Atheistic-Nones. The nonsignificance of attendance for the Theistic-Some group was surprising, because attendance (like most forms of social support) tend to be a consistent positive predictor of perceived health (Strawbridge, Shema, Cohen, & Kaplan, 2001).

The relationship that prayer had with SRH varied between groups. Atheistic-Somes reported a significant and negative relationship between prayer and SRH, whereas prayer was not a significant predictor of SRH for the remaining groups. It is intriguing that Theistic-Nones reported a nonsignificant positive relationship between prayer and SRH, which was significantly different than the relationship between prayer and SRH for Theistic-Somes, F(1, 93) = 7.16, p = .009, and Atheistic-Somes, F(1, 93) = 5.40, p = .022. Overall, prayer played a varied role in its prediction of SRH.

 Table 2

 Atheism Predicting Self-Rated Health and Nonreligion Predicting Self-Rated Health

	Coefficients/linearized SE				
	Atheism $(N = 603)$		Nonreligion $(N = 1, 184)$		
Variable	Block 1	Block 2	Block 1	Block 2	
Constant	2.772/.281***	2.793/.269***	3.042/.159***	3.052/.158***	
Sex	.103/.087	.095/.088	.021/.049	.019/.050	
Age	007/.003	007/.003*	008/.002***	008/.002***	
Race (White)					
Black	059/.128	067/.125	052/.083	054/.084	
Other	070/.155	072/.155	051/.084	051/.084	
Marital status (married)					
Widowed	453/.197*	452/.195*	316/.164	315/.164	
Divorced	114/.129	113/.129	103/.085	102/.085	
Separated	003/.227	004/.226	066/.160	067/.159	
Never married	.024/.130	.029/.134	.003/.077	.006/.078	
Education	.151/.036***	.153/.035***	.122/.021***	.123/.021***	
Income	.022/.013	.022/.013	.020/.007**	.020/.007**	
Atheist		067/.161			
None				027/.072	
$R^2/\Delta R^2$.131/.131***	.132/.001	.109/.109***	.109/.000	

 $p^* < .05. p^* < .01. p^* < .001.$

	Coefficients/linearized SE			
Variable	Theistic-Somes	Theistic-Nones	Atheistic-Somes	Atheistic-Nones
N	485	44	23	43
Constant	2.788/.266***	1.886/.840*	3.229/1.034**	2.558/1.186*
Sex	.062/.083	034/.240	485/.374	.538/.382
Age	009/.003**	.001/.010	002/.010	.022/.011*
Race (White)				
Black	126/.119	.366/.255	Omitted	611/.443
Other	21/.161	.524/.324	124/.374	.310/.391
Marital status (married)				
Widowed	323/.176	-1.308/.419**	155/.605	.156/.414
Divorced	140/.118	1.034/.366**	.368/.386	128/.608
Separated	011/.208	.373/.502	Omitted	.155/.379
Never married	.052/.116	.133/.315	.427/.413	.550/.448
Education	.136/.039**	.237/.062***	.242/.130	059/.122
Income	.030/.011**	.002/.033	005/.053	.051/.026
Attendance	.030/.017	.018/.075	.051/.065	187/.244
Prayer	069/.036	.080/.059	185/.082*	712/.395
Perceived religiosity	.126/.062*	.131/.187	.066/.324	658/.247**

 Table 3

 Seemingly Unrelated Regression Models by Belief in God(s) and Religious Affiliation for

 Self-Rated Health

Finally, the relationship between perceived religiosity and SRH varied dramatically between groups. Perceived religiosity was a significant positive predictor of SRH for Theistic-Somes and a significant negative predictor for Atheistic-Nones. Atheistic-Nones significantly differed in their experience of perceived religiosity from Theistic-Somes, F(1, 93) = 8.70, p = .004, and Theistic-Nones, F(1, 93) = 5.75, p = .019, but not Atheistic-Somes, F(1, 93) = 3.56, p = .065. Similar to prayer, perceived religiosity had a varied role in its prediction of SRH. Conceptually, this would suggest that perceived religiosity is significantly positive for persons who are simultaneously religious and believe in god(s) but is significantly negative for persons who are simultaneously nonreligious and do not believe in god(s).

Happiness

Using ordinal logistic regression, researchers explored whether being an Atheist or None was associated with self-reported levels of happiness.

Atheists (n = 1,168). The assumption of parallel lines was violated for income within the model. Specifically, income was significantly and positively associated with moving from the "not too happy" group to the "pretty happy" group, but was not a significant predictor of moving from the "pretty happy" group to the "very happy" group; however, the assumption held for all other variables. Researchers investigated whether demographic covariates predicted level of happiness in Model 1, F(11, 101) = 7.95, p < .001, which was significant. Researchers then investigated whether being an atheist was related to happiness level in Model 2, but the atheism variable was not a significant predictor, OR = .86, p = .596, 95% CI [.50, 1.50]. Overall, being an atheist or theist was not significantly related to happiness level (Figure 2).

Nones (n = 1,760). Similar to the previous model, income violated the parallel lines assumption and was corrected for after the fact. Researchers regressed happiness onto demographic cova-

riates in Model 1, F(11, 120) = 11.94, p < .001, which was significant. Researchers then added religious affiliation in Model 2, F(12, 119) = 15.15, p < .001, which was also significant. Being a None was associated with a small, negative relationship with happiness, OR = .64, p = .002, 95% CI [.49, .85] (Figure 3). Overall, this would support the contention that being a Some was associated with higher levels of happiness than being a None. The implications of this finding will be addressed in the discussion (Table 4).

Religious attitudes/behaviors. Researchers conducted an ordinal logistic regression assessing the relationship between religious attitudes/behaviors predicting happiness, for each theistic/ religious group. Because of data sparseness for the atheist groups, a simpler model was used that omitted race and collapsed several marital status variables (i.e., divorced, separated, and widowed were combined into a single category). This decision was made because logistic models cannot handle "empty" categories well and because there were fewer atheists to fill less common categories. As a precaution, researchers conducted a standard regression model (which handles "empty" categories differently) with a full battery of covariates to investigate any obvious consequences of omitting race and collapsing marital status. However, similar results were produced for both models. While there were larger error terms across these models, there were no fatal errors produced when using these simplified models.

Similar to the relationship between attendance and SRH, attendance did not play a substantive role in predicting happiness for any theistic/religious group. In other words, attendance did not predict a higher (or lower) level of happiness. In addition, theistic/ religious groups did not differ significantly from each other in regard to how attendance predicted happiness (Table 5).

Regardless of theistic/religious group, prayer did not significantly predict higher/lower levels of happiness. While both atheist groups reported a decidedly negative relationship between prayer



Figure 2. Differences for atheists/theists for happiness while controlling for covariates.

and happiness, these relationships were not statistically significant. The only difference among groups were that Theistic-Nones reported a significantly different (and more positive) relationship between prayer and happiness, F(1, 114) = 3.94, p = .050. This finding supported the notion that prayer does not have a monolithic relationship with happiness.

Finally, researchers investigated the relationship between perceived religiosity and happiness. Similar to SRH, perceived religiosity was a significant and positive predictor of happiness in the Theistic-Some group. Persons who perceive themselves to be religious and believe in god(s) were more likely to report a greater level of happiness when reporting higher levels of perceived religiosity. However, this similar positive relationship did not emerge for either Theistic-Nones, Atheistic-Somes, or Atheistic-Nones.

While the assumption of parallel lines held consistent for Theistic-Somes, Theistic-Nones, and Atheistic-Nones, it was violated for the Atheistic-Nones group for the perceived religiosity variable. Perceived religiosity was not a significant predictor for moving between the "not at all happy" and "pretty happy" categories, and there were no significant differences between the theistic/religious identities with perceived religiosity. However, regarding the Atheistic-Nones group, perceived religiosity was significantly and negatively associated with moving from the "pretty happy" and the "very happy" category. In this case, Atheistic-Nones reported a more negative relationship between perceived religiosity and happiness than Atheistic-Somes, F(1, 114) = 168.93, p < .001, Theistic-Nones, F(1, 114) = 207.40, p < .001, and Theistic-Somes, F(1, 114) = 216.27, p < .001. These findings signify two things: First, perceived religiosity has a variable relationship with happiness that partially depends on Theistic/Religious category. Second, perceived religiosity does not have uniform relationship with happiness, even among nonreligious atheists.

Discussion

The current study explored the question of whether religious identity or theistic identity was associated with better or worse



Figure 3. Differences for Nones/Somes for happiness while controlling for covariates.

	Odds ratio/linearized SE			
Variable	Atheism $(N = 1, 168)$		Nonreligion $(N = 1,760)$	
	Model 1	Model 2	Model 1	Model 2
Cutpoint 1	3.417/1.308**	3.536/1.343**	4.380/1.243***	5.252/1.472***
Cutpoint 2	.390/.141*	.403/.147*	.444/.117**	.526/.136*
Sex	1.075/.164	1.058/.158	1.118/.125	1.068/.118
Age	1.000/.006	1.000/.006	.997/.004	.996/.004
Race (White)				
Black	.686/.148	.677/.148	.583/.097**	.570/.096**
Other	1.027/.265	1.024/.266	.958/.189	.940/.188
Marital (married)				
Widowed	.436/.138*	.438/.139*	.394/.106**	.398/.107**
Divorced	.534/.125**	.535/.126**	.492/.088***	.499/.090****
Separated	.496/.136	.495/.135*	.498/.100**	.486/.097***
Never married	.367/.077***	.372/.079***	.430/.072***	.446/.076***
Education	1.133/.068*	1.137/.067*	1.094/.053	1.101/.053*
Income (Cutpoint 1)	1.169/.037***	1.169/.037***	1.157/.033***	1.159/.033****
Income (Cutpoint 2)	1.027/.017	1.027/.018	1.036/.014*	1.038/.014**
Atheist		.863/.240		
None				.644/.091**

Table 4Atheism Predicting Happiness and Nonreligion Predicting Happiness

* p < .05. ** p < .01. *** p < .001.

health among a national sample of Americans. In addition, the current study also investigated the relationship between theistic/ religious identity combinations and their relationship with religious attitudes/behaviors. These results suggested that various theistic/religious identities experienced religious attitudes/behaviors quite differently from each other. Specifically, when Atheistic-Nones reported having high levels of perceived religiosity, they tended to report poorer health than other groups. Overall, the results support the authors' contention that atheism, irreligion, or nonreligion is not associated with any substantive health penalty (as suggested by Hall et al., 2008), and there is little evidence that supports the notion that atheists, irreligionists, or the nonreligious benefit from religious attitudes/behaviors. The implications of these findings will be discussed now.

Table 5

Seemingly Unrelated Regression Models by Belief in God(s) and Religious Affiliation for Happiness

	Odds ratio/linearized SE			
Variable	Theistic-Somes	Theistic-Nones	Atheistic-Somes	Atheistic-Nones
N	942	98	38	79
Cutpoint 1	2.354/1.005	.311/.357	524.715/1452.141*	4.737/8.309
Sex	.900/.147	1.506/.566	1.105/1.268	3.833/2.908
Age	1.000/.005	.999/.024	.890/.025***	.999/.029
Married				
Widowed/divorced/separated	.482/.096***	.397/.343	2.032/4.541	.578/.440
Single	.299/.078***	.828/.577	.075/.102	.687/.500
Education	1.165/.075*	2.187/.670*	.982/.401	.646/.171
Income	1.18/.048***	1.091/.068	.999/.088	1.107/.053*
Attend	.985/.033	1.101/.144	1.529/.404	1.329/.308
Pray	.995/.051	1.245/.146	.896/.378	.587/.183
Perceived religiosity	1.258/.136*	1.032/.269	4.438/3.846	.887/1.025
Cutpoint 2	.283/.125**	.059/.068*	.039/.096	620,598.4/1,516,361***
Sex	.900/.147	1.506/.566	1.105/1.268	3.833/2.908
Age	1.000/.005	.999/.024	.890/.025***	.999/.029
Married				
Widowed/divorced/separated	.482/.096***	.397/.343	2.032/4.541	.578/.440
Single	.299/.078***	.828/.577	.075/.102	.687/.500
Education	1.165/.075*	.844/.228	7.097/3.811**	.646/.171
Income	1.026/.024	1.091/.068	.999/.088	1.107/.053*
Attendance	.985/.033	1.101/.144	1.529/.404	1.329/.308
Pray	.995/.051	1.245/.146	.896/.378	.587/.183
Perceived religiosity	1.258/.136*	1.032/.269	4.438/3.846	.000/.000***

p < .05. p < .01. p < .001.

The Relationship Between Irreligion and Health

The current study found no evidence to support the contention that belief in god(s) or identifying as religious was associated with better health. Granted, persons who identified as being religiously affiliated were more likely to be in a higher category of happiness in one set of analyses-taking this difference at face value suggested there was a small health penalty with being nonreligious (Cohen's d = .25). However, it would be problematic to interpret this finding without any contextual nuance. A major confounding factor that was not addressed in the current study was that of social support. Social support (i.e., the network of close friends/families that will provide tangible and nontangible aid) is a strong predictor of well-being, and persons who are religious tend to report higher levels of social support (Horning, Davis, Stirrat, & Cornwell, 2011). Framed differently, this small difference between Nones and Somes may have been the product of a well-established confound, rather than something intrinsic to being religious. In addition, when comparing the religious and the nonreligious on subjective health, there were no other health penalties associated with being nonreligious. Overall, there was limited evidence that being nonreligious was associated meaningfully with poorer health.

When investigating health penalties associated with atheism, the current study could not find any substantive differences between atheists and theists in regard to either SRH or Happiness. Given that atheism is often, and arguably erroneously, conceptualized as a more "extreme" version of nonreligion, it is very telling that differences between the groups could not be detected. Generally speaking, the difference between believers and nonbelievers was not significant, and even if the raw differences had been statistically significant, the effect size for this group comparison would not have any clinical significance (Cohen's d < .10). In short, believers and nonbelievers did not differ in regard to health outcomes. Granted, there may be situations in which a belief in god(s) is beneficial (e.g., clinical populations in which optimism is important), but at a population level of Americans the differences between believers and nonbelievers were not significant or meaningful for SRH or happiness.

A recurring finding from the current study is that the relationship between R/S beliefs and behaviors have relationships with health that are contingent on a person's theistic and religious identities. This theme echoes Meyer (2003), who noted that adherence between the self and one's culture is important in overall well-being. In the current study, atheists and Nones reporting higher levels of R/S activities reported correspondingly lower wellness. While one could point to this finding as "evidence" of poorer health of atheists or Nones, this is a somewhat misleading interpretation. Atheists and Nones generally report lower levels of attendance, prayer, and religiosity-it is only with the adoption of these beliefs/behaviors where the negative relationship emerges. Whether this negative health impact is a product of the incongruence between identity and behavior is unclear, although the parallels between the current study's findings and Meyer's assessment are visible and intriguing.

One Size Does Not Fit All

A goal of the current study was to determine how attendance, prayer, and perceived religiosity were related to subjective SRH and happiness. Specifically, the current study combined categories of belief and religious affiliation into four categories (Atheistic-Nones, Theistic-Nones, Atheistic-Somes, and Theistic-Somes). Whereas the literature will often report that attending church, praying or meditating, and religiosity are related to positive wellbeing, the current study found only limited support for this finding. While attendance is well documented predictor of health (Ellison & Levin, 1998; Powell et al., 2003), there was no association between attending church and SRH or happiness for any of the four groups in the current study. This null result was somewhat unexpected given the expectation that there would have likely been social benefits associated with attending church.

Prayer also varied across theistic/religious identities, although it was generally negatively, but nonsignificantly, associated with health outcomes. It is interesting that it was only with Atheistic-Somes, that is, persons who identified as religious but did not believe in god(s) (or identified with a nontheistic religion), who reported a significant and negative relationship between prayer and health outcomes. This relationship may reflect persons who are ill who are trying to cope with their illness by praying. As an alternative, it may be that ill persons have *lost their faith* in god(s), because of a failure of recovery. With this latter explanation in mind, researchers explored if the original theistic identity categories (I do not believe in God now, and I never have; I do not believe in God now, but I used to; I believe in God now, but I didn't used to; I believe in God now, and I always have) predicted Somes' relationship with prayer. Results from this exploratory analysis suggested that Somes who reported that, "I don't believe in God now, but I used to," indicated a negative relationship between prayer and health outcomes. However, when Somes who reported "I don't believe in God now, and I never have" were assessed, researchers could not complete the analyses because of the low N. This ruled out comparisons between the two groups; however, even if comparisons had been possible, either of these explanations is speculative would need verification.

Overall, it is also noteworthy that persons who believed in god(s) but did not identify as being religious (i.e., Theistic-Nones) reported a significantly more positive relationship between prayer and well-being than did most other theistic/religious identify groups. In other words, persons who believed in god(s) but did not identify themselves as being religiously affiliated got the greatest benefit from prayer. This lends support to the idea that prayer has a nuanced relationship with well-being, rather than a monolithic one. In other words, the relationship that prayer has with wellbeing is not intrinsically salutary or deleterious; it is contingent on, among other things, theistic belief and religious affiliation.

Finally, perceived religiosity was associated with positive, negative, and nonsignificant results across the theistic/religious identities. Theistic-Somes reported that perceived religiosity had a positive relationship with SRH and with happiness; however, this was the only group to report a significant and positive relationship. Atheistic-Somes and Theistic-Nones reported a nonsignificant relationship between perceived religiosity and both SRH and happiness. In contrast, Atheistic-Nones reported a negative relationship between SRH and perceived religiosity, and between happiness and perceived religiosity. Regarding happiness, perceived religiosity was statistically nonsignificant when predicting moderate levels of happiness for Atheistic-Nones. However, when examining the highest level of happiness, greater levels of perceived religiosity were associated with large and significant declines in happiness. This is likely the most intriguing finding from the current study, and mirrors similar results from Speed and Fowler (2016). In other words, when nonbelievers who were not religiously affiliated saw themselves as being "religious people," they tended to report lower levels of health. The cause of this relationship is unclear, although it fits both a dissonance model (Uecker, Regnerus, & Vaaler, 2007) but is also consistent with research delineating between intrinsic/extrinsic religiosity (Horning et al., 2011). Overall, perceived religiosity played the most significant role in the prediction of health outcomes across theistic/religious identities, but there were radical differences in whether this relationship was salutary or deleterious.

Overall, the current study found strong evidence for the notion that the relationship between religious attitudes/behaviors and health outcomes are not monolithic. Instead, these relationships are influenced by what a person believes and whether a person identifies as religiously affiliated. On a conceptual level this makes sense, as the benefits of prayer and perceived religiosity are presumably linked to whether god(s) exist and whether religious ritual or devotion has an implied meaning beyond its literal actions.

Atheists in America

An ancillary finding to emerge from the current study were the number of people who were identified as atheist. The current study used a representative sample for the United States for 2008, in which 9.98% of respondents reported that they not believe in God [Nota bene: a recent study by Gervais and Najle (2017) would suggest that the current number is higher]. To place this in perspective, in the United States, there were more persons who did not believe in God (9.98%); in contrast, Jewish, Buddhist, Hindu, Muslim, Orthodox-Christian, Other Eastern Religionist, Native American Religionist, Internondenominational members, and Other Religion combined only make up 8.26% of the total American population. The discrepancy in the number of atheists from the current study compared with other research is explicable by two factors. The first is that surveys often require persons to identify as an atheist, and the second is that surveys often classify atheism as being subordinated to a religious category-which may be a questionable classification approach. These issues will be presented in a broader context of the study and discussed in some detail.

Response bias. There are two major issues that are present when requesting atheists self-identify. The first issue is that there is widespread confusion over what atheists are. Hackett (2014) noted that 21% of those who self-identify as atheist will also indicate that they believe in god(s). However, these persons are still "counted" toward the total number of atheists despite believing in god(s). While one could point out that errors in self-report are endemic, we would argue that it is unusually bad in the case of assessment of atheism. Whereas there is a widespread conceptual understanding of many topics assessed via self-report (e.g., gender, race, education level), there is a large degree of confusion and a complete lack of nuance regarding what atheism actually is (Galen & Kloet, 2011; Hwang, Hammer, & Cragun, 2011). This, combined with alternative labels such as humanism, secular humanism, transhumanism, and even some Buddhism sects, creates a methodological environment that is "stacked" against accurately recording atheist numbers. Atheism has been defined with a high degree of variability (for example, nonbelief combined with low religiosity [Hsiao, Chiang, Lee, & Han, 2013]; lack of a belief in an afterlife [Lundh & Radon, 1998; Smith-Stoner, 2007]), and this variability makes synthesizing findings addressing atheism difficult.

The second issue with self-report is that there is a widespread negative perception of atheists in the United States (Edgell et al., 2006). Atheists tend to be less trusted than virtually every other group, and atheists are aware that they are negatively perceived by society at large. Surveys that ask a person to identify his or her religious affiliation and provide an "atheist" option, are asking persons to identify as part of a distrusted group. Situations such as these are prone to social desirability bias, which makes the likelihood of accurate information being collected on atheists remote.

Atheism as a religious identity. Setting aside issues with getting persons to identify as atheist, a separate conceptual issue exists. Census information will often inquire about a person's religious affiliation and will count atheists as being a subset of a larger nonreligious group. While this has been the historic approach to collecting information on atheists, researchers need to critically assess whether atheism fits with the concept of a "religious identity" at all. In its most inclusive definition, being an atheist only means that one does not have a belief in god(s) (Bullivant, 2013). Objectively, if a person answers the question, "Do you believe in god(s)?" with any answer other than "Yes," then they are an atheist (Bullivant, 2013).¹ However, there is no objective definition of what being "religious" is, which is why nominal members of a religion and devoted members of a religion are both "counted" as being religiously affiliated. Religious affiliation, from a research standpoint, only means that a person has elected to *identify* as being a member of a certain religion and does not require they hold any specific beliefs or engage in any specific practices.

Granted, some may argue that to be a "true" member of "Religion X," you must have specific beliefs and engage in specific practices. Although we acknowledge that this may be a reasonable theological objection to our point, we would counter that from a research perspective, it is irrelevant. To the best of authors' determination, there is no widely accepted measure of whether a person is a "true" member of a religion. Because indicating that one has a religious identity does not necessitate a belief in god(s), persons who lack a belief in god(s) can and sometimes will indicate that they are indeed religious (e.g., Atheist-Somes in the current study). In other words, a person being an atheist does not preclude him/her as having a "traditionally theistic" religious identity.

This measurement issue provides support that atheism does not "fit" with the broader idea of religious identity. Currently, researchers appear to be more interested in capturing persons who *identify* as atheist, as opposed to persons who actually *are* atheist. Granted, one could fairly argue that all social data is based on self-identification to some extent. However, it is important to emphasize that persons identifying as atheist often do not seem to understand what the term means (Hackett, 2014), which suggests that self-identification may not be providing accurate data. While

¹ Because belief is a positive position, persons answering "I don't know" would by definition not have a belief in god(s), making it possible to classify them as atheists.

being able to select "atheist" as a religious identity is arguably progressive, researchers need to weigh carefully the information they are getting. A person indicating that they are religiously affiliated, may in fact not believe in god(s). Similarly, a person indicating that they are an atheist, may actually believe in god(s). This inconsistency between self-identification and belief is something that cannot be ignored indefinitely. Secularism is on the rise and if researchers desire to produce accurately describe society, they need to ensure their methodological approaches are sound.

We propose an obvious, straightforward, and practical solution: ask all respondents of a survey, "Do you believe in god(s)?" Persons responding in the affirmative are theist, and persons not responding in the affirmative are atheist. The proposed approach avoids the definitional ambiguity of what atheism is, does not preclude religious identity and atheist identity co-occurring, and provides a good estimate of nonbelievers. It is important that given that this question literally captures the meaning of atheism (Bullivant, 2013), it is less vulnerable to criticism that the measure is somehow invalid. By including one extra question on surveys, several outstanding issues in how irreligion is studied become resolved. It is important to reiterate, while there is not a litmus test for a "true" religious identity, there is a litmus test for whether a person is a "true" atheist—it is simply whether he or she believes in god(s).

Limitations

The current study experienced several limitations. First, because archival data were used, the current study was limited in which questions were asked. Notably, health outcomes were based on single-item self-reports rather than longer versions of validated measures. However, this was not seen as a major issue because single-item measures tend to be highly correlated with longer measures (Kuhn et al., 2006). Furthermore, while the sampling frame was nationally representative of Americans (albeit 9 years old now), some groups may have been excluded or underrepresented in the current study (e.g., homeless). Finally, social support could not be controlled for in the current study, which made conclusions about the benefits of religious beliefs/behaviors difficult to draw. Arguably, these issues do not pose a substantive risk to the current study, and the authors were able to use a nationally representative sample of Americans for their research, which made these limitations worthwhile.

In the current study, there was not substantive evidence of being theistic, nonsecular, or religious provides a health "benefit" compared with atheists and Nones. Future research addressing the salutary effects of religion on health outcomes should attend to the idea of theistic/religious identities reporting unique R/S-health relationships. Overwhelmingly, there has been a tendency within the literature to treat these groups as comparable, when there is little theoretical justification to do so. Overall, the R/S-health literature should move away from perceiving R/S as a monolithic force and move toward a nuanced view acknowledge the role of social identities.

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Received May 18, 2017

Revision received August 11, 2017

Accepted September 21, 2017