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Religious Attendance and Body Mass: An Examination of Variations by Race and Gender

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Abstract Studies of the association between religious attendance and body mass have yielded mixed results. In this paper, we consider intersectional variations by race and gender to advance our understanding of these inconsistencies. We use data from the 2006–2008 Health and Retirement Study to examine the association between religious attendance and three indicators of body mass: overall body mass index, waist circumference, and waist-to-height ratio ($n = 11{,}457$). For White women, attendance is either protective or unrelated to body mass. For Black women, attendance is consistently associated with increased body mass. We find that religious attendance is not associated with body mass among the men.

Keywords Religion · Body mass · Church attendance · BMI

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Is church attendance associated with increased body mass? Despite evidence suggesting that religious involvement protects health and well-being (Ellison and Levin 1998; Hill et al. 2011; Koenig et al. 2001; Strawbridge et al. 1997), research on the relationship between religious service attendance and body mass has yielded mixed results. Some studies find that religious involvement is associated with an increased risk of obesity (Feinstein et al. 2010; Ferraro 1998); however, other studies show no relationship between religious service attendance and body mass (Ellis and Biglione 2000; Gillum 2006; Hill et al. 2017; Roff et al. 2005). Still other research suggests that religious attendance may reduce the risk of obesity, at least for certain subgroups (Cline and Ferraro 2006; Hill et al. 2014).

Why might religious service attendance be associated with body mass? On the one hand, there are well-established links between religious involvement and a number of positive health behaviors, including those related to weight (e.g., walking and other forms of exercise) (Hill et al. 2006, 2007). Based on this literature, it is reasonable to assume that the protective effects of church attendance on health may also extend to body mass. On the other hand, there is reason to suspect that church attendance may not be associated with body mass, or that church attendance may be associated with increased weight. Cline and Ferraro (2006) posit that religious involvement may increase body mass because gluttony is not a sin that churches tend focus on, and many religious organizations use food as a means for socializing, thus making excessive eating or poor eating habits an "acceptable vice" for churchgoers.

In addition to the inconsistent theory and findings of previous work, few scholars have examined how the relationship between religious service attendance and body mass might vary according to race and gender. Ferraro (1998) found no gender difference in the relationship between religious practice (measured as frequency of church attendance and consumption of religious media) and body mass index (BMI). In subsequent work, Cline and Ferraro (2006) found that women who report higher levels of religious attendance are less likely to be obese. Church attendance was not associated with obesity among men in this study. Previous research focusing on the relationship between religious service attendance and body mass is also inconsistent when results are stratified by race. Using data from the Jackson Heart Study, Reeves and colleagues (2012) found no relationship between church attendance and weight for African Americans. In contrast, Dodor (2012) found that church attendance was positively associated with obesity risk among African Americans.

Given that few studies have examined subgroup variations in the link between religion and body mass, it is unsurprising that the intersection of race and gender has been virtually unexplored. In an exception to this general trend, Bruce and colleagues (2007) found that religious participation is positively associated with BMI among African American women, but unrelated to BMI among African American men, White women, and White men. Understanding how the association between religious service attendance and body mass may differ by both gender and race is important given that race and gender do not exist in isolation, but gender differences may be nested within racially segregated religious contexts (Krause 1996).

There are several reasons why the impact of religious service attendance on body mass might vary by race and gender. Virtually all studies on racial variations in attitudes toward the body have focused on women. To begin, Black and White women have different orientations to body weight, body size, and dietary consumption. Feminist and intersectionality scholars maintain that bodies are socially constructed and represent the position they occupy in society afforded by race and gender (Lorber and Martin 2012). Discourse

from dominant groups tie Black women's bodies to controlling images based on systems of race, class, and gender oppression that stereotype sexuality, femininity, and morality (Collins 2004). The dominant frames around Black women's bodies lead many Black women to reject hegemonic body ideals, thus overeating and larger body sizes are not as stigmatized by Black women as they are for White women (Sutherland 2013). Black women do not hold the same body ideals as their White counterparts, tend to weigh more than Whites, and are more likely to be more satisfied with their bodies than Whites (Fikkan and Rothblum 2012). Further supporting these ideas is the fact that African American women have higher rates of obesity and more weight management issues than any other race or gender group, and African Americans tend to lose less weight when engaged in exercise programs than Whites (Bruce et al. 2007; Yeary et al. 2009).

Therefore, it can be argued that Black and White women come into religious spaces with different orientations around food and body ideals, and religious organizations tend to reinforce these orientations. Because churches tend to be segregated by race (Emerson and Smith 2001), and social roles within religious organizations tend to separate along gender lines (Krause 1996; Lincoln and Mamiya 1990; Taylor and Chatters 1988), it may be that religious participation fosters social relationships with similar others that reinforce gender and race specific ideals about diet and the body. Previous research on social networks suggests that close social ties, particularly those of the same-sex, impact the likelihood of obesity (Christakis and Fowler 2007). Thus, while race- and gender-specific social networks cultivated by religious involvement may yield important psychosocial benefits, these networks may also increase acceptance of larger body sizes or influence the adoption of specific eating behaviors, including those that may be unhealthy. When determining the effect of church participation on body mass, the social context of the bodies examined must be considered, lending to the possibility that outcomes of religious participation on body mass may differ by subgroup—particularly for Black women.

The effect of religious participation on body mass may also differ by race and gender because churches often operate differently for Blacks and Whites. Practices in Black churches can be traced to Africa and are acknowledged to have a different character and style than the Christianity practiced by predominately White churches (Carter 2002). Black churches are noted to have unique programs and services and to cultivate religious experiences tailored toward coping with adversity in society (Ferraro and Kim 2014). Black churches are more encompassing institutions than White churches (Patillo-McCoy 2015). Black churches play a critical role in the social, political, and organizational lives of Blacks and provide instrumental support to members. This may be because Black churches are one of the few American institutions that are owned and operated by African Americans, thus providing a haven from the broader iniquities of society (Patillo-McCoy 2015). While it is unclear how the diverse roles of predominately Black and White religious institutions may translate into differential impacts of religious involvement on body mass, the variation in church focus warrants examining subgroup variation.

Another limitation of previous research is that the majority of studies in this area employ only two outcomes of interest: BMI (Bruce et al. 2007; Cline and Ferraro 2006; Ellis and Biglione 2000; Gillum 2006) or obesity (Bruce et al. 2007; Cline and Ferraro 2006; Roff et al. 2005). Although commonly used, scholars are increasingly concerned about the limitations of these measures. For example, both BMI and obesity are often calculated based on self-reported height and weight, which are frequently imprecise. In addition, BMI does not take into account the difference between fat and nonfat mass from bone and muscle or the changes in body composition that occur with age (Rothman 2008). Recent evidence also suggests that BMI is an inconsistent predictor of cardiometabolic health (Tomiyama et al. 2016). While this line of research does not propose abandoning the

use of BMI altogether, it does suggest that more precise measures of body mass should be considered. Measures like waist circumference, waist-to-hip ratio, and waist-to-height ration may be more precise and more sensitive to the physiological stress response than more general measures of body mass (Hill et al. 2017).

In this paper, we use data collected from the Health and Retirement Study (HRS), a nationally representative longitudinal study of Americans aged 50 and older (Health and Retirement Study 2012), to examine the association between church attendance and three measures of body mass (i.e., BMI, waist circumference, and weight-to-height ratio) stratified by race and gender. We have opted to focus on older adults for two important reasons. First, older adults have higher levels of religious involvement than their younger counterparts (Krause 2006, 2010). As a result, religious involvement may be especially important in this population. Second, given the rapid graying of the American population, it is important to examine pathways that may bolster or hinder successful aging. Obesity may not only increase the risk of mortality, but may also impair mobility. Research demonstrates that obesity is a consistent risk factor for arthritis, joint problems, and cardiovascular disease (Ford et al. 1997; Sowers 1998; Wadsworth and Pendergast 2014; Woods-Giscombe 2010).

The remainder of this article consists of three major sections. We begin by describing the data source, measures, and statistical procedures. Following the presentation of results, we discuss the implications of our findings, our study limitations, and promising directions for future investigation.

Methods

Participants

Participants were drawn from the Health and Retirement Study (HRS), a nationally representative longitudinal study of adults aged 50 and older within the U.S. (Health and Retirement Study 2012). Participants are re-interviewed every 2 years. Starting in 2006, respondents participated in an enhanced face-to-face interview that included a physical measures questionnaire (Clarke et al. 2008). About half of the participants completed this questionnaire in 2006 and the other half in 2008. We used the combined 2006 and 2008 assessments in our analysis. Respondents who did not complete the physical measures questionnaire in 2006 or 2008 were excluded from the sample. Since we were interested in comparisons across race and gender, we also limited our sample to those who identified as "White" or "Black." Given that only 2% of respondents identified with any other racial category, the sample size was not large enough for adequate comparisons. We used listwise deletion to handle missing cases (i.e., respondents who did have a value for all measures in our study were dropped from the sample). Across the 2006–2008 assessments, a total of 11,457 participants completed all of the measures of interest.

Measures

BMI

BMI was an anthropometric measurement assessed during the face-to-face interview. Respondents' height was measured without shoes and recorded by the interviewer to the nearest quarter inch. Weight was measured without shoes and with light clothing using a

Healthometer 830 kl scale and recorded to the nearest half pound (up to 330 lb). BMI was calculated as kg/m^2.

Waist Circumference

Waist circumference was assessed during the face-to-face interview. After standing up and removing bulky clothing items, respondents pointed to their navel and then placed a tape measure around their waist at the navel level. The interviewer helped any respondent who was unable to place the tape measure around their waist. Then the interviewer checked to make sure the tape measure was horizontal and snug around the waist. Respondents' waist circumference was recorded to the nearest inch.

Waist-to-Height Ratio

A ratio of waist-to-height was obtained by dividing waist circumference (in inches) by height (in inches).

Church Attendance

Respondents were asked "About how often have you attended religious services during the last year?" Respondent could choose from the following response categories: more than once a week, once a week, two or three times a month, one or more times a year, or not at all. The attendance variable was also reverse coded so that higher values of church attendance correspond with increases in attending religious services.

Covariates

Multivariate analyses controlled for a range of sociodemographic characteristics that are known correlates of religious attendance and body mass. These characteristics include gender (1 = female), race (1 = Black), age (in years), education (in years), income (logged), marital status (1 = divorced, 1 = widowed, 1 = never married, 0 = currently married), and religious affiliation. To measure religious affiliation, respondents were first asked "What is your religious preference, are you Protestant, (Roman) Catholic, Jewish, or something else?" If respondents identified as Protestant they were then asked to specify their denomination. Using these two questions, we created six affiliation categories: Mainline Protestant, Evangelical Protestant, Black Protestant, Catholic, Other religion, and no religious affiliation. We use the classification scheme developed by Steensland and his colleagues (2000) to assign religious affiliation. Due to the small sample size of individuals identifying as Jewish, this category was combined with the "other" religion category.

Analytic Strategy

We tested the association between church attendance and body mass in a number of different ways. We first used ordinary least squares regression to model continuous body mass (i.e., BMI, waist circumference, and waist-to-height ratio) on church attendance and relevant demographic factors. We then tested the interaction between race and church attendance to determine whether the association between church attendance and body mass varied by race. Finally, we stratified the sample by gender to determine whether the

interaction between race and church attendance on body mass differed for women and men. We present a figure to illustrate the moderating effect of race on the relationship between church attendance and waist circumference among women. The figures for the other moderating effects discussed in the results are not presented due to space limitations; however, the findings are substantively identical across outcomes.

Results

Among our respondents, Blacks display a higher average BMI (30.93 vs. 28.99), waist circumference (40.50 vs. 39.31), and waist-to-height ratio (0.62 vs. 0.60) than Whites (Table 1). Black respondents also attend church more frequently than White respondents (3.53 vs. 2.86).

Table 2 displays the results of our OLS model predicting BMI for the full sample and stratified by gender. In the full sample, there is no relationship between church attendance and BMI in the main effect model (Model 1); however, the interaction term introduced in Model 2 indicates that this association is moderated by race ($b = 0.785$, $p < 0.001$). Stratifying the sample by gender further reveals that the interaction between church attendance and race is only present among female respondents. Church attendance appears to be unrelated to BMI among men, regardless of race. Given evidence of a significant

Table 1 Descriptive statistics

	Full sample ($N = 11{,}457$)		White sample ($N = 10{,}097$)		Black sample ($N = 1360$)	
	Mean/%	SD	Mean/%	SD	Mean/%	SD
Body mass index	29.22	5.880	28.99	5.756	30.93	6.479
Waist circumference	39.45	5.761	39.31	5.754	40.50	5.703
Waist-to-height Ratio	0.606	0.089	0.603	0.088	0.623	0.093
Female	0.592		0.582		0.665	
White	0.881					
Black	0.119					
Years of education	12.72	2.975	12.85	2.928	11.75	3.138
Income (logged)	10.65	0.914	10.72	0.887	10.14	0.955
Age	67.45	10.21	67.64	10.24	66.06	9.901
Married	0.632		0.660		0.427	
Divorced	0.111		0.099		0.204	
Widowed	0.179		0.172		0.230	
Never married	0.030		0.025		0.066	
Mainline protestant	0.314		0.328		0.215	
Evangelical protestant	0.274		0.266		0.331	
Black protestant	0.036		0.000		0.307	
Catholic	0.256		0.282		0.066	
Other religion	0.047		0.048		0.038	
No religion	0.072		0.076		0.043	
Church attendance	2.937	1.385	2.857	1.382	3.535	1.248

Source HRS 2006–2008

Table 2 Ordinary least regression of BMI on sociodemographics, religious affiliation, and church attendance

	(1)	(2)	Men		Women	
			(3)	(4)	(5)	(6)
Female	−0.232*	−0.254*				
	(0.116)	(0.116)				
Black	1.669***	−1.047*	−0.246	−0.734	2.614***	−0.402
	(0.204)	(0.500)	(0.291)	(0.642)	(0.275)	(0.729)
Years of education	−0.090***	−0.092***	−0.082**	−0.081**	−0.139***	−0.142***
	(0.021)	(0.021)	(0.026)	(0.026)	(0.031)	(0.031)
Income (logged)	−0.333***	−0.345***	0.289**	0.284**	−0.685***	−0.694***
	(0.076)	(0.076)	(0.101)	(0.101)	(0.108)	(0.108)
Age	−0.108***	−0.108***	−0.075***	−0.075***	−0.131***	−0.130***
	(0.006)	(0.006)	(0.008)	(0.008)	(0.009)	(0.009)
Divorced	−0.424*	−0.405*	−0.898***	−0.891***	−0.269	−0.249
	(0.186)	(0.186)	(0.261)	(0.261)	(0.254)	(0.254)
Widowed	−0.066	−0.069	−0.049	−0.043	−0.104	−0.118
	(0.165)	(0.164)	(0.284)	(0.284)	(0.211)	(0.211)
Never married	−0.752*	−0.665*	−1.530***	−1.526***	−0.145	0.009
	(0.327)	(0.327)	(0.419)	(0.419)	(0.471)	(0.472)
Mainline protestant	0.928***	0.976***	0.868**	0.872**	0.988**	1.061**
	(0.232)	(0.231)	(0.272)	(0.272)	(0.365)	(0.365)
Evangelical protestant	1.152***	1.207***	0.751**	0.761**	1.409***	1.475***
	(0.236)	(0.236)	(0.279)	(0.279)	(0.370)	(0.370)
Black protestant	0.482	0.488	0.815	0.805	0.261	0.307
	(0.397)	(0.396)	(0.549)	(0.550)	(0.559)	(0.559)
Catholic	1.106***	1.175***	1.019***	1.031***	1.162**	1.243***
	(0.237)	(0.237)	(0.279)	(0.279)	(0.372)	(0.372)
Other religion	0.308	0.318	0.430	0.435	0.124	0.134
	(0.322)	(0.322)	(0.408)	(0.408)	(0.478)	(0.477)
Church attendance	0.053	−0.026	0.049	0.035	0.036	−0.052
	(0.042)	(0.044)	(0.055)	(0.057)	(0.059)	(0.062)
Church attendance*Black		0.785***		0.155		0.831***
		(0.132)		(0.182)		(0.186)
Constant	40.137***	40.439***	31.426***	31.508***	45.566***	45.819***
	(0.969)	(0.969)	(1.270)	(1.274)	(1.354)	(1.353)
N	11,457	11,457	4677	4677	6780	6780
R-squared	0.046	0.049	0.031	0.031	0.076	0.078

Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, reference for martial status is Married and for religious affiliation is no affiliation

interaction between church attendance and race among women, we examined whether the effects for each racial group were significantly different from zero using conditional process modeling (Hayes 2013). This analysis was conducted using PROCESS, a versatile modeling tool freely available for SPSS and SAS, that integrates many of the functions of

Table 3 Ordinary least regression of waist circumference on sociodemographics, religious affiliation, and church attendance

	(1)	(2)	Men		Women	
			(3)	(4)	(5)	(6)
Female	−3.285***	−3.303***				
	(0.111)	(0.111)				
Black	1.073***	−1.179*	−0.557*	−1.185	1.899***	−0.327
	(0.195)	(0.479)	(0.280)	(0.618)	(0.263)	(0.696)
Years of education	−0.104***	−0.105***	−0.066**	−0.066**	−0.176***	−0.178***
	(0.020)	(0.020)	(0.025)	(0.025)	(0.030)	(0.030)
Income (logged)	−0.535***	−0.545***	0.082	0.076	−0.883***	−0.889***
	(0.073)	(0.073)	(0.097)	(0.097)	(0.103)	(0.103)
Age	−0.034***	−0.034***	−0.008	−0.008	−0.052***	−0.051***
	(0.006)	(0.006)	(0.008)	(0.008)	(0.008)	(0.008)
Divorced	−0.403*	−0.387*	−0.766**	−0.758**	−0.303	−0.288
	(0.178)	(0.178)	(0.251)	(0.251)	(0.242)	(0.242)
Widowed	0.103	0.100	0.091	0.099	0.025	0.015
	(0.158)	(0.158)	(0.274)	(0.274)	(0.201)	(0.201)
Never married	−0.256	−0.184	−0.983*	−0.978*	0.296	0.410
	(0.313)	(0.313)	(0.404)	(0.404)	(0.450)	(0.450)
Mainline protestant	0.944***	0.984***	0.820**	0.826**	1.075**	1.129**
	(0.222)	(0.222)	(0.262)	(0.262)	(0.348)	(0.348)
Evangelical protestant	1.285***	1.331***	0.905***	0.918***	1.563***	1.612***
	(0.226)	(0.226)	(0.269)	(0.269)	(0.353)	(0.353)
Black protestant	0.803*	0.808*	0.520	0.507	0.932	0.966
	(0.380)	(0.380)	(0.530)	(0.530)	(0.534)	(0.533)
Catholic	0.928***	0.985***	0.751**	0.767**	1.071**	1.131**
	(0.227)	(0.227)	(0.269)	(0.269)	(0.355)	(0.355)
Other religion	0.482	0.490	0.411	0.417	0.457	0.464
	(0.308)	(0.308)	(0.393)	(0.393)	(0.456)	(0.456)
Church attendance	−0.091*	−0.157***	−0.059	−0.077	−0.136*	−0.201***
	(0.040)	(0.042)	(0.053)	(0.055)	(0.056)	(0.059)
Church attendance*Black		0.651***		0.200		0.614***
		(0.126)		(0.175)		(0.178)
Constant	49.953***	50.204***	41.350***	41.456***	52.296***	52.483***
	(0.927)	(0.928)	(1.224)	(1.228)	(1.291)	(1.291)
N	11,457	11,457	4677	4677	6780	6780
R-squared	0.090	0.092	0.010	0.010	0.057	0.059

Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, reference for martial status is Married and for religious affiliation is no affiliation

existing and popular published statistical tools for mediation and moderation analysis (Hayes 2012). Our findings suggest that church attendance is associated with increased BMI among Black women and unrelated to BMI among White women (Model 6). More specifically, additional calculation of the partial slope (not displayed) shows that each unit

increase in church attendance is associated with an approximate 0.780 increase in BMI among the Black women in our sample ($p < 0.001$).

As seen in Table 3, church attendance is associated with a 0.091 decrease in waist circumference ($p < 0.05$), net of all controls. Similar to the results for BMI, Model 2 indicates that the association between religious service attendance and waist circumference varies by race ($b = 0.651, p < 0.001$). Further stratification of the sample suggests that this relationship only exists among women (Model 6); however, unlike our results for BMI, attendance is associated with increased waist circumference among Black women and decreased waist circumference among White women (Fig. 1). More specifically, additional calculation of the partial slopes indicates that each unit increase in church attendance is associated with a 0.413 increase in waist circumference among the Black women in our sample ($p < 0.001$), and a 0.201 decrease in waist circumference among the White women in our sample ($p < 0.05$).

Finally, Table 4 displays the association between church attendance and waist-to-height ratio for the full sample and stratified by gender. Similar to the previous two outcomes, our stratified analysis suggests that the association between church attendance and waist-to-height ratio varies by both gender and race. In the main effect model, church attendance is unrelated to waist-to-height ratio (Model 1). In the interaction model, this relationship is moderated by race ($b = 0.011, p < 0.001$). Further stratification of the sample suggests that this relationship only exists among women (Model 6). Like our results for waist circumference, additional calculation of the partial slopes (not displayed) shows that church attendance is associated with increased waist-to-height ratio among Black women ($b = 0.076, p < 0.01$) and decreased waist-to-height ratio among White women ($b = -0.003, p < 0.01$).

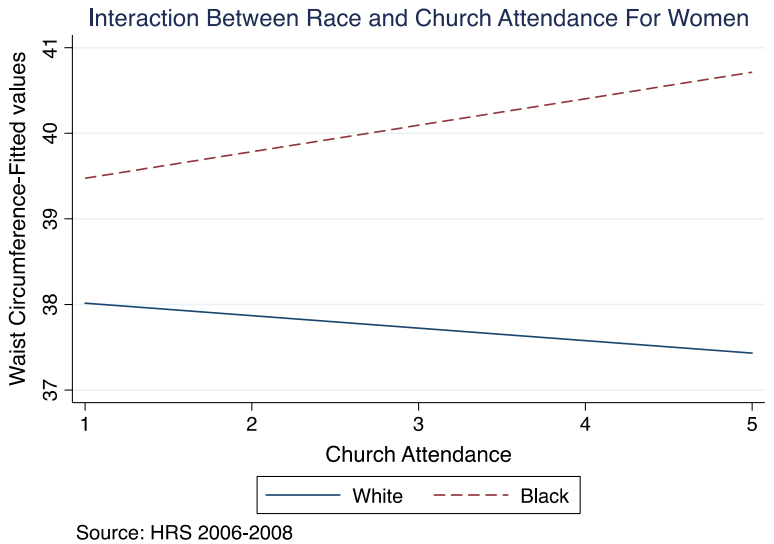

Fig. 1 Interaction between race and church attendance on waist circumference among older women

Table 4 Ordinary least regression of waist-to-height ratio on sociodemographics, religious affiliation, and church attendance

	(1)	(2)	Men		Women	
			(3)	(4)	(5)	(6)
Female	0.001	0.001				
	(0.002)	(0.002)				
Black	0.013***	−0.026***	−0.014***	−0.027**	0.026***	−0.012
	(0.003)	(0.008)	(0.004)	(0.009)	(0.004)	(0.011)
Years of education	−0.003***	−0.003***	−0.002***	−0.002***	−0.004***	−0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Income (logged)	−0.011***	−0.011***	−0.001	−0.001	−0.017***	−0.017***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Age	−0.000	−0.000	0.000*	0.000*	−0.000*	−0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Divorced	−−0.007*	−0.006*	−0.011**	−0.011**	−0.006	−0.006
	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Widowed	0.002	0.001	0.001	0.002	−0.001	−0.001
	(0.002)	(0.002)	(0.004)	(0.004)	(0.003)	(0.003)
Never married	−0.004	−0.003	−0.013*	−0.013*	0.003	0.005
	(0.005)	(0.005)	(0.006)	(0.006)	(0.007)	(0.007)
Mainline protestant	0.014***	0.014***	0.011**	0.012**	0.016**	0.017**
	(0.004)	(0.003)	(0.004)	(0.004)	(0.006)	(0.006)
Evangelical protestant	0.018***	0.019***	0.012**	0.012**	0.023***	0.024***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)
Black protestant	0.012	0.012*	0.010	0.010	0.013	0.014
	(0.006)	(0.006)	(0.008)	(0.008)	(0.009)	(0.009)
Catholic	0.019***	0.020***	0.016***	0.016***	0.022***	0.023***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)
Other religion	0.012*	0.012*	0.010	0.010	0.012	0.013
	(0.005)	(0.005)	(0.006)	(0.006)	(0.007)	(0.007)
Church attendance	−0.001	−0.002***	−0.001	−0.001	−0.002*	−0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Church attendance*Black		0.011***		0.004		0.011***
		(0.002)		(0.003)		(0.003)
Constant	0.754***	0.758***	0.621***	0.623***	0.843***	0.846***
	(0.015)	(0.015)	(0.018)	(0.018)	(0.021)	(0.021)
N	11,457	11,457	4677	4677	6780	6780
R-squared	0.042	0.045	0.025	0.025	0.071	0.073

Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, reference for martial status is Married and for religious affiliation is no affiliation

Discussion

Although several studies have examined the relationship between religion and body mass, few studies have considered how this relationship might vary according to social status. Much of the scholarship on religious attendance and body mass is also limited to the study of BMI or obesity. Using the 2006 and 2008 waves of the Health and Retirement Study, the current study addresses these gaps in the literature by examining how the association between religious service attendance and body mass varies by both race and gender. We also employ three distinct measures of body mass (BMI, waist circumference, and waist-to-height ratio) to examine the consistency of the relationship between church attendance and body mass.

Our findings suggest that the generally positive effects of religious involvement on health may not extend to all subpopulations. We find that the protective effects of church attendance are limited to White women. Further, church attendance appears to have a deleterious effect on the body mass of Black women. Church attendance appears to be unrelated to body mass among older adult men, regardless of race. Our results are generally consistent across measures of body mass. While previous research suggests that race and gender disparities in the influence of church attendance on body mass may be due to factors such as stratified social networks, variation in the role of churches within Black and White communities, or differences in diet quality and ideal body size, additional research is needed to examine these specific mechanisms. These findings highlight the importance of examining subgroup variations, particularly the interaction of key social characteristics like race and gender.

Although this study helps to advance our understanding of the association between church attendance and body mass, there are two key limitations that we would like to address. Because our sample is comprised of older adults, we are not able to assess how church attendance might influence the body mass of younger populations. Second, causality cannot be established using cross-sectional data. It is possible, for example, that some older adults may increase or decrease religious involvement based on whether their body size is stigmatized or accepted by their current religious institution. Less healthy older adults may also be selected out of public religious activities in the first place. Longitudinal studies are needed to clarify the religion/obesity link among older adults.

Despite these limitations, we have found several notable and robust associations between church attendance and body mass in older adulthood. Future work along the lines sketched above promises to clarify and extend our current knowledge of the connection between religious involvement and body mass.

Compliance with Ethical Standards

Conflict of interest All the authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants performed by any of the authors. The current study employs secondary data analysis on de-identified, publicly available data, and therefore did not require IRB approval.

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