Religion and obesity among adults in Brazil[1]

Ana Paula Verona
Department of Demography
Universidade Federal de Minas Gerais, Brazil
anapaulaverona@gmail.com

Brunah Schall
Department of Sociology and Anthropology
Universidade Federal de Minas Gerais, Brazil
brunah.schall@gmail.com

Cláudio Santiago Dias Jr.
Department of Sociology and Anthropology
Universidade Federal de Minas Gerais, Brazil
claudio.austin@gmail.com

Abstract

According to the World Health Organization (WHO), the proportion of overweight and obese people is growing in developing countries, especially in the BRICS countries (Brazil, Russia, India, China, and South Africa). Recent results of researches show that obesity has become an epidemic in Brazil. Using data from the National Research on Social Inequalities (2008), this article examined association between religion and obesity in Brazil. Preliminary results showed a strong association between obesity and membership with mainline Protestant, Pentecostal, and Neopentecostal churches in Brazil, even after adjusting the factors that affect the Body Mass Index (BMI).

[1] 2013 PAA Annual Meeting – New Orleans, Louisiana, USA – April 11-13

Introduction

Several studies have shown that, in the last 40 years, Brazil no longer displays a high prevalence of malnutrition, and it has changed having a high prevalence of obesity instead (Batista Filho, Souza, Miglioli e Santos 2008; Coutinho, Gentil e Toral, 2008; IBGE, 2006; Macinko, Guanais e Souza, 2006; Uauy e Monteiro, 2004; Bermudez e Tucker, 2003). Currently, it can be said that Brazil is facing an obesity epidemic. Data from the Brazilian Institute of Geography and Statistics (IBGE) indicate that 50.1% of adult men are overweight, and that 12.4% of these are obese. Among women, 48% are overweight and 16.9% are obese (IBGE, 2012).

In spite of biological factors such as genetics and metabolism have a strong role in determining a person's gaining of excessive weight, certain aspects such as inadequate eating habits and a sedentary lifestyle, among other aspects of one's lifestyle, present a higher impact on the risk of becoming obese (Bray e Popkin, 1998).

Although the process of the Brazilian population's weight gain is relatively well-documented, studies relating religion to this phenomenon in Brazil have not yet been done. According to Ellison and Hummer (2010), there is a significant gap in the literature about the possible associations between religion and health in several societies that must be filled. Aiming to contribute to the filling of this gap, this article intends to research the possible associations between religion and obesity using data from the adult population in Brazil in 2008.

Religion and obesity

Several studies describe the way religion may influence body weight, both positively and negatively. Low rates of obesity among religious persons usually are associated with the promotion of health behaviors (less alcohol consumption and more physical activities), healthy coping behaviors, stress reduction, improved psychosocial functioning (lower depression and anxiety and higher social support) and healthier eating (e.g. increased fish, green vegetables and fruit intake and vegetarianism) (Gillum, 2006; Kim, Sobal and Wethington, 2003; Reeves et al., 2012; Roff et al., 2005). Gluttony, one of the deadly sins, is the object of moral constraint in religious settings (Cline and Ferraro, 2006) and being overweight has a negative impact on the image of religious leaders (Gerber, 2012). Also, fasting is part of the Christian ascetic practices, and is promoted as a purifying activity in historical Catholicism (Bynum, 1987) and among Puritans and Methodists (Gerbe, 2012). However, not all religious denominations condemn gluttony with the same intensity, which in some cases is considered an "accepted vice" (Cline and Ferraro, 2006; Gerber, 2012), and food is seen as "one of the few available sources of earthy pleasure" (Sack, 2001). Besides, religious gatherings frequently involve eating (Krause et al., 2002) and food is used instead of alcohol as a celebratory good (Sack, 2001).

There are also differences in the way religious denominations perceive physical exercise and dieting. While some consider more important to focus on spiritual matters and portray concerns with the physical appearance as vanity (Gerber, 2012), others teach that the body is the "temple of the Holy Spirit" and therefore should receive good care (Cline and Ferraro, 2006; Ellison and Levin 1998; Gerber, 2012; George, Ellison, and Larson 2002; Levin 1994). Moreover, religion can be associated with higher rates

of obesity as a consequence of its success in curtailing smoking, which is an appetite suppressant (Cline and Ferraro, 2006; Gillum, 2006; Reeves, 2012). Kim, Sobal and Wethington (2003) also argue that it is possible that an opposite causal relationship exists between religion and obesity, as a form of social selection; people who are obese tend to be more religious because they find a welcoming and consoling environment in religious organizations, and a protection from social stigma (Cline and Ferraro, 2006). Furthermore, religion groups often promote body acceptance and self-worth, preserving their adherents from social pressures to be thin, which may lead them to be less involved in body weight control than those more exposed to societal norm of thinness (Kim, 2007). Finally, there is an association of health behaviors and concepts of control and agency (Benjamins, 2012). Believing in the control power of God can be related to decreased weight control behavior (Kim, 2007), once this external locus of control can make the individual less proactive (Benjamins, 2012). However, there are contradictory studies about this issue (Benjamins, 2012).

Overall, the relationship between religion and obesity is still ambiguous and needs to be better elucidated. There are studies associating religiosity with a healthier diet and/or physical activity (Ayers et. al., 2010; Benjamins, 2012; Hart et al., 2004; Hill et al., 2006; Salmoirago-Blotcher et al., 2011; Wallace and Forman, 1998), while others associate it with higher body weight and/or obesity (Cline and Ferraro, 2006; Feinstein et al., 2010; Ferraro, 1998; Kim, Sobal, and Wethington, 2003; Lapane et al., 1997; Oman and Reed, 1998) and some found no significant relationship (Ellis and Biglione, 2000; Reeves et. al. 2012; Roff et al., 2005). Gillum (2006) observed a positive association between frequency attendance at religious services with overweight or obesity prevalence, but the correlation lost significance after controlling for

sociodemographic, health, and smoking variables. Despite this inconsistency and contradiction among the researches results, there is agreement about the important role religion can play in promoting healthier behaviors such as proper eating habits and physical exercise. The development of a faith-based weight loss intervention is a feasible, culturally acceptable and effective way to treat obesity (Krukowskiet et al., 2010), since "religion represents one of the most available and authoritative institutions to aid adherents in avoiding obesity" (Cline and Ferraro, 2006).

Methods

This study used data from the National Research on Social Inequalities done on 2008 by the Center for Studies of Wealth and Social Stratification (CERES), of the Institute of Social and Political Studies (IESP). The research involved 25 researchers in 16 institutions of 7 states in the country, with the aim of understanding and monitoring the dynamics of the inequality and social mobility in Brazil.

The universe of the research was formed by the residential address of all of the states and urban or rural regions in Brazil. Information regarding the household, the head of the household, and spouses was collected. In total, 8,048 households were visited, and information from 12,326 individuals was collected.

Variables

Body Mass Index (BMI) was used as a dependent variable. Height and weight were used for the calculations, and these were collected in the moment of the survey, with the data being grouped in this manner[2]:

- Normal weight = 18.5–24.9
- Overweight = 25–29.9
- Obesity = BMI of 30 or greater

The religious denomination and the frequency of cults were used as independent variables. The control variables that were used were age, ethnicity, years of schooling, socioeconomic status, marital status, geographic region of residency[3], alcohol consumption, and depression. The analyses for men and women were done separately, using models of multinomial logistic regression.

Preliminary results

Table 1 shows the preliminary results of multinomial models adjusted by the risk of adult women being overweight (Model 1) or obese (Model 2) when compared to the normal weight for women in Brazil on 2008. These measurements are based on the BMI calculated for each woman of our sample. The results for model 2 show a strong association between obesity and belonging to Mainline protestant, Pentecostal, and Neopentecostal churches in Brazil, even after adjusting for the factors that affect the BMI.

[2] Information about underweight was disregarded.
[3] Only the states of Acre (AC), Roraima (RR), Amapa (AP), and Rio Grande do Norte (RN), were not considered in the research.

The nature of the data used in this work does not allow one to talk about the causality between religion and the risk of being obese or overweight. However, we can suggest some interpretations for our preliminary results. Some churches could be a calmer place for coexistence and socialization for obese people, who can, for example, face fewer episodes of prejudice associated with obesity. Second, the strong association between belonging to a religion and the risk of being obese could be explained by improvements in self-esteem, generally disseminated by some of these churches, especially Pentecostal and Neopentecostal churches. These can, therefore, be a demanded space by Brazilian women, since they are potential sources of help in overcoming difficult moments associated to obesity.

Table 1 - Adjusted multinomial logistic regression models for being overweight vs. normal weight and obese vs. normal weight among Brazilian adult women in 2008

Variables	Model 1 Overweight vs. Normal Weight	Model 2 Obese vs. Normal Weight
Age	1.01***	1.02***
Race/color (white)	1.00	1.00
non-white	0.97	0.87
Religion (Catholic)	1.00	1.00
Mainline protestant	1.14	1.47**
Pentecostal	1.21*	1.50***
Neopentecostal	1.16	1.80**
Others	1.10	2.01**
Espírita	1.19	1.29
Agnostic	1.03	1.03
No religion	0.77	0.94
Region (Northeast)	1.00	1.00
North	0.80	0.86
Southeast	0.91	1.06
South	0.98	1.22*
Center West	0.80	0.69**
Marital status (Single, Divorced and Widowed)	1.00	1.00
Married	1.08	1.09
Cohabiting	1.02	1.09
Alcohol consumption over the last year (Never)	1.00	1.00
Up to four times per month	1.01	1.06
More than three times per week	0.84	0.68*
SES (1=Low, 8=High)	1.01*	1.05***
Years of Education	0.97**	0.95***

Source: National Research on Social Inequalities (2008)

N=6,312

* p<0.1; ** p<0.05; *** p<0.001