Published in final edited form as:
Sociol Health Illn. 2012 March ; 34(3): 396–411. doi:10.1111/j.1467-9566.2011.01377.x.

Does reading keep you thin? Leisure activities, cultural tastes, and body weight in comparative perspective

Fred C. Pampel
Population Program, University of Colorado, Boulder, United States

Abstract

While sedentary leisure-time activities such as reading, going to movies, attending cultural events, attending sporting events, watching TV, listening to music, and socializing with friends would seem to contribute to excess weight, a perspective focusing on SES differences in cultural tastes suggests the opposite, that some sedentary activities are associated with lower rather than higher body weight. This study aims to test theories of cultural distinction by examining relationships between leisure-time activities and body weight. Using 2007 data on 17 nations from the International Social Survey Program, the analysis estimates relationships between the body mass index and varied leisure-time activities while controlling for SES, physical activities, and sociodemographic variables. Net of controls for SES and physical activities, participation time in cultural activities is associated with lower rather than higher body weight, particularly in high-income nations. The results suggest that both cultural activities and body weight reflect forms of distinction that separate SES-based lifestyles.

Keywords

weight; leisure activities; socioeconomic status; ISSP; cultural distinction

Introduction

With jobs increasingly involving sedentary tasks rather than physical labour, leisure-time activities become central to maintaining both health and proper weight. Most obviously, leisure-time physical exercise tends to keep weight lower than sedentary leisure-time activities such as reading, going to movies, attending cultural events, attending sporting events, watching TV, listening to music, and socializing with friends (Lajunen *et al.* 2009, Popkin 2009, Hu *et al.* 2003). Along with failing to burn extra calories, many of these sedentary activities encourage unhealthy snacking and drinking (French *et al.* 2001). Both greater calorie consumption and lower exercise contribute to rising rates of obesity, although excess eating probably has more influence (Bliech *et al.* 2008). Through both mechanisms, leisure-time activities can influence body weight.

Besides affecting weight overall, leisure-time activities may contribute to the inverse relationship between socioeconomic status (SES) and body weight that exists in high-income nations (Ball and Crawford 2005, McLaren 2007, Monterio *et al.* 2004, Roskam *et al.* 2010). Assuming that more educated persons in higher prestige jobs and with higher earnings expend fewer calories at work than others, physical activity outside of work can help, along with healthy eating, to keep their weight low.[1] High SES groups thus have

Address for correspondence: Fred Pampel, Population Program, University of Colorado, Boulder, Colorado 80302-0483, United States fred.pampel@colorado.edu.

higher rates of exercise than low SES groups and tend to participate in sports such as tennis or jogging that can be maintained into middle and old age (Stempel 2005, Warde 2006). Absent exercise, the participation of high SES persons in sedentary activities outside of work would increase weight and narrow disparities.

Given that obesity is associated with premature mortality (Flegal *et al.* 2005) and is a crucial component of health disparities (Braverman *et al.* 2010), national health goals accordingly should emphasise reducing weight through replacement of sedentary activities by physical activities. For example, the Healthy People 2010 goals in the United States aim for a reduction of adult obesity from levels of 30 percent to 15 percent and for a reduction of no leisure-time physical activity from 40 percent to 20 percent (CDC 2010).

SES, Cultural Tastes, and Body Weight

Another perspective suggests more complexity in the relationships between leisure-time activities and body weight. This perspective notes that leisure-time activities involve more than the calories burned – they also reflect cultural meanings and tastes that vary across SES groups and may be associated with motives and means for good health. Certain sedentary but culturally laden activities may indirectly lower body weight, perhaps as much as physical activities directly lower body weight. For example, maintaining a normal body weight, reading, and attending concerts, live theatre, and art exhibitions may be part of a lifestyle adopted by high SES groups, while watching TV and adding weight may be part of a less healthy lifestyle. The physical nature of a leisure-time activity may be less important than its cultural meaning. Although any such association of sedentary activities with body weight would be spurious, as both relate to underlying cultural tastes, attention to the association can give insights into cultural sources of disparities in body weight.

To develop this argument, I build on two literatures, one on the cultural meanings of body weight and the other on consumption of music, theatre, art, and entertainment. Although largely separate from one another, the literatures have a similarity: They suggest that body weight and cultural consumption both serve as symbols of self-presentation that help to define boundaries between SES groups. They each help define identity and image in ways that solidify ties to some and mark separation from others.

First, consider SES-related tastes or normative preferences for body weight. Maintaining fashionably lean and fit figures for women and men may involve a conscious or unconscious effort of high SES groups to symbolically define a health lifestyle that distinguishes themselves from others (Cockerham 2000, 2005, Katainen 2010). Some 110 years ago, Veblen (1998[1899]) described how thinness became a symbol of feminine beauty among an emerging leisure class in industrializing societies. Bourdieu (1984) has argued more recently that body size and shape distinguish social classes in modern societies, with upper classes using thinness as a symbol of exclusivity and fashionableness. He distinguishes the use of the body by dominant classes as a project to make it healthier and more aesthetically pleasing from the more instrumental use of the body by other classes. Although not always a conscious choice (Katainne 2010), body management and maintenance can serve as a means to display cultural capital (Warde 2006).

Further highlighting the importance of culture, some suggest that concern about excess weight has less to do with health than with the social stigma associated with obesity and its concentration among disadvantaged groups (Campos *et al.* 2006). Certainly the stigma and

[1]While other components of SES such as occupation and income affect body weight, education has special importance. Because most weight gain occurs in adulthood, after the completion of schooling, education is less influenced by body weight than are current occupation and income, which change greatly over the life course.

bias faced by the obese involve moral evaluations, particularly of low SES groups, based on attributed poor choices and lack of discipline (Lewis and Puymbroeck 2008, Puhl and Heuer 2009). The literature on body image suggests that due to ubiquitous media images, ideals of a slender body shape span class divides (Featherstone 1987). However, higher SES groups have greater time and monetary resource to realise the ideal (Grogan 2008:165). Over time, a slender body has become associated with presumed upper-class ideals of success and willpower, while obesity has become associated with presumed lower-class lack of success and low self control (Bordo 1993). Even if body shape ideals differ little across SES groups, then, the ability to realise these ideals may still translate into SES-based cultural differences in weight.

Second, consider SES-related norms of cultural consumption. Decades of theory and research have identified how links between SES and cultural tastes define group boundaries (for recent reviews, see Chan and Goldthorpe 2010, Roy and Dowd 2010). Forms of cultural distinction have changed – they no longer involve simple differences between highbrow and lowbrow tastes (Peterson and Kern 1996, Peterson and Simkus 1992). Rather, high SES groups enjoy a variety of cultural experiences or cultural omnivorousness compared to the more constrained or exclusive cultural tastes of low SES groups (Bryson 1996). High SES groups are more likely to attend cultural events such as symphonies, dramas, and musicals but are open to less sophisticated forms of entertainment such as popular music, sporting events, and movies. Even television shows, often considered a source of lowbrow entertainment, have become part of the high SES omnivore cultural repertoire (Kuipers 2006). In contrast, low SES groups have a less diverse array of cultural interests and tastes – they are better described as univores than omnivores (Chan and Goldthorpe 2010). The styles of appreciation likewise differ across classes (Bourdieu 1984). High SES groups focus more on aesthetic enjoyment and intellectualising their experience, while lower SES groups focus more on emotional experience.

Although the nature of SES-based cultural tastes changes, the ability of those tastes to distinguish group boundaries remains (Coulangeon and Lemel 2010). All SES groups may enjoy sports and movies, but high SES groups distinguish themselves by also enjoying classical music, opera, theatre, and art museums. Bourdieu (1984) views such forms of cultural capital as ways of reproducing class dominance, while Chan and Goldthorpe (2010) take a more Weberian view in arguing that cultural tastes and activities relate more to status than class. Yet, both treat cultural consumption as an important component of stratification.

Bringing the arguments about body weight and cultural consumption together suggests the following: If cultural tastes shape both body weight and leisure activities and if both body weight and leisure activities are forms of cultural capital, it implies an association that is related to SES. Those spending time in sedentary but sophisticated activities such as reading and attending cultural events should have lower body weight, even when levels of physical exercise are similar, than those spending time in other sedentary activities such as watching television or playing cards. This possibility shifts the focus from calories expended in leisure-time activities to the health-related cultural meanings of those activities. It further offers a means to take account of culture explicitly rather than inferring it from SES. Pampel (2006) takes this approach in examining the net association between smoking and musical tastes, but the logic may have wider applicability.

SES should partly but not completely explain the association between leisure-time activities and body weight. On one hand, SES supplies resources that help advantaged groups live a healthier lifestyle, eat a more nutritious diet, and maintain lower body weight. Numerous underlying mechanisms besides cultural tastes contribute to the relationship between SES and body weight (Pampel *et al.* 2010). For example, high SES groups experience less in the

way of stress and deprivation that encourage unhealthy eating; enjoy greater payoff in terms of longevity from healthy behaviour; learn skills in school to overcome obstacles, including those related to healthy behaviour; have healthier choices in local stores and restaurants; and can better afford expensive fruits, vegetables, and lean meats. Since SES determines body weight in many ways besides culture, any association between leisure-time activities and body weight may be due in good part to these SES differences in resources.

On the other hand, although SES resources relate closely to both leisure-time activities and body weight, cultural resources should have an independent association. To the extent that it is a separate form of capital, culture should do more than mirror other social advantages. It follows that leisure-time activities and body weight should have an association that is at least partially independent of the social structural advantages provided by education, occupation, and income. For example, low SES persons who participate in diverse, often highbrow cultural activities should adopt desires for thinness typical of others, usually high SES persons, with interests in these activities. Conversely, high SES persons who enjoy sports, cards, and socializing but not reading and cultural performances should adopt more expansive norms of body weight. If cultural tastes are related but not identical to SES, it means that education, occupation, and income will be confounders in the relationships between leisure activities and weight but should not wholly explain away the relationships.

National Differences

The cultural arguments can be extended to consider national context: The relationship between leisure-time activities and body weight will likely differ between lower- and higher-income nations. Varied body weight norms by levels of economic and social development imply that a positive association between cultural activities and body weight will emerge only in, or at least more strongly in, richer nations.

The classic review of Sobal and Stunkard (1989) and two recent updates (McLaren 2007, Monteiro *et al.* 2004) conclude that SES relates directly to obesity in developing nations but relates inversely or weakly in developed nations. Whereas high SES persons tend to weigh more than others in poor countries, they tend to weigh less in rich countries. The difference in the SES gradient appears more clearly for women than men, for education and occupation more than income, and for earlier periods more than recent periods. Still, the reversal in the relationship of SES and weight with economic development highlights the importance of national context.

The different relationships across nations relate to resources, knowledge, and culture. In terms of resources, low SES groups in lower-income nations work in physically demanding jobs (e.g., agriculture, manual labour) and can rarely afford to purchase and consume excess food, whereas high SES groups have access to excess food and can avoid physically demanding tasks (through sedentary jobs, hired help, and household amenities). With adequate food intake and limited energy expenditure, weight gain ensues among the affluent in developing countries. In rich countries, however, most can afford high-calorie (though often unhealthy) food and avoid physical activity or manual labour (Bleich *et al.* 2008, Kumanyika 2008, Cutler *et al.* 2003, Brownson *et al.* 2005). Higher income relative to food prices allows even low SES groups to purchase and consume excess food. For high SES groups in high-income nations, however, the health costs of excess weight provide motivation to eat healthier, pay for expensive fresh foods and lean meats, and exercise regularly (Pampel *et al.* 2010). Since high SES groups live longer, they benefit most from healthy living and can use their resources to maintain appropriate weight.

In terms of knowledge, higher educational attainment is related to an awareness of whether one is overweight (Paeratakul *et al.* 2002) and to attempts to achieve healthy weights (Lynch

et al. 2009). In poor countries with less developed educational systems and less nutritional knowledge, the presence of malnutrition makes excess weight appear healthy. All groups desire to consume more food and reduce physical labour, although only high SES groups in these countries typically have the economic means to do so. In rich countries, however, knowledge does more to reduce obesity (Bleich *et al.* 2007, Kan and Tsai 2004). High SES groups have educational advantages in understanding the health value of proper weight, diet, and exercise, and they more effectively apply knowledge about health to everyday behaviour (Mirowsky and Ross 2003). Lack of nutritional knowledge among low SES groups may help explain their relatively high obesity levels (Monteiro *et al.* 2004).

In terms of culture, values reinforce national differences in the relationship of SES and body weight. Excess weight in poorer countries symbolises high status, and among men, large size indicates power and physical prowess (McLaren 2007). According to one study, 87 percent of traditional cultures view plumpness as an ideal of feminine beauty (Brown and Konner 1987). In richer countries, the stigma associated with obesity and the thinness of fashion models and celebrities indicate the opposite values.

If SES-based norms for body weight change across levels of economic and social development, then so should the relationships between leisure-time activities and body weight. Participating in cultural activities may signify high status in lower-income nations, but high status in these nations may lead to higher rather than lower weight. Only in higher-income nations with strong ideals of slenderness will an association emerge between leisure-time cultural activities and lower body weight.

Hypotheses

The hypothesised links between body weight and varied sedentary leisure-time activities offer nonobvious and clearly falsifiable predictions. Highbrow leisure-time activities common among cultural omnivores such as attending cultural events and reading should be associated with lower body weight, while lowbrow cultural activities common among univores such as attending sporting events, socializing, and playing cards should be associated with higher body weight. The associations should hold with controls for physical activity and SES components of education, occupation, and income. Moreover, the associations should hold more strongly for high-income nations than other nations.

A plausible alternative hypothesis is that sedentary activities are alike in increasing body weight and that cultural meanings have little importance relative to the extent of calories burned. This claim leads to a prediction that sedentary highbrow and lowbrow cultural activities alike will be associated with higher weight, while physical activities will be associated with lower weight. Another plausible alternative hypothesis is that the diversity of cultural meanings in society blurs not only the relationship between cultural tastes and SES but also any overlap between types of sedentary activities and body weight. It may be that the emergence of mass marketing has made cultural meanings increasingly fluid, complex, and individualistic (Erickson, 1996, Featherstone 1987, Lamont and Fournier, 1992). As the coupling of socioeconomic position and body weight ideals has attenuated due to the prevalence of slender images in the media (Hesse-Biber 2007, Grogan 2008), so too might any association between leisure-time activities and body weight. The individualisation of tastes may lead to a weak correspondence between body weight and cultural activities.

Methods

Data

The International Social Survey Program (2010) or ISSP, a collaboration of nations doing annual surveys for probability samples of citizens or residents, included a module on leisure-

time activities and sports in the 2007 surveys. Of the 34 nations participating in 2007, 17 asked about body weight and 16 asked about desire to lose weight. The nations with data on both leisure-time activities and body weight include seven from Western Europe and Oceania (Austria, Finland, France, Germany, Ireland, New Zealand, and Switzerland),[2] four from Eastern Europe (Bulgaria, Poland, Russia, and the Slovak Republic), and six from other parts of the world (Dominican Republic, Israel, Mexico, Philippines, South Korea, and Uruguay). By no means representative of all regions of the world, these 2007 ISSP nations none the less vary widely on economic development and cultural background. Moreover, the data set provides a rare opportunity to link items on cultural components of leisure to epidemiological information on weight.

Measures

The surveys ask respondents a series of questions about the time they are not occupied with work or household duties or other activities that they are obliged to do: “How often do you do each of the following activities in your free time?” The activities include the following: 1) watch TV, DVD, videos; 2) go to the movies; 3) go out shopping; 4) read books; 5) attend cultural events such as concerts, live theatre, exhibitions; 6) get together with relatives; 7) get together with friends; 8) play cards or board games; 9) listen to music; 10) take part in physical activities such as sports, going to the gym, going for a walk; 11) attend sporting events as a spectator; 12) do handicrafts such as needle work, wood work; and 13) spend time on the Internet/ PC. Answers include 1) never, 2) several times a year or less often, 3) several times a month, 4) several times a week, and 5) daily.

A rotated exploratory factor analysis defines four independent dimensions for 12 of the leisure-time activities. I treat taking part in physical activities as separate because, unlike all the others, it involves physical exertion and more intense burning of calories. It also differs from the others in that excess weight can prevent as well as respond to vigorous exercise. Excepting rare instances in which extreme obesity might prevent taking seats at concerts or sporting events, excess weight does not prevent participation in sedentary activities as it might for exercise. Among the sedentary items, then, the first factor includes going to movies, reading, attending cultural events, and using the internet. This dimension reflects highbrow activities that are likely most common among high SES omnivore groups. The second factor includes socializing with relatives and friends, playing games, and attending sporting events; the third includes handicrafts and reading; and the fourth includes watching TV, listening the music, and going shopping. These three dimensions seem less closely tied to appreciation of culture than the first one. Standardised scales are constructed for the four factors and the physical activities item is standardised as well. These variables are treated as continuous in the analysis.

The surveys ask respondents to report their weight and height. With weight in kilograms and height in meters for each country, the body mass index (BMI) is computed with the standard formula. Values above 50 (only 0.1 percent of all cases) are recoded to 50 to limit any distortion from extreme values.[3] To capture relationships at the high end of body weight, a dummy variable distinguishes obese persons (BMI of 30 or greater) from underweight, normal weight, and overweight persons. In addition, all but one of the 17 nations ask respondents if they would like to gain weight, maintain current weight, lose weight, or do not care about their weight. This is coded into a dummy variable that contrasts those wanting to lose weight (1) with others (0).

[2]Despite the geographic location of New Zealand, its high income and English heritage suggest the use of the umbrella term of the West for these countries.

[3]The alternative, deleting these cases because they may reflect reporting error, changes the results only trivially.

The ISSP data contain key sociodemographic variables such as gender (female equals one), age (measured in decades), and marriage or partnership status (married and cohabiting equal one). Residence is measured by self reported assessment of city size with values of 1) farm or country, 2) country village, 3) town or small city, 4) suburb or outskirt of big city, and 5) urban or big city.

The surveys use two measures of education. One is based on years of schooling completed and one is based on highest degree obtained. Years of schooling range from 0 to 22. Highest degree has five categories: 1) no formal qualification (typically less than 8 years of schooling), 2) lowest formal qualification (typically 8 years of schooling), 3) above lowest qualification, 4) higher secondary completed, and 5) university degree completed. Treating both as continuous, the two measures have a correlation of .850 and give nearly identical results in the models, but since the degree measure has slightly less missing data, it is presented in the tables.[4] To help ensure that most respondents have completed their education, the analysis includes only those over age 24.

For employment, a dummy variable contrasts full-time workers, part-time workers, and students (coded 1) with those not working (unemployed, disabled, retired, homemakers). For occupation, the ISSP uses the International Standard Classification of Occupations (ISCO) to group jobs into categories based on skill level and skill specialisation (International Labour Organization 2004). The classification for the 2007 ISSP surveys defines ten major groups (based on the first digit of the four digit scores) and 41 sub-major groups (based on the first two digits of the scores). After adding a category for those not reporting occupations (about 12.6 percent of the cases), sets of dummy variables can control for the type of work done. A related measure of self-reported standing in society is based on a question that asks respondents to place themselves on a scale of one to ten. Although the question wording differs between countries, with some referring specifically to rich and poor and others to top and bottom groups, the measure taps subjective status within a nation.

A measure of family income differs in wording across nations, with some nations asking about net income, others about gross income. With the national currency differing as well, it is necessary to create a standardised family income score for each nation that has a mean of zero and standard deviation of one. The measure can influence the BMI within countries but not between countries. Even at that, data are missing for 18.6 percent of the cases.

Estimation

The availability of individual-level data within multiple nations makes multilevel models suitable for the analysis. In treating national differences in the outcomes as random variables, the multilevel models adjust for clustering by nation, different sample sizes for level-1 and level-2 units, heteroscedastic error terms, and varying numbers of cases within level-2 units – all problems that otherwise downwardly bias estimated standard errors (Raudenbush and Bryk 2002). The restricted maximum likelihood estimates of the parameters are generated by xtmixed in STATA 11.0.[5] For the BMI, the intraclass correlation coefficient of .07 indicates that most but not all variation occurs within nations. The tables report significance levels of .05, .01, and .001, and the text refers to significant relationships when any of the criteria are met.

[4]BIC statistics show that a model with linear education performs better than a non-linear model with dummy variables for the categories in education.

[5]STATA xtmixed does not allow use of probability weights, but checks using descriptive statistics and regression show that the weighted and unweighted results differ only trivially.

Results

The descriptive statistics in Table 1, with a maximum sample size of 21669 but smaller numbers of cases for variables with missing data, reveal wide variation across individuals in the BMI (ranging from about 12 to the maximum of 50), but the means across nations vary less. The Philippines has the lowest mean of 22.5 and New Zealand the highest of 26.7. For the related body weight measures, about 14 percent of individuals fall into the obese category and 44 percent want to lose weight. The measures of leisure-time activities, listed in the next set of rows in Table 1, all have means of zero and standard deviations of one. However, according to the means of the component variables, the most popular activities are watching television, listening to music, and getting together with friends, while the least popular are going to movies, attending sporting events, and attending cultural events.

Table 2 examines the social structuring of leisure-time activities, where each of the four dimensions plus taking part in physical activities is used as the outcome in multiple regressions with sociodemographic variables. Education is significant across all models but mostly strongly raises participation time in cultural activities. Less strongly but still significantly, it raises participation time in physical, handicraft, and television/music activities, and it lowers participation time in socializing activities. Subjective status also significantly raises participation time in cultural, physical, and most other activities (but standardized income has no influence and is not included in the models). Comparing across columns, education and subjective status more strongly affect cultural activities than other activities. In addition, urban residence is associated significantly with more cultural and physical activities but significantly reduces socializing and handicraft activities. Age significantly increases handicraft activities and decreases the other activities. Relatedly, those employed or in school are significantly more involved in cultural activities but less involved in other activities.

Table 3 presents multilevel models of the the determinants of the BMI. The first model includes only the sociodemographic variables, the second model only the activity variables, and the third model both sets of variables together.[6] The first model with the sociodemographic variables shows expected relationships. Education, subjective status, employment, and urban residence are significantly associated with lower BMI values, while being married is significantly associated with higher values. On average, women have significantly lower BMI values than men. For age, the linear and squared terms show a rise in body weight that reverses after age 59.

The next column lists coefficients for a model with only the activity measures. As expected, participation time in both cultural and physical activities is significantly associated with lower BMI values, while participation time in the other activities is significantly associated with higher BMI values. Although sedentary rather than active, participation time in cultural activities has an association considerably larger than participation time in physical activities. A standard deviation increase in cultural activities lowers the BMI by -.554, while a standard deviation increase in physical activities lowers the BMI by -.164. The other activities have smaller coefficients than cultural and physical activities and are associated with higher rather than lower weight.

With the sociodemographic and leisure-time activities included together in model 3, the coefficients for education, urban residence, and subjective status decline modestly. The

[6]The variance inflation factor (VIF) reveals no serious multicollinearity problems. Excepting the close relationship between age and age squared, the largest VIF of 1. 6 occurs for the cultural activities scale (meaning that 62.5 percent of the variance in this variable is independent of the other explanatory variables). A common rule of thumb suggests that a VIF of 10 is cause for concern but even considerably high values may be acceptable (O'Brien 2007). Overlap among the variables in Table 3 is much more modest.

slope for cultural activities, although still significant, declines substantially because of its overlap with education and other sociodemographic variables. In some ways, cultural and other leisure activities serve as markers for social standing. However, they also have independent associations. The coefficient for a standard deviation change in cultural activities (−.199) is similar to that for physical activities (−.194) and (as calculated from the coefficient in Table 3) for education (−.175). Attending cultural events has a meaningful association with the BMI, even if part of the association is due to overlap with education and the sociodemographic variables.

Controls for occupation (not listed in the table) fail to change the size of the coefficient for cultural activities. Among the 10 occupational-category dummy variables, only two differ significantly from the category with the median BMI: 1) production, department, and general managers, and 2) service and shop and market workers have relatively high BMI values. However, the set of variables increases rather than decreases the BIC value, suggesting that the additional variables do not improve the model. Dummy variables for the 41 more detailed occupation categories likewise fail to improve the BIC and change the cultural activities coefficient only trivially. Differences in body weight by leisure-time activities do not appear to stem from occupational differences. Similarly, the measure of income standardised within nations fails to significantly influence the BMI or affect the coefficients for the leisure-time activities and is excluded from the models.

Table 3 list results for two other outcomes that supplement the results for the BMI. One model predicts being obese (equal to 1) or not (equal to 0) and another model predicts the desire to lose weight (equal to 1) or not (equal to 0). As shown by the means in Table 1, the proportion obese equals .14, while the proportion wanting to lose weight equals .44. Both models include the sociodemographic and the leisure-time variables and, as is appropriate for the binary outcomes, both models use logistic regression. The results in Table 4 for these two outcomes prove much the same as for the BMI outcome. Education, cultural activities, and physical activities are associated with lower logged odds of being obese, while other sedentary activities are associated with higher logged odds. Still further, a model that uses the desire to lose weight as the outcome replicates the findings. The model in the last column of Table 3 controls for the BMI to identify sources of difference in desires for persons with similar body size. According to the logistic regression coefficients, education, urban residence, cultural activities, and physical activities are associated with the logged odds of wanting to lose weight. Along with being associated with lower weight, these variables are associated – net of the positive effect of BMI in the model – with the desire to lose weight.

Table 4 presents coefficients from models run separately for males and females in the high-income West and in other parts of the world. BIC tests show that allowing the relationship to vary by gender and world region improves on a model with identical coefficients across these groups.[7] A key result emerges from these separate models: Both education and cultural activities lower weight for all groups except males in other parts of the world. The weak relationship for men in non-Western nations perhaps reflects norms in low- and middle-income nations that favor large size as an indicator of prestige and power. Otherwise, education and cultural activities have the expected negative associations.[8] The coefficients for physical activities also differ across groups. Such activities are associated with lower weight in the West, where jobs generally involve less physical exertion, than in other nations. The other leisure-time activities have less consistent influences but tend to increase weight.

[7]The other nations include both former Communist nations of Eastern Europe and the lower-income nations of Asia and South America. Based again on the BIC statistic, further separating these two groups of nations did not improve the model fit.

Discussion

Along with reaffirming the importance of SES for body weight, these results also identify an association with an ostensibly irrelevant factor – participation in cultural activities. Attending cultural events (e.g., concerts, live theatre, exhibitions), reading, going to movies, and using the internet relate negatively to the BMI , and a scale of these factors has an association that is similar in size to that between the BMI and participating in sports and exercise. Cultural and physical activities are further associated with the odds of being obese and, net of actual body weight, of wanting to lose weight. Although related to SES, these activities have independent associations with the BMI. In contrast, leisure-time activities involving socializing, handicrafts, and watching television/listening to music, although like cultural activities in their sedentary nature, are associated with greater BMI.

These results are consistent with claims that both leisure-time activities and body weight represent facets of class-based culture. The activities are spuriously yet still meaningfully associated with body weight through a possible common cause – cultural tastes that in part distinguish SES-related group membership. Although based on an inference about the underlying common cause, this finding is consistent with a cultural explanation of SES differences in overweight and obesity. Of course, SES resources besides cultural tastes prove equally or more important for body weight. Yet, the independent influences of various types of sedentary leisure-time activities suggest the value of extending arguments about economic and social resources to include cultural tastes.

The theoretical arguments and empirical evidence link two separate literatures that may have more in common than scholars recognise. First, theories of the importance of symbolic distinction to social inequality (Bourdieu 1994, Veblen 1998[1899] have been applied extensively to cultural consumption. Liking for diverse musical genres and attendance at cultural performances and art exhibitions are seen as mechanisms of closure or even domination that relate closely to and reinforce economic and social sources of inequality. Second, SES represents a fundamental cause of health that operates through multiple mechanisms and has endured through centuries of medical advances (Link and Phelan 1995). Such SES differences in health relate to SES differences in body weight. Maintaining fashionably lean and fit figures may involve a conscious or unconscious effort of high SES groups to symbolically define a health lifestyle that distinguishes them from others (Cockerham 2000, 2005). Considering literatures on both cultural consumption and body weight highlights ways in which cultural resources influence two diverse kinds of outcomes.

The association between participation in cultural activities and body weight emerges more strongly in high-income nations of the West than elsewhere. The national context of access to food shapes both the opportunities to put on excess weight and the SES-based norms about weight. Thus, high SES leads to relatively greater weight in lower-income nations where widespread access to food is limited but leads to relatively lower weight in high-income nations where most can afford excess food. The results support these arguments by demonstrating a more consistent association between cultural activities and low body weight in the West than elsewhere. In addition, the relationships emerge more consistently for

[8]The separate models by region suggest that economic and social development strengthen the negative relationships of education and cultural activities on the BMI. This implies a cross-level interaction of national determinants such as gross domestic product per capita (GDP) and the Human Development Index (HDI) with education and cultural activities. A formal test of this claim can be done with multilevel models, but the small number of nations limits the ability to reliably estimate variance and covariance parameters for random intercepts and slopes. While at best suggestive, tests for the interactions show that GPD and the HDI strengthen the negative slope of cultural activities on the BMI, particularly for women. Other tests for interactions similarly show that GPD and the HDI strengthen the negative slope for education. These results are consistent with those in Table 4 and with the hypothesis about national differences in the SES patterns of body weight.

women than men. Men in low- and middle-income nations show little association between cultural activities and body weight. That the general associations vary across national contexts in theoretically meaningful ways helps demonstrate their importance.

An alternative interpretation of the relationship between leisure-time activities and body weight might attribute more causal importance to cultural participation. A cautious interpretation of the results highlights the likely spuriousness due to education and cultural tastes. However, participation in cultural activities involving art and music appreciation, reading, and use of the internet may foster learning, problem-solving skills, and a sense of personal efficacy (Mirowsky and Ross 2003) that then help in resisting pressures to overeat. Presumably, other sedentary activities such as socializing, handicrafts, and television/music have positive rather than negative relationships with body weight because they do not create the same opportunities for developing learning and discipline. The cross-sectional data make it impossible to separate the causal and non-causal interpretations, but both types of arguments highlight an intriguing and neglected source of social differentiation in body weight.

Despite the varied forms of evidence in support of the theoretical arguments, cross-sectional data and somewhat crude measures limit the findings. The cross-sectional data offer only a snapshot of the relentless social transformation of cultural tastes. The nature of SES-based leisure-time activities has changed enough in recent decades that survey measures cannot fully capture the fluid nature of cultural meanings. Measures of a larger number of culturally laden activities and more detail on likes and dislikes (rather than on only how often one participates in the activities) would be useful. Measures of self-reported weight and height also contain error, particularly when compared across 17 nations. In many other ways as well, reliance on existing data has clear limitations. None the less, the surprisingly strong and consistent cross-sectional relationships of measured leisure-time activities and body weight suggest their theoretical importance.

Acknowledgments

The work received funding and administrative support from a grant of the Eunice Kennedy Shriver National Institute of Child Health and Development to the University of Colorado Population Center (NICHD R21 HD051146). I thank Justin Denney and Patrick Krueger for helpful discussion and insight from related collaborative work.

REFERENCES

Ball K, Crawford D. Socioeconomic status and weight change in adults: a review. Social Science and Medicine. 2005; 60(9):1987–2010. [PubMed: 15743649]

Bleich SN, Blendon R, Adams A. Trust in scientific experts on obesity: implications for awareness and behavior change. Obesity. 2007; 15(8):2145–2156. [PubMed: 17712134]

Bleich SN, Cutler D, Murray C, Adam A. Why is the developed world obese? Annual Review of Public Health. 2008; 29:273–295.

Bordo, S. Unbearable Weight: Feminism, Western Culture and the Body. Berkeley: University of California Press; 1993.

Bourdieu, P. Distinction: A Social Critique of the Judgment of Taste. Richard, Nice, translator. Cambridge, MA: Harvard University Press; 1984.

Braveman PA, Cubbin C, Egerter S, Williams DR, Pamuk E. Socioeconomic disparities in health in the United States: what the patterns tell us. American Journal of Public Health. 2010; 100(S1):S186–S196. [PubMed: 20147693]

Brown PJ, Konner M. An anthropological perspective on obesity. Annals of the New York Academy of Sciences. 1987; 499:29–46. [PubMed: 3300488]

Brownson RC, Boehmer TK, Luke DA. Declining rates of physical activity in the United States: what are the contributors? Annual Review of Public Health. 2005; 26:421–443.

Bryson B. “Anything but heavy metal”: symbolic exclusion and musical dislikes. American Sociological Review. 1996; 61(6):884–899.

Campos P, Saguy A, Ernsberger P, Oliver E, Gaesser G. The epidemiology of overweight and obesity: public health crisis or moral panic? International Journal of Epidemiology. 2006; 35(1):55–60. [PubMed: 16339599]

CDC. Data 2010: The Health People 2010 Data Base. 2010 Retrieved from http://wonder.cdc.gov/data2010/focus.htm.

Chan, TW.; Goldthorpe, JH. Social status and cultural consumption. In: Chan, TW.; Goldthorpe, JH., editors. Social Status and Cultural Consumption. Cambridge: Cambridge University Press; 2010. p. 1-27.

Cockerham, WC. The sociology of health behavior and health lifestyles. In: Bird, CE.; Conrad, P.; Fremont, AM., editors. Handbook of Medical Sociology. Upper Saddle River, NJ: Prentice Hall; 2000. p. 159-172.

Cockerham WC. Health lifestyle theory and the convergence of agency and structure. Journal of Health and Social Behavior. 2005; 46(1):51–67. [PubMed: 15869120]

Coulangeon, P.; Lemel, Y. Bourdieu’s legacy and the class-status debate on cultural consumption: musical consumption in contemporary France. In: Chan, TW.; Goldthorpe, JH., editors. Social Status and Cultural Consumption. Cambridge: Cambridge University Press; 2010. p. 84-108.

Cutler DM, Glaeser EL, Shapiro JM. Why have Americans become more obese? Journal of Economic Perspectives. 2003; 17(3):93–118.

Erickson BH. Culture, class, and connections. American Journal of Sociology. 1996; 102(1):217–251.

Featherstone M. Lifestyle and consumer culture. Theory and Society. 1987; 4(1):55–70.

Flegal KM, Graubard BI, Williamson DF, Gail MH. Excess deaths associated with underweight, overweight, and obesity. JAMA. 2005; 293(15):1861–1867. [PubMed: 15840860]

French SA, Story M, Jeffery RW. Environmental influences on eating and physical activity. Annual Review of Public Health. 2001; 22:309–335.

Grogan, S. Body Image: Understanding Body Dissatisfaction in Men, Women, and Children. London: Routledge; 2008.

Hesse-Biber, SN. The Cult of Thinness. New York: Oxford University Press; 2007.

Hu FB, Li TY, Colditz GA, Willett WC, Manson JE. Television watching and other sedentary behaviors in relation to risk of obesity and type 2 diabetes mellitus in women. JAMA. 2003; 289(3):1785–1791. [PubMed: 12684356]

International Labour Organization. ISCO: International Standard Classification of Occupations. 2004 Retrieved from http://www.ilo.org/public/english/bureau/stat/isco/index.htm.

International Social Survey Program. General Information. 2010 Retrieved from http://www.issp.org.

Kan K, Tsai WD. Obesity and risk knowledge. Journal of Health Economics. 2004; 23(5):907–934. [PubMed: 15353186]

Katainen A. Social class differences in the accounts of smoking – striving for distinction? Sociology of Health and Illness. 2010; 32(7):1087–1101. [PubMed: 21039618]

Kuipers G. Television and taste hierarchy: the case of Dutch television comedy. Media, Culture, and Society. 2006; 28(3):359–378.

Kumanyika SK. Global calorie counting: a fitting exercise for obese societies. Annual Review of Public Health. 2008; 29:297–302.

Lajunen H-R, Keski-Rahkonen A, Pulkkinen L, Rose RJ, Rissanen A, Kaprio J. Leisure activity patterns and their associations with overweight: a prospective study among adolescents. Journal of Adolescence. 2009; 32(5):1089–1103. [PubMed: 19345989]

Lamont, M.; Fournier, M., editors. Cultivating Differences: Symbolic Boundaries and the Making of Inequality. Chicago: University of Chicago Press; 1992.

Lewis ST, Van Puymbroeck M. Obesity-stigma as a multifaceted constraint to leisure. Journal of Leisure Research. 2008; 40(4):574–588.

Lynch E, Liu K, Wei GS, Spring B, Kiefe C, Greenland P. The relation between body size perception and change in body mass index over 13 years: the CARDIA study. American Journal of Epidemiology. 2009; 169(7):857–866. [PubMed: 19221119]

McLaren L. Socioeconomic status and obesity. Epidemiologic Reviews. 2007; 29(1):29–48. [PubMed: 17478442]

Mirowsky, J.; Ross, CE. Education, Social Status, and Health. Hawthorne, NY: Aldine De Gruyter; 2003.

Monteiro CA, Moura EC, Conde WL, Popkin BM. Socioeconomic status and obesity in adult populations of developing countries: a review. Bulletin of the World Health Organization. 2004; 82(12):940–946. [PubMed: 15654409]

O'Brien RM. A caution regarding rules of thumb for variance inflation factors. Quality and Quantity. 2007; 47:673–690.

Paeratakul S, White MA, Williamson DA, Ryan DH, Bray GA. Sex, race/ethnicity, socioeconomic status, and BMI in relation to self-perception of overweight. Obesity Research. 2002; 10(5):345–350. [PubMed: 12006633]

Pampel FC. Socioeconomic distinction, cultural tastes, and cigarette smoking. Social Science Quarterly. 2006; 87(1):19–35. [PubMed: 21874073]

Pampel FC, Krueger PM, Denney JT. SES disparities in health behavior. Annual Review of Sociology. 2010; 36:349–370.

Peterson RA, Kern RM. Changing highbrow taste: from snob to omnivore. American Sociological Review. 1996; 61(5):900–907.

Peterson, RA.; Simkus, A. How musical tastes mark occupational status groups. In: Lamont, M.; Fournier, M., editors. Cultivating Differences: Symbolic Boundaries and the Making of Inequality. Chicago: University of Chicago Press; 1992. p. 152-186.

Popkin, BM. The World is Fat: The Fads, Trends, Policies, and Products that Are Fattening the Human Race. New York: Avery; 2009.

Puhl RM, Heuer CA. The stigma of obesity: a review and update. Obesity. 2009; 17(5):941–964. [PubMed: 19165161]

Raudenbush, SW.; Bryk, AS. Hierarchical Linear Models. Second Edition. Thousands Oaks, CA: Sage Publications; 2002.

Roskam AJR, Kunst AE, van Oyen H, Demarest S, Klumbiene J, Regidor E, Helmert U, Jusot F, Dzurova D, Mackenbach JP. Comparative appraisal of educational inequalities in overweight and obesity among adults in 19 European countries. International Journal of Epidemiology. 2010; 39(2):392–404. [PubMed: 19926664]

Roy WG, Dowd TJ. What is sociological about music. Annual Review of Sociology. 2010; 36:183–203.

Sobal J, Stunkard AJ. Socioeconomic status and obesity: a review of the literature. Psychological Bulletin. 1989; 105(2):260–275. [PubMed: 2648443]

Stempel C. Adult participation in sports as cultural capital: a test of Bourdieu's theory of the field of sports. International Review of the Sociology of Sport. 2005; 40(4):411–432.

Veblen, T. Theory of the Leisure Class. Amherst, NY: Prometheus Books; 1998[1899].

Warde A. Cultural capital and the place of sport. Cultural Trends. 2006; 15(2–3):107–122.

Table 1

Descriptive Statistics

Variable	Obs	Mean	St. Dev.	Min	Max
Weight Outcomes					
BMI	20072	25.45	4.47	12	50
Obese	20072	0.14	0.34	0	1
Wants to Lose	20212	0.44	0.50	0	1
Sociodemographic					
Female	21669	0.55	0.50	0	1
Age (Decades)	21628	4.93	1.58	2.5	9.8
Education	21478	2.72	1.48	0	5
Married	20881	0.61	0.49	0	1
Urban	21547	3.40	1.27	1	5
Employed-School	21523	0.60	0.49	0	1
Subjective Status	20986	5.10	1.85	1	10
Standardized Income	17641	0.00	1.00	−1.89	15.99
ISCO Occupation	18926	5034	2539	100	9333
Leisure-Time Activities					
Cultural	20320	0	1	−2.58	4.95
Physical	21435	0	1	−1.22	1.51
Socializing	20320	0	1	−3.06	3.87
Handicraft	20320	0	1	−2.63	3.52
TV/Music	20320	0	1	−5.30	2.56

Table 2

Multilevel Multivariate Regression Coefficients and Z-Values for Predictors of Leisure-Time Activities

Sociodemographic	**Leisure-Time Activities**									
Predictors	**Culture**		**Physical**		**Socializing**		**Handicraft**		**TV/Music**	
Female	−0.032	**	−0.060	***	−0.208	***	0.418	***	0.266	***
	−2.75		−4.43		−14.91		30.44		19.17	
Age (Decades)	−0.143	***	−0.047	***	−0.099	***	0.096	***	−0.021	***
	−32.87		−9.38		−18.83		18.52		−4.06	
Education	0.209	***	0.103	***	−0.064	***	0.073	***	0.044	***
	46.2		19.61		−11.78		13.65		8.19	
Married	−0.06	***	0.000		−0.035	*	0.073	***	0.016	
	−5.10		0.02		−2.48		5.19		1.14	
Urban	0.095	***	0.031	***	−0.037	***	−0.043	***	0.007	
	19.01		5.24		−6.13		−7.12		1.13	
Employed-School	0.123	***	−0.073	***	−0.085	***	−0.082	***	−0.106	***
	8.97		−4.55		−5.15		−5.02		−6.43	
Subjective Status	0.063	***	0.043	***	0.041	***	0.008		0.022	***
	18.57		10.84		9.97		1.92		5.36	
Constant	−0.537		−0.298		0.779		−0.782		−0.210	
Variance Component Intercept	0.133		0.177		0.087		0.100		0.089	
N individuals	18656		18656		18656		18656		18656	
N nations	17		17		17		17		17	

Sociol Health Illn. Author manuscript; available in PMC 2013 March 01.

Table 3

Multilevel Regression Coefficients and Z-Values for Predictors of Body Weight Outcomes

Predictors	**BMI**		**BMI**		**BMI**		**Obese** [a]		**Want to Lose Weight** [a]	
Female	−0.981	***			−1.077	***	0.001		1.189	***
	−14.96				−15.78		0.01		26.94	
Age (Decades)	2.858	***			2.832	***	1.499	***	0.148	
	20.87				20.61		13.44		1.68	
Age^2	−0.241	***			−0.241	***	−0.132	***	−0.035	***
	−18.17				−18.24		−12.58		−4.03	
Education	−0.170	***			−0.118	***	−0.088	***	0.108	***
	−6.66				−4.35		−4.44		6.61	
Married	0.159	*			0.141	*	−0.058		0.286	***
	2.30				2.06		−1.19		6.82	
Urban	−0.104	***			−0.070	*	−0.010		0.055	**
	−3.62				−2.43		−0.46		3.13	
Employed-School	−0.279	***			−0.228	**	−0.149	**	0.062	
	−3.48				−2.83		−2.64		1.26	
Subjective Status	−0.058	**			−0.044	*	−0.020		−0.009	
	−2.96				−2.23		−1.41		−0.75	
Cultural			−0.554	***	−0.199	***	−0.111	***	0.124	***
			−14.85		−4.65		−3.46		4.80	
Physical			−0.164	***	−0.194	***	−0.157	***	0.077	***
			−4.27		−5.16		−5.79		3.33	
Socializing			0.096	**	0.114	**	0.055	*	−0.026	
			2.71		3.24		2.21		−1.18	
Handicraft			0.107	**	0.115	**	0.061	*	−0.049	*
			3.08		3.26		2.47		−2.25	
TV/Music			0.064		0.192	***	0.099	***	0.186	***
			1.83		5.49		3.85		8.73	
BMI									0.364	***
Constant	19.522		25.445		19.367		−5.41		−10.621	

Predictors	BMI	BMI	BMI	Obese [a]	Want to Lose Weight [a]
Variance Component					
Intercept	1.344	1.369	1.299	0.391	0.301
N Individuals	17349	17349	17349	17349	16153
N Nations	17	17	17	17	16

[a] Logistic Regression

Sociol Health Illn. Author manuscript; available in PMC 2013 March 01.

Table 4

Multilevel Regression Coefficients and Z-Values for Predictors of BMI: By Gender and World Region

Predictors	Males West		Females West		Males Other		Females Other	
Age (Decades)	2.669	***	3.070	***	2.008	***	3.546	***
	9.42		10.02		8.12		13.70	
Age^2	−0.235	***	−0.261	***	−0.180	***	−0.291	***
	−8.73		−8.99		−7.50		−11.5	
Education	−0.120	*	−0.215	***	0.016		−0.126	*
	−2.28		−3.49		0.33		−2.41	
Married	0.129		0.064		0.702	***	0.207	
	0.91		0.42		5.39		1.59	
Urban	−0.154	**	−0.070		−0.058		−0.040	
	−2.77		−1.13		−1.09		−0.70	
Employed-School	−0.396	*	−0.354	*	0.101		−0.271	*
	−2.04		−1.98		0.63		−2.01	
Subjective Status	−0.104	*	−0.197	***	0.019		0.022	
	−2.44		−4.16		0.58		0.62	
Cultural	−0.226	*	−0.350	**	0.059		−0.344	***
	−2.41		−3.22		0.82		−4.56	
Physical	−0.305	***	−0.761	***	0.042		−0.018	
	−3.69		−8.47		0.66		−0.27	
Socializing	0.149		0.318	***	0.050		−0.004	
	1.91		3.56		0.89		−0.07	
Handicraft	−0.137		0.123		−0.091		0.296	***
	−1.84		1.52		−1.36		4.79	
TV/Music	0.125		0.348	***	0.133	*	0.145	*
	1.64		4.02		2.23		2.34	
Constant	21.239		19.307		20.080		15.616	***
Variance Component								
Intercept	0.403		0.925		2.025		1.861	
N Individuals	3423		3974		4461		5491	

NIH-PA Author Manuscript
NIH-PA Author Manuscript

Predictors	Males West	Females West	Males Other	Females Other
N Nations	7	7	10	10