

## Attitudes regarding overweight, exercise, and health among Blacks (United States)

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### Abstract

**Objective** To investigate Blacks' views regarding the connections among overweight, exercise, and health.

**Methods** A national randomized telephone survey of 986 US Blacks, conducted between 6 July 2004 and 15 July 2004.

**Results** The majority (65%) of respondents reported their weight as average or underweight. Most participants also reported being regularly physically active in the last month (84.5%). The majority of participants reported believing that it is possible to be overweight and healthy. Most acknowledged the connection between exercise and health, and just over half of respondents identified the association between overweight and cancer risk. There was little sociodemographic variation in responses, although findings differed by self-reported overweight and physical activity.

**Conclusions** Some Blacks may underestimate the extent of their overweight, perhaps resulting from the high prevalence of the condition in the population. Gaps exist in Blacks' recognition of the connection between weight and health, although the importance of exercise for health promotion was widely acknowledged. These data may highlight an important target for intervention attention.

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### Introduction

More than 65% of the US population is currently overweight or obese [1, 2] and rates of physical inactivity are similarly elevated. Together, physical inactivity and obesity may account for up to 25–30% of several major cancers and may influence over 15% of cancer deaths [1]. Overweight and obesity disproportionately affect US Blacks; estimates suggest that 71% of the non-Hispanic Black population is overweight (body mass index (BMI)  $\geq 25$ ), compared to over 63% of non-Hispanic Whites [3]. Among Blacks, overweight prevalence varies by a range of demographic characteristics, particularly gender [4, 5].

The high prevalence of overweight among Blacks is likely influenced, in part, by their poorer dietary patterns [6, 7] and higher reported rates of physical inactivity (particularly during leisure time), compared to other racial and ethnic groups [8–11]. However, a range of sociocultural characteristics may also be implicated. As a group, Blacks maintain a greater social acceptance of overweight, have high rates of body image satisfaction that are largely independent of body weight, and experience fewer within-group social pressures to lose weight [12–17]. The extent to which Blacks view overweight and physical inactivity as having health consequences however, remains largely unclear.

There is emerging evidence that Blacks may hold mixed views regarding the impact of overweight and physical inactivity on health-related outcomes [12, 18, 19]. Given the paucity of data in this area, we surveyed a national sample of Blacks, in part to investigate sociodemographic variation in views regarding the connections among overweight, physical inactivity, and health.

## Materials and methods

These data are drawn from a national randomized telephone survey of US Blacks conducted by CBS News Poll in collaboration with the Black Entertainment Television network (BET) and its charitable foundation, the BET Foundation, with input from the study authors. Interviews were conducted between 6 July 2004 and 15 July 2004. All study methods were approved by the lead author's university human subjects committee.

Black respondents were identified from 31 previously collected, nationally representative surveys administered by CBS News Poll between January 2003 and April 2004. The Kish selection method [20] was used to identify a single eligible adult from each reached household, who was then screened to exclude non-Blacks. Of the 2477 households contacted, eligibility could not be determined for 1239, 252 were ineligible, and 986 completed the study survey. Assuming that 79.6% (986/(986+252)) of those with undetermined eligibility were also eligible, the poll response rate is 50%.

### Survey questionnaire

Participants provided sociodemographic data including: age; sex (male, female); educational attainment in years (less than high school, high school graduate, some college, and college degree or more), and yearly gross income (under \$15,000, \$15,000–\$30,000, \$30,000–\$50,000 and over \$50,000). We also asked a standard perceived weight question: 'How would you describe your weight? Would you call yourself underweight, average weight or over-

weight?' [21, 22]. Because of the small number of respondents who reported being underweight (less than 5%), we grouped underweight and average weight participants together (normal weight). We were unable to obtain measured body weight and did not include a self-reported weight question because of the study's focus on perceived weight, limited space, and concerns about misreporting. To assess levels of physical inactivity, we utilized the standard no leisure time physical activity question from the Behavioral Risk Factor Surveillance System (BRFSS) [23], 'During the past month, other than your regular job, did you participate in any physical activity or exercise such as running, aerobics, golf, gardening, or walking for exercise?' (yes, no).

There were three outcomes of interest. Participants were asked to report their views regarding the association between health and both overweight and exercise. Specifically, they were asked whether they agreed or disagreed with the statement 'exercise is necessary to be healthy' and if they thought it was possible 'for a person to be overweight and still be healthy'. Participants were also asked whether they believed that overweight can 'increase a person's risk of getting a disease like cancer'. Responses (yes, no, don't know) were dichotomized (yes, no) due to small numbers.

To adjust for sampling biases and enhance sample representativeness, responses were weighted based on 2000 US census data of the non-Hispanic Black population by age, gender, education, region, and the number of household-dwelling adults. Logistic regression was used to test associations and produce odds ratios (OR) and 95% confidence intervals (CI). For each outcome, we ran an unadjusted logistic regression model with each predictor. For each predictor, if there was a significant association ( $p < 0.10$ ), we included the variable in subsequent multivariable analyses with each outcome. Age and sex were included in all multivariable analyses regardless of the association in the unadjusted logistic regression. While we modeled age as continuous for finest control of confounding (and thus generated odds ratios for a 1-year age increase), we present odds ratios equivalent to a 10-year age difference. We also examined whether gender modified the association between perceived weight and the study outcomes.

## Results

Participants included (Table 1) 986 individuals (males  $n = 456$ , 46.3% and females  $n = 530$ , 53.7%), who ranged in age from 18 to 90 (mean = 42.33; SD = 16.62). Most participants had either a high school diploma (39.1%) or some college educational experience (47.4%) and over half

**Table 1** Demographic characteristics of study sample

	Weighted frequency (N=986)	Weighted percent (%)
<i>Sex</i>		
Male	456	46.3
Female	530	53.7
<i>Age</i>		
< 29	251	25.4
29–40	254	25.7
41–53	229	23.2
>53	253	25.6
<i>Income</i>		
Under \$15,000	166	16.9
\$15,000–\$30,000	280	28.4
\$30,000–\$50,000	276	28.0
Over \$50,000	236	24.0
Won't specify/Refused	27	2.8
<i>Education</i>		
Not HS grad	133	13.6
HS grad	384	39.1
Some college	298	30.3
College plus	168	17.1
<i>Weight</i>		
Normal Weight	640	65.1
Overweight	344	35.0
<i>Physical activity</i>		
Active in the last month	833	84.5
Not active in the last month	152.4	15.5

of the sample (52%) reported earning over \$30,000 in gross income per year. The majority (65%) of respondents reported being of normal weight to the perceived weight question and 84.5% indicated that they were physically active in the previous month. Just over half of the sample reported that it is possible to be overweight and healthy (53%) and that overweight increases cancer risk (55%). The vast majority of participants reported that exercise is necessary to be healthy (84%). Educational attainment was excluded from all multivariate models because it was not associated at the  $p < 0.10$  level with any of the study outcomes.

**Table 2** Multivariable associations of sociodemographic variables with study outcomes, OR (95% CI)

	Possible to be overweight and healthy	Exercise is necessary for health	Overweight increases cancer risk
Age (ten-year increase)	0.91 (0.83, 0.98)	1.22 (1.10, 1.37)	1.11 (1.02, 1.21)
Female	0.86 (0.65, 1.13)	1.07 (0.74, 1.55)	0.82 (0.62, 1.09)
<i>Income</i> <sup>a</sup>			
\$15,000–\$30,000	1.06 (0.71, 1.58)	0.77 (0.46, 1.31)	0.70 (0.46, 1.05)
\$30,000–\$50,000	1.21 (0.80, 1.81)	0.76 (0.45, 1.28)	0.52 (0.35, 0.78)
Over \$50,000	1.20 (0.78, 1.84)	1.08 (0.60, 1.94)	0.91 (0.59, 1.39)
Overweight	1.11 (0.83, 1.48)	2.10 (1.36, 3.22)	1.68 (1.24, 2.26)
Physically active in the last month	1.49 (1.00, 2.21)	0.29 (0.19, 0.44)	0.77 (0.52, 1.15)

<sup>a</sup> <\$15,000 reference

Is it possible to be overweight and still be healthy?

Only age was significantly ( $p = 0.02$ ) associated with views about overweight and health in univariate analyses. A 10-year increase in age was associated with a 10% lower likelihood of believing overweight is associated with health (OR = 0.91, 95% CI: 0.84, 0.93). In multivariable analyses, age and reported physical activity were associated with views regarding overweight and health (Table 2). Age was significantly inversely related to views about overweight and health ( $p=0.02$ ), (10-year age increase, OR=0.91, 95% CI: 0.83, 0.98). Surprisingly, individuals who reported being active in the last month were 50% more likely to report believing that one can be overweight and healthy (OR=1.49, 95% CI: 1.00, 2.21). Neither gender nor income was associated with views regarding overweight and health in either unadjusted or multivariable adjusted analyses. Perceived weight was not associated with views about overweight and health, and the association did not vary by gender.

Is exercise necessary to be healthy?

Age, perceived weight, and physical activity were each univariately associated with the view that exercise is necessary to be healthy. Increasing age was associated with increased likelihood of believing that exercise is necessary to be healthy; a 10-year age increase was associated with a 26% increase (OR=1.26, 95% CI: 1.13, 1.41). Participants who perceived being overweight were twice as likely to believe that exercise is necessary to be healthy (OR=2.10, 95% CI: 1.36, 3.22). Participants who reported being physically active during the last month were more than 70% less likely to believe that exercise is necessary to be healthy (OR=0.29 95% CI: 0.19, 0.44). In multivariable analyses, age, perceived weight, and self-reported physical activity remained associated with the outcome.

Neither gender nor income was associated with the view that exercise is necessary for health in multivariable analyses. The association between perceived weight and views regarding whether exercise is necessary for health did not vary by gender.

## Does overweight increase cancer risk?

Age, perceived weight, and income were each associated with views about overweight and cancer risk in univariate analyses. Increasing age was associated with higher odds of believing that overweight increases the risk of cancer (10-year age increase OR=1.14, 95% CI: 1.06, 1.23). Participants who perceived being overweight were more likely to believe that being overweight increased cancer risk (OR=1.75, 95% CI: 1.32, 2.32). Compared to the reference category (<\$15,000 per year), participants earning \$30,000–\$50,000 were less likely to believe that overweight increases cancer risk (OR=0.52, 95% CI: 0.36, 0.78).

In multivariable analyses, age, perceived overweight, and income (<\$15,000 *versus* \$30,000–\$50,000) remained associated with views about overweight and cancer risk; however, no association was found for either gender or physical activity. The association between perceived weight and views regarding the connection between overweight and cancer was not modified by gender.

## Discussion

Many of the findings from this preliminary investigation were unexpected and highlight the complexity of Blacks' views about overweight, exercise, and health. Just over half of the respondents in our study reported believing that it is possible to be overweight and healthy. However, about 55% acknowledged that overweight is associated with increased disease risk. Most participants also acknowledged that exercise is necessary to be healthy. We found surprisingly little sociodemographic variation in these responses; however, it appears that older individuals were more likely to indicate that overweight and physical inactivity had health consequences. While responses often varied by perceived weight and self-reported exercise, no clear patterns of association with these factors emerged.

Surprisingly, we found that rates of perceived overweight were quite low; only 35% of respondents reported themselves as overweight. These data are inconsistent with national overweight prevalence data for the US black population, which suggest that fully 63% of non-Hispanic Black men and 77% of non-Hispanic Black women (over age 20) are presently overweight or obese [3]. We posit at least two explanations for this surprising finding. First, it is possible that there was underreporting of perceived overweight by a considerable proportion of the study sample. Misestimation of overweight in self-reported height and weight has been previously identified among Blacks [24–27]. There is less evidence of biased responding on perceived weight questions of the type we employed.

While intentional underreporting as an explanation for this finding is plausible, we also propose that the low rates of perceived overweight may have resulted from unintentional misestimation of the clinical overweight standard, which may be influenced by the high prevalence of overweight among the US Black population [28]. Put another way, overweight may have reached normative levels among many segments of the US Black population; the low reported rates of perceived overweight in our study may have been influenced by individuals' tendency to base their perceptions of overweight on social comparison rather than clinical guidelines. Thus, we argue that the low rates of perceived overweight found in this study should not be attributed solely to measurement error; rather, these data may highlight the need to better communicate standards for assessing body composition, particularly in populations with a high prevalence of overweight. This hypothesis should be explored in future investigations, given its potential importance in informing the design of future intervention strategies.

A slight majority of respondents reported believing that it is possible to be overweight and healthy. While there is indeed evidence that the health consequences of overweight occur at a higher body mass index for Blacks compared to Whites [29–31], it is perhaps more likely that there is lower recognition that overweight is associated with adverse health outcomes. This is consistent with previous investigations showing that some Blacks may underestimate the health risks of overweight [28, 32]. Participants reporting being physically active were 50% more likely to believe that one can be overweight and healthy. Given this very surprising finding, we questioned whether individuals who reported being physically active were also those who might be attempting to lose weight, and who might therefore identify themselves as being overweight. However, results of a chi-square analysis ( $\chi^2(1) = 4.81$ ,  $p = 0.02$ ) suggested that a significantly lower percentage of overweight participants reported being physically active (35.8% *versus* 64.2%, respectively). Thus, we speculate that it may be challenging for individuals to recognize the specific health consequences of overweight when almost two-thirds of the Black population is currently overweight.

Most participants (84.5%) however, reported believing that exercise is necessary to be healthy. There is increasing evidence that individuals in racially and ethnically diverse populations recognize the health benefits of exercise [33–35]; however, consistent with the present findings, some Blacks may view exercise as distinct from overweight and its resulting health consequences [32]. Counterintuitively, we found that overweight participants were twice as likely to agree that exercise is necessary to be healthy. This perhaps suggests that overweight participants may better

recognize the benefits of exercise for both health promotion and weight management.

Additionally, we found that those who reported being physically active in the past month were 70% less likely to agree that exercise is necessary to be healthy. It is possible that these participants were not engaging in activity primarily for the resulting health benefits, but for other considerations (*i.e.* enjoyment, necessity as part of daily activities). However, it is perhaps more likely that this finding resulted from the limitation of the no leisure time physical activity question, which may have resulted in the inadvertent conflation of self-reported physical activity from multiple contextual sources (*e.g.* leisure time, occupational, domestic, and transportation). In general, rates of reported physical inactivity in our sample were very low – only 15.5% of participants reported no leisure time physical activity in the last month. In contrast, previous national survey data [23] reports no leisure time physical activity rates of 28% among non-Hispanic Black men and 36% among non-Hispanic Black women. Despite the use of the common survey question, it is also possible that this discordance resulted from differences in sampling strategies employed by each study.

Only about half of the sample acknowledged the connection between overweight and cancer risk; overweight participants were significantly more likely to recognize the association. Compared to those who earned under \$15,000 per year, individuals reporting income in the \$30,000–\$50,000 range were almost 50% less likely to report believing that overweight is associated with increased cancer risk. We caution against over-interpretation, particularly given the inconsistent and limited socioeconomic variation across the study findings. However, it is important to note that discussion of the weight-cancer association has only recently emerged in the biomedical literature, has not been widely publicized in the popular media, and receives less consideration than the connection between weight and other health conditions (*e.g.* cardiovascular disease, diabetes). Thus, it is not particularly surprising that 45% of the sample would not identify the connection between overweight and cancer risk. Nevertheless, these data may serve as a basis upon which to gauge the efficacy of future health communication efforts in this area. This may also prove to be an important future target for intervention, given the high incidence of weight-related cancers among Blacks [36, 37].

The potential for developing weight management interventions for Blacks that highlight the associated health benefits remains an important area of future study. Given that aesthetic concerns may not be a particularly effective primary intervention target for weight reduction among Blacks [12, 32], future research should more explicitly

investigate the utility of developing intervention strategies for Black populations that highlight the health promoting value of weight reduction. We speculate however, that this work will need to contend with the meaning of health for some Blacks, given the high prevalence of obesity-related conditions (*e.g.* hypertension, diabetes) that themselves may have reached normative levels in some segments of the US Black population. Overall however, the lack of a consistent socioeconomic gradient in participant's responses may suggest that population-based intervention strategies designed to emphasize the health consequences of overweight may have some utility.

Several factors may limit interpretation of these findings. First, a higher response rate survey would have been desirable, although we note the evidence highlighting the difficulty of reaching Blacks in telephone surveys [38]. The low response rates associated with telephone-administered surveys similarly affects larger studies such as the BRFSS, which in 2002 reported a median response rate of approximately 44.5% (range 25.2–79.3%) [23]. Next, the logistical limitations of our survey necessitated the administration of fewer survey items than would have been preferable. Therefore, we utilized the BRFSS no leisure time physical activity question that is widely used, but may be limited in scope and external validity. Additionally, because of logistical limitations and our a priori interests concerned perceived weight, we administered a standard perceived weight question and did not include self-reported height and weight questions. Given their demonstrated comfort with higher body weights, the health impacts of discordance between perceived and measured weight among Blacks is an important area of future study. Given the paucity of validated items concerning the health consequences of overweight, we designed questions that emerged from our formative research. A related concern, while we recognize that overweight has not been linked to increased risk of all cancers, we nevertheless utilized a general question, given the relatively recent emergence of the empirical connection and the low likelihood of participants making distinctions between cancer types. We chose to combine data from participants who reported being either underweight or average weight. The association with the three outcomes, overweight and health ( $X^2 = 0.03$ ,  $p = 0.86$ ), exercise and health ( $X^2 = 2.67$ ,  $p = 0.10$ ) and overweight and cancer ( $X^2 = 0.25$ ,  $p = 0.62$ ), did not significantly differ between those who reported being underweight *versus* average weight. Finally, the present sample was drawn from a pool of respondents from previous surveys. Thus, these participant's responses might not necessarily generalize to the entire population. Overall, we recognize the surprising nature of many of these outcomes and strongly recommend that additional work seek to replicate and further contextualize our findings.

Despite these limitations, this study has several important findings. Taken together, these data highlight opportunities to intervene upon Blacks' recognition of the health consequences of overweight. Given that weight management interventions have shown very limited success among US Blacks [39–46], these preliminary findings suggest that some paradigm shifts may be necessary in our understanding of Blacks' views about weight in order to better intervene.

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