

## Self-Reported Obesity and Obesity-Related Behaviors

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**ABSTRACT** - This study used survey methodology to identify the self-reported behavioral patterns in Alabama that are associated with obesity. The participants were 400 randomly selected Alabama residents who were interviewed by telephone. The survey questionnaire had questions designed to measure self perceptions of body image, body mass index (BMI), and self-reported behavioral patterns. Based on the sample in this survey, a majority of survey respondents (58%) were overweight. Further, there is a significant difference between the number of people who were overweight and those who believe they were, with actual obesity exceeding self perceptions. The primary reason that most people (80%) gave for not dieting to lose weight was that it was too hard to count calories. Other factors which interfered with dieting to lose weight were a belief that diets don't work (66%), over-saturation of talk about dieting (62%), and the expense of eating a healthy diet (56%).

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Recent research has focused in the growing role of obesity as a national health problem. The Center for Disease Control (2002) has called obesity an "public health epidemic", with more than 60 percent of America's population currently overweight. The decade of the 1990s alone saw a 50 percent increase (Mokdad, et al, 1999). An estimated 280,000 people deaths were caused by obesity in 1991 alone (Allison, et al, 1999), with obesity becoming a detrimental factor in the health of both men and women (Bowman, et al, 1999; Wardle, Wailer & Jarvis, 2002). Such numbers point to an alarming trend, since excess weight contributes to a variety of other health problems such as heart failure (Kenchaiah, et al, 2002), diabetes (Hillier & Pedula, 2001; Mokdad, et al, 2001), cardiovascular diseases (Glowinska, Urban & Koput, 2002; Wilson, et al, 2002), cancer (Michaud, et al, 2001) and a variety of other medical problems (Pi-Sunyer, 1993). The result is that obesity now outranks both smoking and drinking as a factor contributing negatively to both the quality and cost of individuals' health (Sturm, 2002) and to the quality of their lives (Simmons, 2001).

Several individual difference factors, including both behavioral and demographic variables, are known to contribute to obesity. Obesity is known to be related to such individual behaviors as activity level (Michaud, et al, 2001), eating habits (Blokstra, Burns, & Seidell, 1999; Harvey, et al, 2002), and television viewing habits (Robinson, 1998). Individual motivations for engaging in weight-reduction behaviors include both health and appearance reasons (Cheskin & Donze, 2001), but growing numbers choose neither motivation. Obesity among women is also associated with income and marital

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status; married women from lower income groups are especially susceptible to obesity (Kahn & Williamson, 1991).

Ethnic heritage is also a major factor, particularly among African-American women. While blacks in general are more susceptible to obesity (Burke & Bud, 1996; Paeratakul, Lovejoy, et al, 2002; Paeratakul, White, et al, 2002), the problem is particularly acute among black women. Many black women have historically considered the thin ideal to be unattractive, opting instead for a physically bigger self-image passed down by their mothers that emphasizes bulk and curves (Nichter, 2001; Weaver, Gaines, & Ebron, 2001). Not surprisingly, these ideals result in a higher risk for cardiovascular disease among black women (Morrison & James, 1999).

A variety of treatment options are now being tested and proscribed to deal with this growing problem. These treatments range from mild interventions (such as dietary modifications) to pharmacological treatments and even surgical interventions such as bariatric surgery (SpenceJones, 2003). However, each of these treatments has risks that must be assessed by the individual practitioner and patient before moving forward. If the practitioner is to "first do no harm," then he or she must be able to understand the risks of treatment versus the risk of not treating (Chase, 1994). It is therefore important for the practitioner and patient to clearly understand the degree of risk which is primarily related to how obese the patient is.

A critical step in any health model is the individual patient's perceived susceptibility to the condition and the perceived seriousness of the condition (Becker & Mainman, 1975). In terms of obesity, it is important to know whether obese people understand that they are obese and if they understand the risks associated with obesity. Moreover, the patient is more likely to take action if they perceive that the benefit outweighs the risks. Therefore, it is important that the practitioners understand the concerns of their patients' and phrase their recommendations in light of those concerns (Becker & Mainman, 1975).

Based upon these rationales, the following research questions were tested. 1. Will body image differ significantly by age, gender, and ethnicity? 2. Is there a difference between perceived body image and actual body image, in terms of obesity? 3. What are the major reasons that people give for not losing weight? 4. What are the perceived major benefits of losing weight? 5. Is there a relationship between television viewing habits and obesity?

## Method

### *Participants*

The participants were four hundred residents of Alabama who were interviewed in a statewide random sample taken October 7-11, 2001 (margin of error  $\pm$  4.9%, with a 95% confidence level). Participants were selected using the following procedure. First, a sampling frame was developed by dividing the state into six geographical areas and percentages assigned to each area based upon 1996 population estimates. Second, 8,000 phone numbers were randomly selected and divided into subgroups based on the geographical breakdown; numbers were randomly selected, and the individual was contacted by telephone and asked if they were a registered voter and if they would participate in the research project. The response rate for those who contacted, qualified and agreed to participate was 71.4%. In terms of ethnic background, 79% of the respondents were white, 16% were black, and 5% belonged to other ethnic groups (e.g., Hispanics and Asians). Counting non-response (answering machines, no answer, etc), the overall response rate was 27.9%.

### *Survey Questionnaire*

The survey questionnaire consisted of a series of questions about eating habits and

perceptions of body image. Body image was cross-classified using two approaches. Self perception of body image was measured with the question: "Which of the following best describes your current attitude about dieting and losing weight - are you underweight and don't have to worry about dieting, about average weight, somewhat overweight but not enough to need a diet, or overweight and would like to lose some of those excess pounds?"

Responses to this question were compared by asking the participant to provide their height and weight. These numbers were then used to calculate a body mass index (BMI, calculated as weight in kilograms divided by height in meters squared) for each participant (Daniels & Khoury, 1997). The standard categories are underweight (BMI less than 18.5), normal (BMI, 18.5 to 24.9), overweight (25 to 29.9), and obese (30 or higher).

Reasons for not dieting to lose weight were measured with a series of statements. The participants responded to each statement using a Likert-type scale: "strongly agree, agree, unsure, disagree, or strongly disagree." The responses were coded as an interval scale that ranged from 1 ("strongly disagree") to 5 ("strongly agree"). The specific questions were: "It's hard to keep up with how many calories you eat in a day." "Going on a diet is expensive, because low calorie foods cost more than regular food." "I don't have time to diet." "Dieting is just too inconvenient." "I have trouble keeping up with how much I eat." "It's just too hard for the average person to lose weight." "I'm tired of hearing so much talk about diets and losing weight." "Most diets don't work."

Rationales for losing weight were measured with a series of statements which the participants were asked to rate the importance of each one as a reason for someone who would want to lose weight. Possible responses were "very important, somewhat important, or not important." The specific statements were: "So they can improve their health." "So they can improve their appearance and be more physically attractive." "So they can live to see their children grow." "So they can wear clothes they haven't been able to wear recently." "So they can feel good about themselves." "So they will be socially comfortable around their friends and romantic partners." Television viewing habits were measured by asking: "On an average, how often do you watch television every day - less than one hour, one hour to two hours, two hours to four hours, four to eight hours, or more than eight hours?"

### ***Statistical Analysis***

RQ-1 was tested with three Chi-Square analysis, using the perceived body image as nominal categories. RQ-2 was tested with a binomial comparison between perceived body image and actual body image as calculated with the BNII. RQ-3 and RQ-4 were tested with a series of paired comparison t-tests for dependent samples. RQ-5 was tested with a Chi-Square analysis (TV viewing-by-body image).

## **Results**

### ***Individual Differences in Body Image***

There was no significant difference in body image by gender ( $\chi^2(3)=1.96$ ) or by ethnic background ( $\chi^2(6)=4.56$ ). There was, however, a significant difference in body image by age ( $\chi^2(9)=23.34, p < .005$ ). Those who were more likely to view themselves as being of average weight were young adults (18-34 year olds, 53%) and those over 65 (54%), while 35-49 year olds (35%) and 50-65 year olds (34%) were less likely to have that body image. Most of the 35-49 year olds (61%) viewed themselves as being either overweight (39%) or obese (22%). Similarly, most of the 50-to-65 year olds (69%) also thought they were either overweight (33%) or obese (26%).

### **Body Image Perceptual Difference**

Based on the calculations of body mass index, a majority of the participants in this survey (58%) are overweight (i.e., having a BMI of 25 or higher). Further, there is a gap between the number of people who are overweight and those who believe they are, since only forty-nine percent (49%) reported being overweight using the self-report measure. A binomial analysis found that the 9% difference in those two numbers was statistically significant ( $p < .001$ ). Further, the number of individuals with inaccurate perceptions about their weight is actually higher than that, since the inaccuracy can occur in both directions. A cross-tabulation of perceptions by BMI found that 16% of those with normal BMI ratings thought they were overweight, while 24% of those who were actually overweight (according to BMI calculations) viewed themselves as being of normal weight ( $\chi^2(1) = 141.97, p < .001$ ).

However, this under-estimation does not appear to occur with true obesity, as compared to simply being overweight. The total number of respondents identified as obese or very obese, using the body mass index formula, is the same as the number of people who say they would like to lose weight (22%). Body image perceptions also varied significantly by age (21%  $23.33, p < .005$ ). Young adults (53%) and older adults (54%) were more likely to describe themselves as being of average weight, while a majority in the middle-aged categories (35-65) described themselves as overweight or somewhat overweight.

### **Perceived Difficulties in Dieting to Lose Weight**

The perceived difficulties that most people ( $M = 3.99$ ) gave for not dieting to lose weight was that it was too hard to count calories - a response that was significantly higher than any other alternative ( $t = 4.16, p < .001$ ). Other factors which interfered with healthy diets were a belief that diets don't work (3.62), over-saturation of talk about dieting (3.43), and the expense of eating a healthy diet (3.30). Each of these factors was significantly higher ( $t = 2.26, p < .05$ ), than lack of time (2.30), inconvenience (2.70), too hard to lose weight (2.75), and keeping up with one's food intake (2.61).

### **Perceived Benefits of Weight Loss**

Three major perceived benefits were identified for losing weight: to see their children grow up (4.81), to improve their health (4.78), and to feel good about themselves (4.65). There was no significant difference between ratings for seeing their children grow up and improving their own health, but both of those items rated higher than feeling good about themselves ( $t = 3.01, p < .005$ ). All three items were rated significantly more important ( $p < .001$ ) than social comfortability (3.96), physical attractiveness (3.89), and wearing clothes (3.42).

### **Television Viewing Habits**

No direct relationship between television viewing and obesity was identified in this survey ( $\chi^2(4) = 3.26$ ). There was no significant difference in the actual viewing habits of obese and non-obese participants.

## **Discussion**

Several results identified in this study warrant further investigation. First, this study found no significant ethnic difference in obesity - a finding that is at odds with many earlier studies. This may indicate that the ideal body image of blacks and whites is growing closer together, possibly due to the homogenization of that image in popular culture or perhaps due to a growing integration of the two races into a single culture. Both possibilities warrant further investigation.

No significant impact for television viewing was identified either. Since this result is also at odds with some previous research, additional investigation into this topic is warranted. One possibility, though, is that television viewing has reached or is approaching a saturation level for all member of American society, with most people having similar viewing levels. Meanwhile, as more members of the population have come to recognize the potential obesity effects of such behavior, some of them could be expected to address those effects by employing some counter measures (such as increasing exercise). Such counter measures have the potential to mitigate the obesity effects among some viewers. Another possibility is that the obesity effects caused television viewing may be mitigated by the ideal of a thin body image that is often promoted by television programming and advertising (Harrison, 1997, 2000). Thus, while increased television viewing may reduce exercise for individuals, it may also increase their motivation to avoid obesity. Additional research is needed to verify these possibility.

A majority of the respondents in this study were overweight. Further, there was a significant difference between the number of people who were overweight and those who believe they were, with actual obesity exceeding self perceptions. The primary reason that most people gave for not dieting to lose weight was that it was too hard to count calories. Other factors which interfered with dieting to lose weight were a belief that diets don't work, over-saturation of talk about dieting, and the expense of eating a healthy diet.

Generally, the results also indicated that people who are obese tend to recognize that they have a weight problem, but they simply have not made a commitment to change the eating behaviors needed to address that problem. Those who are moderately overweight, however, sometimes dismiss their problem as anything serious. That reaction is not realistic, since even moderate obesity can contribute to health problems (CDC, 2002). Among these individuals, intervention efforts must first get the individual to understand their problem. While moderate obesity may not call for highly intrusive procedures such as bariatric surgery, minor dietary changes may be in order.

Obese people sometimes attribute their obesity to the wrong causes. For example, those who were obese often attributed television viewing, and the resulting decline in activity that it caused, as a reason for their obesity. In reality, though, their viewing habits did not differ significantly from the viewing habits of the non-obese. That would imply that some other factor - probably their eating habits - has more to do with their obesity than does their activity levels. Still, this study only examined the respondents perceptions of the factors contributing to their weight problems. The secondary emphasis of activity level may simply be a perceptual factor that underestimates the true impact that activity can have on weight control.

Regardless, the results indicate that body image is an important component in coping with a weight problem. Further, the individual differences between those who are overweight and those who are truly obese provide a good first step in researching and ultimately treating obesity. Those who are overweight, but not obese would probably benefit from public health campaigns that educate them on standards of health and weight. On the other hand, such educational efforts would likely be wasted on the truly obese population. This group clearly knows that they are obese. Educating them about BMI standards would, at best, be redundant. Further analysis of this population indicates that health efforts should focus on methods and techniques of weight loss. By understanding the individual differences of overweight and obese individuals, body image, health messages, and treatment can be more focused and likely more effective.

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