Who Reports Receiving Advice to Lose Weight?

Results From a Multistate Survey

Christopher N. Sciamanna, MD, MPH; Deborah F. Tate, MS; Wei Lang, PhD; Rena R. Wing, PhD

Background: Overweight and obesity are increasingly prevalent in the United States. The prevalence of health care provider advice to lose weight is not clear.

Methods: We examined the percentage of individuals who reported being advised to lose weight by a health care practitioner in the past year by population subgroup. Participants were individuals in the 10 states participating in the 1996 Behavioral Risk Factor Surveillance System, which assessed advice to lose weight, hypertension awareness, and cholesterol awareness.

Results: The prevalence of reporting advice to lose weight was most strongly associated with body mass index (BMI) (calculated as weight in kilograms divided by the square of height in meters) and weight-related comorbidities. In individuals with a BMI of 25 to 27, only 5.6% of those with no comorbidities and 13.6% of those with comorbidities received advice. These rates were increased to 32.4% and 47.3%, respectively, in those with a BMI greater than 30. Middle-aged individuals, those with more education, and those living in the northeast were also more likely to receive advice. Receiving advice to maintain weight was reported by only 2.5% of respondents. Receiving advice to lose weight was strongly associated with trying to lose weight, especially in those with a BMI of 25 to 27, where 77.5% who received advice reported trying to lose weight vs 33.4% of those who did not receive advice.

Conclusions: Advice to lose weight is uncommon and is given primarily to those who are already obese, are middle-aged, and have comorbidities. Practitioners may be missing important opportunities to counsel mildly overweight individuals to lose weight or to maintain their weight and thereby prevent comorbidities.

Arch Intern Med. 2000;160:2334-2339

OVERWEIGHT and obesity are increasingly prevalent in the United States. Based on data from the Third National Health and Nutrition Examination Survey, 59.4% of men and 50.7% of women in the United States are overweight or obese (body mass index [BMI] [calculated as weight in kilograms divided by the square of height in meters] >25). These individuals are at increased risk of premature mortality and have higher morbidity due to coronary heart disease; type 2 diabetes; hypertension; stroke; and cancers of the colon, prostate, and breast. Overweight and obesity negatively impact quality of life by limiting mobility and physical endurance and by contributing to social, academic, and job discrimination.

Physician screening and counseling may be an effective approach to this national problem. A growing body of evidence supports the efficacy of physician counseling to encourage physical activity and smoking cessation. Fewer studies have evaluated the role of physician advice in promoting weight loss in overweight individuals. Addressing overweight and obesity in primary care is recognized as a national health priority in the Healthy People 2000 health objectives for the United States.

The present study used data from the 1996 Behavioral Risk Factor Surveillance System (BRFSS) to examine the proportion of overweight and obese individuals who report receiving advice to lose weight from a health care provider in the past year, the factors associated with receiving this advice, and the relation between receiving such advice and reporting efforts to lose weight.

RESULTS

Overall, 14.4% of respondents reported that a health professional had advised them to lose weight in the past year (Table 1). The proportion of individuals who re-
PARTICIPANTS AND METHODS

METHODS

The BRFSS is cross-sectional survey of health risk behaviors in noninstitutionalized civilian adults aged 18 years and older. Data are collected by state health departments, in collaboration with the Centers for Disease Control and Prevention, and use an independent probability sample of adults residing in that state. Details about the sampling method, purpose, validity, reliability, and methods of analysis of the BRFSS have been published elsewhere.12,13

All states use an identical set of core questions and have the option of adding other individual questions or standard sets (modules) of questions. The present analyses are based on the 10 states that included the modules about hypertension awareness and cholesterol awareness. Analyses were restricted to these 10 states because the presence of weight-related comorbidities was expected to have a large effect on physicians’ advice to lose weight. The total sample for the 1996 BRFSS was 124085; the 10 states used in this analysis had a sample of 13288. Analyses were restricted to respondents who reported that they had a routine checkup with a physician in the past 12 months, bringing the final sample to 10187.

Participants were asked, “In the past 12 months, has a doctor, nurse, or other health professional given you advice about your weight?” Multiple-choice response options were “Yes, lose weight,” “Yes, maintain weight,” “Yes, gain weight,” and “No.” The present analysis focused on the response “Yes, lose weight,” with exploratory analyses performed on “Yes, maintain weight” and “Yes, gain weight.” The BRFSS instrument does not ask, however, who the advice was from (eg, physician or nurse).

All respondents were also asked their height and weight, which were used to determine BMI; participants were divided into the following BMI categories: less than 23, 23 to 25, 25 to 27, 27 to 30, greater than 30. Although a BMI of 25 to 30 is now considered “overweight,” this category was subdivided at 27 because, until recently, a BMI greater than 27 was used to define overweight. Other variables considered were age, sex, race and ethnicity, and region of the country (south, midwest, or northeast), education level, age (18-30, 31-40, 41-50, 51-60, and >60 years), region of the country (south, midwest, or northeast), or the presence of weight-related comorbidity (yes or no). Separate χ² statistics were also calculated to examine the association between BMI and advice to gain weight or advice to maintain weight.

Stepwise logistic regression was then conducted to model the relation between advice to lose weight and these demographic variables. Age was represented in the model by a linear and a quadratic term to account for the nonlinear association between age and advice to lose weight. Body mass index was entered as a continuous measure.

Logistic regression was also used to determine whether trying to lose weight and types of strategies being used to lose weight were related to whether the individual reported being advised to lose weight by their health care provider. These analyses also include BMI category (25-27, 27-30, or >30) as a possible predictor of trying to lose weight and examined the interaction of BMI × advice to lose weight. Individuals with a BMI of less than 25 were omitted from this analysis because advice to lose weight was rarely given to these individuals.

All analyses were performed using statistical software (SAS version 6.12; SAS Institute Inc, Cary, NC).

Participants were categorized as having a weight-related comorbidity if they reported having been told that they have a high blood cholesterol level, high blood pressure (on >1 occasion), or nongestational diabetes. Diabetes was considered a weight-related comorbidity only in those older than 45 years to increase the likelihood that the individual had type 2 diabetes mellitus.

Respondents were also asked if they were currently trying to lose weight; those who answered “yes” to this question were then asked if they were “eating fewer calories to lose weight,” “eating less fat to lose weight,” or “using physical activity or exercise to lose weight.”

STATISTICAL ANALYSIS

Descriptive statistics were used to determine the distribution of sociodemographic characteristics. χ² Analyses were then conducted to determine whether the respondent’s report of having been advised to lose weight (received advice vs did not receive advice to lose weight or was advised to maintain or gain weight) was related to sex, race, education level, age (18-30, 31-40, 41-50, 51-60, and >60 years), region of the country (south, midwest, or northeast), or the presence of weight-related comorbidity (yes or no). Separate χ² statistics were also calculated to examine the association between BMI and advice to gain weight or advice to maintain weight.

Stepwise logistic regression was then conducted to model the relation between advice to lose weight and these demographic variables. Age was represented in the model by a linear and a quadratic term to account for the nonlinear association between age and advice to lose weight. Body mass index was entered as a continuous measure.

Logistic regression was also used to determine whether trying to lose weight and types of strategies being used to lose weight were related to whether the individual reported being advised to lose weight by their health care provider. These analyses also include BMI category (25-27, 27-30, or >30) as a possible predictor of trying to lose weight and examined the interaction of BMI × advice to lose weight. Individuals with a BMI of less than 25 were omitted from this analysis because advice to lose weight was rarely given to these individuals.

All analyses were performed using statistical software (SAS version 6.12; SAS Institute Inc, Cary, NC).

The adjusted odds of being advised to lose weight (vs receiving no advice or being advised to gain or maintain weight) were more than doubled in respondents with a weight-related comorbidity compared with those with no comorbidity (Table 2). The highest frequency of reporting advice to lose weight occurred in those with a comorbidity and a BMI greater than 30; however, even in these respondents, only 47.3% reported that they had been advised to lose weight.

There was a curvilinear effect of age on the proportion who reported having been advised to lose weight. Among those aged 41 to 60 years, 19% reported being advised to lose weight compared with only 9% of those aged 18 to 30 years, 14% of those aged 31 to 40 years, and 12% of those older than 60 years.

The adjusted odds of reporting being advised to lose weight (vs receiving no advice or being advised to gain or maintain weight) was 40% greater in those with at least some college education compared with those with less than a high school education. The probability was also increased in those with higher education. Individuals living in the midwest (vs the northeast) were less likely to
Because the proportion of individuals who reported having been advised to lose weight was lower than expected, we also determined the proportion who were told to maintain their weight or gain weight. Only 2.5% of respondents were advised to maintain weight and 1.9% were advised to gain weight, with no significant association between BMI and these types of advice.

The next set of analyses examined the association between being advised to lose weight and trying to lose weight. Logistic regression indicated that trying to lose weight was significantly associated with BMI category and with having been advised to lose weight ($P<.001$ for both). The interaction of BMI category and advice to lose weight was also significant ($P<.001$). As shown in Figure 2, the association between receiving advice to lose weight and trying to lose weight was strongest in those in the lowest BMI category. Only 33.4% of individuals with a BMI of 25 to 27 who had not received advice to lose weight from their health care provider reported trying to lose weight. In contrast, 77.5% of individuals in the same BMI category who reported being advised to lose weight reported trying to lose weight.

Individuals who were trying to lose weight were also asked about specific strategies they were using, and comparisons were made between those who had been advised to lose weight and those who had not received such advice. Being advised to lose weight by a health care provider increased the proportion who reported eating di-
Obesity and overweight are increasingly being recognized as important health problems that must be managed as chronic diseases. Physicians are in a key position to assess obesity and to advise patients to lose weight when indicated. We therefore sought to determine the proportion of individuals who reported that their physician had advised them to lose weight. Our main finding is that advice to lose weight is given primarily to those who are obese (rather than to those who are overweight) and to those who already have obesity-related comorbidities rather than to prevent such disease.

There was also evidence that physicians’ advice to lose weight is associated with the prevalence of trying to lose weight and that such advice might have its greatest impact on those in lower BMI categories. The proportion of individuals with a BMI of 25 to 27 who reported trying to lose weight was 77.5% in those who had been advised to lose weight compared with 33.4% in those who had not been given such advice.

In general, we were struck by the low prevalence of reports of advice to lose weight. Even in those with a BMI greater than 30 and a weight-related comorbidity, only 47.3% reported receiving such advice.

In the present study, the odds of reporting being advised to lose weight was 2-fold greater in those with a weight-related comorbidity (diabetes, hypertension, or hypercholesterolemia) than in those without such a comorbidity. Similarly, Heywood et al14 found that patients with a weight-related diagnosis were twice as likely to receive weight counseling, and Logue et al15 and Heath et al16 found that physicians were more likely to record weight advice in the charts of overweight patients with weight-related comorbidities.

Advice to lose weight was associated with BMI (Figure 1), and only 9.8% of individuals with the most mild degrees of overweight (BMI, 25-27) were advised to lose weight. Advice to lose weight was also differentially reported by respondents of different ages. The highest prevalence of such reports were at ages 41 to 60 years, when many weight-related comorbidities developed. Older individuals (>60 years) were less likely to receive advice, perhaps reflecting the controversy regarding the risks of obesity in older individuals.17 Younger individuals (18-30 years or 31-40 years) were also less likely to report receiving advice to lose weight; this finding is of greater concern because physicians might be missing an important opportunity for prevention with younger overweight patients. In the present analyses, only 8.7% of individuals aged 18 to 40 years with a BMI of 25 to 27 reported being advised to lose weight. We considered the possibility that these younger overweight individuals were being advised to maintain their weight but found that only 2.5% of all respondents reported receiving such advice. Recent data suggest that weight gain occurs most frequently in individuals aged 25 to 34 years18 and that weight gain after age 20 years increases the risk of coronary heart disease and other weight-related comorbidities.19 Therefore, an important goal would be to increase the prevalence of physician advice regarding weight maintenance.
and weight loss in these younger overweight individuals in an effort to prevent weight gain and the development of weight-related comorbidities.

In the present analysis, women and men reported comparable rates of being advised to lose weight. After adjusting for other covariates, however, the multivariate model showed a trend for women to report receiving advice to lose weight more frequently than men. Both the 1990-1991 Missouri BRFSS and a national survey of more than 2000 overweight adults in 1997 found that women were more likely to report receiving advice to lose weight. Because overweight and obesity pose similar risks for both sexes, the reasons for these differences are not clear.

It is unclear why respondents from the midwest report lower rates of advice to lose weight; differential interest in body weight or threshold for overweight in different parts of the country might affect physicians’ willingness to address this topic with their patients. Individuals with higher education levels were also more likely to report having received advice to lose weight. Because education is often a proxy for socioeconomic status, this might reflect physicians’ beliefs that better educated or more financially secure individuals are more likely to be in a position to make changes in their weight by changing their food intake or physical activity patterns.

Advice to lose weight is reported with equal frequency in whites, Hispanic Americans, and African Americans after adjusting for BMI, education, and region of the country. Results of previous studies suggest that white women are more concerned about their weight at lower levels of overweight than minority women, report greater discrepancy between their current and goal weight, and are less likely to be satisfied with their size. A survey of women, however, found no differences in weight concern and body image satisfaction between race groups when they were matched for socioeconomic status.

Results of this study also indicate a strong association between being advised to lose weight and trying to lose weight. Individuals who had been advised to lose weight were clearly more likely to report trying to lose weight. However, there is no way to verify this self-report of trying to lose weight, and respondents might just have wanted to seem adherent to their physicians’ advice. Moreover, advice to lose weight seemed to have its greatest impact on those in the lower BMI categories. For individuals with a BMI of 25 to 27, the prevalence of trying to lose weight was more than twice as great in individuals who had been advised to lose weight (77.5%) than in those not given such advice (33.4%). The potential public health impact of this finding is particularly noteworthy. Whereas only 9.8% of individuals with a BMI of 25 to 27 in this study were advised to lose weight (13.6% of those with a BMI of 25-27 and a comorbidity), this group seems to be most receptive to such advice. Differential recall of advice, however, by those more and less overweight may bias this finding; audio tape validation is needed to further understand this bias.

Strengths of this study include the large sample size and the representativeness of the sample. However, in considering the results of this study, several limitations must be kept in mind. First, all data are based on respondents’ reports of whether they were advised to lose weight and thus are subject to recall bias. Advice to lose weight may be brief and therefore may not be recalled. Published data on recall of physician advice to modify behaviors is limited to smoking cessation counseling. Folsom and Grimm found that only 60% of patients who received smoking cessation counseling as part of a research protocol recalled such advice 3 months later. Physicians’ recall, however, might not be as accurate as patient recall of advice; Pbert and colleagues found that physicians in a smoking cessation counseling study advised only 71% to quit (validated by tape recording), although 100% of physicians reported dispensing such advice. With longer delays, there may be greater problems with recall. Frank and colleagues found that 9.1% of individuals who initially recalled receiving advice to quit smoking no longer recalled

---

Table 3. Participants Reporting Receiving Health Professional Advice to Maintain or Gain Weight in the Past Year

<table>
<thead>
<tr>
<th>Body Mass Index*</th>
<th>&lt;23 (n = 1879)</th>
<th>25-27 (n = 1734)</th>
<th>&gt;30 (n = 1948)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advised to lose weight, %</td>
<td>2.6</td>
<td>3.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Advised to gain weight, %</td>
<td>1.1</td>
<td>0.3</td>
<td>0.3</td>
</tr>
</tbody>
</table>

*Calculated as weight in kilograms divided by the square of height in meters: weight (kg)/[height(m)]^2.
receiving such advice several years later. Finally, the opposite problem, namely, overreporting of advice, might occur. Ward and Sanson-Fisher compared audiotapes with patient exit interview reports and found that patients overreported receiving advice to quit smoking (specificity, 82%; sensitivity, 92%). Because of social pressure, this overreporting of advice may be particularly apparent in individuals with the highest BMIs. Changes in respondents’ BMI between the physician visit and the time of the BFRR survey might also have occurred. This effect is probably small, however, because weight changes over time average 0.45 to 0.9 kg per year. Finally, the outcome question is worded, “Has a doctor, nurse, or other health professional given you advice about your weight?” It is possible that patients are recalling advice from another health professional (eg, nutritionist or dietitian), and conclusions might not apply specifically to physicians, although, as the task of providing health advice typically falls to the physician, we are confident that the results are applicable to physicians. More research is needed to understand the frequency of counseling from other health care providers because, in research settings, other health care providers can be effective at encouraging behavior change.

The main finding in this study is that rates of reporting advice to lose weight are low, which might reflect typical barriers to preventive counseling (eg, lack of time, reimbursement, and support) but may also reflect the lack of clear evidence that weight loss is really beneficial to individuals. Results of several randomized trials suggest, however, that providing brief training to physicians regarding obesity may lead to better counseling regarding this issue and to better weight losses in their patients. Further efforts are therefore needed to train physicians to assess obesity and advise patients about weight loss. Brief counseling (3-10 minutes) from a physician regarding smoking has been shown to be effective. Similar positive results may occur with physician advice to lose or maintain weight.

Accepted for publication March 2, 2000.

We thank Bess Marcus, PhD, for her thoughtful review of the manuscript.

Corresponding author: Christopher N. Sciamanna, MD, MPH, The Miriam Hospital, RISE Bldg, 164 Summit Ave, Providence, RI 02906 (e-mail: csiamanna@lifespan.org).

REFERENCES


