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The Impact of Physician Weight Discussion on Weight Loss in US Adults

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Abstract

Problem—The increasing prevalence of overweight and obesity in the United States and worldwide is at epidemic levels. Physicians may play a vital role in addressing this epidemic. We aimed to examine the association of a physician's discussion of patients' weight status with self-reported weight loss. We hypothesized that physician discussion of patients' being overweight is associated with increased weight loss in patients with overweight and obesity.

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Methods—Data analysis of participants (n=5,054) in the National Health and Nutritional Examination Survey (NHANES) in 2005-2008. The main outcome was rates of self-reported weight loss and the association with physicians' discussion of their patients' weight status.

Results—Overweight and obese participants were significantly more likely to report a 5% weight loss in the past year if their doctor had told them they were overweight (adjusted OR (AOR) 1.88; 95% CI 1.45-2.44; AOR 1.79; 95% CI 1.30-2.46, respectively).

Conclusions—Physicians' direct discussion of their patients' weight status is associated with clinically significant patient weight loss and may be a targetable intervention. Further studies are needed to determine if increasing physician discussion of patients' weight status leads to significant weight loss.

Keywords

Weight counseling; weight loss; primary care; physician counseling

Introduction

The increasing prevalence of overweight and obesity in the United States and worldwide is at epidemic levels and has placed significant financial burdens on health care systems and the health of individuals.(1-3) Physicians are charged to discuss weight with patients, yet they continue to struggle with identifying and counseling their patients effectively.(4-5) Furthermore, the rate of obesity counseling by physicians appears to be declining, possibly due to physicians lacking confidence to counsel well and having low outcome expectations that their counseling helps patients lose weight.(4) Still, patients expect their physician to address their weight, and when physicians do not, patients may infer that their weight is not a problem.(6) Thus it is imperative that physicians address weight, but such counseling needs to be simple and effective given physicians' competing demands.

The effectiveness of several different weight control interventions, including the 'Five A's' method, Motivational Interviewing, and the use of visual prompts, has been assessed in previous studies of doctor-patient weight counseling with mixed results.(7-8) Although intensive interventions that have addressed diet and nutrition have achieved more success in helping patients to lose weight, physicians often do not have time to provide such counseling due to the increasing number of clinical issues addressed at visits.(9-12). Furthermore, physicians appear to have negative attitudes and beliefs about their overweight or obese patients and their ability to adhere to medical recommendations.(13-14) Physicians also feel inadequately prepared to offer weight counseling to their patients and may be unaware of suitable initial weight loss targets.(15-16)

Simple interventions, such as a physician acknowledgement of patients' weight, have recently been shown to increase the accuracy of patients' perceptions of their weight, in addition to increasing their desire and attempts to lose weight.(17-18) This suggests that complex or time-consuming weight control interventions may not be needed to alter patients' attitudes about their weight and weight control behaviors. Similarly, physician advice has been found to impact patients' behavior regarding preventive medicine, including diet and

exercise.(19) The objective of this study is to examine the association of a doctor's discussion of patients' weight status with self-reported weight loss. Data from the 2005-2008 National Health and Nutrition Examination Survey (NHANES) were analyzed. We hypothesized that participants who reported their physician discussed their weight status explicitly would be more likely to report a clinically significant weight loss over the past year.

Methods

We analyzed data from the 2005-2008 NHANES to determine the impact of physicians' telling participants they are overweight. This annual survey evaluates the health and nutrition of US adults through a series of questionnaires, physical examinations, and laboratory samples, which have been described elsewhere.(18, 20) For this analysis, we included participants between the ages of 20 and 64 with a measured body mass index (BMI) of ≥ 25 who responded to the question, "Has a doctor or other health professional ever told you that you were overweight?" Participants with a BMI between 25 and 29.9 were classified as overweight whereas participants with a BMI ≥ 30 were classified as obese; in accordance with National Heart, Lung, and Blood Institute guidelines.(21) Women who were currently pregnant were excluded. Thus, our final sample included 5054 participants, with 2405 participants classified as overweight and 2649 participants classified as obese.

The demographic characteristics we controlled for in our multivariate analysis included age, gender, race/ethnicity, general health, education level, marital status, family poverty to income ratio (family income divided by the U.S. Department of Health and Human Services' poverty guidelines), the number of places and number of times the participant reported receiving healthcare in the last year, and diagnoses of hypertension and diabetes. Prior studies have shown an association between these characteristics and weight loss or the receipt of health advice from a physician.(22-24) Further, ethnic minorities, particularly obese black patients, are less likely to receive obesity care.(25) Similarly, age, gender, education level, and the number of times an individual visits a physician have also been found to influence weight counseling, as well-educated female participants approaching 60 years of age who frequently visit their physician are more likely to report receiving weight advice.(23-24) Higher income and married patients also might have higher odds of receiving weight advice.(26)

The main outcome measure was the proportion of participants who lost at least 5% of their body weight in the past year. The percentage weight loss was calculated as the self-reported weight one year ago subtracted from the current weight divided by the weight one year ago multiplied by 100. This percentage weight loss was then categorized into two binary variables using cut points of $\geq 5\%$ and $\geq 10\%$ weight loss which were the primary outcome variables to be associated with a physician's discussion of a patient's weight status. This study was determined to be exempt by the Penn State College of Medicine Institutional Review Board.

Statistical Analysis

A weighted analysis employing procedures in SAS 9.2 (SAS Institute, Cary, NC) which take into consideration the complex sampling stratification and clustering used by the NHANES study was used for all analyses. A weighted Chi-square analysis was used to make comparisons between overweight and obese respondents in terms of demographic and clinical characteristics as well as the physician's discussion of a patient's weight status. Within the obese and overweight groups, weighted multivariable logistic regression model was used to determine the association of the physician's discussion of a patient's weight status with the percentage weight loss (5% or 10%) adjusted for all of the demographic and clinical characteristics. Odds ratios were calculated to determine the direction and magnitude of the associations and are adjusted for all of the other variables in the model.

Results

Table 1 describes demographic characteristics of 2005-2008 NHANES participants who were classified as overweight (n=2405) or obese (n=2649). Significant differences were not observed between overweight and obese participants in education level, marital status, and poverty to income ratio. Overweight and obese participants were also more likely to report losing at least 5% or 10% of their body weight in the past year if they were told by their physician they were overweight (Figure 1).

In logistic regression models, controlling for known predictors of weight loss as described above, overweight participants were significantly more likely to report a 5% loss of weight in the past year if their physician told them they were overweight (adjusted OR 1.88; 95% CI 1.45-2.44; Table 2). Obese participants reported similar results (adjusted OR 1.79; 95% CI 1.30-2.46). Overweight and obese participants had greater than two times the odds of reporting a greater than 10% weight loss if their weight status was discussed by their physician (overweight: adjusted OR 2.38; 95% CI 1.62-3.49; obese: adjusted OR 2.15; 95% CI 1.23-3.74) (Table 2).

Discussion

We observed that patients who reported their physician discussed their weight status were more likely to report clinically significant weight loss. Specifically, overweight and obese individuals who were told they were overweight by their physician have approximately two times the odds of reporting a 5% loss of weight in the past year – a weight loss amount that has been found to significantly improve the comorbidities associated with being overweight or obese.(27) Further, overweight and obese individuals have greater than two times the odds of reporting a 10% loss of weight in the past year. Previous studies have demonstrated that physicians' discussion of overweight and obese weight status is correlated with patient perceptions of their individual weight and their desire to lose weight.(18) However, none to our knowledge has demonstrated an association between physician discussion of overweight status and patient weight loss.

In general, our results support previous findings that physicians are not uniformly discussing weight status with their patients.(4, 22-25, 28-31) It remains unclear why certain individuals

are more likely to receive weight discussion than others. One explanation is that certain individuals (e.g., overweight middle-aged women) visit their physician more frequently, thus increasing the physicians' opportunities to discuss patients' weight.(24)

The current obesity epidemic provides a well-demonstrated need for efficient and effective interventions to help patients lose weight. As greater than 80% of US adults have a primary care provider, primary care represents an ideal location to address weight control.(1, 32) Furthermore, the U.S. Preventive Services Task Force recommends screening all adults for obesity.(33) At minimum, physician discussion of patient weight status could be a useful first step for physicians to approach a more complex weight loss strategy. For example, this intervention may fit well within the motivational interviewing (MI) framework examined by Pollak and colleagues.(34-35) However, simply discussing patients' weight status as overweight may be motivating enough to encourage some patients to pursue weight loss.

Discussing weight status could be considered a form of brief advice, which has been found to have powerful effects for reduction of alcohol use and smoking cessation.(36-38) In a study among injured, at-risk drinkers in the emergency department, Blow and colleagues found that brief advice combined with written intervention methods resulted in significant improvements on alcohol-related consequence variables.(37) Adults in another primary care-based study were provided brief behavioral counseling sessions (<10 minutes) on smoking cessation and pharmacotherapy, resulting in a significant increase in the proportion of smokers who successfully quit. Minimal intervention sessions (<3 minute) were also found to increase cessation rates.(36) Similarly, a brief smoking cessation intervention based on MI significantly increased cessation rates at 6-week follow up.(38) However, when applied to weight counseling, the success of such an approach depends upon several factors including physicians being comfortable acknowledging their patients' weight status and using acceptable weight-related terminology.(39-41)

Altering the perspectives and desires of patients who are overweight and obese is a critical component of this type of intervention as well. Overweight or obese patients may misperceive their weight status, believing they are a healthy weight, and are therefore less likely to report a desire or attempt to lose weight.(42) NHANES participants who reported being told by their physician that they were overweight had an increased likelihood of accurately identifying themselves as overweight or obese, an increased desire to lose weight, and were more likely to report attempting to lose weight.(18) Specifically, Yaemsiri et al. noted that individuals diagnosed as overweight or obese were more likely to make changes to their diet, exercise, or pursue both weight management strategies.(17) Similarly, obese patients advised by their physician to lose weight were three times more likely to report attempting to lose weight than those who were not advised.(24) Our study extends this literature by illustrating that patients who are overweight or obese are more likely to lose at least 5% of their weight if their physician has told them they were overweight. Thus, discussion of patients' weight status may play an important role in changing both their weight control attitudes and behaviors, and may lead to successful outcomes.

This study has several limitations. NHANES data is collected through participant self-report and it is difficult to determine how items may be interpreted. For example, the question

studied in this research asks if participants have “ever” been told by a physician or other health professional that they are overweight. Therefore, it is uncertain exactly when participants were told they were overweight and when they began losing weight during this one year period. It is possible that the physician discussion about weight status occurred during, and not prior, to the weight change. Similarly, it is unclear if physicians' discussing participants' weight represents more extensive weight counseling, which would overestimate the effectiveness of discussion only. Previous research also highlights patient self-report recall inaccuracies. When recalling providers' questions about smoking status and cessation, smokers over-reported advice to stop smoking with a specificity of 82% and sensitivity of 92% when compared to the audio taped consultation with the provider.(43) A further limitation was the use of self-reported height and weight. However, self-report is a valid and commonly used measure for height and weight when assessing preventive counseling. (44-45) Lastly, participants who may have been overweight for longer periods of time might be more likely to have their physician discuss that they are overweight, resulting in greater reinforcement for these individuals. Future research is necessary to examine the effectiveness of such a physician-based intervention.

This study has several strengths. To our knowledge, this is the first study to show an association between a physician's discussion of their patients' weight status and patients' self-reported clinically-significant weight loss. An additional strength of this study is the use of a large, nationally representative sample.

Physicians' discussion of their patients' weight status is associated with clinically significant patient weight loss. Given the imagined simplicity of a physician-based intervention, this may present a useful first step for weight control prior to more in-depth weight loss counseling.

Primary care-based strategies for weight control are especially appealing given their tremendous reach and potential for dissemination. Future simple and effective weight loss interventions will be necessary to attempt to address the current obesity epidemic.

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Figure 1. Physician Discussion of Weight Status and Self-Reported Weight Loss

Table 1
Demographic Characteristics of those who were Overweight or Obese

	Patients, % ^a		
Variable	Overweight (BMI ^b 25.0-29.99) (n=2405)	Obese (BMI 30.0) (n=2649)	P-value
Told Overweight by Doctor			<0.001
Yes	22.9	66.8	
No	77.1	33.2	
Age			0.016
20-34	29.5	26.3	
35-49	40.2	38.6	
50-64	30.3	35.1	
Sex			<.001
Male	60.8	48.1	
Female	39.2	51.9	
Education			0.281
<High School	16.6	18.0	
High School	83.4	82.0	
Marital Status			0.929
Married/Living with Partner	68.1	68.3	
Not Married	31.9	31.7	
Poverty to Income Ratio			0.104
1.0	88.7	87.1	
<1.0	11.3	12.9	
Ethnicity			0.003
Non-Hispanic White	68.2	66.9	
Non-Hispanic Black	11.1	15.3	
Hispanic	15.7	13.7	
Other	5.0	4.1	
General Health			<0.001
Excellent	18.3	11.0	
Very Good	36.6	26.7	
Good	31.8	40.1	
Fair	11.1	17.9	
Poor	2.1	4.2	
Place of Routine Care			<0.001
No Place	17.4	13.4	
One or More Places	82.6	86.6	
Physician Visits in Last Year			<0.001
0	22.1	15.5	

	Patients, % ^a		
Variable	Overweight (BMI ^b 25.0-29.99) (n=2405)	Obese (BMI 30.0) (n=2649)	P-value
1-3	48.7	44.0	
4	29.2	40.6	
Diabetes			<0.001
Yes	4.1	11.8	
No	95.9	88.2	
Hypertension			<0.001
Yes	22.7	36.2	
No	77.3	63.8	

Table 2
Logistic Regression Predicting Who Reported a 5% and 10% Weight Loss in the Past Year Among Overweight and Obese Patients

Variable	Over weight (BMI ^b 25.0-29.99) (n=2205)				Obese (BMI 30.0) (n=2427)			
	5% Weight Loss		10% Weight Loss		5% Weight Loss		10% Weight Loss	
	Odds Ratio (95% CI) ^a	P-value ^a	Odds Ratio (95% CI) ^a	P-value ^a	Odds Ratio (95% CI) ^a	P-value ^a	Odds Ratio (95% CI) ^a	P-value ^a
Told Overweight by Doctor								
Yes	1.88 (1.45, 2.44)	<0.001	2.38 (1.62, 3.49)	<0.001	1.79 (1.30, 2.46)	<0.001	2.15 (1.23, 3.74)	0.007
No	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Age								
20-34	1.46 (1.11, 1.93)	0.007	1.92 (1.19, 3.10)	0.008	1.12 (0.80, 1.58)	0.502	1.25 (0.71, 2.23)	0.436
35-49	1.21 (0.87, 1.68)	0.258	1.11 (0.71, 1.72)	0.647	1.06 (0.78, 1.45)	0.701	1.32 (0.79, 2.20)	0.296
50-64	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Sex								
Male	0.69 (0.51, 0.92)	0.014	0.62 (0.41, 0.95)	0.029	0.82 (0.70, 0.98)	0.026	0.62 (0.47, 0.83)	<0.001
Female	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Education								
<High School	0.94 (0.67, 1.32)	0.730	1.25 (0.78, 2.01)	0.351	1.23 (0.91, 1.65)	0.172	1.42 (0.94, 2.12)	0.094
High School	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Marital Status								
Married/Living with Partner	0.66 (0.49, 0.87)	0.004	0.54 (0.34, 0.86)	0.010	0.79 (0.59, 1.06)	0.116	0.78 (0.51, 1.17)	0.233
Not Married	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Poverty to Income Ratio								
1.0	0.88 (0.57, 1.35)	0.556	1.10 (0.61, 1.99)	0.747	0.89 (0.64, 1.25)	0.511	0.90 (0.58, 1.38)	0.618
<1.0	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Ethnicity								
Non-Hispanic White	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Non-Hispanic Black	1.05 (0.76, 1.43)	0.780	0.87 (0.50, 1.54)	0.630	1.51 (1.17, 1.95)	0.002	1.52 (1.16, 1.97)	0.002
Hispanic	0.90 (0.61, 1.32)	0.582	0.62 (0.36, 1.07)	0.087	0.98 (0.70, 1.39)	0.922	0.87 (0.52, 1.46)	0.600
Other	0.63 (0.27, 1.46)	0.284	0.46 (0.14, 1.48)	0.189	1.08 (0.59, 1.95)	0.805	0.45 (0.16, 1.25)	0.126

Variable	Over weight (BMI ^b 25.0-29.99) (n=2205)			Obese (BMI 30.0) (n=2427)		
	5% Weight Loss		10% Weight Loss		5% Weight Loss	
	Odds Ratio (95% CI) ^a	P-value ^a	Odds Ratio (95% CI) ^a	P-value ^a	Odds Ratio (95% CI) ^a	P-value ^a
General Health						
Excellent	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Very Good	1.25 (0.83, 1.90)	0.291	1.85 (0.84, 4.01)	0.123	0.71 (0.44, 1.14)	0.157
Good	1.63 (1.04, 2.53)	0.034	1.44 (0.63, 3.29)	0.391	0.65 (0.40, 1.07)	0.092
Fair	2.08 (1.21, 3.56)	0.008	3.27 (1.57, 6.82)	0.002	0.51 (0.27, 0.98)	0.043
Poor	2.34 (0.98, 5.53)	0.055	2.33 (0.66, 8.25)	0.189	0.71 (0.34, 1.48)	0.358
Place of Routine Care						
No Place	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
One or More Places	1.06 (0.68, 1.63)	0.807	0.73 (0.40, 1.32)	0.301	1.04 (0.70, 1.55)	0.845
Physician Visits in Last Year						
0	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
1-3	1.18 (0.90, 1.57)	0.228	0.86 (0.44, 1.70)	0.667	0.98 (0.68, 1.40)	0.929
4	1.35 (1.01, 1.82)	0.045	1.22 (0.73, 2.03)	0.448	1.26 (0.84, 1.88)	0.256
Diabetes						
Yes	2.11 (1.34, 3.32)	0.001	3.93 (2.03, 7.54)	<0.001	1.83 (1.19, 2.80)	0.006
No	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	
Hypertension						
Yes	1.30 (0.96, 1.75)	0.094	1.31 (0.88, 1.95)	0.183	1.13 (0.87, 1.46)	0.355
No	1.0 (Reference)		1.0 (Reference)		1.0 (Reference)	

^a p-values and odds ratios from weighted multivariable logistic regression taking into consideration the complex sampling stratification and clustering and adjusted for all other variables in the table.

^b Body Mass Index