

Association between Obesity and Patient Satisfaction

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Abstract

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Objective: To examine the relationship between BMI and patient satisfaction with health care providers using a nationally representative survey.

Research Methods and Procedures: This analysis examined the 9914 adult patients who completed the 2000 Medical Expenditure Panel Survey and had visited a health care provider within 12 months of the survey. Linear regression models were employed with patient satisfaction as the dependent variable. The patient satisfaction scale was based on ratings from five questions assessing the quality of provider interactions. The independent variable was BMI, with adjustments for the domains of demographics, social-economic status, health attitudes and behavior, health status, and health care use. BMI (weight in kilograms/square of height in meters) was classified as normal weight (18.5 to 24.9), overweight (25.0 to 29.9), or obese (≥ 30.0). Hierarchical models were used to evaluate how each domain modified the BMI-satisfaction association.

Results: Obese patients reported significantly greater satisfaction with their health care providers than their normal-weight counterparts did ($p < 0.05$). There were no significant differences in satisfaction between normal-weight and overweight patients or between overweight and obese patients. The health status domain produced the largest modification in the BMI-satisfaction relationship. Examination of interaction effects revealed that the association between BMI and satisfaction was confined to older persons.

Discussion: In this nationally representative sample of individuals, obese persons were more satisfied than their normal-weight counterparts. This finding counters those of previous studies. Incomplete adjustments for health care use and insurance status may have led to those conclusions.

Key words: patient satisfaction, physician interaction, older patients, health care delivery

Introduction

The United States' obesity epidemic has emerged as a public health priority. From 1988 to 2000, the age-adjusted prevalence of obesity among adults in the U.S. increased from 22.9% to 30.5% (1). Sadly, no one is projecting abatements of this trend (2,3). Currently, the U.S. spends approximately \$90 billion annually in direct costs to treat obesity (4). In response, the NIH has requested \$440.3 million for obesity research during fiscal year 2005 (5).

The Surgeon General's office issued an action plan (6) after declaring, "Overweight and obesity may soon cause as much preventable disease and death as cigarette smoking (7)." The plan emphasized increasing "research on the behavioral . . . causes of overweight and obesity" and educating "health care providers . . . on the prevention and treatment of obesity." Clearly, the plan acknowledged the complex and challenging dynamics between health care providers and overweight or obese patients.

The paucity of studies (8–10) examining the impact of BMI (mass in kilograms/square of height in meters) on patient satisfaction underscores the Surgeon General's concerns. Moreover, their findings have been mixed. The largest study (8), with 2858 patients, detected only a modest association between obesity and patient dissatisfaction in overall visit experience; however, no differences emerged when only provider satisfaction scores were compared among the normal-weight, overweight, and obese groups. In a study limited to 259 obese women (9), participant satisfaction with physician care for general health and medical expertise did not extend into weight management. In a study sample of 85 women and 40 men, the normal-weight men

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reported greater positivity of care when compared with overweight men (10). Conversely, overweight women expressed greater patient satisfaction than normal-weight women did.

In contrast, study conclusions on physician attitudes toward obese patients are more unified. Fundamental disagreements abound between physicians and patients as to the etiology, consequences, and treatment of obesity (11). Surveyed physicians cited psychological problems such as indolence and impulsiveness as important causes and barriers to weight management (12). They labeled encounters with obese patients as “a waste of . . . time” that reduced job satisfaction and taxed their patience (9). Subsequently, negative attitudes arise (13), (14). Ramifications of this mindset include less time spent with patients, decreased empathy, dismissive interactions, and diminished optimism and willingness to treat (13,15). The perception of overweight and obese patients being dissatisfied may be projection by frustrated physicians (16).

Accurate assessments of patient satisfaction are crucial to the economic viability of health plans (17). Patient satisfaction is equated with quality of health care (18), a prominent marketing feature. High levels of patient satisfaction have been associated with adherence to treatment, improved outcomes, and continued enrollment with providers (19–21). Documented factors that influence satisfaction include: age, gender, race/ethnicity, social-economic status (SES),¹ health status, and type of health insurance (22).

The purpose of this study was to use a nationally representative database to evaluate the direction and magnitude of the relationship between BMI and patient satisfaction with validated survey instruments.

Research Methods and Procedures

Data were utilized from the Household Component of the 2000 Medical Expenditure Panel Survey (MEPS), cosponsored by the Agency for Health Care Research and Quality and the National Center for Health Statistics. The Household Component includes data on demographics, income, employment; health conditions and status; insurance coverage and reimbursement; health service access and use; and a self-administered questionnaire (SAQ) with questions about health conditions, health status, skepticism toward medical care, height, weight, and patient satisfaction. Further details about the survey are available on the MEPS web site (<http://www.meps.ahrq.gov>). Included in the present analysis were 9914 adults (≥ 18 years of age) reporting a health care visit in the prior 12 months (Figure 1).

¹ Nonstandard abbreviations: SES, social-economic status; MEPS, Medical Expenditure Panel Survey; SAQ, self-administered questionnaire; HMO, health maintenance organization; PCS12, physical component summary; MCS12, mental component summary; CI, confidence interval.

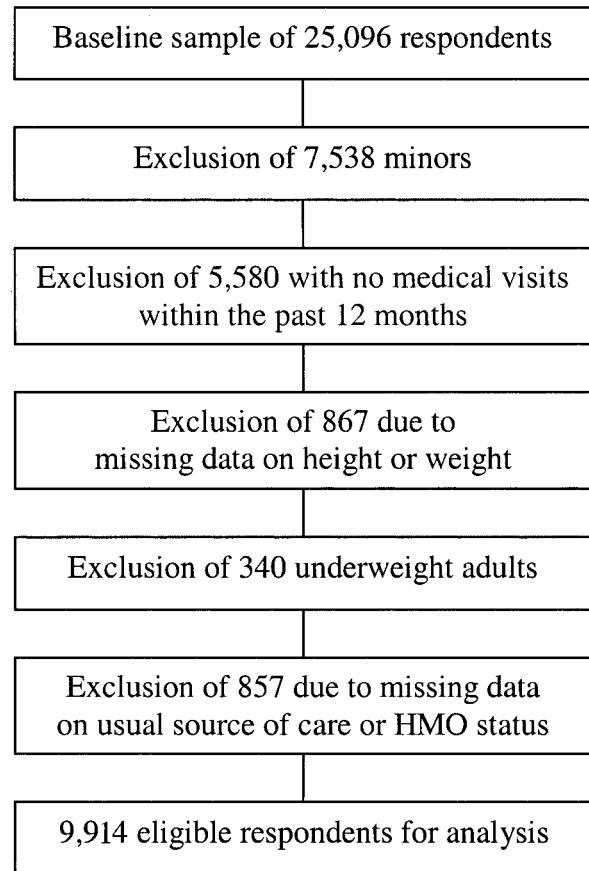


Figure 1: Selection criteria for inclusion in full model analysis.

This analysis focused on satisfaction questions in the SAQ involving direct provider contact. Attributes of patient-physician interactions have the greatest impact on patient satisfaction (23). A previously validated satisfaction scale (24) was constructed using five questions: “How often health care providers listened carefully to you;” “How often health care providers explained things so you understood;” “How often providers showed respect for what you had to say;” “How often health providers spent enough time with you;” and a rating of overall healthcare administered by providers. The first four questions used a scale of 1 (never) to 4 (always). The global care question used a scale of 0 (worst health care possible) to 10 (best health care possible). Responses pertained to medical visits within the prior 12 months. Due to range differences in questions, responses were standardized to a mean of 0 with a standard deviation of 0.84. Cronbach’s α reliability score for the five questions was 0.89. MEPS excluded patients who did not have a medical visit within the prior 12 months from the satisfaction scale questions.

BMI was categorized for most linear regression analyses using the NIH classifications (25): normal weight (18.5 to 24.9), overweight (25.0 to 29.9), and obese (≥ 30.0). Un-

Table 1. Hierarchical models of satisfaction for obese patients compared with normal-weight patients

Model	Variables included in the model	<i>p</i>	β Coefficient (95% confidence interval)	<i>R</i> ²
1	Age, race/ethnicity, gender, marital status, residency (metro, region)	0.896	-0.003 (-0.055, 0.048)	0.025
2	Above model plus income, years education	0.858	0.005 (-0.046, 0.056)	0.027
3	Above model plus smoking, skepticism towards medical services	0.718	-0.009 (-0.059, 0.041)	0.039
4	Above model plus disease burden, number of medicines, PCS12 and MCS12 scores	0.062	0.047 (-0.002, 0.096)	0.103
5	Above model plus, type of insurance coverage, HMO status, usual source of care, number of physician visits (full model)	0.037	0.051 (0.003, 0.099)	0.108

PCS12, physical component summary; MCS12, mental component summary; HMO, health maintenance organization. Full model includes age, race/ethnicity, gender, marital status, metropolitan or rural area, region of country, income, years of education completed, smoking status, degree of medical skepticism, disease burden, number of medications, PCS12 and MCS12 scores, type of insurance, HMO status, usual source of care present, and number of physician visits. All models included the overweight patients. There were no statistically significant differences between the normal-weight and overweight groups with respect to patient satisfaction.

derweight individuals (BMI < 18.5) were excluded due to their increased risks for malignancies and eating disorders.

Covariates

Regression analysis included variables that have been demonstrated to be associated with satisfaction ratings: demographics (26) (age, race/ethnicity, gender, marital status, and region of residency), SES (27) (income and years of completed education), health behavior and attitudes (28) (smoking status and degree of skepticism toward medical services), morbidity (20) (disease burden number of medications and self-rated health), and health use factors (22) [type of insurance coverage, enrolled in a health maintenance organization (HMO) or not, if usual source of care present, and the number of physician visits within the past 12 months]. Income was quantified as the respondent’s family income related to the percentage of the federal poverty level: low ($\leq 200\%$), medium ($\geq 200\%$ and $< 400\%$), and high ($\geq 400\%$). A medical skepticism scale (29) was based on four SAQ questions about health-related attitudes: do not need health insurance, health insurance not worth the cost, more likely to take risks, and can overcome illness without medical help. The response categories for all four questions ranged from 1 (disagree strongly) to 5 (agree strongly). Higher scores correspond to greater degrees of medical skepticism. Illness burden was defined as the mean of number of self-reported chronic conditions among: diabetes mellitus, hypertension, angina, coronary heart disease,

myocardial infarction, cerebral vascular event, asthma, emphysema, and joint pain. Number of medications was defined as the number of different prescriptions taken during the year (30). Self-rated health was measured with the Short-Form 12 (31), a standardized measure of health status that yields physical component summary (PCS12) and mental component summary (MCS12) scores. Higher scores correlate with higher function.

Analyses

STATA software, version 8.2 (StataCorp LP, College Station, TX) was employed for statistical analyses to adjust for the complex sampling strategy and weights of MEPS and to yield appropriate standard errors and nationally representative parameter estimates. Linear regression analyses with satisfaction as the dependent variable were used. The key independent variable was BMI. A series of hierarchical models were constructed to isolate the driving component of the relationship between BMI and satisfaction (Table 1). Each model step incorporated groupings of variables that measured similar characteristics or areas of health care. The base model (Model 1) consisted of demographics, with sequential additions of SES (Model 2), health behaviors/attitudes (Model 3), health assessments (Model 4), and health care delivery (Model 5). Finally, interaction effects between BMI and salient independent variables were examined for possible modifications of the association between BMI and satisfaction.

Table 2. Baseline characteristics of adult study population*

	18.5 to 24.9	25.0 to 29.9	≥30.0
BMI range (kg/m ²)	18.5 to 24.9	25.0 to 29.9	≥30.0
Population (<i>n</i> = 15,461) [% (SE)]	40 (0.5)	37 (0.5)	23 (0.5)
Mean age estimate [years (SE)]	43 (0.3)	47 (0.4)	46 (0.4)
Race/ethnicity [% (SE)]			
White (<i>n</i> = 9582)	77 (1.0)	74 (1.1)	70 (1.7)
Hispanic (<i>n</i> = 3361)	9 (0.8)	12 (1.0)	12 (1.4)
African American (<i>n</i> = 2073)	9 (0.8)	11 (1.1)	16 (1.4)
Other (<i>n</i> = 445)	5 (0.6)	2 (0.3)	2 (0.4)
Gender [% (SE)]			
Female (<i>n</i> = 8133)	60 (0.7)	40 (0.8)	51 (0.4)
Male (<i>n</i> = 7328)	40 (0.7)	60 (0.8)	49 (0.4)
Marital status [% (SE)]			
Never (<i>n</i> = 3331)	29 (1.0)	19 (0.8)	20 (1.0)
Married (<i>n</i> = 9430)	53 (1.0)	62 (1.0)	60 (1.1)
Widowed/divorced (<i>n</i> = 2700)	18 (0.7)	18 (0.6)	19 (0.7)
Income [% (SE)]			
Low (<i>n</i> = 4890)	25 (0.9)	24 (0.9)	30 (1.2)
Medium (<i>n</i> = 4910)	30 (0.9)	32 (0.8)	35 (1.2)
High (<i>n</i> = 5661)	45 (1.1)	44 (1.1)	35 (1.3)
Completed years of education [% (SE)]			
<12 (<i>n</i> = 4177)	20 (0.7)	20 (0.9)	25 (1.0)
=12 (<i>n</i> = 4937)	30 (0.9)	32 (0.8)	36 (0.8)
>12 (<i>n</i> = 6347)	50 (1.1)	48 (1.0)	39 (1.2)
Metropolitan area residency [% (SE)]			
Yes (<i>n</i> = 12,008)	18 (1.3)	18 (1.7)	22 (1.8)
No (<i>n</i> = 3453)	82 (1.3)	82 (1.7)	78 (1.8)
Region of residency [% (SE)]			
Northeast (<i>n</i> = 2444)	19 (1.3)	19 (1.4)	18 (1.6)
Midwest (<i>n</i> = 3263)	24 (1.3)	23 (1.5)	23 (1.4)
South (<i>n</i> = 5942)	34 (1.9)	35 (2.2)	39 (2.2)
West (<i>n</i> = 3812)	23 (2.7)	23 (2.9)	19 (2.2)
Smoking status [% (SE)]			
Yes (<i>n</i> = 3063)	75 (0.8)	77 (0.3)	81 (0.8)
No (<i>n</i> = 12,398)	23 (0.8)	23 (0.7)	19 (0.8)

SE, standard error.

* Sample sizes are based on weighted and unadjusted data. *p* values for overall group comparison based on *F* or χ^2 tests. All *p* values < 0.001. Column totals may not add up to 100 due to rounding.

Results

Tables 2 and 3 show the characteristics of the sample by BMI group. Nearly 25% of the study population were obese, and 35% were overweight. Compared with the normal-weight group, the overweight and obese groups were older, more likely to be male, Hispanics, African Americans, live in the South, be poorer and less educated, and more likely to be smokers. Higher BMI was associated with more morbidity, more medications, lower self-rated health, more non-

private sector care, a greater likelihood of a usual source of care, and less skepticism toward medical care (Table 3).

Table 4 shows the association of satisfaction with other characteristics. Greater satisfaction was associated with being older, female, white, greater income, more education, being a nonsmoker, less medical skepticism, better self-rated health, more medications, and having a usual source of care. Overall, there was a very weak unadjusted association between BMI and satisfaction ($R^2 = 0.0001$, $p = 0.345$).

Table 3. Health status and attitude summary by BMI*

BMI range [kg/m ²]	18.5 to 24.9	25.0 to 29.9	≥30.0
Mean disease burden score (SE)	6.8 (0.2)	9.5 (0.2)	13.1 (0.3)
Mean PCS12 score (SE)	50.2 (0.2)	49.1 (0.2)	46.1 (0.3)
Mean MCS12 score (SE)	51.0 (0.1)	51.2 (0.2)	50.0 (0.2)
Number of medications [% (SE)]			
None (<i>n</i> = 5218)	35 (0.9)	33 (0.8)	25 (1.0)
One to two (<i>n</i> = 2523)	17 (0.6)	15 (0.7)	16 (0.7)
Three to five (<i>n</i> = 1868)	13 (0.6)	12 (0.5)	12 (0.6)
Six to 14 (<i>n</i> = 2651)	18 (0.6)	18 (0.5)	18 (0.8)
≥15 (<i>n</i> = 3201)	17 (0.6)	22 (0.7)	29 (0.1)
Health insurance coverage [% (SE)]			
Any private (<i>n</i> = 10,672)	75 (0.8)	76 (0.8)	71 (1.0)
Public only (<i>n</i> = 2315)	13 (0.6)	12 (0.6)	13 (0.5)
Uninsured (<i>n</i> = 2474)	12 (0.6)	11 (0.6)	14 (0.5)
HMO status [% (SE)]			
Covered by private HMO (<i>n</i> = 5209)	36 (1.3)	37 (1.3)	34 (1.2)
Covered by private insurance, not HMO (<i>n</i> = 4852)	34 (1.2)	35 (1.2)	33 (1.3)
Not covered by private insurance (<i>n</i> = 5400)	30 (1.0)	28 (1.0)	33 (0.8)
Has usual source of medical care [% (SE)]			
Yes (<i>n</i> = 12,051)	77 (1.0)	80 (0.9)	82 (0.9)
No (<i>n</i> = 3410)	23 (1.0)	20 (0.9)	18 (0.9)
Mean number of outpatient visits during 2000 (SE)	3.3 (0.1)	3.5 (0.1)	4.4 (0.2)
Mean skeptic score (SE)	2.06 (0.02)	2.04 (0.02)	1.95 (0.02)

SE, standard error.

* Sample sizes are based on weighted and unadjusted data. *p* Values for overall group comparison are based on *F* or χ^2 tests. All *p* values < 0.001, except for HMO status (*p* = 0.006). Column totals may not add up to 100 due to rounding. Maximum scores: illness burden, 100; medical skepticism, 20; MCS12 and PCS12, 100, with the national mean = 50.

However, obese individuals reported greater patient satisfaction than their normal-weight counterparts after adjusting demographic, social-economic, health behaviors/attitudes, health assessment, and health care delivery domains (Table 1, Model 5). The largest intramodel increase in β coefficient for the obese group occurred when health assessment measures were added (Table 1, Model 4); the corresponding *p* value approached statistical significance at 0.062. There were no statistical differences in satisfaction between normal-weight and overweight persons or between overweight and obese persons.

There was some evidence of a linear trend of increasing satisfaction with increasing weight. Defined as an interval level variable in the full regression model, increasing BMI was modestly associated with increased satisfaction [β = 0.004; 95% confidence interval (CI), 0.001, 0.006; *p* = 0.01]. Regression analysis using standardized values for satisfaction and BMI as a continuous variable yielded sim-

ilar results (β = 0.026; 95% CI 0.006, 0.046; *p* = 0.01). The addition of BMI squared (β < 0.001; 95% CI, -0.0005, 0.00002; *p* = 0.405) was not significant.

From the hierarchical models, the association between obesity and satisfaction did not attain statistical significance until aspects of health care delivery were incorporated. However, the largest intramodel increase in β for the obese group occurred when health assessment measures were added (Model 4); the corresponding *p* value approached statistical significance at 0.062.

No significant interaction effects were observed between BMI and gender or insurance type. However, stratified analyses revealed that the higher satisfaction among the obese was confined to those ≥55 years of age.

We excluded from the analyses minors and adults who had not visited their health care provider 12 months before the survey administration (~50%). The baseline characteristics of the excluded adults are listed in Table 5. When

Table 4. Mean (SE) satisfaction scores*

BMI (kg/m ²)		Metro area	
18.5 to 24.9	15.0 (0.2)	Yes	15.2 (0.2)
25.0 to 29.9	15.2 (0.2)	No	15.7 (0.2)
≥30.0	15.9 (0.2)	Region	
Race/ethnicity		Northeast	16.4 (0.3)
White	16.2 (0.2)	Midwest	15.8 (0.2)
Hispanic	11.8 (0.2)	South	15.0 (0.2)
African American	13.6 (0.3)	West	14.3 (0.5)
Other	12.5 (0.7)	Smoker	
Age		Yes	13.3 (0.2)
<55 years	14.0 (0.2)	No	15.9 (0.1)
≥55 years	18.5 (0.1)	Number of medications	
Gender		None	8.6 (0.3)
Female	17.2 (0.1)	One to two	15.7 (0.3)
Male	13.4 (0.2)	Three to five	18.1 (0.2)
Marital status		Six to 14	19.2 (0.2)
Never	12.3 (0.2)	≥15	20.2 (0.1)
Married	16.1 (0.2)	Insurance coverage	
Widowed/divorced	16.6 (0.2)	Any private	16.0 (0.2)
Income		Public	17.2 (0.3)
Low	14.2 (0.2)	Uninsured	9.0 (0.3)
Medium	14.8 (0.2)	HMO status	
High	16.4 (0.2)	Private HMO	15.8 (0.3)
Years of education completed		Private, nonHMO	16.6 (0.2)
<12	13.3 (0.2)	Nonprivate	13.3 (0.2)
= 12	15.0 (0.2)	Has usual source of care	
>12	16.5 (0.2)	Yes	17.0 (0.1)
		No	8.8 (0.3)

SE, standard error.

* Satisfaction scores are based on weighted and unadjusted data. *p* Values for overall group comparison based on *F* or *t* tests. All *p* values < 0.001, except for BMI category (*p* = 0.046). Maximum satisfaction score = 26.

compared with the study group, the excluded adult individuals were more likely to be normal weight, younger, non-white, female, healthier, a smoker, and more skeptical of medical care (Table 5).

Discussion

In this nationally representative health survey of individuals who had a medical visit with 12 months of being surveyed, obese patients reported greater satisfaction with their healthcare providers than their normal-weight counterparts did. This key finding emerged primarily after adjusting for health status and was largely confined to those ≥55 years of age. Our findings challenge the conclusions of most prior studies (8–10). Collectively, those studies lacked uni-

versality due to limited sample size, geographic boundaries of one metropolitan city, settings affiliated exclusively with academic medical centers, and incomplete adjustments for established covariants associated with patient satisfaction. Two studies did not include a normal-weight reference group (9,10). Our study sample and design addressed these shortcomings. Contrary to Hebl et al.'s findings (10), we detected no significant interaction between BMI and gender on patient satisfaction.

Social and psychological stressors inundate the obese patient (32). Diminished quality of life (33,34) and increased level of chronic disease burden compromise self-assessments of health. Obese individuals have lower health-related quality-of-life scores (35–39), even in the absence of chronic disease conditions (40). Self-reported poor health is,

Table 5. Characteristics of an adult population who did not have a medical visit within the prior 12 months of the survey*

	18.5 to 24.9	25.0 to 29.9	≥30.0
BMI range (kg/m ²)	18.5 to 24.9	25.0 to 29.9	≥30.0
Population (<i>n</i> = 5193) [% (SE)]	42 (0.9)	37 (0.8)	20 (0.8)
Mean age estimate [years (SE)]	37 (0.5)	40 (0.4)	40 (0.5)
Race/ethnicity [% (SE)]			
White (<i>n</i> = 2661)	69 (1.6)	64 (1.7)	60 (2.3)
Hispanic (<i>n</i> = 1542)	13 (1.3)	17 (1.4)	19 (2.4)
African American (<i>n</i> = 808)	12 (1.4)	15 (1.8)	19 (2.0)
Other (<i>n</i> = 182)	6 (1.0)	4 (0.8)	2 (0.6)
Gender [% (SE)]			
Female (<i>n</i> = 2021)	44 (1.3)	26 (1.3)	36 (1.7)
Male (<i>n</i> = 3172)	56 (1.3)	74 (1.3)	64 (1.7)
Smoking status [% (SE)]			
Yes (<i>n</i> = 1195)	32 (1.4)	25 (1.3)	24 (1.5)
No (<i>n</i> = 3998)	68 (1.4)	75 (1.3)	76 (0.9)
Mean skeptic score (SE)	2.3 (0.02)	2.3 (0.02)	2.2 (0.04)
Mean disease burden score (SE)	3.1 (0.2)	4.2 (0.2)	6.2 (0.3)

SE, standard error.

* Sample sizes are based on weighted and unadjusted data. *p* Values for overall group comparison based on *F* or χ^2 tests. All *p* values < 0.001, except for skeptic scores, which were non-significant. Column totals may not add up to 100 due to rounding.

in turn, predictive of patient dissatisfaction. In addition, patients' desired amount of weight loss can exceed those of their treating physician by factors of two to three (41). Unmet expectations may turn into frank disappointment (42) and dissatisfaction (43). Ambitious weight reduction goals may be grounded in the pervasive dissatisfaction with body image in American society, particularly among overweight women (44–46). This outlook may be fueled by the prejudice and scorn that society in general (47–49), and health care professionals in particular (12,13,15,50–52), inflicts on the overweight and obese. All these factors would seem to promote an adversarial relationship between obese patients and their health care providers and suggest lower levels of satisfaction.

Yet, our findings counter this supposition. Obese patients' increased patient satisfaction may be rooted in their overall harsh treatment by society. Armed with low expectations, they may be pleasantly surprised when their physicians offer directed plans to address health concerns. Recently, researchers have eschewed interventions limited to only weight reduction among obese patients (53,54). Now, there is a redirection of efforts to increase self-acceptance and incorporation of healthier lifestyles rather than an exclusive focus on weight reduction (55,56). The emphasis is on incremental and steady improvement as opposed to improbable goal attainment.

Our finding that greater satisfaction among obese persons emerges primarily after adjustment for health status and is

confined to those who are older suggests that obese patients may be more accepting of their weight situation with advancing age and greater morbidity. However, in analysis not shown, we noted no association between mental health well-being (MCS12) and satisfaction among older persons or those with more morbidity, whether obese or not. Further research is needed to explore the reasons for these associations.

The limitations of this study included its cross-sectional nature, self-reported heights and weights, and the number of missing responses. Studies have documented the pervasive inaccuracies of self-reported height and weight (57–60), leading to underestimation of obesity prevalence in most epidemiological studies. Advancing age (57,59), higher income, and higher education are associated with individuals who are likely to under-report their weight. Assuming this reporting bias is perpetuated in our study, the association between weight and satisfaction would have been attenuated because parallel increases occurred among satisfaction and age, income, and education. This assumption is counterbalanced by the higher frequency of under reporting of weight among Hispanics (59) and African Americans (60). These two groups were much less satisfied when compared with whites in our study.

Patients answering all five elements of the satisfaction variable were disproportionately obese. The obese group utilized more medical services, affording them increased opportunities to evaluate their providers. Analysis of the

Table 6. Characteristics of adult population based on medical visit status within the prior 12 months of the survey*

	Yes (n = 10,268)	No (n = 5193)
BMI [% (SE)]		
Normal	39 (0.7)	42 (0.9)
Overweight	36 (0.6)	37 (0.8)
Obese	24 (0.6)	21 (0.8)
Mean age [years (SE)]	49 (0.3)	39 (0.3)
Gender [% (SE)]		
Female	58 (0.5)	36 (0.7)
Male	42 (0.5)	64 (0.7)
Race/ethnicity [% (SE)]		
White	79 (1.0)	65 (1.4)
Hispanic	9 (0.8)	16 (1.3)
African American	10 (0.9)	15 (1.4)
Other	3 (0.3)	4 (0.6)
Marital status [% (SE)]		
Never	19 (0.6)	34 (1.1)
Married	21 (0.5)	13 (0.6)
Widowed/divorced	60 (0.8)	53 (1.2)
Smoking status [% (SE)]		
Yes	80 (0.6)	72 (0.9)
No	20 (0.6)	28 (0.9)

SE, standard error.

* Sample sizes are based on weighted and unadjusted data. *p* Values for overall group comparison based on *F* or χ^2 tests. All *p* values < 0.001. Column totals may not add up to 100 due to rounding.

study sample demonstrated that white, older, and female patients tend to be more satisfied, whereas healthier patients and smokers tend to be less satisfied (Table 6). Thus, the excluded population's impact on selection bias is mixed.

Despite these limitations, our findings suggest an opportunity for building rapport with obese patients. Obese patients have increased requests stemming from weight management issues (61). By acknowledging these desires, providers position themselves as advocates for their patients. Perceived request fulfillment has been demonstrated to be related positively to patient satisfaction (62). Moreover, patients value non-technical humanistic (education, counseling) services over technical (tests, medications) ones (63).

Our study points to a higher degree of satisfaction among a segment of the population that is at increased risk for morbidity and mortality. The effect size ($\beta = 0.051$) was

very small; however, its direction is counter to that of the original hypothesis. Obviously, there is ample room to improve this relationship. One is enhanced physician counseling and recommendation in lifestyle modifications for their obese patients (61,64–67). Our findings bode well for providers as they actively engage with their obese patients in formulating treatment options. Providers would be wise to recognize this unique patient perspective and to channel it into improved health outcomes.

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