

Physician Personal Characteristics and Obesity Treatment Plan Study

A Thesis submitted to The University of Arizona College
of Medicine-Phoenix in partial fulfillment of the requirements for the
Degree of Doctor of Medicine

Marisa Jo Schottelkorb

2011

Acknowledgements

I owe my deepest gratitude to Dr. Bradley Appelhans.

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Abstract

Obesity is a very common finding in the primary care physician's office; however, physicians do not always treat obese patients according to guidelines. This investigation examined the possible relationships between a physician's personal weight history, anti-obesity bias, and the proposed treatment plan for an obese, hypertensive patient. Fifty-five Family Medicine, twenty-one Internal Medicine, and five "Other" Family or Internal Medicine Subspecialty physician participants viewed a video featuring either a hypothetical female or male patient with stage I hypertension and obesity (with a BMI of 32.) Of the total 81 physician participants, only 33 completed the entire study. Of these, 79.4% had attempted weight loss in their lifetime, with 55.9% having attempted weight loss in the past year. Median physician BMI was 25, with a small standard deviation of 2.7. Mean obesity bias score was 50.6 (out of possible 117, the maximum value reflecting the most anti-obese attitudes,) with a standard deviation of 19.7. Among all 81 participants, weight loss was in the three highest-ranked treatment recommendations in 90.9% of physician participants. Only 21.2% recommended all four JNC-

recommended components of lifestyle change. 93.9% recommended the initiation of a drug during this diagnostic visit. Statistical significance was not achieved in relating physician personal characteristics such as weight history to treatment recommendations due to the low number of participants completing all study measures.

Introduction

Obesity is an important issue for physicians and patients alike. Obesity is a risk factor for cardiovascular disease, a variety of cancers, diabetes, osteoarthritis, sleep apnea, diminished mobility, and as importantly, societal stigmatization. The U.S. Preventive Services Task Force recommends that clinicians screen all adults for obesity and offer intensive counseling and behavioral interventions as needed to achieve weight loss.^{1,2}

However, the actions of doctors in treating obesity are not as would be expected. For example, physicians actually spend less time educating obese patients about exercise and health than their normal-weight counterparts.³ This may be due to discrimination against the obese by medical professionals,⁴ failure to recognize obesity as a medical problem, the ineffectiveness of interventions for obesity,^{5,6,7} or any number of other reasons.

Of course, physician behaviors and treatment recommendations affect patient outcomes, sometimes in dangerous ways. In one study, obese female patients reported very negative clinic experiences when doctors attempted to speak with them about their weight.

Consequently, this group had a much lower rate of seeking preventive care, in addition to longer delays before seeking help for symptoms of disease, which translated into higher cervical cancer rates.⁸

Furthermore, doctors have feelings about their obese patients beyond strict medical concerns. In one study, many physicians did not merely recognize obesity as a “medical condition,” but rather as a lack of self-control, or as a result of self-indulgence or other personal failings.⁹

This study featured a patient with both obesity and hypertension. Hypertension is a common finding accompanying obesity. Hypertension is defined as two blood pressure values greater than 140 mmHg systolic or 85 mmHg diastolic. It is the single most common diagnosis made by primary care providers.¹⁰ Among other risks, cardiovascular disease risk doubles for each added increment of 20/10 beginning at a blood pressure at 115/75 mmHg.

The best hypertension treatment protocol is spelled out for physicians in the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC). According to the JNC, modification of lifestyle is the first line treatment of hypertension.¹¹ Lifestyle modification includes weight reduction,

dietary sodium reduction, physical activity, and decreasing alcohol consumption. When physicians use motivational interviewing techniques, patients are known to lose more weight at 3 months than having no discussion or not using motivational interviewing.¹² If the hypertension doesn't resolve with these lifestyle-based efforts, medications are then recommended. The addition of hypertension to a patient case of obesity may increase the desire to intervene, plus prevent participants from guessing the hypotheses of the study.

How well do physicians perform in their treatment recommendations for a patient with obesity and new-onset hypertension? In this study's case presentation, the physician is presented with two cues, obesity and hypertension, to trigger the recommendations for lifestyle change. The main objective of this study is to determine the role of physician characteristics (physician gender, weight history, and feelings toward obesity) in the physician's proposed treatment plan and ranking of treatment goal importance in obese patients presenting with hypertension.

This research protocol has the potential to reveal an unexpected effect of physicians' own characteristics in the health of obese patients, and may therefore expose a gap which could be perhaps remediated in

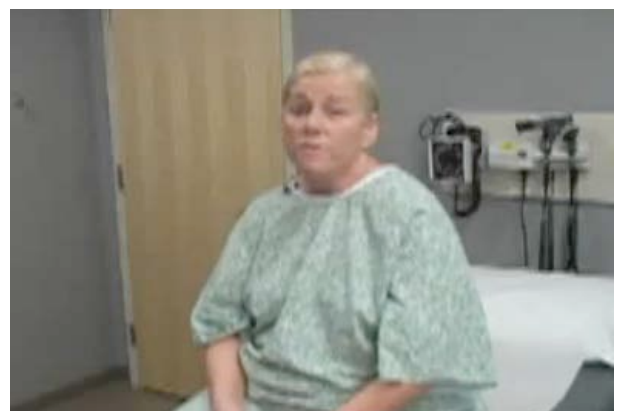
medical education. However, this study does not attempt to quantify or describe the nuances of the difficult discussions held between obese patient and physician.

We hypothesize that many thinner physicians will most closely follow the JNP recommendations (lifestyle modifications as an effective treatment for obesity and hypertension,) but that they will also tend to have higher obesity bias. Conversely, we hypothesize that physicians with greater BMI scores will be more likely to additionally prescribe medications for hypertension/obesity treatment on this first diagnostic visit, but also show less bias on the obesity bias scale. We suspect that heavier physicians will be more likely to recognize the challenges of lifestyle change based on their own experiences with losing weight, and therefore jump more quickly to medication use than their thinner colleagues. Additionally, being heavier themselves, we expect that physicians with a higher BMI would have less bias against obese people than would thinner physicians.

Research Methodology

Internists and family physicians in the Phoenix area were recruited to be participants via email and printed fliers mailed to physician offices. Individuals who wished to participate followed an internet link to access the informed consent and study materials. Participants were randomized to watch one of two brief videos depicting a clinical encounter with an obese patient presenting with hypertension. The patient was a 52 year old white male or female with average BP of 150/90 mmHg (assessed twice, utilizing the correct method.) The patient's BMI was 32, and the patient actors had BMIs near to the reported BMI. Physical exam was reported to show no abnormalities. At the second visit, urinalysis, EKG, fasting cholesterol, fasting glucose, electrolytes, and creatinine were all within normal range.

Figure 1: Study video patients: Bob Jones, left; Sue Jones, right.



The participants were then asked to give treatment recommendations and prioritize the therapeutic importance of each recommendation that they chose. Next, participants completed questionnaires assessing their personal weight history and attitudes regarding obesity. The Antifat Attitudes Questionnaire is an independently-validated 15-item measure to assess the participant's obesity bias.¹³ It is comprised of statements about obese people with agreement or disagreement measured on a Likert scale. The statements are categorized into three general categories: dislike (e.g., “I tend to think that people who are overweight are a little untrustworthy,”) fear of fat (e.g., “One of the worst things that could happen to me would be if I gained 25 pounds,”) and willpower (e.g., “Some people are fat because they have no willpower.”) Higher scores indicate stronger anti-fat attitudes, with the maximum score of 117 reflecting the highest degree of personal anti-obesity feelings.

Table 2: Possible treatments that the physician participants could recommend.

Possible Treatments
ACE-Inhibitor
ARB (Angiotensin II Receptor Antagonist)
Beta-blocker
Calcium channel blocker
Low-sodium diet
Moderation of alcohol intake
No intervention; return for follow-up in 6 months
Physical activity
Refer to specialist
Renal angiogram
Renal ultrasound
Thiazide-type diuretic
Weight loss
Other (write in)

Results

Participants

55 Family Medicine, 21 Internal Medicine, and 5 “Other” (Family Medicine or Internal Medicine Subspecialty) physician participants were recruited and participated in the study. Of the total 81 physician participants, only 33 completed the entire study. These

participants who completed the whole study were composed of 24 males (72.7%) and 9 females (27.3%). When restricted to full participants only, 67.6% of participants are Family Physicians (N=23,) followed by 9 Internists (26.5%), and 2 physicians who describe their position as “Other.”

Participants graduated from medical school in the range of 1970-2008, with a median year of 1986 (Standard Deviation (SD) 11.32). Participant age ranged from 30-64 years, with median age of 50 (SD 10.46). Additionally, one person did not report their age.

The remainder of the results will be only participants who completed the entire study.

33.3% (N=11) of participants viewed the male patient video, “Bob Jones,” and the remainder viewed his counterpart, “Sue Jones,” with identical patient data, except for gender.

BMI measures

79.4% (N=27) of the participants have ever tried to lose weight, with 55.9% (N=19) having attempted weight loss in the past year. Median physician BMI was 25 (mean 24.9), with a small standard deviation of 2.7. The mean physician participant's highest lifetime BMI

(excluding data from one pregnant participant) was 26.6 (SD 3.2).

Table 3: Weight-based findings for full-responder physician participants.

Ever tried weight loss		N (proportion)	SD
	No	7 (0.206)	-
	Yes	27 (0.794)	-
Tried weight loss in past year			
	No	15 (0.411)	-
	Yes	19 (0.559)	-
BMI			
	Current	24.9	2.7
	1 year ago	25.1	2.9
	Age 25	23.0	2.3
	Highest	26.6	3.2
	Lowest	21.8	2.0

Weight bias

The mean anti-obesity bias score was 50.6 (out of possible 117, the maximum value reflecting the most bias) with a standard deviation of 19.7.

Table 4: The Antifat Attitudes Questionnaire¹² with the mean rating per statement by the physician participants, with associated standard deviations (SD). According to this Likert scale, strong disagreement is rated a 1, and strong agreement rated a 9, with graduated levels of agreement in between.

Question	Statement	Mean rating	SD
1	I really don't like fat people much.	2.48	2.49
2	I don't have many friends who are fat.	4.45	2.66
3	I tend to think that people who are overweight are a little untrustworthy.	0.91	1.42
4	Although some fat people are surely smart, in general, I think they tend not to be as bright as normal weight people.	1.36	1.93
5	I have a hard time taking fat people seriously.	1.15	1.6
6	Fat people make me somewhat uncomfortable.	2.03	1.96
7	If I were an employer looking to hire, I might avoid hiring a fat person.	3.15	2.48
8	I feel disgusted with myself when I gain weight.	3.45	2.5
9	One of the worst things that could happen to me would be if I gained 25 pounds.	4.45	2.87
10	I worry about becoming fat.	3.27	2.48
11	People who weigh too much could lose at least some part of their weight through a little exercise.	7.06	2.06
12	Some people are fat because they have no willpower.	4.52	2.93

Question	Statement	Mean rating	SD
13	Fat people tend to be fat pretty much through their own fault.	3.97	2.56
14	I am satisfied with my current body weight.	5.12	3.01
15	I find myself thinking about my body weight a lot.	3.24	2.65
	Total Score (maximum: 117)	50.64	19.71

Treatment Recommendations

Weight loss was in the top three ranked treatment recommendations in 90.9% (N=30) of physician participants. An additional two participants included weight loss at a lower rank. Only 57.6% of physicians felt that weight loss rated first or second in treatment importance.

Only 21.2% (N=7) recommended all four JNC-recommended components of lifestyle change. 93.9% (N=31) recommended the initiation of a drug. Of the drugs recommended, 20 physicians (60.6%) recommended a thiazide. Four participants (12.1%) recommended an ACE-inhibitor. One participant recommended a beta-blocker. One participant recommended two separate drugs on this visit. One participant wanted to watch and wait for 6 months.

Table 5: Treatment recommendations by physician participants.

Recommendation	N	Proportion
Weight loss recommended	32	0.970
Weight loss is #1 recommendation	13	0.394
Weight loss in top 2 recommendations	19	0.576
Weight loss in top 3 recommendations	30	0.909
Drug recommended	31	0.940
Recommend all four lifestyle changes	7	0.210
Of those recommending all four lifestyle changes, number recommending a drug also	7	1.000
Recommend 3 of the 4 lifestyle changes	23	0.697
Recommended 2 drugs	1	0.030
No recommendations, follow-up in 6 months	1	0.030
ACE-Inhibitor recommended	4	0.121
Beta-blocker recommended	1	0.030
Thiazide recommended	20	0.606
Low sodium diet recommended	22	0.667
Moderate alcohol intake	10	0.303
Physical activity	32	0.970
Weight loss	32	0.970

In further examining the participants who appropriately recommended all four of the JNC-recommended lifestyle changes, the highest-ranked treatment (by importance) was a thiazide for three of the participants, weight loss for three participants, and physical

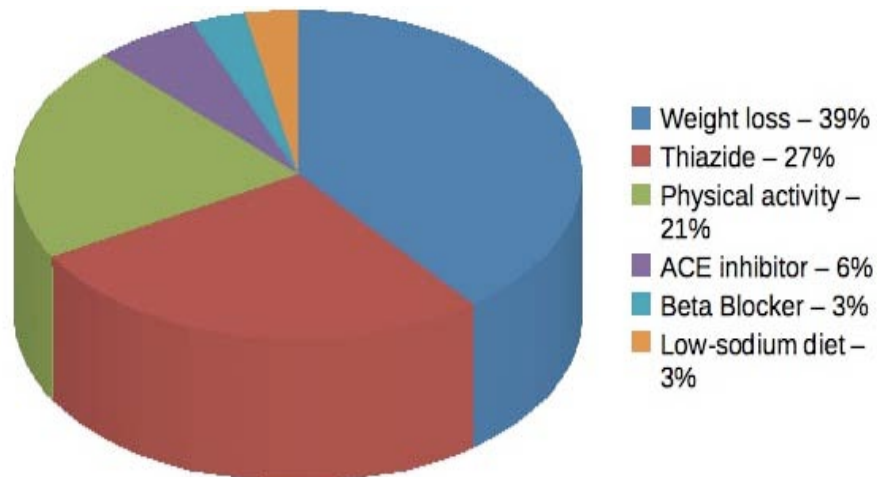
activity for one. Of note, these findings are consistent with the treatment priorities of the group as a whole (including those who did not complete the entire study). These three treatments were also the top three for the entire group.

The #1 recommendation prescribed by the physician participants are listed in Table 6 and represented in Figure 7 (below).

Table 6: Intervention by frequency of participant top recommendation.

Intervention	Number of physicians prescribing as #1 recommendation
Weight loss	13
Thiazide	9
Physical activity	7
ACE inhibitor	2
Beta-blocker	1
Low-sodium diet	1

Figure 7: Pie chart representation of top recommended treatments.



Statistical significance was not achieved in relating these variables due to the low number of participants completing all study measures, which will now be detailed further. In examining simple correlative relationships, bias score is correlated with BMI, but is not significant ($p = 0.421$). Bias score is similarly correlated with years in practice ($p = 0.793$). BMI is also positively correlated with years in practice, but is not significant ($p = 0.668$).

One-way analysis was then used to examine the manner in which the mean of a single variable is affected by combinations of factors. Examining results from men versus women reveals very similar responses in bias scores, personal BMI, and years in practice. The BMI of male participants is greater than the women, and this difference almost reaches significance ($p = 0.130$).

A Pearson chi-square test was used to assess if paired variables are independent of the other. Here, we compared physicians' number one treatment recommendation. This finding was almost significant by gender: women prescribe drugs first, while men recommend weight loss first ($p = 0.050$ in asymptotic, 2-sided significance).

Logistic regression was then employed to predict the probability of an event's occurrence in predicting another variable. In this context,

gender was close to reaching significance as a predictor of the other variables ($p=0.099$), whereas bias score ($p=0.440$), physician BMI ($p=0.580$), and years in practice ($p=0.499$) were not.

Discussion

In this investigation, the findings did not reach significance to associate the BMI of physician participants with anti-obesity bias scores or with obesity/hypertension treatment priorities. Thus, further research is needed to collect data to reach significance in results. By utilizing a realistic patient interview format, this study type examined the environment contributing to behaviors, thereby providing an improved gauge for ecological validity.

Several interesting findings were unearthed. Most physicians we sampled have personally tried to lose weight at some time in their lives, and over half of participants attempted weight loss in the last year.

The physicians polled in this study showed unexpectedly little variation in BMI. This finding probably does not reflect the real variation inherent to the physician population, and likely reflects bias

in self-reporting of body weight. Having a small degree of variation in BMI limits the ability to elicit statistically significant associations between BMI and other variables. If the current BMI data are truly biased, it is perhaps surprising that primary care physicians would be hesitant to report their actual body weight. Future studies examining associations between physician body weight and obesity treatment must address this bias through either objective measurement of body weight or other methods.

Also interesting is the significant comparison in the most important treatment recommendation by gender. Males were more likely to rank weight loss as most important, whereas women rank prescribed medications as their #1 intervention. The reason for this preference is unclear. Perhaps men and women personally experience the weight loss process differently, with the men sporting a more optimistic view of the efficacy of weight loss efforts.

Future Directions

This work would benefit greatly from a greater sample size. Since fewer than half of the sampled physicians completed the entire

study, future extensions of this work should accommodate for this phenomenon, and sample a much greater number of physicians. It might also be helpful to add a phrase commenting on the importance of completing each question. This study's Institutional Review Board requirements stipulated that the participant must be able to decline to answer any question. Additionally, it is possible that technical difficulties in accessing the video(s) are responsible for the low response rate. Changing the online accessibility of the case videos and the survey by providing a disc of the videos and a paper copy of the survey might lead to more complete participation.

One issue not addressed by this study is perceived anti-obesity bias versus unconscious bias. It would be fascinating to add measures which assess how biased a participant would judge him/herself, with comparisons to their scores on the bias questionnaire.

Additionally, a qualitative study could be used to answer some of the “why” questions that this research elicits. For example, participants could be asked to respond in their own words to why they placed a certain treatment as their #1 recommendation. Participants might relate their own experiences in how certain treatments tend to work in their practices, or perhaps relate personal reasons.

The BMI values of physician participants in the study reflected a smaller range of physician sizes than expected based on the PI's experience. This could be a result of the small sample size, or physician misclassification of their own weight classification, as has been seen in other studies.¹⁴ It would be helpful to characterize the average physician BMI and find a representative BMI range.

One issue not addressed in this work is the effect of physician gender versus patient gender. For example, would a male and female physician have the same treatment recommendations for a same-sex patient, or for an opposite-sex patient? A larger sample size would be necessary to differentiate these small groups.

Although this investigation contributes to our understanding of physicians and anti-obesity bias, the current study has several limitations that should be addressed in future research. This sample size is from a geographically-limited area which perhaps would not be replicated in other areas. Second, although the patient actors were similar in BMI to each other as well as to the reported BMI, the slight variation in size as well as the limited viewing exposure inherent in a video format may not trigger an accurate representation of the patient as compared with a live person sitting in the physician's practice.

Future studies could rely on a written representation of the patient, or could perhaps have participants visit and examine a live, standardized patient.

It is hoped that future results from this research could inform physicians' practices and/or medical student education about treating obesity and hypertension. If anti-obesity bias proves to be associated with physician BMI or obesity treatment patterns, introspective education regarding personal beliefs has the potential to improve care of this patient population. In our experience, these beliefs are deep values informed by both society and health concerns, which could require intensive education to have hopes of altering. However, given the detrimental effect that the physician's interaction can have on our obese patients, in terms of stigmatization, the patient-physician relationship, as well as in receiving preventive care, additional thought and research should be paid to the characterization of this issue.

Conclusions

Obesity has a profound effect on the way that primary care physicians treat their patients. As a disease, obesity is a monumental

medical issue, with additional challenges regarding social stigmatization. A physician also brings his or her own biases to the table. Even when paired with hypertension, this study showed that 78.8% of physicians failed to recommend all the components of lifestyle change suggested in the JNC guidelines as the first step in treating hypertension. Additionally, most physicians jump directly to prescribing medications. Significance was not reached in relating the physician participants' own BMI history, score on the anti-obesity bias measure, and treatment recommendations. Thus, additional participants and further research are needed to clarify these questions.

Works Cited

1. Screening for Obesity in Adults. What's New from the USPSTF? *Agency for Healthcare Research and Quality*. December 2003. <http://www.uspreventiveservicestaskforce.org/uspstf/uspsobes.htm>. Accessed June 17, 2009.
2. McTigue KM, Harris R, Hemphill B, et al. Screening and Interventions for Overweight and Obesity in Adults: Summary of the Evidence for the U.S. Preventive Services Task Force. *Annals of Internal Medicine*. 2003;139(11):933-949.
3. Bertakis KD, Azari R. The impact of obesity on primary care visits. *Obesity Research*. 2005;13(9):1615-1623.
4. Puhl R, Brownell KD. Bias, Discrimination, and Obesity. *Obesity Research*. 2001;9(12):788-805.
5. Wooley SC, Garner DM. Obesity treatment: The high cost of false hope. *Journal of the American Dietetic Association*. 1991;91(10):1248-1251.
6. Kramer FM, Jeffery RW, Forster JL, Snell MK. Long-term follow-up of behavioral treatment for obesity: Patterns of weight regain among men and women. *International Journal of Obesity*. 1989;13(2):123-136.
7. Miller WC. How Effective Are Traditional Dietary and Exercise Interventions for Weight Loss? *Medicine and Science in Sports and Exercise*. 1999;31:1129–1134.
8. Amy NK, Aalborg A, Lyons P, Keranen L. Barriers to routine

gynecological cancer screening for White and African-American obese women. *International Journal of Obesity*. January 2006;30(1):147-155.

9. Price JH, Desmond SM, Krol RA, Snyder FF, O'Connell JK. Family practice physicians' beliefs, attitudes, and practices regarding obesity. *American Journal of Preventive Medicine*. November-December 1987;(6):339-45.
10. Pace WD, Dickinson LM, Staton EW. Seasonal Variation in Diagnoses and Visits to Family Physicians. *Annals of Family Medicine*. 2004;2:411-417.
11. Chobanian AV, Bakris GL, Black HR, et al. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension*. 2003;42:1206-1252.
12. Pollack KI, Alexander SC, Coffman CJ, et al. Physician Communication Techniques and Weight Loss in Adults; Project CHAT. *American Journal of Preventative Medicine*. 2010;29(4)321-328.
13. Crandall CS. Prejudice against fat people: Ideology and self-interest. *Journal of Personality and Social Psychology*. 1994;66:882-894.
14. Perrin EM, Flower KB, Ammerman AS. Pediatricians' Own Weight: Self-perception, Misclassification, and Ease of Counseling. *Obesity Research*. 2005;13(2)326-332.

Works Consulted

- Befort CA, Greiner KA, Hall S et al. Weight-Related Perceptions Among Patients and Physicians. *Journal of General Internal Medicine*. October 2006;21(10):1086-1090.
- Blackburn GL, Wilson GT, Kanders BS, et al. Weight cycling: The experience of human dieters. *American Journal of Clinical Nutrition*. 1989;49(suppl 5):1105-1109.
- Blair SN, Church TS. The Fitness, Obesity, and Health Equation: Is Physical Activity the Common Denominator? *JAMA*. 2004;292(10):1232-1234.
- Blanck HM, Khan LK, Serdula MK. Use of Nonprescription Weight Loss Products: Results From a Multistate Survey. *JAMA*. 2001;286(8):930-935.
- Bortz WM. Health Behavior and Experiences of Physicians: Results of a Survey of Palo Alto Medical Clinic Physicians. *Western Journal of Medicine*. January 1992;156(1):50-51.
- Butler D. Health experts find obesity measures too lightweight. *Nature*. 2004;428:244.
- Campos P, Saguy A, Ernsberger P, Oliver E, Gaesser G. The epidemiology of overweight and obesity: public health crisis or moral panic? *International Journal of Epidemiology*. February 2006;35(1)55-60.
- Campos P, Saguy A, Ernsberger P, Oliver E, Gaesser G. Response: lifestyle not weight should be the primary target. *International*

- Journal of Epidemiology*. February 2006;35(1)81-82.
- Connors ME, Melcher SA. Ethical issues in the treatment of weight-dissatisfied clients. *Professional Psychology; Research and Practice*. 1993;24(4):404-408.
- Cummins S. Food environments and obesity – neighbourhood or nation? *International Journal of Epidemiology*. February 2006;35(1):100-104.
- Cuttler L, Whittaker JL, Kodish ED. The Overweight adolescent: Clinical and ethical issues in intensive treatments for pediatric obesity. *Journal of Pediatrics*. April 2005;146(4):559-64.
- Flegal KM, Carroll MD, Kuczmarski RJ, Johnson CL. Overweight and obesity in the united states: Prevalence and trends, 1960-1994. *International Journal of Obesity and Related Metabolic Disorders : Journal of the International Association for the Study of Obesity*. 1998;22(1)39-47.
- Flum DR, Dellinger EP. Impact of Gastric Bypass Operation on Survival: A Population-Based Analysis. *Journal of American College of Surgeons*. 2004;199:543-551.
- Friedman J. A War on Obesity, Not the Obese. *Science*. February 2003;299(5608):856-858.
- Garner DM, Wooley SC. Confronting the failure of behavioral and dietary treatments for obesity. *Clinical Psychology Review*. 1991;11(6):729-780.

- Gostin LO. Law as a Tool to Facilitate Healthier Lifestyles and Prevent Obesity. *JAMA*. 2007;297(1):87-90.
- Gregg EW, Guralnik JM. Is Disability Obesity's Price of Longevity? *JAMA*. 2007;298(17):2066-2067.
- Hash RB, Munna RK, Vogel RL, Bason JJ. Does Physician Weight Affect Perception of Health Advice? *Preventive Medicine*. January 2003;36(1):41-44.
- Haskell WL, Lee I, Pate RR, et al. Physical Activity and Public Health: Updated Recommendation for Adults from the American College of Sports Medicine and the American Heart Association. *Circulation*. 2007;116:1081-1093.
- Hill AJ, Silver EK. Fat, friendless and unhealthy: 9-year old children's perception of body shape stereotypes. *International Journal of Obesity and Related Metabolic Disorders : Journal of the International Association for the Study of Obesity*. 1995;19(6):423-430.
- Hochberg MC, Lethbridge-Cejku M, Scott WW, Reichle R, Plato CC, Tobin JD. Upper extremity bone mass and osteoarthritis of the knees: Data from the Baltimore longitudinal study of aging. *Journal of Bone and Mineral Research : The Official Journal of the American Society for Bone and Mineral Research*. 1995;10(3):432-438.
- Kalarchian MA, Marcus MD, Wilson GT, Laboivie EW, Brodin RE, LaMarca LB. Binge Eating Among Gastric Bypass Patients at

- Long-term Follow-up. *Obesity Surgery*. 2002;12(2):270-275.
- Kim D, Kawachi I. Food Taxation and Pricing Strategies to “Thin Out” the Obesity Epidemic. *American Journal of Preventive Medicine*. May 2006;30(5):430-437.
- Lobstein T. Commentary: Obesity – public health crisis, moral panic, or a human rights issue? *International Journal of Epidemiology*. February 2006;35(1):74-76.
- Oliver JE. The Politics of Pathology: how obesity became an epidemic disease. *Perspectives in Biology and Medicine*. 2006;49(4):611-627.
- Saguy AC, Riley KW. Weighing both sides: Morality, mortality, and framing contests over obesity. *Journal of Health Politics, Policy and Law*. 2005;30(5):869-921.
- Thompson D, Edelsberg J, Colditz GA, Bird AP, Oster G. Lifetime Health and Economic Consequences of Obesity. *Archives of Internal Medicine*. 1999;159:2177-2183.
- Thompson WG, Cook DA, Clark MM, Bardia AB, Levine JA. Treatment of Obesity. *Mayo Clinic Proceedings*. January 2007;82(1):93-102.
- Wadden TA, Anderson DA, Foster GD, Bennett A, Steinberg C, Sarwer DB. Obese Women’s Perceptions of Their Physicians’ Weight Management Attitudes and Practices. *Archives of Family Medicine*. 2000;9:854-860.

PHYSICIAN PERSONAL CHARACTERISTICS & OBESITY TREATMENT STUDY

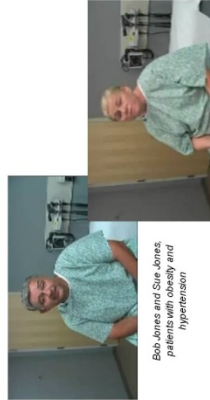


Marisa Schottelkorb, Class of 2011, with Dr. Bradley Appelhans, PhD

Introduction

Obesity is a risk factor for cardiovascular disease, a variety of cancers, diabetes, osteoarthritis, sleep apnea, diminished mobility, and as importantly, societal stigmatization. The U.S. Preventive Services Task Force recommends that clinicians screen all adults for obesity and offer intensive counseling and behavioral interventions as needed to achieve weight loss.^{1,2} Doctors have nonproductive behaviors toward obese patients:

- Physicians spend less time educating obese patients about exercise and health than their normal-weight counterparts.³
- Medical professionals discriminate against the obese.⁴
- Some doctors fail to recognize obesity as a medical problem,⁵ but rather as a lack of self-control, or as a result of self-indulgence or other personal failings.⁶
- Some doctors cite lack of intervention for obesity due to treatment ineffectiveness.^{7,8}
- Obese female patients report very negative clinic experiences, leading to a lower rate of seeking preventive care, in addition to longer delays before seeking help for symptoms of disease, which translated into higher cervical cancer rates.⁹



Obese female and male patients with obesity and hypertension

Hypertension is a common finding with obesity. Like obesity treatment, hypertension treatment should be initiated using lifestyle modifications first, per most recent Joint National Committee on Hypertension (JNC) guidelines.

In this study, we attempted to examine how a physician's own characteristics (physician gender, weight history, and feelings toward obesity) related to the physician's proposed treatment plan and ranking of treatment goal importance in obese and hypertensive patients.

Hypothesis

We hypothesized that 1) thinner physicians would be more likely to recommend lifestyle recommendations, and less likely to prescribe medications than physicians with higher BMIs, consistent with JNC guidelines, and 2) thinner physicians would have higher scores on a measure of obesity bias than physicians with higher BMIs.

Methodology

- Internists and family physicians in the Phoenix area were recruited to be participants via email and printed letters mailed to physician offices.
- Individuals who wished to participate followed an internet link to access the informed consent and study materials.
- Participants were randomized to watch one of two brief videos depicting a clinical encounter with a male or female obese patient presenting with hypertension.
- The patient was a 52 year-old with average BP of 150/90 mmHg (assessed twice, utilizing the correct method).
- The patient's BMI was 32, and the patient actors had BMIs near to the reported BMI.
- Physical exam was reported to show no abnormalities.
- At this second visit, umalalysis, EKG, fasting cholesterol, fasting glucose, electrolytes, and creatinine were all within normal range.
- Participant data collected.
- Treatment recommendations, in a prioritized order
- Questionnaire assessing personal weight history
- Questionnaire assessing attitudes toward obesity (Antifat Attitudes Questionnaire, an independently-validated 15-item measure to assess the participant's obesity bias, shown here.¹² The maximum score of 117 would reflect the highest degree of anti-obesity bias.

Physician Participant Characteristics

Of 71 participants, only 32 completed the entire study.

Ever tried weight loss	N	SD
No	7 (0.206)	-
Yes	27 (0.794)	-
Tried weight loss in past year		
No	15 (0.411)	-
Yes	19 (0.559)	-
BMI		
Current	24.9	2.7
1 year ago	25.1	2.9
At age 25	23.0	2.3
Highest in life	26.6	3.2
Lowest in life	21.8	2.0

Number One Recommendation



Other treatment options not represented here include angiotensin receptor blocker, calcium channel blocker, moderation of alcohol intake, no intervention/return in 6 months, refer to specialist, renal program, renal ultrasound, and other (write in.)

Anti-Obesity Bias

Very strongly disagree 1 2 3 4 5 6 7 8 9 Very strongly agree

Question	Statement	Mean rating	SD
1	I really don't like fat people much.	2.48	2.49
2	I don't have many friends who are fat.	4.45	2.66
3	I tend to think that people who are overweight are a little unattractive.	0.91	1.42
4	Although some fat people are surely smart, in general, I think they tend not to be as bright as normal weight people.	1.36	1.93
5	I have a hard time taking fat people seriously.	1.15	1.6
6	Fat people make me somewhat uncomfortable.	2.03	1.96
7	If I were an employer looking to hire, I might avoid hiring a fat person.	3.15	2.48
8	I feel disgusted with myself when I gain weight.	3.45	2.5
9	One of the worst things that could happen to me would be if I gained 25 pounds.	4.45	2.87
10	I worry about becoming fat.	3.27	2.48
11	People who weigh less much could lose at least 50% of their weight through a little exercise.	7.06	2.06
12	Some people are fat because they have no willpower.	4.52	2.93
13	Fat people tend to be fat pretty much through their own fault.	3.97	2.56
14	I am satisfied with my current body weight.	5.12	3.01
15	I find myself thinking about my body weight a lot.	3.24	2.65
Total Score (maximum: 117)		50.64	19.71

Prescribing Priorities

Intervention	Number of physicians prescribing as #1 recommendation
Weight loss	13
Thiazide	9
Physical activity	7
ACE inhibitor	2
Beta-blocker	1
Low-sodium diet	1

Take-Away Points

- Study in which physician participants watched a video of a hypertensive, obese patient and made treatment recommendations and completed an obesity bias questionnaire
- Unable to achieve significance in most measures due to incomplete participation
- Most physicians studied recommended a drug for hypertension in addition to lifestyle changes
- Most physicians did NOT include all JNC-recommended lifestyle change components in their treatment plan
- Unable to link physician BMI or history of dieting to trends in treatment recommendations.
- Future work should secure complete participation to test associations with physician characteristics.

References

- Screening for Obesity in Adults: What's New from the USPSTF? Agency for Healthcare Research and Quality. <http://www.uspreventiveservicestaskforce.org/uspsfstfobesity.htm>. Accessed June 17, 2009.
- McLean S, Hershfield B, et al. Screening and Interventions for Obesity. *Journal of the American Medical Association*. 2008;300(11):1282-1291.
- Preventive Services Task Force. *Annals of Internal Medicine*. 2003;139(11):933-946.
- Puhl R, Brownell KD. Bias, Discrimination, and Obesity. *Obesity Research*. 2005;13(6):1015-1023.
- Wadden KD, Arora JB. The Impact of Obesity on Primary Care Visits. *Obesity*. 2001;9(12):788-805.
- Pruitt R, Brownell KD. Obesity Treatment: The High Cost of False Hope. *Journal of the American Dietetic Association*. 1991;91(10):1248-1251.
- Pruitt R, Desmond SM, Krol RA, Snyder FF, O'Connell JK. Family practice physicians beliefs, attitudes, and practices regarding obesity. *American Journal of Preventive Medicine*. 1998;14(2):139-143.
- Kramer FM, Jeffrey RW, Forster AJ, Sidel MK. Long-term follow-up of behavioral treatment for obesity: Patterns of weight regain among men and women. *International Journal of Obesity*. 1998;22(12):1396-1401.
- Mack NC. Effectiveness of Weight Loss Interventions for Weight Loss? *Medicine and Science in Sports and Exercise*. 1998;30(11):1929-1934.
- Armstrong A, Lyons P, Kersness L. Barriers to routine gynecological cancer screening in low-income, inner-city African American obese women. *International Journal of Obesity*. January 2008;32(1):142-152.