NIH Public Access
Author Manuscript
Obes Res Clin Pract. Author manuscript; available in PMC 2015 March 01.

Published in final edited form as:
Obes Res Clin Pract. 2014 ; 8(2): e115–e200. doi:10.1016/j.orcp.2012.12.004.

Patient and Physician Characteristics Associated with the Provision of Weight Loss Counseling in Primary Care

Gareth R. Dutton, PhD[1,*], **Katharine G. Herman, MA, MEd**[2], **Fei Tan, PhD**[3], **Mary Goble, MSN**[4], **Melissa Dancer-Brown, RD**[4], **Nancy Van Vessem, MD**[4], and **Jamy D. Ard, MD**[5]

[1]Department of Medickine/Division of Preventive Medicine, University of Alabama at Birmingham, Birmingham, AL

[2]Department of Medical Humanities and Social Sciences, Florida State University College of Medicine, Tallahassee, FL

[3]Department of Mathematical Sciences, Indiana University-Purdue University Indianapolis, Indianapolis, IN

[4]Capital Health Plan, Division of Health Promotion, Tallahassee, FL

[5]Nutrition Sciences, University of Alabama at Birmingham, Birmingham, AL

Abstract

Background—A variety of physician and patient characteristics may influence whether weight loss counseling occurs in primary care encounters.

Objectives—This study utilized a cross-sectional survey of primary care patients, which examined patient characteristics, physician characteristics, and characteristics of the physician-patient relationship associated with weight loss counseling and recommendations provided by physicians.

Participants—Participants (N=143, mean age=46.8 years, mean BMI=36.9 kg/m^2, 65% Caucasian) were overweight and obese primary care patients participating in a managed care weight loss program.

Measures—Participants completed self-report surveys in the clinic prior to the initial weight loss session. Surveys included items assessing demographic/background characteristics, weight, height, and a health care questionnaire evaluating whether their physician had recommended weight loss, the frequency of their physicians' weight loss counseling, and whether their physician had referred them for obesity treatment.

Results—Patient BMI and physician sex were most consistently associated with physicians' weight loss counseling practices. Patients seen by female physicians were more likely to be told

© 2012 Asia Oceania Assoc. for the Study of Obesity. Published by Elsevier Ltd. All rights reserved.

[*]Corresponding author: Gareth R. Dutton, PhD, University of Alabama at Birmingham, Division of Preventive Medicine, 1717 11th Avenue South, Birmingham, AL 35205. Telephone: (205) 934-6876. Fax: (205) 934-7959. gdutton@uabmc.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

NIH-PA Author Manuscript
NIH-PA Author Manuscript
NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

that they should lose weight, received more frequent obesity counseling, and were more likely to have been referred for obesity treatment by their physician. Length and frequency of physician-patient contacts were unrelated to the likelihood of counseling.

Conclusions—These findings add to previous evidence suggesting possible differences in the weight loss counseling practices of male and female physicians, although further research is needed to understand this potential difference between physicians.

Keywords

weight loss; obesity management; primary health care; physicians

Background

Patients who have been advised to lose weight by their physician are more likely to engage in weight loss efforts, [1,2] and many overweight and obese patients express an interest in greater physician involvement in their weight loss attempts. [3,4] However, there are numerous barriers interfering with the provision of weight loss counseling in primary care, including lack of time, lack of reimbursement, and physicians feeling ill-equipped to address these issues. [5–9] Given the recent development that the Centers for Medicare and Medicaid Services (CMS) will reimburse primary care providers for weight loss counseling, [12] some of these barriers may be partially addressed. Regardless, obese patients currently report minimal guidance from physicians regarding weight loss. [1,10,11]

A number of cross-sectional studies suggest that particular physician and patient characteristics may influence the provision of weight loss counseling. Patients with a higher BMI receive more physician advice for weight loss and spend more time with the physician than patients who have less severe levels of overweight and obesity. [2,3,12,13] Patients with less education, younger age, and those who have not yet developed weight-related comorbidities are less likely to receive physician counseling. [2] Also, women are more likely than men to receive physician recommendations for weight loss, [7,14] and there is some evidence that physicians recommend greater amounts of weight loss for women than men of comparable weight status. [15]

In terms of physician characteristics, clinical specialty influences the provision of obesity treatment, with primary care physicians and endocrinologists providing more treatment than other specialties, such as gynecology, cardiology, and orthopedics. [16] Older physicians have demonstrated more positive attitudes toward weight loss treatment [17] and have reported greater likelihood for addressing this topic. [18] A recent study indicated that physicians with normal BMI were more likely to discuss weight loss with obese patients than physicians who were overweight/obese. [19] Compared to male physicians, female physicians are more likely to offer patients nutritional and physical activity counseling, [7] although this has not always been found. [18] In one study, female physicians spent more time discussing nutritional information, whereas male physicians were more inclined to discuss cardiovascular risk. [13] However, another study indicated that male patients seeing a male physician received more nutritional and exercise counseling than female patients seeing a female physician. [20] Furthermore, significant differences in the weight loss goals

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

provided by male and female physicians have been documented, with male physicians recommending weight goals to patients that would require significantly greater losses. [15]

While prior research has identified a variety of patient and physician characteristics that may be associated with the occurrence of weight loss counseling, most studies have examined either physician characteristics or patient characteristics. Few studies have simultaneously looked at both sets of factors. Also, there is a lack of research examining the relationship between physicians and patients (e.g., length of relationship, frequency of contacts) and how this relates to weight loss advice. Furthermore, previous work has failed to focus on the prior experiences of patients specifically seeking treatment for weight loss. Given the recent decision to reimburse providers for weight loss services, [21] this topic is particularly timely.

The purpose of the current investigation was to examine the association between 1) patient characteristics, 2) physician characteristics, and 3) the physician-patient relationship and likelihood of patients receiving weight loss counseling from their primary care physicians. It was hypothesized that higher patient BMI and more diagnosed medical conditions would be associated with greater likelihood of weight loss counseling. It was also hypothesized that patients seeing a female physician and those with a more frequent and longer relationship with their physician would receive more counseling.

Methods

Participants and Setting

One hundred fifty-four members of a managed care organization seeking treatment for weight loss were recruited for this study. The managed care organization based in northern Florida provides clinical services for approximately 110,000 members in a four-county area receiving health benefits and coverage through numerous employer groups and Medicare. This managed care organization houses 52 different specialties, includes 149 primary care providers in its network (i.e., family medicine, internal medicine, gynecology, and geriatrics), and is affiliated with two local hospitals. The managed care organization offers group-based behavioral weight loss treatment for members, and treatment is conducted at one of the managed care outpatient clinics. Members interested in the weight loss program who attended an informational session offered monthly by the organization were targeted for study recruitment. Recruitment occurred over an 8-month period, and 157 patients were invited to participate in this study during that time. One hundred fifty-four participants agreed and completed the survey (98% response rate). The study protocol was approved by the institutional review boards of the participating organizations.

Main Measures

Participants completed anonymous, self-report surveys in the clinic prior to the initial weight loss session, and these surveys included the following items:

Demographic and Background Characteristics—Items regarding participants' demographic characteristics assessed age, sex, ethnicity, marital status, and level of education. Participants also were asked about the presence of diagnosed medical conditions,

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

including diabetes, heart disease, hypertension, high cholesterol, sleep apnea, arthritis, and thyroid disease.

Weight and Height—Participants were asked to report their current height (in feet and inches) and weight (in lbs). Self-report of these anthropometric measures was conducted in order to maintain the anonymity of participants' survey responses. Self-reported weight has been shown to be a valid and reliable approach that corresponds closely with objective, documented measurements. [22,23]

Health Care Questionnaire—Participants responded to items about contact with their primary care physician, which were adopted from a previous health care questionnaire utilized in previous weight loss studies. [11,12] Items assessed the number of years the patient had been seen by the primary care physician ("visit duration"), the average number of medical visits per year with the physician ("visit frequency"), and the sex of the patient's physician. Using five-point Likert scales, patients also reported the frequency with which their physician discussed weight loss with them (1=never; 5=at every visit). This health care questionnaire has demonstrated acceptable test-retest reliability. [11,12] For this study, patients were also asked if their physician had recommended weight loss within the past year (yes/no) and if their physician had referred them to the current weight loss program (yes/no).

Statistical Analyses

Descriptive analyses were used to summarize demographic and other baseline characteristics of the sample. Patients' reports of physician behavior (e.g., frequency of weight loss counseling, physician recommendation to lose weight, physician referral to weight loss program), as well as items related to the physician-patient relationship (e.g., number of years seen by physician, number of visits per year) were also summarized.

Logistic regressions were conducted to examine the associations between the assessed independent variables and physician weight loss counseling behaviors. Logistic regressions were conducted for each of the following outcome variables: 1) frequency of physician weight loss counseling (often vs. not often); 2) whether physicians recommended that the patient lose weight (yes vs. no); and 3) whether physicians referred the patient to the weight loss program (yes vs. no). Due to the skewed distribution of responses on the 5-point Likert scale of the first item listed here (i.e., "how often does your doctor discuss weight control?"), this item was re-categorized to provide a dichotomous outcome as described. For each regression, independent variables included 1) patient characteristics, and 2) characteristics of the physician and physician-patient relationship. Patient characteristics included age, race (white vs. black), BMI (continuous measure), number of medical conditions, marital status (married vs. unmarried), and educational attainment (graduated college vs. did not graduate college). Characteristics of the physician and physician/patient relationship included physician's sex, number of years seen by one's physician, and number of visits per year with one's physician. Secondary analyses were conducted with the same variables, except BMI was included as a categorical variable with three levels: 1) overweight (25–29.9 kg/m^2), 2) class I obesity (30–34.9 kg/m^2), and 3) class II/III obesity

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

(>35.0 kg/m^2). Similarly, secondary analyses including female participants only were conducted to replicate findings observed in the primary analyses including both sexes.

Results

Patient Characteristics

While 154 participants completed the study survey, eleven participants were excluded because their BMI was less than 25 kg/m^2 or because there were unavailable BMI data. The data from the remaining 143 participants were utilized in the reported analyses. Characteristics of the sample are summarized in Table I.

Predictors of Weight Loss Counseling Behaviors

Frequency of Counseling—Results of regression analyses indicated that higher patient BMI (OR=1.15, 95% CI 1.07–1.24) was associated with patients receiving more frequent weight loss counseling from their physician, $p < 0.001$. A greater number of medical conditions was related to more frequent counseling (OR=1.56, 95% CI 1.02–2.38) after adjusting for characteristics of the physician-patient relationship, $p < 0.05$. Having a female physician (OR=2.88, 95% CI 1.14–7.30) was associated with patients receiving more frequent weight loss counseling from their physician as well, $p < 0.03$. Other patient demographic variables were not related to the frequency of received weight loss counseling. In addition, duration of the physician-patient relationship and the frequency of visits to the physician were not related to the amount of weight loss counseling received. The variables associated with frequency of counseling are summarized in Table II.

Recommendation to Lose Weight—With adjustment for physician-patient relationship factors, patients' BMI was a significant factor in recommendations to lose weight (OR=1.10, 95% CI 1.01–1.19), $p < 0.04$. Also, patients were more likely to receive advice to lose weight if their physician was a female (OR=3.25, 95% CI 1.18 – 8.94), $p < 0.03$. No other variables were related to physician recommendations for weight loss (see Table III).

Referral to Treatment Program—Physician's sex was significantly associated with the likelihood of receiving a physician-referral to a weight loss treatment program. Specifically, patients who had a female physician were more likely to be referred to a weight loss program than patients who had a male physician (OR=3.13, 95% CI 1.31 – 7.49), $p = 0.01$. Patients who graduated college were more likely to receive a treatment referral as well (OR=2.66, 95% CI 1.12–6.28), $p < 0.03$. The factors associated with referral to a weight loss treatment program are summarized in Table IV.

Secondary Analyses

Supplemental analyses including participants' BMI as a categorical (rather than continuous) measure demonstrated that class II/III obesity was significantly associated with counseling frequency (OR=9.48, 95% CI 2.66 – 33.74) and physician recommendations for weight loss (OR=3.57, 95% CI 1.11 – 11.47) when compared to overweight participants (reference group). Class II/III obesity was not associated with physician referral for treatment, and class I obesity was not different from the overweight reference group for any of the three

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

outcomes. Consistent with the primary analyses, physician gender was significantly associated with all three outcomes in these models, *p*s < 0.01. Additionally, supplemental analyses including only female participants replicated the findings from primary analyses; the significant associations observed previously between patient BMI and physician gender remained for each of the three outcome variables (i.e., counseling frequency, recommendation for weight loss, and treatment referral).

Conclusions

The results of this study suggest certain patient and physician characteristics are associated with the provision of weight loss counseling and specific treatment recommendations. In terms of patient characteristics, patients with a higher BMI were more likely to have their physician recommend weight loss and received more frequent weight loss counseling from their physician. Further analyses suggest that this association may be most pronounced for patients with BMIs >35 kg/m^2. These finding support previous research and our hypothesis that patients with a higher BMI receive more physician advice for weight loss than patients who have less excess weight. [2,3,12,13] This is potentially problematic because a significant proportion of overweight individuals who would benefit from treatment preventing continued weight gain and weight-related medical conditions may be overlooked. However, it is encouraging to note the lack of differences in physician counseling associated with patients' ethnicity, age, or educational attainment.

As for physician characteristics, female physicians were more likely to recommend weight loss to overweight/obese patients, more frequently provided weight loss counseling, and were more likely to refer patients to a weight loss program than their male colleagues. These associations were consistently observed regardless of whether patients' BMI was included as a continuous or categorical measure and when the small numbers of male patients were excluded from analyses. Previous research has provided conflicting results on whether physician sex is related to the provision of weight management advice and treatment. While some studies indicate female physicians were more likely to offer patients nutritional and physical activity counseling, [7,13] others have not supported this finding [20]. For instance, Phelan et al. reported that female physicians discussed topics such as decreasing television time, increasing physical activity, and recording food intake, whereas male physicians were more likely to discuss nutritional and low-calorie diet options. [18] Sonntag et al. reported that female physicians were more likely to discuss nutrition-related behaviors, whereas male physicians were more likely to discuss cardiovascular risks. [13]

If physician sex differences do exist, perhaps female physicians feel more comfortable addressing the topic of weight management, especially with female patients. It is important to note that this outcome was assessed via patients' self-report of their physicians' behavior, and the majority of patients were women (which is typical of weight loss programs). Thus, it is possible that the sex-matching of the physician-patient dyad is a more relevant factor in the provision of weight loss counseling than the sex of the physician alone. In other words, female patients seeing a female physician may be more likely to receive counseling than female patients seeing a male physician. Findings of a recent study seem to support this hypothesis, as researchers found that female physicians had significantly longer visits with

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

female patients than when meeting with male patients. [13] However, Pickett-Blakely et al. found that gender concordance of the physician-patient dyad mattered, but female patients seeing female physicians were less likely to receive nutritional and exercise counseling as compared to male patients seeing male physicians. [20] Unfortunately, it was not feasible to address this issue with the current data, since there were so few male patients available for analysis. Thus, future research should explore further the importance of sex concordance in the occurrence and content of medical weight loss counseling.

While physician sex appeared to be a relevant factor in the provision of weight loss counseling, neither the frequency of medical visits nor the length of the physician-patient relationship were related to any of the counseling behaviors/outcomes as hypothesized. This is one of the few studies to examine the frequency and duration of physician-patient contacts as they relate to the provision of weight loss counseling, although previous research has indicated that certain medical specialties (e.g., primary care) are associated with a greater likelihood of providing weight loss counseling as compared with other areas of specialization (e.g., cardiology, orthopedics). [17] If these differences in physician specialties are due to the longer-term nature of the primary care relationship, it is possible that these factors were less relevant in the current sample, which exclusively focused on primary care.

There were several limitations of this study that should be addressed. First, due to the homogeneous nature of the current sample, it was difficult to make comparisons based on patients' race or sex. In particular, it would be beneficial to examine physicians' interactions with male patients on this topic. Since the sample included treatment-seeking individuals only, results may not generalize to the larger population of obese primary care patients. It is also possible that some analyses were under-powered to detect associations given the modest sample size relative to the number of variables included in the models. Regarding physician characteristics, the current study included only physician sex in analyses. Future research that includes a more comprehensive set of physician characteristics, including physicians' BMI, would be valuable. Additionally, patients completed self-report surveys to provide information regarding their experiences with physicians as well as their own height and weight, which are subject to recall bias and other inaccuracies. Future research including physicians' perspectives on these encounters as well as direct observation of encounters and other objective measurements may be useful. This study did not assess patients' eating behaviors or physical activity, and future investigations should also include these variables. As mentioned previously, another important area of future research deals with the influence of sex-matched, physician-patient dyads on the provision and characteristics of weight loss counseling in medical encounters.

In summary, this study highlights some of the patient characteristics that may unknowingly influence physicians' approach to weight loss counseling. Current findings are also consistent with previous work suggesting that female physicians are more likely to provide weight loss counseling and referrals, [7,14] although the mechanism explaining this sex effect remains unclear and deserves further research attention. Somewhat surprisingly, the length of the physician-patient relationship and the frequency of contacts were unrelated to counseling behaviors, which also warrants further investigation and replication. Regardless,

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

primary care providers should remain mindful of potential variations in practice patterns due to their own characteristics as well as patients' characteristics. Additional study is needed to identify systemic approaches to ensure consistent and appropriate counseling and recommendations for overweight and obese individuals.

Acknowledgments

Funding: This work was supported by the Florida State University College of Medicine [no grant number assigned].

References

1. Galuska DA, Wills JC, Serdula MK, Ford ES. Are health professionals advising obese patients to lose weight? JAMA. 1999; 282:1576–78. [PubMed: 10546698]
2. Sciamanna CN, Tate DF, Lang W, Wing RR. Who reports receiving advice to lose weight? Arch Intern Med. 2000; 160:2334–2339. [PubMed: 10927731]
3. Potter MB, Vu JD, Croughan-Minihane M. Weight management: what patients want from their primary care physicians. J Fam Pract. 2001; 50:513–18. [PubMed: 11401737]
4. Tan D, Zwar NA, Dennis SM, Vagholkar S. Weight management in general practice: What do patients want? Med J Australia. 2006; 185:73–75. [PubMed: 16842059]
5. Bocquier A, Verger P, Basdevant A, et al. Overweight and obesity: Knowledge, attitudes, and practices of general practitioners in France. Obes Res. 2005; 13:787–95. [PubMed: 15897489]
6. Foster GD, Wadden TA, Makris AP, et al. Primary care physicians' attitudes about obesity and its treatment. Obes Res. 2003; 11:1168–76. [PubMed: 14569041]
7. Holund U, Thomassen A, Boysen G, et al. Importance of diet and sex in prevention of coronary artery disease, cancer, osteoporosis, and overweight or underweight: a study of attitudes and practices of Danish primary care physicians. Am J Clin Nutr. 1997; 65:S2004–06.
8. Kushner RF. Barriers to providing nutrition counseling by physicians: A survey of primary care practitioners. Prev Med. 1995; 24:546–52. [PubMed: 8610076]
9. Ruelaz AR, Diefenbach P, Simon B, Lanto A, Arterburn D, Shekelle PG. Perceived barriers to weight management in primary care: perspectives of patients and providers. J Gen Intern Med. 2007; 22:518–22. [PubMed: 17372803]
10. Nawaz H, Adams ML, Katz DL. Weight loss counseling by health care providers. Amer J Pub Health. 1999; 89:764–67. [PubMed: 10224993]
11. Wadden T, Anderson D, Foster G, Bennett A, Steinberg C, Sarwer D. Obese women's perceptions of their physicians' weight management attitudes and practices. Arch Fam Med. 2000; 9:854–60. [PubMed: 11031392]
12. Anderson DA, Wadden TA. Bariatric surgery patients' views of their physicians' weight related attitudes and practices. Obes Res. 2004; 12:1587–1595. [PubMed: 15536222]
13. Sonntag U, Henkel J, Renneberg B, Brockelbrink A, Braun V, Heintze C. Counseling overweight patients: analysis of preventive encounters in primary care. Int J Qual Health Care. 2010; 22:486–492. [PubMed: 20956283]
14. Hebl MR, Xu J. Weighing the care: physicians' reactions to the size of a patient. Intern J Obes. 2001; 25:1246–52.
15. Dutton GR, Tan F, Perri MG, et al. What words should we use when discussing excess weight? J Am Board Fam Med. 2010; 23:1–5. [PubMed: 20051534]
16. Kristeller JL, Hoerr RA. Physician Attitudes toward Managing Obesity: Differences among Six Specialty Groups. Prev Med. 1997; 26:542–49. [PubMed: 9245677]
17. Ferrante JM, Piasecki AK, Ohman-Strickland PA, Crabtree BF. Family physicians' practices and attitudes regarding care of extremely obese patients. Obes. 2009; 17:1710–16.
18. Phelan S, Nallari M, Darroch F, Wing R. What do physicians recommend to their overweight and obese patients? J Amer Board Fam Med. 2009; 22:115–22. [PubMed: 19264934]

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

19. Bleich, SN.; Bennet, WL.; Gudzune, KA.; Cooper, LA. [Accessed May 14, 2012] Impact on physician BMI on obesity care and beliefs. Available at: http://www.nature.com/oby/journal/vaop/ncurrent/full/oby2011402a.html

20. Pickett-Blakely O, Bleich SN, Cooper LA. Patient-physician gender concordance and weight-related counseling of obese patients. Am J Prev Med. 2011; 40:616–619. [PubMed: 21565652]

21. Centers for Medicare & Medicaid Services. Decision Memo for Intensive Behavioral Therapy for Obesity (CAG-00423N). U.S. Department of Health & Human Services; Available at: http://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?&NcaName=Intensive%20Behavioral%20Therapy%20for%20Obesity&bc=ACAAAAAAIAAA&NCAId=253& [Accessed February 29th, 2012]

22. McGuire MT, Wing RR, Klem ML, Lang W, Hill JO. What predicts weight regain in a group of successful weight losers? J Consult Clin Psychol. 1999; 67:177–85. [PubMed: 10224727]

23. Stunkard AJ, Albaum JM. The accuracy of self-reported weights. Am J Clin Nutr. 1981; 34:1593–99. [PubMed: 7270483]

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Table I

Sample characteristics

Variable	n	Percentage or Mean (SD)
Age (years)	143	46.8 (12.5)
Gender		
Female	128	90%
Male	15	10%
Weight (kg)	143	101.3 (23.6)
BMI (kg/m^2)	143	36.9 (7.4)
Overweight	28	20%
Obese	115	80%
Marital status		
Married	88	62%
Not married	53	38%
Race		
White	91	68%
Black	43	32%
Education		
Graduated college	76	54%
Some college or below	65	46%

NIH-PA Author Manuscript
NIH-PA Author Manuscript
NIH-PA Author Manuscript

Table II

Factors associated with the frequency of physician weight loss counseling †

Variable	n	OR	95% CI	*p*-value
Race				
Black	41	0.89	0.32 – 2.47	0.82
White	84	1	---	---
BMI	125	1.15	1.07 – 1.24	0.00*
Number of Medical Diagnoses	125	1.56	1.02 – 2.38	0.04*
Age	125	0.97	0.93 – 1.02	0.27
Marital Status				
Married	79	1.93	0.76 – 4.92	0.17
Unmarried Or Separated	46	1	---	---
Education				
Graduated College	69	1.89	0.76 – 4.71	0.17
Did Not Graduate College	56	1	---	---
Physician Visit Duration	125	1.01	0.95 – 1.07	0.76
Physician Visit Frequency	125	0.87	0.68 – 1.11	0.26
Physician Sex				
Female	55	2.88	1.14 – 7.30	0.03*
Male	70	1	---	---

* $p<0.05$

† This variable was assessed by the following question from the patient survey: “How often does your doctor discuss weight control?”

NIH-PA Author Manuscript
NIH-PA Author Manuscript
NIH-PA Author Manuscript

Table III

Factors associated with physicians recommending weight loss †

Variable	n	OR	95% CI	*p*-value
Race				
Black	41	0.68	0.22 – 2.12	0.51
White	85	1	---	---
BMI	126	1.10	1.01 – 1.19	0.03*
Number of Medical Diagnoses	126	1.64	0.98 – 2.75	0.06
Age	126	0.99	0.94 – 1.03	0.56
Marital Status				
Married	79	1.37	0.51 – 3.66	0.53
Unmarried Or Separated	47	1	---	---
Education				
Graduated College	69	1.60	0.61 – 4.20	0.34
Did Not Graduate College	57	1	---	---
Physician Visit Duration	126	1.07	1.00 – 1.14	0.05
Physician Visit Frequency	126	1.39	0.99 – 1.95	0.06
Physician Sex				
Female	56	3.25	1.18 – 8.94	0.02*
Male	70	1	---	---

* $p<0.05$

† This variable was assessed by the following question from the patient survey: “Has your primary care physician recommended to you that you lose weight (in the past year)?”

NIH-PA Author Manuscript
NIH-PA Author Manuscript
NIH-PA Author Manuscript

Table IV

Factors associated with physician referral to weight loss treatment †

Variable	n	OR	95% CI	*p*-value
Race				
Black	40	0.63	0.24 – 1.66	0.35
White	85	1	---	---
BMI	125	1.02	0.96 – 1.08	0.52
Number of Medical Diagnoses	125	1.32	0.09 – 1.94	0.16
Age	125	0.97	0.93 – 1.01	0.13
Marital Status				
Married	78	0.90	0.38 – 2.11	0.80
Unmarried Or Separated	47	1	---	---
Education				
Graduated College	68	2.66	1.13 – 6.28	0.03*
Did Not Graduate College	57	1	---	---
Physician Visit Duration	125	1.01	0.96 – 1.07	0.64
Physician Visit Frequency	125	1.14	0.91 – 1.43	0.26
Physician Sex				
Female	56	3.13	1.31 – 7.49	0.01*
Male	69	1	---	---

* $p<0.05$

† This variable was assessed by the following question from the patient survey: “Did your primary care physician refer you to this weight loss program?”