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Communication Study

Predictors of weight loss communication in primary care encounters

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ABSTRACT

Objective: Evidence suggests that physicians' use of motivational interviewing (MI) techniques helps patients lose weight. We assessed patient, physician, relationship, and systems predictors of length of weight-loss discussions and whether physicians' used MI techniques.

Methods: Forty primary care physicians and 461 of their overweight or obese patients were audio recorded and surveyed.

Results: Weight-related topics were commonly discussed (nutrition 78%, physical activity 82%, and BMI/weight 72%). Use of MI techniques was low. A multivariable linear mixed model was fit to time spent discussing weight, adjusting for patient clustering within physician. More time was spent with obese patients ($p = .0002$), by African American physicians ($p = .03$), family physicians ($p = .02$), and physicians who believed patients were embarrassed to discuss weight ($p = .05$). Female physicians were more likely to use MI techniques ($p = .02$); African American physicians were more likely to use MI-inconsistent techniques ($p < .001$).

Conclusion: Primary care physicians routinely counsel about weight and are likely to spend more time with obese than with overweight patients. Internists spend less time on weight. Patient and systems factors do not seem to influence physicians' use MI techniques.

Practice implications: All physicians, particularly, male and African American physicians, could increase their use of MI techniques to promote more weight loss among patients.

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1. Introduction

Patient–physician communication has a direct influence on patient satisfaction and adherence [1–5]. Physician counseling also can influence patients to change weight-related behaviors such as physical activity and diet [6,7]. However, physicians perceive these discussions as challenging [8–14]. Despite the challenges, physicians often counsel their patients to lose weight [15]. Unfortunately, physician communication may not be effective as few patients actually lose weight.

One style physicians could use to enhance patient motivation and confidence to lose weight, improve nutrition, and increase physical activity is motivational interviewing (MI) [16]. MI is a patient-centered, directive style used to help patients resolve ambivalence or resistance about behavior change. The MI approach includes: (1) reflecting back to patients what was heard; (2) praising patients for even small changes; (3) allowing patients to set own goals; (4) asking permission before giving advice; (5) accepting patient's motivation or lack thereof to change – not confronting or judging; (6) working collaboratively while supporting patient autonomy as the patient attempts to change [17,18].

MI may be especially effective when addressing a complex issue such as weight. Most obese patients know they need to lose weight, yet are ambivalent about changing due perhaps to low self-efficacy and lack of skills. Using MI helps translate patient ambivalence into increased motivation. Most people do not like to feel ambivalent; rather, they prefer to compartmentalize their reasons for wanting to lose weight and their reasons for not wanting to lose weight. When these reasons are emphasized and discussed together and ambivalence is heightened, patients might be more motivated to resolve this ambivalence and move toward healthier goals. MI also helps patients who are resistant to change. Unlike other

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approaches that rely more on information giving and trying to persuade patients of the reasons for losing weight, MI helps patients explore their resistance in a non-confrontational and non-judgmental way. Reducing resistance might occur by exploring goals and values and how these might not be congruent.

The MI approach has been successfully applied to help patients lose weight [19–23]. Recent work indicates that MI can also be applied in the health care setting. When physicians counsel about weight use MI techniques, such as reflective listening and asking permission before giving advice, patients are more likely to lose weight [24–26]. This work also indicates that physician's use of MI techniques does not increase the overall time of the visit. Given time constraints of primary care encounters, physicians would never be expected to do in-depth MI counseling during primary care encounters but could incorporate MI techniques into their weight loss counseling. Some factors may enhance or inhibit physicians from using MI techniques. Knowing these factors can help develop interventions to improve use of MI techniques to help patients lose weight.

Epstein [27] proposed a model of factors that affect patient-centered communication (Fig. 1) that could explain physician use MI techniques. Patient factors include: race, age, gender, BMI, motivation, self-efficacy, comfort discussing weight with physicians, and attributions about obesity. Patient demographics, such as patient gender and weight, might predict how weight-loss conversations occur as physicians might believe that women know more about weight loss [28] or because physicians might not feel compelled to convince obese, rather than overweight, patients they need to lose weight [14]. It also could be that patient psychosocial factors like how confident they are they can lose weight affect how physicians counsel. Physician factors include: race, age, gender, BMI, specialty, confidence to counsel about weight, outcome expectations that weight counseling will improve patients' weight, barriers, and comfort discussing weight with patients. Physician demographics, including their weight, as well as their beliefs about their counseling and the efficacy of their counseling, all could affect how they counsel about weight. Relationship factors include whether the patient is a new patient, race concordance and gender concordance of the patient–physician dyad [29]. Visit factors include type of encounter (i.e., preventive vs. chronic care) and patient and physician perceived time constraints.

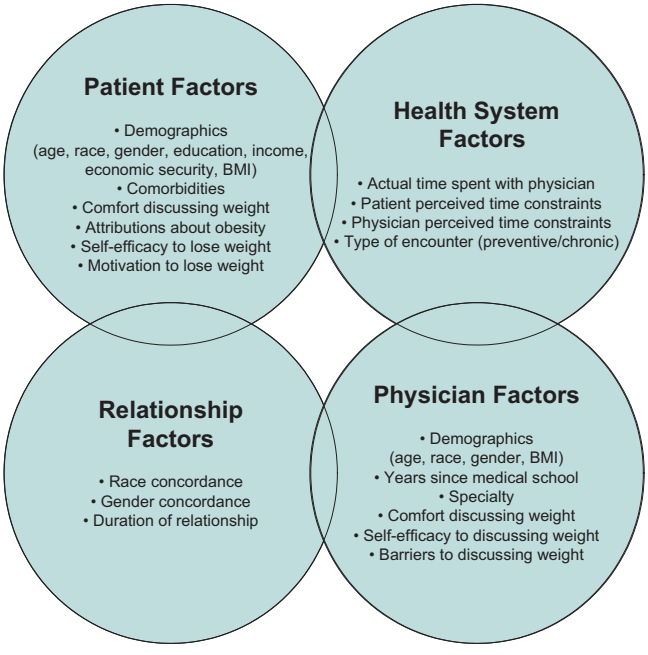


Fig. 1. Factors that influence patient-centered communication. Adapted from Epstein PCC.

The aims of these analyses are to describe time spent on weight-related topics, physician use of MI techniques during weight-related discussions, and to determine which patient, physician, relationship, and systems factors related to quantity (time) and quality (use of MI) of these discussions.

2. Methods

2.1. Recruitment: physicians

Project CHAT (Communicating Health: Analyzing Talk.) was approved by Duke University Medical Center IRB. Methods are described in detail elsewhere [24]. Briefly, we recruited 40 primary care physicians from five community-based practices and told them the study would examine how they address preventive health (not that it was specifically about weight loss counseling). We audio recorded encounters between these physicians and 461 of their overweight and obese patients. Participating physicians gave written consent, gave permission to send patients letters with their electronic signature, and completed baseline questionnaire that included demographic questions and questions about their beliefs about counseling about weight, nutrition, and physical activity (embedded in questions about smoking and alcohol). Physicians completed a final survey after their visits were audio recorded in which we assessed their prior training in behavioral counseling (Fig. 2).

2.2. Recruitment: patients

We sent a letter introducing the study to patients and included a toll-free number to refuse contact. One week later, we called patients to review eligibility and administer the baseline questionnaire assessing demographic factors and psychosocial factors related to improving weight, nutrition, physical activity, embedded in questions about nutrition and physical activity. Eligible patients were at least 18 years of age, English speaking, cognitively competent, not pregnant and had a BMI $\geq$ 25. We first assessed self-reported BMI at the telephone screener and verified height at weight at the encounter to determine eligibility.

2.3. Audio recording coding measures: quantity

2.3.1. Content

We coded the presence of three primary weight-related topics raised either by physicians or patients: nutrition, physical activity, and BMI/weight. We provide actual examples from both patients and physicians. Examples of nutrition were, "*Pt*: With my work schedule, I am on the road all the time and often end up having to eat out for my lunch and dinners" and "*MD*: How much sweet tea would you say you drink in an afternoon?" Examples of physical activity were, "*Pt*: I try to walk three times a week at the mall in the morning" and "*MD*: We need to get you doing some form of cardio for at least 30 minutes a day where you are working hard enough that your heart is beating fast." Examples of BMI/weight were, "*Pt*: Since Christmas I have put on 5 pounds" and "*MD*: Looking at your chart here, your BMI is 26.5, which classifies your weight as overweight." We calculated the total time spent on weight-related topics, including secondary, less common, topics (e.g., surgery, barriers to losing weight). We calculated the total time spent discussing weight-related topics raised by either patient or physician.

2.3.2. Time spent with physician

We calculated the total time patients were in the room with their physician to assess how much of the visit was spent on weight-related topics.

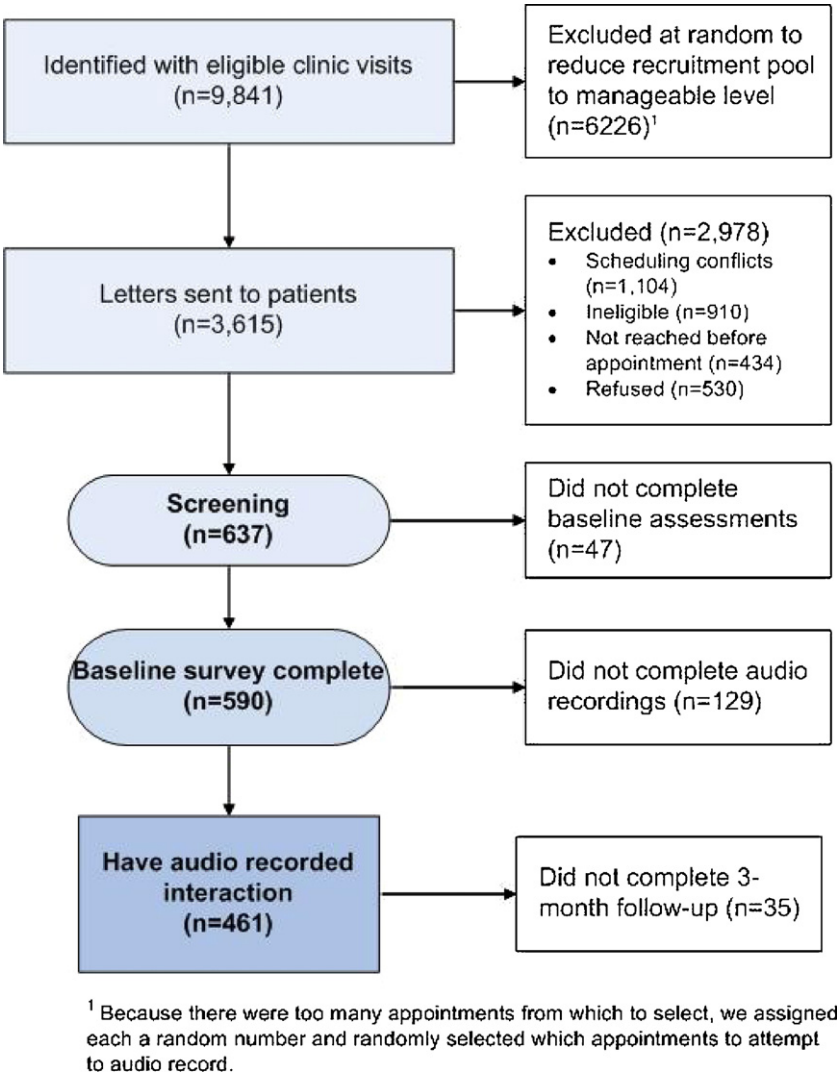


Fig. 2. Recruitment.

2.4. Audio recording coding measures: quality

2.4.1. Motivational interviewing

Two independent coders were trained for 30 h to use the Motivational Interview Treatment Integrity scale (MITI) [30] to assess use of MI techniques during weight-related segments. These MI techniques represent both general patient-centered techniques, such as expressing empathy and practicing reflective listening, and also include skills that used specifically to address patient ambivalence and deal with patient resistance. They assessed global ratings of "Empathy" (1–5 scale, ICC = .70) and "MI Spirit," (1–5 scale, ICC = .81), which included three components: *evocation* (eliciting patients' own reasons for change), *collaboration* (acting as partners) and *autonomy* (conveying that change comes only from patients).

Coders also counted closed questions ("yes"/"no" questions, ICC = .82; actual example: *MD*: "Have you tried the South Beach diet?"), open questions (requires more than "yes"/"no" responses, ICC = .78; actual example: *MD*: "What is keeping you from exercising?"), simple reflections (conveys understanding, but adds no meaning to what the patient said, ICC = .45; actual example: *MD*: "You don't have time to exercise."), complex reflections (conveys understanding and adds substantial meaning, ICC = 1.0; actual example: *MD*: "It sounds like eating out makes it difficult for you to make good food choices."), MI consistent behaviors (asking permission, affirming, providing supportive statements, and emphasizing control, ICC = .70; actual example: *MD*: "How can I help you to start exercising and lose weight?"), and MI inconsistent behaviors (advising without permission, confronting, and directing, ICC = .77; actual example: *MD*: "A good goal for you is to lose a pound a week.").

2.5. Primary outcome measure and covariates

The primary outcome was time spent on weight-related counseling. In secondary analyses, in the subgroup in which weight was discussed, we examined the relationship of a subset of predictors on the MI techniques: (1) simple or complex reflections, (2) MI consistent behaviors, and (3) MI inconsistent behaviors. We did not model the other MI techniques (i.e., MI Spirit, Empathy) due to low prevalence and variability.

2.5.1. Patient-level predictors (14 included)

We included patient demographics gender, age and race (White/Asian vs. African American), education (HS vs. more than HS), economic security (whether the patient had enough money to pay his/her bills), weight (overweight vs. obese), as well as indicator variables for the comorbidities of diabetes, hypertension,

Table 1
Sample characteristics ($n = 461$).

	M (SD) or %
Patient factors ($n = 461$)	
Race	
White/Asian	66%
African American	35%
Male	34%
Age	59.8 (13.9)
Education (missing = 1)	
High school education or less	34%
Post high school education	67%
Income (missing = 37)	
$45,000 or less	48%
More than $45,000	52%
Economic security (missing = 13)	
Pay bills no problems	86%
Pay bills w/trouble	14%
BMI	33.1 (7.1)
Obese (BMI $\geq$ 30)	54%
Medical history	
Diabetes	31%
Hypertension (missing = 1)	69%
Hyperlipidemia (missing = 1)	56%
Arthritis	47%
New patient	4%
Patient very motivated to lose weight vs. somewhat to not at all	52%
Motivation to lose weight[a] (scale 1–7)	5.5 (1.9)
Patient very confident can lose weight vs. somewhat to not at all confident	36%
Self-efficacy to lose weight[b] (scale 1–5) – (missing = 1)	3.7 (1.2)
Patient very comfortable discussing weight with physician vs. somewhat to not at all	76%
Comfort discussing weight with physician[c] (scale 1–5) – (missing = 1)	4.6 (0.8)
Attributions about obesity[d] (missing = 35)	70.6 (9.0)
Physician factors ($n = 40$)[e]	
Race	
White/Asian/Pacific Islander	85%
African American	15%
Male	40%
Age (missing = 1)	47.3 (8.2)
BMI (missing = 1)	24.9 (4.0)
Years since med school graduation	22.1 (8.0)
Specialty	
Family physician	48%
Internist	53%
Self-efficacy to address weight[b]	4.0 (0.67)
Physician very comfortable discussing weight with patient vs. somewhat to not at all	53%
Comfort discussing weight with patient[c]	4.4 (0.86)
Barriers to discussing weight with patients[f]	
Too much time required	2.7 (1.3)
Patient not interested	2.5 (1.2)
Inadequate training	1.9 (0.8)
Other health problems require attention	2.8 (1.2)
Weight loss discussion embarrassing	2.5 (1.1)
Relationship factors	
Race concordance	
White MD-White patient	61%
White MD-African American patient	23%
African American MD-White patient	4%
African American MD-African American patient	12%
Gender concordance	
Male MD-male patient	22%
Male MD-female patient	18%
Female MD-male patient	13%
Female MD-female patient	48%
Systems factors	
Total patient-medical personnel in room time (minutes) (missing = 15)	25.4 (10.3)
Patient perceptions that physician was not rushed vs. somewhat rushed to extremely rushed	77%
Physician perceptions that physician was not rushed vs. somewhat rushed to extremely rushed (missing = 4)	32%
Type of encounter	
Preventive	36%
Chronic care	64%

[a] Motivation to lose weight/address weight (1 = not at all to 7 = very much).
[b] Self-efficacy to lose weight/address weight (1 = not at all confident to 5 = very confident).
[c] Comfort discussing weight (1 = not at all comfortable to 5 = very comfortable).
[d] Attributions about obesity (0 = strongly disagree to 5 = strongly agree).
[e] Perceptions of being rushed (1 = not at all rushed to 5 = extremely rushed).
[f] Barriers (1 = strongly disagree to 5 = strongly agree).

arthritis, and hyperlipidemia. As a sensitivity analysis, we ran models including a summation for the comorbid conditions and found similar results. We also assessed psychosocial mediators of weight loss, whether patients were motivated to lose weight (yes/no), comfortable discussing weight (yes/no), and confident about losing weight (yes/no).

2.5.2. Physician-level predictors (12 included)

Physician demographic variables were gender, race (White/Asian/Pacific Islander vs. African American), and physician BMI (normal vs. other). We included years since medical school graduation, physician specialty (family vs. internal medicine) and physician self-efficacy to counsel about weight ($\alpha = .81$), barriers to counsel about weight ($\alpha = .75$), whether the physician was comfortable discussing weight, and physician barriers for weight counseling.

2.6. Relationship factors (two included)

We combined patient and physician race and patient and physician gender to create groups that were concordant or discordant (e.g., White patient-White physician, White patient-African American physician, etc.).

2.6.1. Visit-level predictors (three included)

We included whether the patient and the physician perceived the physician as rushed, and whether the type of visit was preventive or chronic care.

2.7. Analyses

Analyses were performed using SAS software version 9.1.3 (SAS Institute, Inc.). Descriptive statistics were used to describe the sample of patients and physicians as well as summarize use of MI techniques.

2.8. Predictors of quantity

We fit linear mixed models (LMM) to examine the relationship of patient, physician, relationship and system factors to time spent discussing weight accounting for clustering of patients within physician [31] (see list of variables, Table 1). Because the distribution of time spent discussing weight was somewhat skewed, as a sensitivity analysis, we ran the model using a square root transformation. For all models, we examined residual plots and model diagnostics to assess model assumptions. Based on model estimates of mean time spent discussing weight, we calculated the proportion of the total encounter time spent discussing weight related topics for the categorical predictor variables (e.g., obese vs. overweight patients).

2.9. Predictors of quantity (MI techniques)

Due to low prevalence for the use of MI techniques, we were unable to assess the effects of the patient, physician, relationship, and systems factors on the MI techniques using multivariable analyses. In the subgroup of encounters in which weight was discussed ($n = 320$), we examined the bivariate relationship between the dichotomous MI techniques (1) any reflections vs. none, (2) any MI consistent behaviors vs. none, and (3) any MI inconsistent behaviors vs. none and physician race and gender, as well as any variable with a p-value less than 0.25 in the multivariable model for total time spent discussion weight described above. For these models, we used we used a generalized linear mixed model (GLMM) with a logit link to account for clustering of patients within physician.

3. Results

3.1. Quantity and quality characteristics

Table 1 shows the demographic characteristics of the patients and physicians. Physicians and patients discussed weight-related topics in most encounters (Table 2). They addressed nutrition in 78%, physical activity in 82%, and BMI/weight in 72% of encounters. All physicians addressed weight with at least one of their patients; none addressed it with all of their patients. Mean time (in seconds) spent on these topics was 85.4 (SD = 106.0), 57.0 (SD = 67.0), and 42.1 (SD = 72.7), respectively. Combined, physicians and patients spent a mean of 3.3 total minutes discussing weight-related topics when all weight-related segments throughout the encounter were summed.

Physicians had low use of MI techniques (Table 2). In encounters when physicians asked questions ($n = 334$), questions tended to be closed rather than open-ended. Physicians were more likely to ask questions than make reflections. In encounters in which physicians used MI consistent or inconsistent behaviors ($n = 263$), they were twice as likely to use MI inconsistent techniques as MI consistent techniques. They had low scores for MI Spirit ($M = 1.04$, SD = 0.25) and Empathy ($M = 1.04$, SD = 0.21).

3.2. Predictors of quantity

In a multivariable linear mixed model, we examined predictors of time spent discussing weight-related topics including nutrition, physical activity, and BMI/weight (Table 3). The intraclass correlation (ICC) from this model was 0.11, which represents the similarity of time spent discussing weight related topics among different patients who had encounters with the same physician (e.g., clustering effect). Of the patient predictors, we found that encounters were on average 80.2 s longer for obese patients than for overweight patients

Table 2
Prevalence of quantity and quality of weight-related discussions.

	M (SD); median (25th, 75th)
Quantity: seconds spent discussing topic (missing = 15)	
Nutrition	85.4 (106.0); 48.0 (8.0, 124.0)
Physical activity	57.0 (67.0); 39.5 (14.0, 80.0)
BMI/weight	42.1 (72.7); 22.0 (0.0, 52.0)
Total weight-related time	200.1 (196.8); 162.0 (58.0, 273.0)
Quality: MI skill (missing = 15)	
Counseled	69%
Empathy – scale (1–5)	1.04 (0.25)
MI spirit	1.04 (0.21)
Any open questions	27%
Any simple reflections	25%
Any complex questions	5%
Open questions/all questions (missing = 127); (213 (63%) = 0)	0.13 (0.22)
Reflections/questions (missing = 127); (216 (64%) = 0)	0.13 (0.30)
Complex reflections/all reflections (missing = 339); (101 (83%) = 0)	0.13 (0.31)
MI consistent behaviors/MI inconsistent behaviors (missing = 198); (138 (52%) = 0)	0.51 (1.09)
Counseled group ($n = 320$)	
Any simple or complex reflections	38%
Any MI consistent behaviors	49%
Any MI inconsistent behaviors	82%

Table 3
Multivariable mixed model regression results of seconds spent discussing weight-related topics by patient, physician, relationship, and systems factors.

	Estimated difference in total weight time (s) [95% CI]	*p*-Value
Patient factors		
African American Race	3.4 [−43.4, 50.1]	0.89
Male gender	16.6 [−27.8, 60.9]	0.46
Age	−1.1 [−2.7, 0.6]	0.20
Post high school education	3.9 [−36.5, 44.3]	0.85
Pay bills no problems	30.1 [−24.4, 84.7]	0.28
Obese – BMI ≥ 30	80.2 [39.5.0]	0.0001
Hypertension	14.8 [−26.6, 56.1]	0.48
No diabetes	17.3 [−26.6, 61.1]	0.44
Hyperlipidemia	15.8 [−25.2, 56.9]	0.45
No arthritis	23.3 [−16.9, 63.5]	0.26
Not a new patient	2.2 [−137.6.0]	0.98
Very motivated to lose weight[a]	25.5 [−15.8, 66.9]	0.23
Somewhat to not at all efficacious	21.9 [−17.9, 61.8]	0.28
Somewhat to not at all comfortable discussing weight w/physician	12.5 [−32.9, 57.9]	0.59
Physician factors		
African American	109.6 [9.8, 209.4]	0.03
Female gender	4.6 [−77.7, 86.9]	0.91
Overweight	39.2 [−23.7, 102.04]	0.21
Years since med school graduation	0.0 [−4.5, 4.4]	0.99
Family physician	72.2 [8.9, 135.6]	0.03
Self-efficacy to address weight[b]	32.4 [−25.3, 90.1]	0.26
Very comfortable discussing weight with patient[c]	23.4 [−46.3, 93.2]	0.50
Barrier – too much time required, yes	29.4 [−42.3, 101.1]	0.41
Barrier – patient not interested, no	26.7 [−77.4, 130.7]	0.60
Barrier – inadequate training, yes	26.7 [−147.1, 93.9]	0.65
Barrier – other health problems require attention, no	28.3 [−48.9, 105.6]	0.46
Barrier – weight loss discussion embarrassing, yes	84.9 [−1.34, 171.1]	0.05
Systems factors		
Patient perceptions physician rushed, no[d]	19.3 [−26.3, 64.9]	0.41
Physician perceptions of being rushed, yes[d]	14.8 [−33.3, 63.0]	0.54
Encounter type – preventive	34.9 [−7.9, 77.6]	0.11

[a] Motivation to lose weight/address weight (1 = not at all to 7 = very much).
[b] Self-efficacy to lose weight/address weight (1 = not at all confident to 5 = very confident).
[c] Comfort discussing weight (1 = not at all comfortable to 5 = very comfortable).
[d] Perceptions of being rushed (0 = not at all rushed to 5 = extremely rushed).

($p = .0002$); this translates to approximately 15% of the total encounter time used to discuss weight for obese patients versus 11% for overweight patients.

Of the physician predictors, we found physicians and patients spent more time discussing weight-related topics when the physician was African American compared to White ($p = .03$). African American physicians spent a greater proportion of the total encounter time on weight-related topics (14% vs. 11%). Family physicians spend 72.2 s longer than general internists ($p = .02$), which is 14% vs. 12% of the total encounter time for family physicians and internists, respectively. Physicians who thought patients were embarrassed to talk about weight spent more time than physicians who did not note this barrier ($p = .05$). We found no relationship between co-morbid conditions and time spent on weight discussion using individual indicator variables as well as in a model using a summation score (0–4) for the comorbid conditions.

3.3. Predictors of quality (MI techniques)

In the GLM models of encounters where weight was discussed ($n = 320$), White and Asian physicians (67%) used more reflections than African American physicians (41%) ($p = .001$; OR 2.9 95% CI [1.5, 5.6]). The odds of physicians using MI consistent behaviors decreased as patients' age increased ($p = .008$; OR 0.97 [0.96, 0.99]). Female physicians used MI consistent behaviors (54%) more than male physicians (41%) ($p = .02$; OR = 1.7 95% CI [1.1, 2.7]). African American physicians (95%) used MI inconsistent behaviors more than White and Asian physicians (80%) ($p \leq .001$; OR 4.5 95% CI [1.9, 10.6]).

4. Discussion and conclusion

4.1. Discussion

We identified three key findings. First, physicians routinely discussed weight with overweight and obese patients and spent a reasonable amount of time on weight-related topics. Second, physicians and patients spent more time discussing weight when the patient is obese, when the physician was trained in family medicine rather than general internal medicine, and when the physician thought patients are embarrassed to discuss weight. Third, the quality of physician weight loss counseling (MI techniques) indicates the need for improvement, particularly among male and African American physicians.

Consistent with previous reports [15,32,33] physicians often counsel overweight and obese patients to lose weight during both preventive and chronic care encounters. These results indicate that physicians realize their vital role in helping patients try to lose weight as they spent a mean of 3.3 total minutes throughout the encounter discussing weight-related topics, which is more than 103 s of counseling found in a recent study of 352 video-recorded encounters [34]. Physicians in both of these studies spent less time than the eight minutes recommended to help patients change nutrition behaviors; [35] however, this recommendation is not practical, given physicians' other competing demands [36,37].

Despite the encouraging results, some physicians and patients spend less time discussing weight. Physicians and overweight patients spend less time on weight than physicians and obese patients. Physicians also may feel more compelled to counsel obese patients due to greater health risks. It also could be that obese

patients are more aware of their problem and contribute more to the conversation.

Furthermore, some physicians spend less time than others. Internists and their patients spent less time discussing weight than family physicians. These analyses controlled for the presence of one or more of four co-morbid conditions (hypertension, diabetes, hyperlipidemia or arthritis) as separate covariates; thus, those individual co-morbid conditions did not explain this difference. The difference may be due to family physicians having more time for prevention or more psychosocial aspects of care, as they tend to spend less time managing multiple chronic diseases. Also, family medicine training focuses more on communication than internal medicine training. Also, physicians who believed that overweight and obese patients are embarrassed to discuss weight spent more time talking about weight. This may have been because these physicians were being more sensitive or spent more time exploring how patients felt. It is unclear whether the extra time spent discussing weight was effective.

Finally, physicians could improve how they counsel about weight, which is not surprising given the lack of formal training in MI techniques. Female physicians as well as White and Asian physicians were slightly more likely to use MI techniques; however, all could increase their use of MI. Physicians will find it challenging to use MI techniques comprehensively given the time constraints of primary care encounters; however, they can make minor changes to incorporate some MI consistent techniques. Examples include making more reflective statements rather than asking questions or asking open-ended questions rather than closed. Given that patients may be more likely to lose weight when their physician counsels using MI techniques, medical students, residents and practicing physicians could all benefit from learning to use MI techniques when counseling patients to lose weight.

What was surprising about results of this study is that few modifiable physician, patient, or systems factors affected time spent counseling or quality of counseling. It would be more encouraging to learn that physicians who were less confident in their counseling spent less time or had lower quality counseling; however, this was not the case. This might be because MI techniques were relatively rare, and therefore, not many factors were related to their use. Some non-modifiable factors were found, however meaning that interventions may want to target or spend more time teaching male physicians more than females, for instance, when teaching MI.

These results may not be generalizable to younger, lower income patients. Many patients refused the study, which could have biased the sample, although neither the patients nor physicians knew the study was about weight-related communication.

4.2. Conclusion

In summary, physicians spend time discussing weight with overweight and obese patients, but some physicians and patients spend more time talking about weight than others. All physicians could benefit from learning more effective ways to communicate about weight; ideally this education should start in medical school and residency when they have devoted time to learning new skills and opportunities for feedback on their technique.

Practice implications

Given the potential importance of MI techniques in promoting weight loss, physicians might consider learning these techniques. Male and African American physicians may have the greatest need for learning MI techniques.

Acknowledgements

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