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ARTICLES

Do the Five A's Work When Physicians Counsel About Weight Loss?

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BACKGROUND AND OBJECTIVES: More than two thirds of Americans are overweight or obese. Physician counseling may help patients lose weight; however, physicians perceive these discussions as somewhat futile and time-consuming. An effective and efficient tool for smoking cessation is the Five A's (Ask, Advise, Assess, Assist, and Arrange). We studied the effectiveness of the Five A's in weight-loss counseling.

METHODS: We audiorecorded primary care encounters between 40 physicians and 461 of their overweight or obese patients. All were told the study was about preventive health, not weight specifically. Encounters were coded for physician use of the Five A's. Patients' motivation and confidence were assessed before and immediately after the encounter. Three months later, we assessed patient change in dietary fat intake, exercise, and weight.

RESULTS: Generalized linear models were fit adjusting for patient clustering within physician. Physicians used at least one of the Five A's often (83%). Physicians routinely Ask and Advise patients to lose weight; however, they rarely Assess, Assist, or Arrange. Assist and Arrange were related to diet improvement, whereas Advise was associated with increases in motivation and confidence to change dietary fat intake and confidence to lose weight.

CONCLUSIONS: Similar to smoking cessation counseling, physicians routinely Asked and Advised patients to lose weight; however, they rarely Assessed, Assisted, or Arranged. Given the potential impact of using all of these counseling tools on changing patient behavior, physicians should be encouraged to increase their use of the Five A's when counseling patients to lose weight.

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Obesity is one of the most significant health problems facing Americans, with more than two thirds of adults overweight and obese.[1,2] The US Preventive Services Task Force (USPSTF) recommends that physicians offer intensive counseling to obese adults to promote sustained weight loss.[3] Physicians often routinely discuss weight and weight loss strategies with their overweight and obese patients.[4-6] Further, when physicians counsel patients to lose weight, patients are more likely to attempt to lose weight, increase physical activity, and improve diet.[7-11]

What is lacking from the USPSTF guidelines, however, is effective, concise weight loss counseling techniques. Given competing demands, physicians need simple mnemonics. Such a tool exists for smoking cessation counseling: the Five A's (Ask, Advise, Assess, Assist, and Arrange). Use of the Five A's has been linked to higher motivation and more quit attempts among smokers.[12,13] Research has suggested that this technique could be useful for weight loss counseling,[14-16] and physicians in primary care settings currently are using some of these techniques.[17] However, it is unknown whether the Five A's are effective for promoting weight-related change and actual weight loss. The aim of this study was to examine the effect of the use of Five A's during weight loss counseling on patients' motivation, confidence, and

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change in dietary fat intake, physical activity, and weight.

Methods

This study analyzed audio recordings from Project CHAT—Communicating Health: Analyzing Talk. The project was approved by the Duke University Medical Center Institutional Review Board.

Recruitment

Physicians. Primary care physicians from community-based practices (n=54) were told the study would examine communication about preventive health topics, not weight specifically. Forty (74% of those approached) gave written consent. Fourteen refused for the following reasons: new to practice, back from surgery, not enough patients, leaving practice, concerned about patient flow, and do not support research.

Patients. Potential patients were identified by review of scheduled appointments 3 weeks in advance. Eligible participants were at least 18 years of age, English speaking, overweight or obese (BMI ≥ 25 kg/m^2), cognitively competent, and not pregnant. After obtaining consent, a research assistant accompanied the patient to the exam room to start a digital audio recorder. Immediately following the encounter, the research assistant administered a post-encounter survey and assessed the patient's vital signs, including weight and other measures (eg, heart rate) to mask the focus on weight (n=461). Three months later, the research assistant met with the participant to assess vital signs again and administer a survey assessing changes in dietary fat intake and exercise (n=426).

Data Coding

The audiorecorded conversations were transcribed, and the Five A's were coded:[13] (1) *Asks* about weight, nutrition, and/or exercise, (2) *Advises* on topics of nutrition, physical activity, or weight, (3) *Assesses* readiness to change, (4) *Assists* in setting goals, and (5) *Arranges* for follow-up via physician visit, nutrition visit, or telephone contact (Table 1).

Two independent coders analyzed audio recordings; 20% were double coded to assess inter-rater reliability. Disagreements were discussed and final decisions made by consensus. Inter-rater agreement was calculated using Cohen's Kappa.[18] All codes had substantial to near perfect agreement (Ask=.87, Advise=.78, Assess=.87, Assist=.77, and Arrange=1.0).

Measures

Dietary Fat Intake. Dietary fat intake was assessed using the 22-item Fat and Fiber-related Diet Behavior Questionnaire.[19,20] Questions about frequency of food selections included: "When you eat dessert, how often did you eat only fruit?" and "When you ate chicken, how often did you take off the skin?" Responses were averaged into a total score where "1" reflected higher fiber, lower fat food choices, and a score of "4" reflected lower fiber, higher fat choices (α=0.74 at baseline and α=0.77 at 3-month follow-up).

Physical Activity. Physical activity was measured (baseline, 3 months) using the Framingham Physical Activity Index.[21] Participants recalled the average number of hours spent engaged in various daily activities (sleeping, working, at leisure) and the level of activity (sedentary, slight, moderate, and heavy) for each. The composite score accounts for activity duration and intensity.

Anthropometrics. Patient weight (baseline, 3 months) and height

Table 1: Five A's: Definitions and Actual Examples

	Definition	Examples
Ask	Physician asks the patient about weight, nutrition, and/or exercise.	"Do you exercise?" "Tell me what you typically eat for breakfast."
Advise	Physician provides the patient with clear, strong advice.	"You need to get 30 minutes of exercise a day, 5 days a week." "I think you need to lose about 20 pounds." "Because of your diabetes, it is important for you to exercise."
Assess	Physician verbally assesses patient's readiness to change.	"Is losing weight something you want to do in the near future?" "Do you see yourself getting more exercise in the coming months?"
Assist	Physician provides brief counseling or self-help materials.	"How much to you want to lose weight?" "What might get in the way of your plan to exercise three times a week?" "Have you tried a very low carbohydrate diet before?" "How are you feeling about being able to make this change?" "Is your family supportive of your attempts to eat better?"
Arrange	Physician arranges for follow-up with physician or nutritionist.	"Why don't you call me in 2 weeks to let me know how the weight loss plan is going?" "I will schedule an appointment for you to see our nutritionist."

(baseline only) were measured by study personnel using a calibrated scale and portable stadiometer. Patients were asked to remove their shoes, outerwear, and belongings from their pockets.

Motivation. We measured participant motivation to lose weight, change diet, and increase exercise using a seven-level Likert scale before and immediately after the encounter.

Confidence. "Confidence to lose weight" was measured with a five-level Likert scale before and immediately after the encounter, "How confident are you that you can lose weight?" "Confidence to change diet" and "confidence to increase exercise" were measured similarly.

Analysis

Analyses were performed using SAS (SAS Institute, Inc, Cary, NC). We assessed the association between the Five A's (Ask, Advise, Assess, Assist, and Arrange) and the following: weight loss, improvement in dietary fat intake behaviors, increase in exercise, and increase in motivation and confidence to: (1) lose weight, (2) change diet, and (3) increase exercise from baseline to post-visit. We fit hierarchical models accounting for both repeated measures by patient and for clustering by physician. We found no significant physician clustering effect, and this effect was dropped from the models. PROC MIXED was used to fit general linear models (GLM); responses were incorporated into these models from all participants that provided at least one time-point. This modeling framework yields unbiased estimates when missing data are unrelated to the unobserved variable.[22]

Primary predictors included (1) each of the Five A's, (2) time since baseline visit, and (3) time by predictor interaction. All models included *a priori* defined patient, physician, and visit-related covariates. Fourteen patient covariates that were theoretically or empirically thought to be related to changes in weight, physical activity, or dietary fat intake were gender, age, race, high school education, economic security (enough money to pay monthly bills), overweight (BMI 25.0–29.9 kg/m^2) or obese (BMI ≥ 30 kg/m^2), actively trying to lose weight, motivated to lose weight, comfortable discussing weight, confident about losing weight, and the comorbidities of diabetes, hypertension, arthritis, and hyperlipidemia. Nine physician covariates were gender, race, years since medical school graduation, specialty (family versus internal medicine), self-efficacy for and barriers for weight counseling, comfort discussing weight, insurance reimbursement concerns, and prior training in behavioral counseling. Finally, two visit-level covariates were minutes

Table 2: Physician and Patient Characteristics (n=461)

	Physicians % or M (SD)	Patients % or M (SD)
Race	85%	
White/Asian/Pacific Islander	15%	66%
African American	60%	35%
Female	47.3 (8.2)	66%
Age (missing=1)[1]	24.9 (4.0)	59.8 (13.9)
BMI (missing=1)		33.1 (7.1)
Education (missing=1)		
Post high school education		67%
Income (missing=37)		
$45,000 or less		48%
High financial burden (missing=13)		
Pay bills with trouble		14%
Diagnosed with:		
Diabetes		31%
Hypertension (missing=1)		69%
Hyperlipidemia (missing=1)		56%
Arthritis		47%
New patient		4 %
Motivation, baseline[4]		
Change dietary fat intake		5.5 (1.9)
Increase physical activity		4.7 (2.2)
Lose weight		5.2 (1.9)
Confidence, baseline[5]		
Change dietary fat intake		3.7 (1.2)
Increase physical activity		3.7 (1.1)
Lose weight		3.5 (1.1)
Years since medical school graduation	22.1 (8.0)	
Self-efficacy to address weight[2]	4.0 (0.67)	
Comfort discussing weight with patient[3]	4.4 (0.86)	

1—Missing data at baseline

2—Self-efficacy to address weight (1=not at all confident to 5=very confident)

3—Comfort discussing weight (1=not at all comfortable to 5=very comfortable)

4—Motivation (1=not at all motivated to 7=very motivated)

5—Confidence (1=not at all confident to 5=very confident)

spent addressing weight issues and visit type (preventive versus chronic).

Results

Sample Characteristics

Of the 40 physicians who agreed to participate in the study, 19 were family physicians, and 21 were internists. Compared to those who agreed to participate, African American female physicians were more likely to refuse than their white, male counterparts (P=.005), and younger patients were more likely to refuse (P<.001). Most physicians were female (60%), and 85% were white. Mean age was 47.2 years; mean BMI was 24.9 kg/m2. Physicians reported high self-efficacy for addressing weight and comfort discussing weight with patient (Table 2). Of the 461 patients, 66% were female, 66% were white, and 35% were African American. Mean age was 59.8 years; only 4% of the patients were "new" patients. Two-thirds had a post-high school education (Table 2).

Frequency of Five A's Usage

Most conversations contained discussions of weight. In 384 out of the 461 recorded encounters (83%), physicians used at least one of the Five A's. Physicians most frequently Asked (77%), followed by Advised (63%), Assisted (13%), Arranged (5%), and Assessed (4%). Post-hoc tests revealed that physicians used one of the Five A's with patients who were more motivated at baseline to change dietary fat intake (P=.001) and lose weight (P=.002). Additionally, there was a significant difference found for patient weight and counseling, with physicians counseling heavier patients (P<.001). There was no association with use of Five A's and prior training in obesity counseling.

Associations Between Five A's and Dietary Fat and Fiber Intake

In adjusted analyses, motivation to change dietary fat and fiber intake increased for patients whose physicians Advised (M_{pre}=4.7, SE=.10 versus M_{post}=4.9, SE=.10) compared to the Not Advised group (M_{pre}=4.6, SE=.20 versus M_{post}=4.6, SE=.20, P=.05). Similarly, confidence to improve diet increased for patients who were Advised (M_{pre}=3.7, SE=.07 versus M_{post}=3.9, SE=.07) compared to the Not Advised group (M_{pre}=3.7, SE=.10 versus M_{post}=3.7, SE=.10, P=.007). Patients were more likely to report improving their diet when physicians Assisted (M_{pre}= 2.5, SE=.06 versus M_{post}=2.3, SE= .06), compared to those not Assisted (M_{pre} =2.5, SE=.02 versus M_{post}=2.4, SE= .02, P=.001), and Arranged (M_{pre}= 2.5, SE=.10 versus M_{post}=2.2, SE= .10, P=.001) compared to those not (M_{pre}=2.5, SE=.02 versus M_{post}=2.4, SE=.10, P=.04).

Associations Between Five A's and Physical Activity

There were no statistically significant differences between the use of any of the Five A's and confidence, motivation, or actual physical activity change.

Association Between Five A's and Weight Loss

When physicians Advised, patients had significantly higher improvements in confidence to lose weight (M_{pre}=3.7, SE=.07 versus M_{post}=4.0, SE=.07) compared to patients in the Not Advised group (M_{pre}=3.8, SE=.10 versus M_{post}=3.8, SE=.10, P =.05). Patients also were more likely to improve their confidence when their physician Assessed (M_{pre}=3.6, SE=.27 versus M_{post}=4.3, SE=.27) compared to patients whose physicians did Not Assess (M_{pre}=3.7, SE=.06 versus M_{post}=3.9, SE=.06, P=.05). We found a significant difference in measured weight loss for patients whose physicians Arranged (M_{pre}=101.4 kg, SE=3.49 versus M_{post}= 99.9kg, SE= 3.51) compared to patients whose physicians did Not Arranged (M_{pre}= 91.1 kg, SE=.76 versus M_{post}= 91.2kg, SE= .76 P=.05). No other differences were found.

Discussion

We report three important findings. Physicians use some components of the Five A's framework to deliver weight loss counseling. Physicians tailor the intensity of their counseling based on patient characteristics. Some components of the Five A's seem to be related to patients changing their behaviors.

Despite receiving little or no formal training in the Five A's for discussing obesity, we found that physicians were using at least some portion of the Five A's technique in most encounters with overweight and obese patients. This did not seem to differ based on physicians' training in obesity counseling. Physicians were more likely to Ask and Advise, yet infrequently Assess, Assist, or Arrange. These findings are consistent with previous research in Five A's counseling in primary care.[17] Additionally, this finding mirrors what has been found in the smoking literature.[23,24] The emphasis on advice is not surprising, given that physicians are trained in information giving and seeking (Ask and Advise) and are less frequently trained in more partnership building types of behaviors. Though Ask and Advise are more common, the problem with predominantly using these behaviors is that they do not help physicians learn what patients are actually willing to do, and the physicians may, therefore, not be able to help patients formulate an action plan for change. Though physicians appear to realize the importance of weight loss counseling and are attempting to counsel, they may be missing an opportunity to maximize impact.

Physicians seem to tailor their weight loss advice. Encouragingly, physicians provided more comprehensive counseling—used a greater number of Five A's—with heavier patients, who perhaps need it more. This finding is consistent with previous research that has shown that physicians are more likely to target their counseling to heavier patients.[17] Physicians also used more

of the Five A's with more motivated patients and with patients who reported less confidence to lose weight. Our own work indicates that physicians are reluctant to counsel patients who do not want to change.[25] Findings from the current study suggest that physicians do more for those who need more, those who are less confident and are heavier, but also may choose to do more with patients with whom they think they will have the biggest impact, namely those who are motivated.

Overall, use of the Five A's seemed to influence patients to be more motivated to change, more confident to change, and more likely to change. Improvements in motivation and confidence are important as they have been correlated with weight loss, weight maintenance, and continued behavior change over the long term.[26,27] When physicians provide strong, clear advice, patients might be able to recognize the importance of weight as a health concern; the converse might be true when physicians do not provide advice.

Indeed, results suggest that patients whose physicians Assisted or Arranged showed improvements in actual dietary fat intake change scores. This modest improvement reflects a change in one fat-related eating behavior, like trimming the fat off of meat often instead of sometimes or by eating bread/rolls without butter or margarine less often, eating lower fat cheeses less frequently, or from switching from 2% to non-fat milk. These are minor dietary adjustments but ones that can reduce energy intake by 100 or 200 kcal/day, a deficit large enough to result in weight loss in some patients. Thus, the difference likely represents a clinically significant improvement. This supports the use of explicit planning by the physician-patient team in improving nutrition behavior. It may also reflect referrals for medical nutrition therapy, which are an important component of multi-disciplinary weight loss strategy. No changes were found for actual exercise, but this is not surprising as even intensive behavioral interventions are often unable to improve physical activity.[28]

Only one of the A's was linked to actual weight loss. Patients whose physicians Arranged a follow-up visit were more likely to have lost weight 3 months following the visit. This is consistent with the notion that frequency of contact is an important element for influencing behavior change; it may reflect the patient's feeling accountable to their physician. It is encouraging that physicians were more likely to Arrange a follow-up visit for patients with higher BMI.

A major strength of this study is that these primary care patients were not enrolled in a weight-loss trial and therefore were not self-selected to be highly motivated to lose weight. Another strength is the large and ethnically diverse sample. The study also has several limitations. First, the results may not generalize to younger, lower income patients. Second, the study was observational. Though we adjusted for a broad set of patient, physician, and visit covariates, unmeasured confounding variables may still account for at least part of the observed associations. Third, multiple comparisons were done, so significant associations with *P* values near 0.05 must be interpreted with caution. Fourth, there were low frequencies found for Assessing, Arranging, and Assisting. Although this is not surprising, the low frequencies of these techniques make it difficult to detect the effectiveness of these techniques on weight loss. Finally, the analysis is limited by the use of self-reported dietary fat and fiber intake and physical activity measures. A food diary and an accelerometer may have been more accurate; however, such involved measures could invoke changes in behavior, which would have made the interpretation of results more complicated.

This is the first study to assess the relationship between actual use of the Five A's in weight loss counseling in the primary care encounter and subsequent weight-related behavior change. Physicians routinely Asked and Advised patients about weight; however, they rarely Assessed, Assisted, or Arranged. Next steps for this work would be to examine more closely whether some of the A's are qualitatively more important than others. Further, given these preliminary results, a randomized controlled trial might be warranted to test an intervention that attempts to teach physicians how to incorporate the Five A's in their weight loss counseling.

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