

Do Internists, Pediatricians, and Psychiatrists Feel Competent in Obesity Care?

Using a Needs Assessment to Drive Curriculum Design

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BACKGROUND: Physicians must effectively evaluate and treat obesity. To design a needs-driven curriculum intended to improve patient outcomes, physicians were surveyed about their self-perceived knowledge and skills.

OBJECTIVE: The objective of this study was to determine the expressed needs of residents and faculty regarding obesity care training across three specialties.

DESIGN: The study used a survey given to faculty and residents in General Internal Medicine, Pediatrics, and Psychiatry.

METHODS: Survey questions were generated from comprehensive nutrition curriculum and clinical recommendations, administered online, and then organized around a validated behavioral health framework—the 5As (assess, advise, agree, assist, arrange). Analyses were conducted to evaluate differences in perceived knowledge and skills between specialties and across training levels.

RESULTS: From an overall response rate of 65% (65 residents and 250 faculty members), nearly 20% reported inadequate competency in every item with 48% of respondents reporting an inability to adequately counsel patients about common treatment options. Internists reported the lowest competency in arranging referrals and follow-up. Psychiatrists reported the lowest competency in assessment skills.

CONCLUSIONS: This survey demonstrated a critical need for training in specific areas of obesity care. The proposed curriculum targets these areas taking into consideration observed differences across specialties.

KEY WORDS: obesity care; weight loss; medical education (education, medical); obesity; curriculum.

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BACKGROUND

Despite guidelines established by the U.S. Preventive Services Task Force (USPSTF),¹ the American Diabetes Association,² and the Maternal and Child Health Bureau³, physicians frequently fail to counsel obese patients about their weight. In a recent study, counseling about excess weight occurred in only 17% of 376 encounters with overweight or obese patients.⁴ Even when physicians advise patients to lose weight, they may not do so effectively. Of obese patients in two clinics, 79% of patients recalled being counseled to lose weight, and only 28% of these recalled being given specific weight loss recommendations. Of these, 17% remembered discussion of dietary modification, and 5% recalled a strategy combining diet and exercise,⁵ suggesting a real deficiency in physician counseling techniques that are teachable.

Physicians report lack of training in obesity management.^{5–7} In one survey, only 31% reported that they learned good obesity management in residency; interestingly, those who did were more likely to discuss diet or exercise with obese patients (59% vs 29%).⁸ This identifies lack of training as one reason why physicians insufficiently counsel obese patients.

The 5As is a counseling strategy recommended by the USPSTF⁹ that is useful in several areas of office-based counseling including smoking cessation,^{10,11} lowering cholesterol,¹² and weight loss.¹³ The 5As framework guides the physician to Assess risk, current behavior, and readiness to change, Advise change of specific behaviors, Agree and collaboratively set goals, Assist in addressing barriers and securing support, and Arrange for follow-up.^{9,13} As part of an initiative to develop a needs-targeted obesity curriculum, we surveyed faculty and residents about their self-perceived skills. We then used the 5As model to organize competencies and identify areas for residency training and faculty development.

METHODS

Participants

We emailed all senior residents at New York University School of Medicine (NYUSoM) in Internal Medicine (IM), Pediatrics (Peds), and Psychiatry (Psych) asking them to complete an online survey. Faculty lists were obtained from NYUSoM administrators in the Divisions of IM, Peds, and Psych. We excluded faculty who had no working email address, were retired, had left the

institution, were non-MDs, or were neonatologists. Over the course of a 3-month period, we reminded residents and faculty each 8 times to complete the survey.

Survey Design

We compiled survey items assessing physicians' perceived competency in treating and preventing obesity through a review of a comprehensive curriculum¹⁴ and clinical^{15,16} recommendations. Demographic items for residents included training year and previous obesity training, whereas for faculty, they included years since residency, location of main outpatient practice, hours per week in outpatient practice, percent of obese patients, percent of obese patients who lose weight, and teaching responsibilities. Expert faculty ranked the competencies' salience and suggested missing items. The final 15 items were arranged in random order. Slight survey modifications were made for pediatricians, as counseling and assessment often occur at the caregiver level.

We assessed competency using a 4-point scale derived from the "see one, do one, teach one" tradition and shown previously to distinguish mean competency levels between residents who participated in a curriculum and those who did not.¹⁷ The response options were: Know very little about and not able to perform (1); Know something about and somewhat able to perform (2); Able to perform well (3); and Able to teach others how to perform (4). Responses 1 and 2 were considered to be inadequate competency, whereas 3 and 4 were adequate.

Measurement and Analysis

Questions were grouped according to the 5As model using published guidelines,^{9,13} maximizing internal reliability. We performed a repeated measures analysis of variance (ANOVA) with training level (faculty/residents) and specialty (IM/Peds/Psych) included as the between-subject grouping factor. The 5As were included as the within-subjects repeated measures; post hoc testing employed a Bonferroni correction. ANOVAs were conducted to explore whether differences existed between the 5As, specialty, and physician level. Pearson correlations, *t* tests, ANOVA, and chi-squares were performed on continuous and categorical variables, respectively, between overall mean competency and each possible predictor variable. Any significant results were included in the ANOVA and a multiple regression analysis.

This study was approved by the institutional review board at NYU.

RESULTS

Participants

We received completed surveys from 65 of 87 (75%) residents. After excluding 150 faculty (77 no longer at the institution, 11 collaborators in this study, 38 without working emails, and 24 non-physicians or neonatologists), we sent surveys to 399 faculty (158 internists, 81 pediatricians, and 160 psychiatrists). The response rate for faculty was 63% (59% IM, 73% Peds, 61% Psych), yielding an overall response rate of 65%.

Table 1 describes demographic data for the faculty and residents. Approximately two thirds of residents had previous

obesity training. The mean percentage of obese patients seen by faculty was 25%, with IM faculty reporting a higher percentage than psychiatry (35% vs 19%, *p*=.02). Pediatricians reported significantly fewer patients losing weight (7.7% Peds vs 15.3% IM vs 19.4% Psych; *p*=.006).

Competencies

The mean overall competency score for all participants was 2.8 (SD=.57). The mean score for each competency ranged from 2.6 to 3.0 across all specialties, and responses were normally distributed with no overall difference between residents and faculty. The differences among the mean scores of the different

Table 1. Demographics

	Internal medicine	Pediatrics	Psychiatry	Total
Total participants (n=315)				
Number in study	136	70	109	315
Percentage	43	22	35	100
Residents (n=65)				
Number in study	43	11	11	65
Percentage	66	17	17	21
Prior obesity training*	29	7	6	42
Percentage	68	63	54	65
Mean training year	3.09	3.91	4.00	3.38
Faculty (n=250)				
Number in study	93	59	98	250
Percentage	37	24	39	79
Years since finished residency	14	17	14	14
Interquartile range	(6-19)	(6-25)	(4-24)	(5-22)
Teaching roles				
Preceptor	74	35	66	175
Percentage	80	59	67	70
Lecturer	56	69	32	157
Percentage	60	117	33	63
Evaluation	46	29	51	126
Percentage	49	49	52	50
Section leader	10	4	4	18
Percentage	11	7	4	8
Does not teach	0	8	3	11
Percentage	0	14	3	4
Main outpatient practice				
Bellevue (Public)	35	20	17	72
Percentage	38	34	17	29
Gouverneur (Public)	11	1	0	12
Percentage	12	2	0	5
VA (Public)	11	0	3	14
Percentage	12	0	3	6
Tisch (Private)	8	7	2	17
Percentage	9	12	2	7
Other	19	16	74	109
Percentage	20	27	76	44
Mean hours spent in outpatient practice	21.5	24.1	21.4	22.0
Interquartile range	(8-34)	(10-35)	(10-30)	(10-32)
Mean % obese patients seen [†]	35.1	19.4	18.7	25.1
Mean % obese patients lose weight [‡]	15.3	7.7	19.4	14.2

*This question was phrased "Have you received and specific training in the prevention and treatment of obesity during your residency?"

†This question was phrased "What % of your patients are obese?"

‡This question was phrased "What % of obese patients lose weight under your care?"

specialties (Peds=3.0, SD=.57; IM=2.8, SD=.53; Psych=2.7, SD=.62) approached significance ($p=.05$). Demographic factors did not correlate with competency.

Table 2 shows how individual items were categorized according to the 5As model. The internal consistency for each category, as measured by Cronbach's alpha, ranged from .77 to .90. The mean score for each competency ranged from 2.6 to 2.9 across all specialties. The mean score for 'assist' (2.6) was significantly lower than all the other competencies ($p<.005$), followed by 'agree' (2.7), which was significantly different from every category except 'arrange' ($p<.05$). The repeated measures ANOVA analysis found an interaction between specialty and 5As competencies, with Psych reporting significantly lower competency in 'assess' ($p=.02$) and IM reporting significantly lower competency in 'arrange' ($p=.001$) than the other specialties. Additionally, for the 'advise' category, an interaction between physician level (faculty vs resident) and specialty was identified, with IM faculty scoring higher than residents ($p=.03$).

Table 2 also presents individual item responses. Nearly 20% of physicians reported inadequate competency for each item. In the 'assess' category, pediatricians reported higher competency in taking a diet history and assessing diet than the other specialties (6.5% inadequate vs >20% in IM/Psych, $p<.001$), whereas psychiatrists reported lower competency in performing a history and physical exam (53% inadequate, $p<.001$), determining body mass index (BMI; 32% inadequate, $p=.001$), and ascertaining patients' readiness to change (49% inadequate, $p=.004$). For 'advise,' nearly half of physicians could not adequately respond to a patient's questions regarding treatment options for obesity, with no significant difference across specialties. For 'agree,' more than 34% of physicians could not set weight loss, lifestyle, and physical activity goals adequately. In the 'assist' category, 59% of physicians reported inadequate competency using motivational interviewing, and 39% could

not adequately provide a brief weight-loss counseling intervention. Finally, for 'arrange,' internists reported being less competent at referring patients for eating disorders (42% inadequate, $p<.001$), whereas pediatricians reported being significantly better at collaborating with dietitians and referring to community resources than other specialties (20% inadequate, $p=.002$).

DISCUSSION

In this study, we identified important areas of focus for future curriculum development, implementation, and evaluation. Findings indicate that physicians across three specialties report inadequate obesity counseling skills, and the mean overall competency was low. Astonishingly, 1 in 5 physicians rated themselves as inadequately competent in every item, and almost 60% could not adequately use motivational interviewing to change behavior. These findings indicate a clear need for targeted evidenced-based curricula.

No significant difference in mean competency scores was found between residents and faculty. While this finding could indicate a limitation of our survey to distinguish between training levels, it more likely signifies that faculty education is needed, as number of years out of residency did not correlate to competency. Other studies have shown a general lack of training for both residents and faculty^{7,5} and that faculty development is a barrier to obesity education.¹⁸ Thus, faculty training must be incorporated into the curriculum to ensure its success.

This study validates the 5As model construct, leading to more trustworthy overall discipline-specific data upon which to develop obesity curricula likely to improve patient outcomes. Overall, physicians reported lower mean scores in 'agree' and

Table 2. Self-Rated Physician Competency of Individual Survey Items (% Inadequate Competency)*

Competency item		All specialties	Psychiatry	Pediatrics	Internal medicine	P value
Assess	Use 24-hour recall, food record, or food frequency to obtain diet history	65	67	46	73	0.006
	Determine body mass index (BMI) from weight and height measurements	19	32	11	12	0.001
	Assess diet for common unhealthy behaviors associated with obesity (e.g., sweetened beverages, nutritional quality of snacks, frequent meals from fast food restaurants, etc.)	21	28	6.5	22	<.001
	Ascertain each patient's readiness and ability to work on weight loss according to health beliefs and stage of change	38	49	31	33	0.004
	Recognize and screen for common psychosocial problems in obese patients including depression, emotional eating, binge eating	26	14	31	33	<.001
Advise	Take a targeted history and conduct a physical examination to identify common co-morbidities (e.g., arthritis, diabetes, PCOS...)	29	53	18	14	<.001
	Discuss the effect of obesity on present and future health and personalize risk to each patient	21	32	9.7	16	<.001
Agree	Respond to a patient's questions regarding treatment options including behavior change, medications, and surgery	48	52	45	46	0.658
	Assess current level of physical activity and provide guidance for setting physical activity goals for optimal health	34	48	31	25	0.002
	Assist patient in setting realistic goals for weight loss based on making permanent lifestyle changes	40	50	36	33	0.018
Assist	Prescribe plan for exercise/physical activity	44	50	44	39	0.135
	Use motivational interviewing to change behavior	59	54	61	62	0.794
Arrange	Provide brief counseling intervention to help patient lose weight	39	44	32	38	0.1
	Recognize and refer patients with eating disorders	28	11	31	42	<.001
	Collaborate with registered dietitians and refer to community nutrition resources when appropriate	37	44	20	40	0.002

* not able to perform the item well

‘assist’ than for most of the other competencies, which reflects deficiencies in goal-setting and motivational interviewing—both teachable skills.¹⁹

Internists had lower competency in ‘arrange’ as compared to other specialties. Specifically, they had low perceived competency in recognizing and referring patients with eating disorders, collaborating with dieticians, and referring to community nutrition resources. These issues can be addressed in a targeted curriculum. IM residents also had lower perceived competency in ‘advise’ than faculty, which may indicate either that residents are less comfortable advising patients or that they have more need for didactic information regarding obesity risk and treatment options. Pediatricians reported higher competency than other specialties in some items (assessing diet, collaborating with dieticians, and referring to community nutrition resources); thus, these areas could be de-emphasized in their curriculum. Interestingly, pediatric faculty reported a lower percentage of obese patients losing weight than the other specialties despite the higher level of perceived competency.

Psychiatrists were less competent in ‘assess’ than other specialties. Supporting this finding is that psychiatrists reported significantly fewer obese patients than internists, although obesity is more prevalent in their population.²⁰ Specifically, psychiatrists scored lowest on determining body mass index, ascertaining readiness to change, taking a targeted history and physical exam, and setting weight loss and physical activity goals with patients. These are all useful guides for curriculum development.

There are several limitations to this study. First, we relied on self-report rather than using direct methods (i.e., standardized tests, direct observation, and chart review) to test knowledge,

skills, and patient outcomes. While studies have shown that physicians are poor at accurately evaluating their own skills,²¹ our findings are consistent with studies measuring physician performance.^{4,22,23} Second, the physicians surveyed were from one institution which may limit the generalizability of our findings. Counter to that is the fact that study participants practice in a variety of different public and private practice settings across three different specialties. Further, only 15% of NYU residents are graduates of NYUSoM, suggesting that obesity training is insufficient at other institutions as well.

CURRICULUM DEVELOPMENT

Based on the above findings, we developed a curriculum to address specific gaps in knowledge and skills (Table 3) with the goal of improving obesity care in the outpatient setting. By tailoring the curriculum to meet specific learner needs, we aim to increase the efficacy of training, thereby positively influencing patient health outcomes. Interactive didactic sessions provide the core knowledge-based components complemented by skill practice sessions using standardized patients in individual and group settings. Later, learners will apply these skills at a weight management preceptorship. We will experiment with a variety of curriculum implementation approaches including computer-assisted instruction and cross-disciplinary sessions. Faculty development and training will be a crucial component. Finally, we will adapt the curriculum for each specialty based on the specialty-specific strengths and weaknesses that we identified.

Table 3. Components of Obesity Curriculum

Goals/objectives	Instructional strategies	Relation to needs assessment
By the end of the curriculum learners will be able to ASSESS <ul style="list-style-type: none"> • Obesity risk • Current behavior • Readiness to change 	<i>Lectures:</i> Review anthropomorphic measurements, co-morbidities, history and physical, diet and exercise evaluation, transtheoretical model. <i>Skills practice/application:</i> History taking and physical exam with standardized and real patients	Although this competency had the highest mean, many physicians reported inadequate competency using tools to assess diet, determining patient’s stage of change, recognizing common psychosocial problems, and history and physical examination.
By the end of the curriculum learners will be able to ADVISE patients to <ul style="list-style-type: none"> • Lose weight • Change specific behaviors They will also be able to <ul style="list-style-type: none"> • Answer questions about treatment options 	<i>Lectures:</i> Review indications and delivery of various treatment modalities (bariatric surgery, medicines) <i>Skills practice/application:</i> Patient education with standardized and real patients	48% of physicians had inadequate competency in answering patients’ questions regarding treatment options.
By the end of the curriculum learners will be able to AGREE with patients to <ul style="list-style-type: none"> • Set mutual goals based on different treatment options and the patients’ readiness to change 	<i>Lectures/skills practice/application:</i> Review the theory of goal setting; how to collaboratively set goals with patients; diet and exercise prescriptions. Practice with standardized and real patients.	More than one third of physicians indicated inadequate competency for each of the items in this category.
By the end of the curriculum learners will be able to ASSIST patients by: <ul style="list-style-type: none"> • Addressing barriers • Helping obtain support • Motivational interviewing • Prescribing medications 	<i>Lectures/skills practice/application:</i> Review theories of motivational interviewing and behavioral counseling; review indications for and how to prescribe medications. Practice with standardized and real patients	This competency category had a significantly lower mean than all the other categories, and 59% of physicians reported inadequate competency to do motivational interviewing
By the end of the curriculum learners will be able to ARRANGE for <ul style="list-style-type: none"> • Frequent follow up • Referral to specialists, community resources 	<i>Lectures/Resource cards/Application:</i> Emphasize need for frequent follow up; identify local resources/specialists in the community to refer patients. Practice with real patients	More than 28% of physicians reported not being able to adequately perform items in this category

Next steps include assessing the efficacy of such training by studying its impact on physician behavior and patient outcomes modeled on the work of Glasgow et al.²⁴ who have developed tools to assess the 5As in office practice. Directly linking educational interventions like this one to patient outcomes will allow for the development of curricular models and the creation of a richer evidence base in obesity training. Physicians from various specialties who see patients longitudinally have an opportunity and a responsibility to prevent and treat obesity. This will not happen, however, without adequate training. A needs-driven, evidenced-based obesity curriculum is the crucial first step in providing effective training in obesity care.

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REFERENCES

1. U.S. Preventive Services Task Force. Screening for obesity in adults: Recommendations and rationale. See comment. *Ann Intern Med.* 2003;139(11):930–2. (Dec 2).
2. Klein S, Sheard NF, Pi-Sunyer X, et al. Weight management through lifestyle modification for the prevention and management of type 2 diabetes: Rationale and strategies. A statement of the American Diabetes Association the North American Association for the Study of Obesity and the American Society for Clinical Nutrition. *Am J Clin Nutr.* 2004;80(22):57–63. (Aug).
3. Barlow SE, Dietz WH. Obesity evaluation and treatment: Expert committee recommendations. The Maternal and Child Health Bureau, Health Resources and Services Administration and the Department of Health and Human Services. *Pediatrics.* 1998;102(3):E29. (Sep).
4. Scott JG, Cohen D, DiCicco-Bloom B, et al. Speaking of weight: How patients and primary care clinicians initiate weight loss counseling. *Prev Med.* 2004;38(6):819–27. (Jun).
5. Huang J, Yu H, Marin E, Brock S, Carden D, Davis T. Physicians' weight loss counseling in two public hospital primary care clinics. *Acad Med.* 2004;79(2):156–61. (Feb).
6. Block JP, DeSalvo KB, Fisher WP. Are physicians equipped to address the obesity epidemic? Knowledge and attitudes of internal medicine residents. *Prev Med.* 2003;36(6):669–75. (Jun).
7. Kushner RF. Barriers to providing nutrition counseling by physicians: A survey of primary care practitioners comment. *Prev Med.* 1995;24(6):546–52. (Nov).
8. Forman-Hoffman V, Little A, Wahls T. Barriers to obesity management: A pilot study of primary care clinicians. *BMC Fam Pract.* 2006;7:35.
9. Whitlock EP, Orleans CT, Pender N, Allan J. Evaluating primary care behavioral counseling interventions: An evidence-based approach. *Am J Prev Med.* 2002;5(22(4)):267–84.
10. Unrod M, Smith M, Spring B, DePue J, Redd W, Winkel G. Randomized controlled trial of a computer-based, tailored intervention to increase smoking cessation counseling by primary care physicians. *J Gen Intern Med.* 2007;22(4):478–84. (Apr).
11. The Tobacco Use and Dependence Clinical Practice Guideline Panel, Staff, and Consortium Representatives. A clinical practice guideline for treating tobacco use and dependence: A US Public Health Service report.. The tobacco use and dependence clinical practice guideline panel, staff, and consortium representatives. *JAMA.* 2000;283(24):3244–54. (Jun 28).
12. Ockene IS, Hebert J, Ockene JK, et al. Effect of physician-delivered nutrition counseling training and an office-support program on saturated fat intake, weight, and serum lipid measurements in a hyperlipidemic population: Worcester area trial for counseling in hyperlipidemia (WATCH). *Arch Intern Med.* 1999;159(7):725–31. (Apr 12).
13. Serdula MK, Khan LK, Dietz WH. Weight loss counseling revisited. *JAMA.* 2003;289(14):1747–50. (Apr 9).
14. Group on Nutrition, Society of Teachers of Family Medicine, editor. Physician's curriculum in primary care. 2001; Updated 2005.
15. Sadovsky R. Management of obesity: An official recommendation. *Am Fam Phys.* 2003;67(2):379.
16. National Heart, Lung, and Blood Institute Obesity Education Initiative, editor. Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: Evidence report. Bethesda, MD: NIH Publication No. 98-4083; 1998.
17. Yedidia MJ, Gillespie CC, Moore GT. Specific clinical competencies for managing care: Views of residency directors and managed care medical directors. *JAMA.* 2000;284(9):1093–8. (Sep 6).
18. Goff SL, Holmboe ES, Curry L. Barriers to obesity training for pediatric residents: A qualitative exploration of residency director perspectives. *Teach Learn Med.* 2006;18(4):348–55.
19. Rubak S, Sandbaek A, Lauritzen T, Borch-Johnsen K, Christensen B. An education and training course in motivational interviewing influence: GPs' professional behaviour—ADDITION Denmark. *Br J Gen Pract.* 2006;56(527):429–36. (Jun).
20. John U, Meyer C, Rumpf HJ, Hapke U. Relationships of psychiatric disorders with overweight and obesity in an adult general population. *Obes Res.* 2005;13(1):101–9. (Jan).
21. Davis DA, Mazmanian PE, Fordis M, Van Harrison, Thorpe KE, Perrier L. Accuracy of physician self-assessment compared with observed measures of competence: A systematic review [see comment]. *JAMA.* 2006;296(9):1094–102. (Sep 6).
22. Ruser CB, Sanders L, Brescia G, et al. Identification and management of overweight and obesity by internal medicine residents. *J Gen Intern Med.* 2005;20(12):1139–41. (Dec).
23. Eaton CB, Goodwin MA, Stange KC. Direct observation of nutrition counseling in community family practice. *Am J Prev Med.* 2002;23(3):174–9. (Oct).
24. Glasgow RE, Emont S, Miller DC. Assessing delivery of the five 'As' for patient-centered counseling. *Health Promot Int.* 2006;21(3):245–55. (Sep).