



What are Internal medicine residents' attitudes toward obesity as a disease, people living with obesity, and obesity treatment?

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Abstract

Objective: Despite the rising prevalence of people living with obesity, physicians are providing suboptimal care to these individuals, which may be a consequence of inadequate education in weight management and negative attitudes toward people living with obesity. Internal Medicine (IM) residency is an ideal setting to address physicians' attitudes toward people living with obesity. However, there is a paucity of recent literature on this topic. This study sought to assess the current attitudes of IM residents toward obesity as a disease, people living with obesity, and obesity treatment.

Methods: A cross-sectional survey was conducted in 2020 across two IM programs assessing residents' attitudes toward obesity as a disease, people living with obesity, and obesity treatment.

RESULTS: Among 42 residents who participated in the survey, 64% were women; 31 percent were Post Graduate Year 1, 31% PGY-2, and 38% PGY-3. Mean attitude scores were high on statements regarding obesity as a chronic disease [4.7 (SD 0.4)] and its association with serious medical conditions [4.9 (SD 0.3)]. Residents had overall positive attitudes toward people living with obesity. In contrast, residents felt negatively regarding their level of success in helping patients lose weight [2.0 (SD 0.7)].

CONCLUSIONS: While residents recognized obesity as a chronic disease and had positive attitudes toward people living with obesity, their low ratings regarding weight management success suggest that targeted educational efforts are needed to increase obesity treatment self-efficacy.

KEYWORDS

attitudes toward obesity, Internal medicine residents, medical education

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1 | INTRODUCTION

Despite the rising prevalence of people living with obesity, physicians are providing suboptimal care to these individuals.¹ Deficits in counseling of people living with obesity may be attributed to insufficient education and training in nutrition and obesity management.^{2,3} A survey of primary care physicians in 1995² identified inadequate knowledge and skills as a barrier to effective nutrition counseling, which highlighted a major educational gap in physician's training. Since then, there have been intervention efforts to improve knowledge and skills in caring for people living with obesity among medical students and post-graduate trainees.⁴ Professional societies formed an Obesity Medicine Education Collaborative to develop core competencies related to the care of people living with obesity in medical education.^{5,6} Despite these efforts, coverage of foundational obesity medicine knowledge and skills integral to clinical practice is inadequate in medical education.⁴ Furthermore, U.S. medical schools do not prioritize obesity medicine education, thereby limiting educational development in this area.⁷

Another contributor to the gap in care of people living with obesity is weight stigma and negative perception toward people living with obesity among physicians.⁸ Up to 42% of people living with obesity experienced differential treatment due to their weight status, which underscores the prevalence of this issue.⁹ Weight stigma is associated with low self-esteem, body image dissatisfaction, disordered eating habits, depression, and psychological distress,^{10,11} which contribute to poor health outcomes.

Weight bias and negative attitudes are pervasive among medical trainees.^{12–14} A survey of post-graduate health professions trainees in 2013 showed that, while 95% of trainees felt the importance of treating people living with obesity with respect, a significant minority (36%) felt frustrated treating people living with obesity, with greater frustration felt by trainees with higher weight bias.¹⁴ Residents not only hold negative attitude toward people living with obesity, but also toward their weight-related counseling skills. For example, only a minority of Internal Medicine (IM) interns felt that their patients would change their lifestyle after counseling.¹⁵

IM residency is an ideal setting to address physicians' attitudes toward obesity as a disease, people living with obesity, and obesity treatment. Residents, as physicians-in-training, may be more receptive to change in attitudes than practicing physicians and are well-poised to learn new skills. Furthermore, understanding residents' attitudes is critical in identifying potential areas of weight-related attitudes that need improvement. However, there are few recent studies examining this relationship.

This study describes IM residents' attitudes toward people living with obesity across two IM residency programs. The study also explored whether attitudes differed by residents' interest in primary care; the hypothesis was that residents with primary care interest would have more positive attitudes toward care of people living with obesity compared to those without primary care interest.

2 | METHODS

2.1 | Study design and recruitment

A cross-sectional survey was conducted in 2020 assessing residents' attitudes toward people living with obesity. This study recruited residents from two IM residency programs in Baltimore, Maryland affiliated with Johns Hopkins: Johns Hopkins Hospital and Johns Hopkins Bayview. There were approximately 200 total residents across both programs (150 residents at Johns Hopkins Hospital, 50 residents at Johns Hopkins Bayview). The two programs had distinctive leadership and training structures. All residents in the specified programs received informational emails about the study and were directed to contact the research assistant for eligibility screening. To be eligible, residents had to be full-time residents in one of the two IM programs. The study aimed to recruit 20 residents from each program (at least 20% of residents participating), as this baseline survey was conducted prior to testing an obesity curriculum intervention. Residents provided their verbal consent during the eligibility screening. The Johns Hopkins University School of Medicine Institutional Review Board approved this study.

2.2 | Measures and data collection

A previously used survey¹⁶ was adapted to assess residents' attitudes toward obesity as a disease, people living with obesity, and obesity treatment. Questions regarding reimbursement were omitted to make the questions more applicable to the residents' training environment. Responses were rated using a 5-point Likert scale (5—strongly agree, 4—agree, 3—neutral, 2—disagree, 1—strongly disagree). Table S1 provides the details of the questionnaire. The survey also assessed residents' demographics, interest in primary care, and perceived quality of obesity training. The survey was administered using a web-based survey tool and participant's information was deidentified.

2.3 | Data analysis

Descriptive analyses were conducted across all variables and mean scores were reported for the overall sample. The study also compared attitudes for residents with an interest in primary care (responding "very likely" or "somewhat likely") to those without (responding "very unlikely" or "somewhat unlikely") using unpaired *t*-tests.

3 | RESULTS

Among 42 residents who participated in the survey, 64% were women (Table 1). Residents from all 3 years of training were represented: 31% Post Graduate Year (PGY) 1, 31% PGY-2, and 38% PGY-

TABLE 1 Internal medicine residents' demographics and attributes.

Demographics and attributes		Residents (%) (n = 42)
Women		27 (64%)
Post-graduate year (PGY)	PGY-1	13 (31%)
	PGY-2	13 (31%)
	PGY-3	16 (38%)
Primary care interest	Very likely	15 (35%)
	Somewhat likely	8 (19%)
	Somewhat unlikely	8 (19%)
	Very unlikely	11 (26%)
Quality of obesity medicine training during medical school	Very good	3 (7%)
	Good	10 (24%)
	Fair	12 (29%)
	Poor	12 (29%)
	None	5 (12%)
Quality of obesity medicine training during residency	Very good	2 (5%)
	Good	10 (24%)
	Fair	19 (45%)
	Poor	9 (21%)
	None	2 (5%)
Quality of obesity medicine training outside of residency	Very good	1 (2%)
	Good	8 (19%)
	Fair	5 (12%)
	Poor	6 (14%)
	None	22 (52%)

3. Fifty-four percent of residents ($n = 42$) expressed interest in primary care. Forty-one percent of residents rated the quality of obesity training during medical school as "poor" or "none."

Table 2 shows the complete listing of residents' attitudes toward obesity, people living with obesity, and obesity treatment. Mean attitude scores were high, indicating greater agreement, with statements regarding obesity as a chronic disease and its association with serious comorbidities. Additionally, residents had positive attitudes toward making accommodations for people living with obesity, having empathy, and comfort level when examining a patient living with obesity. Only a minority (17%) of residents reported negative attitude toward the appearance of patients living with obesity. In contrast, residents felt negatively regarding their level of success in helping patients lose weight.

There were statistically significant between-group differences in one area: residents with primary care career interest disagreed more strongly that long-term maintenance of weight loss is impossible for most people living with obesity [with interest 2.0 (SD 0.8) versus without interest 2.6 (SD 0.9), $p = 0.02$]. There were no significant between-group differences across other attitude statements.

4 | DISCUSSION

This cross-sectional study assessed IM residents' attitudes toward obesity as a disease, people living with obesity, and obesity treatment. Studies in the past 20 years have shown that practicing physicians and residents demonstrate negative attitudes toward people living with obesity.^{8,12-14,17} However, recent data on residents' attitudes on people living with obesity is sparse; therefore, the study sought to fill this gap. The results of this study indicate that IM residents recognized obesity as a chronic disease associated with serious comorbidities and had overall positive attitudes toward people living with obesity; however, residents held negative attitudes toward their ability to provide care for patients living with obesity.

A prior 2008 survey¹⁷ showed that, while 90% of IM residents recognized obesity as a chronic disease, the majority of PGY-3's (54%) had negative reactions toward the appearance of people living with obesity. These results are consistent with the 2003 survey of practicing PCPs by Foster and colleagues: although PCPs held positive attitudes on obesity as a chronic disease [4.5 (SD 0.9)] and its association with serious medical conditions [4.4 (SD 0.8)], a high minority of practicing PCPs (37%) endorsed a negative reaction

TABLE 2 Internal medicine residents' attitudes toward obesity as a disease, people living with obesity, and obesity treatment.

	Overall mean ^a (SD) n = 42	% of residents who strongly agreed/agreed (%)	Residents with primary care interest ^b mean (SD) n = 23	Residents without primary care interest mean (SD) n = 19	p-value ^c
Positive attitude statements					
Obesity is associated with serious medical conditions	4.9 (0.3)	100	5.0 (0.2)	4.9 (0.3)	0.45
Obesity is a chronic disease	4.7 (0.4)	100	4.8 (0.4)	4.7 (0.5)	0.48
It is necessary to educate patients with obesity on health risks of obesity	4.7 (0.7)	98	4.7 (0.4)	4.6 (1.0)	0.48
A 10% reduction in body weight is sufficient to significantly improve obesity-related health complications	4.1 (0.5)	95	4.2 (0.5)	4.0 (0.6)	0.30
I would recommend that a patient with obesity has an evaluation with a surgeon if they meet criteria for bariatric surgery	4.1 (0.7)	86	4.2 (0.7)	4.1 (0.8)	0.47
I make accommodations for patients with obesity	3.5 (1.0)	57	3.5 (1.0)	3.5 (1.0)	0.99
Medications to treat obesity should be used chronically	2.8 (0.8)	24	2.7 (0.8)	3.0 (0.8)	0.18
Most patients with obesity are well aware of the health risks of obesity	2.8 (0.9)	31	2.9 (1.0)	2.7 (0.8)	0.52
I feel competent in referring to weight-loss programs for patients with obesity	2.4 (0.9)	12	2.3 (0.8)	2.6 (1.0)	0.31
I am usually successful in helping patients with obesity to lose weight	2.0 (0.7)	2	2.0 (0.8)	2.1 (0.5)	0.61
Negative attitude statements					
It is difficult for me to feel empathy for a patient with obesity	1.7 (0.6)	0	1.7 (0.6)	1.7 (0.6)	0.95
It is acceptable to use "scare tactics" to obtain compliance with patients with obesity	2.0 (0.8)	5	2.0 (0.6)	2.0 (1.0)	0.87
For most patients with obesity, long-term maintenance of weight loss is impossible	2.3 (0.9)	12	2.0 (0.8)	2.6 (0.9)	0.02
Most patients with obesity could reach a normal BMI if they were motivated to do so	2.3 (0.9)	12	2.6 (1.0)	2.0 (0.7)	0.05
I feel uncomfortable when examining a patient with obesity	2.3 (0.9)	12	2.3 (0.9)	2.3 (0.9)	0.99
I have negative reactions toward the appearance of patients with obesity	2.4 (1.0)	17	2.2 (0.9)	2.7 (1.0)	0.10
Medications to treat obesity should be limited to short-term (<3 months) use	2.9 (0.8)	26	3.0 (0.9)	2.7 (0.8)	0.25
Most patients with obesity will not lose a significant amount of weight	3.3 (1.0)	50	3.2 (0.9)	3.5 (1.0)	0.24

^aAttitudes were assessed on a 5-point Likert scale: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). The questions are listed in the order of the mean Likert scale value.

^bResidents that were "very likely" or "somewhat likely" to pursue primary care were designated to the group with primary care interest. Residents who were "very unlikely" or "somewhat unlikely" to pursue primary care were designated to the group without primary interest.

^cp-values for the between-group differences were estimated using an unpaired t-test.

toward appearance of patients living with obesity.¹⁶ This study, which adapted the survey measure by Foster and colleagues,¹⁶ showed that residents also expressed positive attitudes on obesity as a chronic disease [4.7 (SD 0.4)] and its association with comorbidities [4.9 (SD 0.3)]. One key difference, however, was that only a small percentage of residents (17%) had negative reaction toward the appearance of patients living with obesity. These findings suggest a potential positive attitude shift, which may reflect efforts of the National Institutes of Health, American Medical Association, and the Centers for Medicare and Medicaid Services in their recognition of obesity as a chronic disease.^{6,18} Other contributing factors may be greater awareness of the harmful effects of weight bias as well as educational efforts in the past 10 years to reduce weight bias and stigma in medical training.^{4,19,20} A national survey of medical residents conducted in 2016 showed that residents in procedure-based specialties (e.g., urology, anesthesiology, and orthopedic surgery) had more negative attitudes toward people living with obesity compared to those in primary care-oriented specialties (e.g., family medicine, pediatrics, psychiatry).¹³ In this study, there were few differences in attitudes between residents with and without primary care interest, suggesting that positive attitudes were consistent regardless of professional interest, although power was limited due to the small sample size.

Despite obesity being recognized as a chronic disease and overall positive attitudes toward people living with obesity, residents in this study felt negatively regarding their level of success in helping patients lose weight. This is consistent with prior studies among residents that have shown negative attitudes toward their weight loss counseling efficacy.^{15,17,21} These findings may be related to the well-documented educational gap in obesity medicine^{4,7} and poor grasp of evidence-based tools necessary for the care of people living with obesity. In fact, few residents in this study highly rated the quality of their prior training in the care of people living with obesity in medical school and residency. Residents also did not feel competent in referral to a weight loss program and had a negative attitude toward the chronic use of anti-obesity medications, which indicates potential opportunities for targeted education in these treatment domains.

It is worth noting that residents in this study were likely to make a bariatric surgery referral [4.1 (SD 0.7)], which contrasts with the results from the 2003 survey¹⁶ that showed that practicing PCPs were less likely to refer to bariatric surgery [2.7 (SD 1.1)]. The higher likelihood of bariatric surgery referral among residents may be attributed to the increasing acceptance of bariatric surgery as an effective treatment for obesity with long-term data demonstrating reduced mortality.²² Additionally, residents may have higher exposure to these procedures due to training in academic medical centers.

Limitations of this study include a small sample size, which limits statistical power. Residents were recruited from two programs affiliated with the same institution in Baltimore, Maryland; therefore, generalizability may be limited to other geographic locations. Residents volunteered to participate in the study, so selection bias may be present. Additionally, those participating in the survey also agreed to participate in an obesity educational intervention, so this study

population could represent residents with greater interest in the care of people living with obesity, which may not be a representative sample. The survey was administered in 2020, prior to FDA approval of new, highly effective anti-obesity medications; therefore, how these medications may impact resident attitudes cannot be determined from this study.

The study findings suggest a potential positive attitude shift regarding people living with obesity among IM residents; however, gaps still remain regarding attitudes on obesity treatment self-efficacy, which suggests the need for targeted educational efforts. Residency offers an ideal setting to educate trainees on obesity as a disease so that they are better poised to deliver high-quality obesity care as they transition to independent practice. Given the study limitations, future directions may include surveying a larger representative sample of residents across multiple residency programs and qualitative studies to gather information on nuanced factors that influence residents' attitudes on people living with obesity and the care of these individuals.

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KC analyzed and interpreted the data, performed a literature search, and generated the tables. JG was involved in the initial conception of the study, participant recruitment, administering the survey, and data analysis. KK contributed to analyzing the data. ST performed statistical analysis. PO helped with participant recruitment. KG was involved in the initial conception of the study and provided oversight in the design and implementation of the study as well as data analysis. ML performed data analysis and interpretation, coordinated statistical analysis with ST, performed literature search, and provided oversight in the analysis of the study. All authors were involved in writing the paper and had final approval of the submitted and published versions. This work was funded by the Johns Hopkins Center for Innovative Medicine and the American Board of Obesity Medicine Foundation.

CONFLICT OF INTEREST STATEMENT

KG serves as the medical director for the American Board of Obesity Medicine, has a research grant from Novo Nordisk, is a paid consultant to the Novo Nordisk and Eli Lilly, and receives royalties from the Johns Hopkins ACG system.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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