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Screening for Obesity: Clinical Tools in Evolution, a WREN Study

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Abstract

Background—The US Preventive Services Task Force (USPSTF) recommends that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults. This recommendation acknowledges the absence of evidence for patient-oriented benefits (lower morbidity or mortality).

Objectives—We sought to determine temporal trends in clinician attitudes toward screening for obesity using body mass index (BMI) and other modalities, before and after introduction of an American Academy of Family Physicians (AAFP) obesity screening toolkit.

Methods—We performed 3 cross-sectional attitudinal surveys (2005–2007) of Wisconsin family physicians before and after they received the Americans In Motion – AIM to Change Toolkit.

Results—Response rates were 19.5% of 1429 in the 2005 survey, 21.7% of 1797 in the April 2007 survey, and 14.3% of 1580 in the December 2007 survey. Virtually all clinicians (98% – 99%) reported in all 3 surveys that they routinely measured adult weight. There was a significant increase in reporting the routine measurement of adult height (from 57% to 74%) necessary for calculation of BMI. While most clinicians (91% in 2004 and 96% in 2007) agreed that it is important to screen all patients for obesity, there was less agreement that screening was feasible or effective.

Conclusions—While many Wisconsin family physicians endorse screening for obesity, fewer were convinced about screening's feasibility. We were unable to determine if the mailing of the AIM kit had a causal effect on the temporal trends observed.

INTRODUCTION

It is well recognized that obesity is an increasing public health problem in Wisconsin and the rest of the United States.^{1–4} Screening for obesity has significant popular and intuitive appeal as a method for reducing the public health burden of obesity-associated diseases. The US Preventive Services Task Force (USPSTF) recommends that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults.⁵ In making these recommendations, the USPSTF acknowledged that there is no direct evidence that implementing these recommendations in the clinical setting will result in any decrease in morbidity or mortality. The lack of any practice-based, patient-oriented effectiveness studies on which to base a strong

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recommendation indicates that personal attitudes among clinicians about the value of screening might reasonably vary.

In 2005, the American Academy of Family Physicians (AAFP) released an obesity screening and treatment kit (Americans In Motion [AIM]– AIM to Change Toolkit [AIM kit]) with the intent that the AIM kit would, among other things, increase practice capability to screen for obesity using body mass index (BMI). The Wisconsin Research and Education Network (WREN), in collaboration with the Wisconsin Academy of Family Physicians (WAFP), studied family medicine clinician attitudes toward obesity screening and treatment by performing 3 Internet-based surveys spanning the time period during which the AIM toolkit was mailed to their members. Herein we report temporal trends in clinician-reported use of BMI as a screening tool, and attitudes about the feasibility and effectiveness of adult obesity screening.

METHODS

In October 2005, we conducted a survey of Wisconsin physician members of the WAFP (the state chapter of the American Academy of Family Physicians) and the WREN (a practice-based research network) about their use of and attitudes about BMI as a tool for screening and treating obesity. We implemented follow-up surveys in April and December of 2007.

The 2005 baseline survey included items to assess routine measurement of height, weight, and BMI; tools used to calculate BMI; and perceived usefulness of BMI in daily clinical practice. Also, we asked clinicians to indicate if they agreed or disagreed with statements about the importance of screening patients for obesity and usefulness of BMI as a measure. Demographic questions included practice type, practice location, race, ethnicity, and gender. Additional questions asked in 2007 ascertained respondent use of the AIM kit components.

The AAFP AIM kit was mailed to all members in the spring of 2007. The AIM to Change toolkit offers resources to help family physicians talk to patients about physical activity, healthy eating, and emotional well-being. The AIM kit encourages physicians to include BMI measurements at every visit when height and weight are measured to identify patients who may be at risk for being overweight or obesity. In addition to posters and tools to help patients assess their health and create a fitness plan, the AIM kit includes several tools to assist clinicians in calculating BMI.

At the time of the April 2007 survey mailing, we randomized physicians to receive the AIM kit either 1 month before or 1 month after receiving the survey. This allowed us to assess any differences in responses to the April survey between those who received the kit and those who did not.

For all 3 surveys, we used current existing e-mail address files to send all WAFP and WREN members an e-mail invitation linked to the online survey. Non-responders received 2 additional reminder e-mails.

We used SAS (SAS Institute Inc., Cary, NC) version 9.1 to conduct all statistical analyses. We calculated descriptive statistics for each item. To assess changes in the responses from 2005 to 2007, we used a 2-sample test for proportions. We used the chi-square statistic to examine differences in responses between those who received the AIM kit before versus after the April 2007 survey mailing.

RESULTS

Response rates for the 2005, April 2007, and December 2007 surveys were 278 (19.5%) of 1429, 390 (21.7%) of 1797, and 226 (14.3%) of 1580, respectively. The WAFP provided a summary of characteristics of its 2615 members as of April 2008 for comparison with respondents to our survey. Demographic characteristics of survey responders were comparable to the entire WAFP membership (Table 1). WREN response rates (34%–44%) were significantly higher than WAFP rates (12%–20%) ($P < 0.05$ for all 3 surveys), although survey responses were not significantly different. Table 2 summarizes clinician attitudes and practices regarding adult obesity screening for the 2005–2007 time periods.

Clinician Attitudes About Adult Obesity Screening and Treatment

Table 2 documents that positive attitudes about the importance of obesity screening increased from 91% to 96% ($P = 0.06$) and that negative attitudes about the effectiveness of clinician advice remained unchanged over the 2005–2007 time period. Two-thirds of respondents in all 3 surveys expressed doubt that patients would comply with recommendations. Almost a quarter reported a persistent attitude that screening all patients in their practice setting was not feasible due to time factors.

Attitudes About BMI

Table 2 also documents positive temporal trends in attitudes favoring BMI. The proportion of clinicians endorsing the statement that BMI should be recorded for all patients increased from 72% to 81% over the survey time period ($P = 0.03$). Endorsement of BMI as a useful vital sign also increased but was of less magnitude overall (45% to 59%; $P = 0.001$). Consistent with these positive temporal changes in attitudes about BMI, the attitude that weight alone was an adequate measure decreased from 13% to 6% ($P = 0.005$).

Obesity Measurement Practices

Clinicians consistently reported that weight is measured routinely for almost all patients at their practice and also reported an increasing trend toward routine height measurement (from 57% to 74%; $P < 0.0001$) that is a requirement for BMI calculation. Respondents reported comparable increased rates of routine BMI calculation (from 50% to 70%; $P < 0.0001$). Clinicians also reported using BMI for at least some patients in 90% or more of practices when screening patients for obesity. Notably, about half of practices also reported use of visual inspection to assess obesity, at least for selected patients.

Use of the AAFP Obesity Toolkit

Of the April 2007 respondents who received the AIM toolkit, 48% did not use any kit components, 46% reported using the BMI calculator, 19% the food and activity journal, 11% the personal fitness assessment, and 10% the fitness prescription pads, for at least some patients. Results were almost identical for the December 2007 respondents, 46% of whom reported using none of the components.

At the time of the April survey, we compared responses for those who had already received the kit and those who had not. We did not observe any difference in attitude toward BMI as a screening tool between these 2 groups.

DISCUSSION

The USPSTF found good evidence that BMI is reliable and valid for identifying adults at increased risk of mortality and morbidity due to overweight and obesity. The USPSTF also found evidence that intensive counseling and intervention could produce modest, sustained

weight loss associated with positive surrogate outcomes (improved glucose metabolism, lipid levels, and blood pressure) but no evidence for better patient-oriented outcomes (decreased morbidity or mortality). Because of lack of evidence for large, patient-oriented benefits, obesity screening received a “B” rating.⁶ The USPSTF found insufficient evidence to recommend for or against intermediate- or low-intensity counseling combined with behavioral intervention for obesity, and insufficient evidence for any intervention in overweight adults.⁶ In the absence of sufficient evidence for large benefits, it is appropriate to investigate clinician attitudes toward obesity screening and treatment to inform clinical practice and to guide future research into effectiveness.

We performed 3 surveys from 2005 to 2007 and found modest temporal increases in favorable attitudes about and self-reported practice of obtaining BMI measurements in clinical practice. It is possible that the AAFP AIM initiative contributed to these temporal trends, but the data are insufficient to conclude a causal effect. This study was not designed to test the effect of the AIM kit on individual physician opinions and practices related to BMI over time. We were able to test the difference in the responses of clinicians who received the kit directly before and just after the mailing of the April 2007 survey, and found that there were not differences in attitudes toward BMI as a screening tool between these 2 groups. Furthermore, almost half of clinicians reported that they did not use any of the components of the AIM mailing, casting doubt on the cost-effectiveness of this type of mailed intervention.

Clinician opinion that it is important to screen for obesity increased over the survey period (from 91% to 96%), whereas the opinion that such screening would improve care remained consistently about 10% lower. Clinician skepticism that recommended interventions would be followed remained consistent and high (67%). This skepticism about the effectiveness of recommended interventions is understandable, as many practices may not have access to the type of high intensity interventions recommended by the USPSTF.⁶ A significant minority (21% – 24%) also reported that systematic screening was not feasible in their setting due to time constraints. These findings are consistent with a recent report that even with a computer prompt of elevated BMI, only 16% of patients had a diagnosis of obesity in their electronic health record, and only 12% were referred for diet treatment.⁷ These barriers may be seen as opportunities for future practice-based research into effective and feasible interventions aimed at improving patient-oriented outcomes for obese patients.

An intriguing finding was the consistent (45% – 52%) report that clinicians used visual inspection to screen for obesity. BMI is a good predictive measure for mortality and morbidity, but waist-to-hip ratio may be an even better predictor than BMI for mortality.⁸ It seems reasonable to hypothesize that visual inspection is (1) an adequate method for estimating waist-to-hip ratio, and (2) a practical and useful substitute for BMI in categorizing patients for intensive assessment and intervention. These hypotheses are testable in practice settings.

Limitations of our study include the low response rates that are characteristic for the type of low-cost e-mail methodology we employed. The demographic similarities between the respondents and the sampling frame mitigate, but do not exclude, the possibility of significant response bias. Our surveys depended entirely on self-report. Self-report of opinions is less problematic than the self-report of routine clinical practices, so we cannot be certain about the actual amount of BMI measurements in clinical practice. Despite these limitations, we believe that the information provided by these surveys offers useful insights into the attitudes, beliefs, and possibly the practices of a sample of family medicine practices in Wisconsin that may be helpful to guide the design of future practice-based effectiveness studies aimed at improving the health of obese adults.

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Table 1

Characteristics of Survey Responders Compared to WAFP Membership

	Survey 1 Oct 2005	Survey 2 Apr 2007	Survey 3 Dec 2007	All WAFP Members
	N (%)	N (%)	N (%)	N (%)
Total respondents	278	390	226	2615 ^a
Gender				
Female	118 (42)	153 (39)	102 (45)	1043 (40)
Male	160 (58)	237 (61)	124 (55)	1570 (60)
Race/Ethnicity				
American Indian	5 (2)	2 (1)	1 (<1)	7 (1)
Asian	21 (8)	19 (5)	6 (3)	59 (5)
African American or Black	4 (1)	5 (1)	2 (1)	8 (1)
White	259 (93)	358 (91)	209 (92)	1157 (92)
Native Hawaiian/Other Pacific Islander	6 (2)	2 (1)	0 (0)	0 (0)
Hispanic/Latino	7 (3)	8 (2)	2 (1)	25 (2)
Age				
25–34	41 (15)	78 (20)	42 (19)	620 (26)
35–44	94 (34)	119 (31)	62 (27)	679 (28)
45–54	102 (37)	135 (35)	82 (36)	648 (27)
55–64	38 (14)	53 (14)	38 (17)	358 (15)
>64	3 (1)	5 (1)	2 (1)	115 (5)
Practice Setting				
Multi-specialty group	127 (46)	168 (43)	111 (49)	593 (47)
Single specialty group	67 (24)	73 (19)	44 (19)	527 (41)
Residency and medical school	35 (13)	81 (21)	42 (19)	NA
Solo practice	12 (4)	13 (3)	9 (4)	68 (5)
Other	37 (13)	55 (19)	20 (7)	82 (6)
Practice Location				
Rural	88 (32)	111 (28)	64 (28)	454 (35)
Suburban/Urban	190 (67)	279 (72)	162 (72)	860 (65)

^aWAFP totals for each characteristic do not add up to 2615 because missing responses were excluded.

Table 2

Clinician Attitudes and Practices Regarding Adult Obesity Screening and Treatment

Total Respondents, N Attitudes, N (%) agree	Oct 2005		Apr 2007		Dec 2007		P-value for % Change
	278	390	226	226	% Change Time 1 to Time 3	% Change	
Obesity Screening and Treatment							
It is important to screen all patients for obesity	254 (91)	368 (94)	216 (96)		+5		0.06
It would improve care to screen all patients for obesity	225 (81)	337 (86)	195 (86)		+5		0.11
Most of my obese patients would not comply with my recommendations	187 (67)	263 (67)	152 (67)		+0		0.99
I do not have time to screen all my patients for obesity	64 (23)	92 (24)	47 (21)		-2		0.55
I do not have staff resources to screen all my patients for obesity	62 (22)	83 (21)	35 (15)		-7		0.05 ^a
Body Mass Index (BMI) Measurement							
BMI should be recorded for all patients	201 (72)	299 (77)	182 (81)		+9		0.03 ^a
BMI is a very useful vital sign	124 (45)	199 (51)	134 (59)		+14		<0.01 ^a
BMI is useful but not recorded on all patients	137 (49)	170 (44)	86 (38)		-11		0.01 ^a
Following (only) weight seems adequate in my practice	37 (13)	26 (7)	13 (6)		-7		<0.01 ^a
Practices, N (%) Performed							
Weight measured routinely	274 (99)	382 (98)	224 (99)		0		0.57
Height measured routinely	159 (57)	261 (67)	168 (74)		+17		<0.01 ^a
BMI calculated routinely	139 (50)	233 (60)	159 (70)		+20		<0.01 ^a
BMI calculated at least sometimes	249 (90)	365 (94)	213 (94)		+4		0.06
Visual inspection used to assess obesity	144 (52)	195 (50)	102 (45)		-7		0.14

^aStatistically significant: $P \leq 0.05$