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Do physician beliefs about causes of obesity translate into actionable issues on which physicians counsel their patients?

Sara N. Bleich^{a,*}, Kimberly A. Gudzone^b, Wendy L. Bennett^{b,c}, and Lisa A. Cooper^{b,d}

Sara N. Bleich: sbleich@jhsph.edu; Kimberly A. Gudzone: kgudzun1@jhu.edu; Wendy L. Bennett: wbennet5@jhmi.edu; Lisa A. Cooper: lisa.cooper@jhmi.edu

^aDepartment of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, USA

^bDepartment of Medicine, Division of General Internal Medicine, Johns Hopkins University School of Medicine, USA

^cDepartment of Population, Family, Reproductive Health, Johns Hopkins Bloomberg School of Public Health, USA

^dWelch Center for Prevention, Epidemiology, and Clinical Research, Johns Hopkins Medical Institutions, USA

Abstract

Objective—To describe the relationship between primary care physicians' (PCPs') beliefs about the causes of obesity with the frequency of nutritional counseling.

Methods—We analyzed a national cross-sectional internet-based survey of 500 US PCPs collected between February and March 2011.

Results—PCPs that identified overconsumption of food as a very important cause of obesity had significantly greater odds of counseling patients to reduce portion sizes (OR 3.40; 95% CI: 1.73–6.68) and to avoid high calorie ingredients when cooking (OR 2.16; 95% CI: 1.07–4.33). Physicians who believed that restaurant/fast food eating was a very important cause of obesity had significantly greater odds of counseling patients to avoid high calorie menu items outside the home (OR 1.93; 95% CI: 1.20–3.11). Physicians who reported that sugar-sweetened beverages were a very important cause of obesity had significantly greater odds of counseling their obese patients to reduce consumption (OR 5.99; 95% CI: 3.53–10.17).

Conclusions—PCP beliefs about the diet-related causes of obesity may translate into actionable nutritional counseling topics for physicians to use with their patients.

Keywords

Obesity; Physician beliefs; Nutrition counseling

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*Corresponding author at: Department of Health Policy and Management, Bloomberg School of Public Health, Johns Hopkins University, 624 N. Broadway, Room 451, Baltimore, MD 21205, USA. Fax: +1 410 614 9152.

Conflicts of interest

None.

Contributors: SNB and LAC conceived the study and developed the hypotheses. SNB analyzed the data. All authors contributed to the interpretation of study findings. SNB drafted the manuscript and all authors contributed to the final draft. SNB had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Background

Obesity care is sub-optimal despite national guidelines for primary care physicians (PCPs) to counsel their obese patients to lose weight (North American Association for the Study of Obesity (NAASO) and the National Heart Lung and Blood Institute, 1998; US Department of Health and Human Services, 2000). Barriers include lack of time (Forman-Hoffman et al., 2006), inadequate training in weight counseling, negative physician attitudes towards obese patients (Huizinga et al., 2009; Kristeller and Hoerr, 1997; Price et al., 1987), and pessimism regarding weight loss (Kushner, 1995; Laws et al., 2009).

The Health Belief Model posits that individuals' health perceptions and attitudes influence their practices (Janz et al., 2002). However, limited attention has been paid to how physician beliefs on obesity impact practice. While we are unaware of studies examining how physician attitudes influence obesity care, there is evidence from other health areas. For example, physician beliefs about the causes of diabetes, hypertension, and dyslipidemia may be as important as physician knowledge in determining practices like prescribing behavior (Huse et al., 2001; Larme and Pugh, 1998; Yarzebski et al., 2002). Obesity care may improve if evidence-based clinical guidelines on obesity management could align physician beliefs with recommended practice behaviors.

In this study, we evaluated whether PCP beliefs about the causes of obesity are associated with actionable topics on which physicians counsel their patients. We hypothesized that physician beliefs about obesity's causes would be associated with the type and frequency of nutritional counseling; in particular, the belief that modifiable diet-related factors cause obesity would be positively associated with nutritional counseling while the belief that immutable biological factors cause obesity would not.

Methods

We conducted an internet-based cross-sectional survey of U.S. PCPs. The survey development and implementation process was described previously (Bleich et al., 2012). Between February–March 2011, we surveyed 500 PCPs from The Epocrates Honors panel — an opt-in panel of 145,000 U.S. physicians. A total of 2010 invitations were sent to a random sample of PCP panel members, who received a \$25 incentive to participate; 58 invitations were returned as undeliverable. The response rate, calculated as completed interviews over the total of working emails sent an invitation was 25.6%. The Johns Hopkins Bloomberg School of Public Health IRB approved this study.

We assessed physician beliefs about the causes of obesity with the question, “How important is each of the following possible causes of obesity for your patients?” For each cause (over consumption of food, restaurant/fast food eating, consumption of sugar-sweetened beverages (SSB), genetics/family history, and metabolic defect), physicians indicated whether it was very important, somewhat important, not very important, or not at all important. We dichotomized variables for each cause where 1 was “very important” and 0 was otherwise, which we selected based on cut-points in the data.

We assessed nutritional counseling habits using the question, “How frequently do you provide each of the following types of nutritional counseling to your obese patients?” For each nutritional recommendation (reading nutritional labels to determine calorie/nutrition content, avoiding high calorie ingredients when cooking, avoiding high calorie menu items when eating outside the home, reducing consumption of SSB, and reducing portion size), physicians indicated whether they provided it very frequently, somewhat frequently, not very frequently, or not at all frequently. Based on cut-points in the data, we dichotomized

variables for each type of nutritional counseling where 1 was “very/somewhat frequently” and 0 was “not very/not at all frequently.”

All analyses were conducted with STATA 11.0 (College Station, TX). We used multivariate logistic regression to assess the association between physician beliefs about obesity’s causes and frequency of corresponding nutritional recommendations, adjusting for age, race, gender, body weight category, years since completing medical school (<20 years, 20 years), specialty (family practice, internal medicine), region (northeast, north central, south, west), and practice site (inpatient, outpatient, both inpatient and outpatient). We selected these covariates based on prior literature, and were included regardless of statistical significance (Bleich et al., 2012). We used SVY to account for the complex survey design to address systematic under- or over-representation of the physician sub-populations, systematic non-response along known PCPs’ demographics, and sampling biases due to differences in non-response rates. The survey’s weighted margin of error was $\pm 5.3\%$.

Results

Table 1 shows the PCPs’ characteristics. The majority of physicians (88%) reported that overconsumption of food, restaurant/fast food eating (62%), and consuming SSB (60%) were very important causes of obesity. Few physicians reported genetics/family history (19%) or metabolic defect (12%) as very important causes of obesity.

Table 2 shows the adjusted associations between physician beliefs and nutritional counseling habits. Physicians who believed that food overconsumption was a very important cause of obesity had significantly greater odds of counseling their obese patients to reduce portion sizes (OR 3.40; 95%CI: 1.73–6.68), avoid high calorie ingredients when cooking (OR 2.16; 95%CI: 1.07–4.33), and reduce SSB intake (OR 2.32; 95%CI: 1.18–4.55). Physicians who believed that restaurant/fast food eating was a very important cause of obesity had significantly greater odds of advising their patients to avoid high calorie menu items outside the home (OR 1.93; 95%CI: 1.20–3.11). Physicians who believed that consuming SSB was a very important cause of obesity had significantly greater odds of counseling their obese patients to reduce SSB intake (OR 5.99; 95%CI: 3.53–10.17). The advice to reduce portion sizes and SSB consumption were common across all physicians who believed that dietary factors were major contributors to obesity. We found no significant association between physicians who believed biological factors (genetics/family history or metabolic defect) were the most important causes of obesity and nutritional counseling habits.

Discussion

Our findings suggest that physician beliefs about modifiable dietary causes of obesity translate into actionable issues on which physicians counsel their patients. Physicians who believed overconsumption of food to be a major contributor to obesity were significantly more likely to counsel their patients to modify nutritional habits related to this belief including reducing portion size, reading nutritional labels, and avoiding high calorie ingredients when cooking. Similarly, physicians who believed SSB consumption to be a very important cause of obesity were significantly more likely to advise obese patients to decrease their intake. In contrast, we observed no association between physicians who believed biological factors were the most important causes of obesity and nutritional counseling practices. To our knowledge, our study is the first to examine whether physician beliefs about the causes of obesity is associated with providing specific nutritional recommendations.

Time constraints (Forman-Hoffman et al., 2006), lack of weight counseling skills (Block et al., 2003; Forman-Hoffman et al., 2006; Jay et al., 2008; Vetter et al., 2008), negative physician attitudes towards obese patients, and pessimism about weight loss success (Huang et al., 2004; Huizinga et al., 2009; Kristeller and Hoerr, 1997; Price et al., 1987) may limit in-depth counseling about weight and lifestyle by PCPs. Recent research suggests that counseling quality may improve with physician obesity-related training (Forman-Hoffman et al., 2006; Jay et al., 2010). Our results suggest that targeted education about major diet-related contributors to obesity may be a feasible strategy that facilitates physicians' delivery of brief, frequent nutritional messages to patients.

Our study has limitations. The cross-sectional design does not allow us to make causal inferences. Our measures rely on physician self-reports of counseling practices; however, research suggests that if physicians report having delivered a service, there is a high likelihood that it was given (Gilchrist et al., 2004). Our measures assessing beliefs about obesity's causes and nutritional counseling habits do not fully represent the spectrum in the literature. For example, we did not ask physicians about encouraging patients to keep a food diary for self-monitoring. The Likert scale we used to assess nutrition counseling habits may also have been differentially interpreted by PCPs (Carifio and Perla, 2007). Some of PCPs may have had extensive additional training in obesity, which could have biased our results positively. Years since medical school completion is proxy for type of education received, but we are unable to account for the variation in curricula across medical schools. Finally, our response rate is relatively low; potentially related to our mode of survey data collection which relied on an online format (rather than the telephone). As a result, the generalizability of our results may be limited.

In conclusion, physician beliefs about the causes of obesity translate into actionable issues on which physicians counsel their patients. Improved PCP education about the causes of obesity may be a feasible strategy for increasing the frequency of nutritional counseling, particularly concrete dietary tips that PCPs can easily share with their patients.

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Table 1

Characteristics of the study sample (N=500).

	n (%)
<i>Physician characteristics</i>	
Gender	
Male	335 (67)
Race	
White	350 (70)
Black	15 (3)
Asian	77 (15)
Hispanic	25 (5)
Other race	6 (1)
Age, years	
Under 45	224 (45)
Aged 45–54	124 (25)
Aged 55 and older	152 (30)
Year since completed medical school	
20 years or more (1990 or earlier)	223 (45)
Less than 20 years (1991 to 2011)	277 (55)
<i>Physician obesity-related training rated as very or pretty good</i>	
Medical school	115 (23)
Residency	173 (35)
Continuing medical education	298 (60)
Other training ^a	298 (60)
<i>Physician-reported practice characteristics</i>	
Primary location where patients are seen ^b	
Hospital or inpatient setting	49 (10)
Office not attached to a hospital or outpatient	313 (63)
Both inpatient and outpatient	136 (27)
<i>Physicians who frequently provide each type of nutritional counseling^c</i>	
Reduce consumption of sugar-sweetened beverages	354 (72)
Reduce portion size	350 (71)
Avoid high calorie menu items when eating outside the home	277 (55)
Avoid high calorie ingredients when cooking (e.g., fats and oils)	223 (44)
Read nutritional labels to determine calorie or nutritional content	193 (41)

Source: Survey of U.S. General Practitioners, Family Practitioners and General Internists between February 9 and March 1, 2011.

Note: numbers may not add up to 100% because of rounding.

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^aOther training includes in-person or online training such as a lecture, seminar, workshop, or conference.

^bOne respondent reported the primary location where patients are seen is “another location.”

^cPercent reporting very/somewhat frequently. Respondents were asked to identify the frequency of providing each type of counseling separately, so they do not sum to 100%.

Table 2

Adjusted Association between physician beliefs about the causes of obesity and content of nutritional counseling offered to patients.

	<u>Belief about primary cause of obesity</u>					
	<u>Diet-related</u>			<u>Biological</u>		
	<u>Overconsumption of food</u>	<u>Restaurant/fast food eating</u>	<u>SSB consumption</u>	<u>Genetics or family history</u>	<u>Metabolic defect</u>	
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	
Reduce portion sizes	3.40 (1.73, 6.68)	1.75 (1.06, 2.89)	2.19 (1.34, 3.57)	1.38 (0.72, 2.66)	0.69 (0.32, 1.52)	
Read nutritional labels	2.06 (0.95, 4.46)	1.29 (0.79, 2.12)	2.13 (1.30, 3.46)	1.31 (0.74, 2.32)	0.93 (0.46, 1.94)	
Avoid high calorie ingredients when cooking	2.16 (1.07, 4.33)	1.44 (0.89, 2.33)	2.11 (1.32, 3.39)	1.04 (0.60, 1.80)	1.11 (0.54, 2.26)	
Avoid high calorie menu items outside the home	1.81 (0.94, 3.48)	1.93 (1.20, 3.11)	2.88 (1.80, 4.60)	1.15 (0.67, 1.95)	0.77 (0.38, 1.54)	
Reduce SSB consumption	2.32 (1.18, 4.55)	2.69 (1.60, 4.54)	5.99 (3.53, 10.17)	0.90 (0.48, 1.69)	0.57 (0.27, 1.23)	

Source: Survey of U.S. General Practitioners, Family Practitioners and General Internists between February 9 and March 1, 2011.

Note: Odds ratios are adjusted for physician race, physician gender, years since completing medical school, specialty, region of the country, and location of practice.