U.S. Primary Care Physicians' Diet, Physical Activity, and Weight-Related Care of Adult Patients

Ashley Wilder Smith, PhD, MPH, Laurel A. Borowski, MPH, Benmei Liu, PhD,
Deborah A. Galuska, PhD, Caroline Signore, MD, MPH, Carrie Klabunde, PhD,
Terry T-K Huang, PhD, MPH, Susan M. Krebs-Smith, PhD, Erica Frank, MD, MPH,
Nico Pronk, PhD, Rachel Ballard-Barbash, MD, MPH

Appendix A

Additional information on sample selection and survey fielding

Physicians were screened for eligibility. Screening was performed using phone calls to verify: (1) the primary care physician's (PCP) mailing address; (2) the PCP's specialty and practice status; (3) whether physicians treated adults or children; and (4) inclusion criteria. Physicians who were retired, in residency training, or involved in full-time teaching, research, or administration were excluded. During the screening, we also determined whether those who described themselves as family physicians treated children, adults, or both. Those who treated children were sent a child-focused questionnaire. Those who did not were sent an adult-focused questionnaire.

A random sample of 4429 physicians was drawn using specialty as the sampling strata to meet the targeted sample size of at least 400 respondents per PCP specialty. The sample weight within each specialty stratum was proportional to the specialty's representation in the total U.S. physician population. The sampling frame database was sorted by U.S. Census region (Northeast, Midwest, South, and West); practice urbanicity; and physician gender to ensure adequate representation of these characteristics. Within each specialty stratum, physicians were sorted by these variables in order to achieve implicit representation before sample selection.

Eligible physicians were sent a package containing a questionnaire with a cover letter from the National Cancer Institute describing the importance of their participation, a detailed description of the study, a letter of support from their specialty organization, a U.S. Postal Service postage-paid return envelope, and a prepaid $30 honorarium check. Up to four additional mailings were sent to the physician's office or home, with phone, fax, and e-mail reminders sent to nonresponders.

Appendix B

Additional information on the specific survey questions used

Energy-balance clinical practices were assessed in a variety of ways. Questions asked how often primary care providers (PCPs): (1) *Provide general counseling for changing diet, physical activity or weight control*; (2) *Provide specific guidance* on each of these behaviors; (3) *Refer these patients to another health professional or program for further evaluation or management*; and (4) *Systematically track/follow patients over time concerning behaviors or other measures of progress related to diet, physical activity or weight.* Response options were: *always, often, sometimes, rarely, never.* PCPs were then asked if they formally assessed their patients' diet, physical activity, and sedentary behavior, and if yes, with what type of assessment tools. PCPs also were asked how often they recorded measures of weight status (e.g., weight on a scale, BMI, waist circumference). Response categories were: *every well-patient visit, every visit, annually, as clinically indicated,* and *never.* Finally, PCPs were asked if they had ever prescribed pharmacologic treatments for weight control or referred any patients for surgical treatment for obesity. Response categories were: *yes* and *no.*

Appendix C

Sample characteristics by physician specialty

Physician characteristics	Total n=1211 n (%)	Internal medicine n=403 n (%)	Family practice n=388 n (%)	OB/GYN n=420 n (%)
Age (≥50 years)	610 (50.4)	209 (51.6)	184 (48.2)	217 (51.8)
Years since medical school				
<10	197 (16.3)	48 (12.5)	59 (15.1)	90 (20.1)
10–20	367 (31.8)	123 (30.3)	132 (32.5)	112 (32.7)
20–30	370 (31.2)	131 (32.5)	123 (28.5)	116 (31.2)
>30	277 (20.8)	101 (29.7)	106 (24.0)	70 (16.0)
Gender (female)	450 (36.0)	131 (32.8)	133 (35.0)	186 (44.6)
Race/ethnicity				
White, non-Hispanic	846 (69.9)	243 (60.1)	296 (76.3)	307 (73.6)
African-American, non-Hispanic	70 (5.4)	20 (5.1)	16 (4.4)	34 (7.9)
Asian-American, non-Hispanic	175 (15.1)	98 (24.3)	41 (10.2)	36 (8.5)
Hispanic	49 (3.8)	15 (3.7)	15 (3.7)	19 (4.3)
Other	22 (1.8)	9 (2.3)	6 (1.4)	7 (1.7)
Missing	49 (4.2)	18 (4.5)	17 (4.1)	14 (3.9)
International medical graduate	267 (23.1)	140 (35.2)	65 (16.9)	62 (14.3)
Board certified	1011 (83.5)	334 (82.4)	330 (85.6)	347 (80.9)
Missing	200 (16.5)	69 (17.7)	73 (19.1)	58 (14.4)
Census region				
Northeast	244 (20.0)	97 (24.3)	56 (15.5)	91 (22.2)
Midwest	282 (24.2)	75 (18.2)	123 (31.1)	84 (20.0)
South	412 (33.4)	149 (37.0)	117 (30.2)	146 (33.9)
West	273 (22.4)	82 (20.5)	92 (23.3)	99 (23.9)
Practice urbanicity				
Large city	247 (18.9)	96 (23.8)	52 (13.1)	99 (23.1)
Medium city	244 (19.3)	77 (19.3)	71 (18.0)	96 (22.5)
Small city	273 (22.7)	83 (20.3)	92 (24.3)	98 (23.6)
Rural	156 (14.7)	45 (11.2)	81 (21.0)	30 (6.9)
Missing	290 (24.3)	102 (25.4)	96 (23.7)	92 (23.6)
Practice type				
Solo	309 (25.2)	134 (33.7)	74 (19.6)	101 (21.9)
Other	713 (58.9)	213 (52.2)	245 (60.0)	255 (65.7)
Missing	189 (15.2)	56 (14.1)	74 (18.1)	59 (14.7)
Single-specialty group	404 (32.3)	88 (21.7)	139 (36.5)	177 (42.9)
Multi-specialty group	232 (19.8)	96 (23.5)	80 (19.4)	56 (13.7)
Missing	570 (47.4)	218 (54.6)	187 (43.4)	165 (43.1)
Patient volume and insurance				
>100 patient visits per week	339 (28.9)	111 (27.3)	122 (31.7)	106 (25.8)
Missing	41 (3.5)	13 (3.3)	14 (3.2)	14 (3.8)
>50% in managed care	107 (8.2)	30 (7.4)	28 (7.2)	49 (11.7)
Missing	645 (54.0)	217 (54.2)	215 (52.2)	213 (54.7)
Patient population treated (age in years)				
<2	325 (37.1)	12 (3.1)	302 (80.4)	11 (3.5)
Missing	26 (2.0)	10 (2.5)	11 (2.5)	5 (1.4)
2–11	428 (46.1)	31 (7.9)	353 (93.1)	44 (11.4)
Missing	23 (1.6)	9 (2.3)	12 (2.7)	2 (0.5)
12–17	914 (74.8)	155 (38.6)	374 (97.6)	385 (91.7)
Missing	13 (1.2)	9 (2.3)	2 (0.5)	2 (0.5)
18–65	1207 (99.7)	400 (99.3)	388 (100.0)	419 (99.8)
Missing	2 (0.2)	2 (0.5)	0 (0.0)	0 (0.0)
≥66	1185 (98.4)	397 (98.5)	386 (99.5)	402 (95.7)
Missing	6 (0.5)	3 (0.8)	2 (0.5)	1 (0.3)

Appendix D

Primary care physicians' counseling, referral and follow-up of diet, physical activity, and weight control

Physician characteristics	Total *n*=1211	Internal medicine *n*=403	Family practice *n*=388	OB/GYN *n*=420	
Patients without chronic disease	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*p*-value
Provide general counseling for diet, physical activity, and weight control					
Always	293 (26.3)	130 (33.0)	91 (24.8)	72 (16.9)	<0.001
Often	642 (53.8)	199 (49.9)	219 (57.1)	224 (53.8)	
Sometimes/rarely/never[a]	258 (19.9)	67 (17.0)	69 (18.1)	122 (29.3)	
PROVIDE SPECIFIC GUIDANCE ON:					
Diet/nutrition					
Always	267 (23.6)	112 (28.1)	87 (23.0)	68 (16.5)	<0.01
Often	658 (54.3)	212 (52.5)	210 (55.1)	236 (56.2)	
Sometimes/rarely/never[a]	279 (22.1)	77 (19.5)	87 (21.9)	115 (27.3)	
Physical activity					
Always	343 (30.3)	149 (37.3)	107 (28.5)	87 (20.9)	<0.001
Often	675 (55.7)	209 (51.8)	227 (58.5)	239 (56.9)	
Sometimes/rarely/never[a]	185 (14.0)	43 (10.9)	50 (13.0)	92 (22.2)	
Weight control					
Always	240 (21.5)	110 (27.5)	76 (20.1)	54 (13.0)	<0.001
Often	580 (48.8)	200 (49.7)	191 (49.8)	189 (45.1)	
Sometimes/rarely/never[a]	381 (29.7)	92 (22.8)	114 (30.1)	175 (41.9)	
Refer patients for further evaluation and/or management					
Always	26 (2.0)	13 (3.3)	3 (0.7)	10 (2.4)	<0.01
Often	201 (15.7)	55 (13.9)	56 (14.5)	90 (22.0)	
Sometimes	535 (45.1)	174 (42.9)	182 (48.1)	179 (42.7)	
Rarely/never[b]	442 (37.2)	158 (39.8)	143 (36.8)	141 (33.0)	
Systematically track/follow patients over time concerning behaviors or other measure of progress related to diet, physical activity, or weight					
Always	102 (9.2)	62 (15.7)	29 (6.7)	11 (2.5)	<0.001
Often	367 (33.5)	163 (40.2)	134 (35.3)	70 (17.0)	
Sometimes	365 (31.5)	107 (26.7)	138 (37.1)	120 (28.2)	
Rarely/never[b]	372 (25.8)	70 (17.5)	83 (21.0)	219 (52.3)	
Patients with chronic disease	*n* (%)	*n* (%)	*n* (%)	*n* (%)	
Provide general counseling for diet, physical activity, and weight control					
Always	565 (50.2)	246 (61.5)	184 (48.6)	135 (32.3)	<0.001
Often	523 (42.6)	140 (34.9)	175 (46.0)	208 (49.7)	
Sometimes/rarely/never[a]	109 (7.2)	14 (3.6)	20 (5.4)	75 (18.0)	
PROVIDE SPECIFIC GUIDANCE ON:					
Diet/nutrition					
Always	483 (43.4)	220 (54.8)	159 (42.1)	104 (24.8)	<0.001
Often	565 (45.4)	149 (36.9)	186 (48.3)	230 (54.6)	
Sometimes/rarely/never[a]	157 (11.3)	33 (8.3)	38 (9.6)	86 (20.6)	
Physical activity					
Always	549 (48.7)	246 (61.3)	174 (46.1)	129 (30.5)	<0.001
Often	551 (44.6)	134 (33.4)	194 (50.1)	223 (53.2)	

Sometimes/rarely/never[a]	104 (6.8)	21 (5.3)	15 (3.8)	68 (16.3)	
Weight control					
Always	431 (38.7)	201 (50.7)	140 (36.6)	90 (21.2)	<0.001
Often	531 (44.2)	158 (39.5)	181 (47.3)	192 (46.0)	
Sometimes/rarely/never	238 (17.1)	39 (9.8)	62 (16.1)	137 (32.8)	
Refer patients for further evaluation and/or management					
Always	89 (6.7)	34 (8.5)	16 (3.9)	39 (9.3)	<0.01
Often	412 (34.3)	125 (30.8)	140 (37.2)	147 (34.6)	
Sometimes	492 (41.8)	162 (40.2)	170 (44.3)	160 (38.8)	
Rarely/never[b]	213 (17.3)	81 (20.5)	58 (14.6)	74 (17.2)	
Systematically track/follow patients over time concerning behaviors or other measure of progress related to diet, physical activity, or weight					
Always	228 (21.2)	125 (31.4)	79 (19.6)	24 (5.5)	<0.001
Often	421 (38.8)	165 (40.9)	170 (45.1)	86 (20.9)	
Sometimes	286 (23.2)	71 (17.9)	95 (25.3)	120 (28.5)	
Rarely/never[b]	266 (16.7)	38 (9.7)	39 (10.1)	189 (45.1)	

[a]Due to small cell sizes for the counseling variables, the bottom three response categories were collapsed into one category.
[b]For the referral and systematic tracking variables, the bottom two response categories were collapsed into one category.