

Weight Management-Related Assessment and Counseling by Primary Care Providers in an Area of High Childhood Obesity Prevalence: Current Practices and Areas of Opportunity

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Abstract

Background: Childhood obesity in Georgia exceeds the national rate. The state's pediatric primary care providers (PCPs) are well positioned to support behavior change, but little is known about provider perceptions and practices regarding this role.

Purpose: The aim of this study was to assess and compare weight-management-related counseling perceptions and practices among Georgia's PCPs.

Methods: In 2012–2013, 656 PCPs (265 pediatricians, 143 family practice physicians [FPs], and 248 nurse practitioners/physician assistants [NP/PAs]) completed a survey regarding weight-management-related practices at well-child visits before their voluntary participation in a free training on patient-centered counseling and child weight management. Data were analyzed in 2014. Likert scales were used to quantify responses from 1 (strongly disagree or never) to 5 (strongly agree or always). Responses of 4 and 5 responses were combined to denote agreement or usual practice. Chi-squared analyses tested for independent associations between pediatricians and others. Statistical significance was determined using two-sided tests and p value < 0.05 .

Results: The majority of PCPs assessed fruit and vegetable intake (83%) and physical activity (78%), but pediatricians were more likely than FPs and NP/PAs to assess beverage intake (96% vs. 82–87%; $p \leq 0.002$) and screen time (86% vs. 74–75%; $p \leq 0.003$). Pediatricians were also more likely to counsel patients on lifestyle changes (88% vs. 71%; $p < 0.001$) and to track progress (50% vs. 35–39%; $p < 0.05$). Though all PCPs agreed that goal setting is an effective motivator (88%) and that behavior change increases with provider encouragement (85%), fewer were confident in their ability to counsel (72%).

Conclusions: Our results show that many PCPs in Georgia, particularly pediatricians, have incorporated weight management counseling into their practice; however, important opportunities to strengthen these efforts by targeting known high-risk behaviors remain.

Introduction

Childhood obesity in the United States has increased dramatically since the 1970s.¹ There has also been an increase in the comorbidities associated with childhood obesity, including hypertension, dyslipidemia, type 2 diabetes, asthma, obstructive sleep apnea, and nonalcoholic fatty liver disease.² Psychosocial health issues, including depression, low self-esteem, and decreased

quality of life, are also more likely to occur among obese children.³ As such, obesity and its associated comorbidities have led to projections for a reduced lifespan.⁴

There are significant geographic differences in the prevalence of childhood obesity. The southeastern region of the United States, including Georgia, has a higher prevalence of childhood overweight and obesity, when compared with other regions. Over one third (35.0%) of Georgia's 10- to 17-year-olds are overweight or obese,

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compared to 31.3% nationally.⁵ It is estimated that only 20% of Georgia's school-aged children are able to pass a basic fitness test.⁶ Significant work is needed to improve the diet and activity patterns of Georgia's children.

Pediatric primary care providers (PCPs) are positioned to play an important role in promoting the behavior changes necessary to decrease the prevalence of childhood obesity and its associated comorbidities. Most parents view pediatricians as a valued advisor concerning their child's weight.⁷ Pediatricians, however, often refrain from weight-management-related counseling because they perceive their efforts as futile, they perceive a lack of interest by families, or they lack effective counseling skills.⁸⁻¹⁰ Less is known about the perceptions and practices of mid-level providers, specifically nurse practitioners/physician assistants (NP/PAs), who play an increasingly important role in the provision of well-child care.¹¹

With growing concern about the prevalence of childhood obesity in Georgia, Children's Healthcare of Atlanta developed the Strong4Life Provider Training program in 2011 to support and improve the healthy weight-management-related counseling efforts of pediatric PCPs. This study was conducted to assess the baseline perceptions and practices of Georgia's pediatric PCPs regarding lifestyle and weight-related counseling done during well-child visits and determine the extent to which these perceptions and practices vary by provider type.

Methods

Sample and Survey Instrument

Multiple 2-hour Strong4Life trainings were held at central locations, physician's offices, and at professional conferences throughout the state of Georgia between August 2012 and September 2013 (Fig. 1). Participation was voluntary. Continuing Medical Education credits were provided free of charge. Of the 665 participants, 656 (98.6%) completed a self-administered survey before training. This included 265 pediatricians, 143 family practice physicians (FPs), and 248 NP/PAs. The survey instrument was adapted from the National Survey of Energy Balance-Related Care among Primary Care Physicians questionnaire created by National Cancer Institute in collaboration with the Centers for Disease Control and Prevention (CDC) and several partner institutes at the National Institute of Health (NIH).¹²

Providers responded to questions related to their diet, physical activity and weight-management-related assessment, and counseling practices and perceptions by selecting the appropriate response from a Likert scale with response options ranging from 1 (strongly disagree or never) to 5 (strongly agree or always). Counseling practices specific to high-risk patients, defined as overweight or obese patients or identified as having unhealthy diet and physical activity patterns, were also assessed. Finally, PCPs were asked what they perceived to be the top three barriers preventing effective evaluation and management of their patients' diet, physical activity, and weight as well as the top three training

and resource needs that could assist them in becoming more effective. The proposal for this study was reviewed by the internal review board of Emory University and determined to be exempt from human subjects research.

Statistical Analysis

Data were analyzed in 2014 by first grouping respondents into those who indicated that they agreed with a specific statement (*i.e.*, Likert scale response of 4 or 5) versus those who indicated that they did not agree or were uncertain with a specific statement (*i.e.*, Likert scale response of 1, 2, or 3). The same was done to group those who indicated that a specified activity was part of their usual practice (*i.e.*, Likert scale response of 4 or 5) versus those for whom the specified activity was not their usual practice (*i.e.*, Likert scale response of 1, 2, or 3). Chi-squared analyses were conducted to test for independent associations between responses and PCP types. Pediatricians were chosen as the reference group because more is known about their weight-related counseling practices and they are known to perform the largest number of well-child visits. Statistical significance was determined using two-sided tests and a *p* value of <0.05. Stata statistical software (version 13; StatCorp LP, College Station, TX) was used for all analyses.

Results

Of the 656 pediatric PCPs, 78% reported assessing diet during well-child visits (Table 1). Pediatricians were more likely than FPs and NP/PAs to assess diet (88% vs. 69–73%; *p* < 0.001); 83% of PCPs specifically assessed fruit/vegetable consumption with no significant differences by provider type. Regarding other behaviors known to be associated with obesity, most PCPs asked about beverage intake (89%), though pediatricians were more likely to do so than other providers (96% vs. 82–87%; *p* ≤ 0.002). Fewer PCPs inquired about eating outside the home (61%) with no difference by provider type.

A majority of PCPs also reported assessing physical activity (78%; Table 1). Most providers asked specifically about daily activity (86%) and participation in organized sports (86%). When compared to pediatricians, however, both FPs and NP/PAs were significantly less likely to assess physical activity in general (86% vs. 69–76%; *p* ≤ 0.01) or to ask about organized sports (94% vs. 79–84%; *p* ≤ 0.003). Pediatricians were also more likely than FPs and NP/PAs to assess screen time (86% vs. 74–75%; *p* ≤ 0.003).

Although nearly all PCPs strongly agree that goal setting is an effective motivator (88%) and that patients are more likely to adopt healthier lifestyles with provider encouragement (85%), fewer were confident in their ability to provide counseling (72%). Most, approximately three quarters (72%) of PCPs, reported that whenever they set a behavior change goal with their patients, they document this goal in their medical record.

Among high-risk patients, those overweight or obese patients or identified as having unhealthy diet and physical



Figure 1. Map representing the locations throughout Georgia where Strong4Life provider trainings were held between August 2012 and September 2013, before which participants completed the self-administered surveys used to collect data for this study.

activity patterns, most PCPs reported they provide general counseling for lifestyle change (78%; Table 2). Pediatricians were more likely than FPs and NP/PAs to provide this general counseling (88% vs. 71%; $p < 0.001$), and were more likely to track progress over time (50% vs. 35–39%; $p < 0.05$), for these patients. Among providers who reported that they do long-term follow-up ($n = 272$), 49% indicated that high-risk patients were re-evaluated quarterly and 24% re-evaluate patients monthly. Few PCPs, regardless of type, refer high-risk patients to other health professionals or programs for additional evaluation or management (20%).

Insufficient time (60%), inadequate referral services (45%), and lack of patient interest (44%) were the top three perceived barriers to evaluating and/or effectively managing patients' diet/nutrition, physical activity, and weight (Table 3). Other notable barriers include resistance from parent/caregiver (29%), perceived difficulty for patients to change their behaviors (24%), lack of effective tools and information to provide patients (24%), and inadequate reimbursement (21%).

When compared to pediatricians, FPs were more likely to report insufficient time (71% vs. 60%; $p = 0.01$) and less likely to report parent/caregiver resistance (12% vs. 35%; $p < 0.001$) as barriers to providing effective counseling. NP/

Table 1. Lifestyle Assessment Practices and Goal-Setting Perceptions of Primary Care Providers in Georgia

	All		Pediatricians		Family practice physicians			NP/PA		
	(N=656)		(N=265)		(N=143)			(N=248)		
	%	n	%	n	%	n	p value*	%	n	p value*
Diet										
General assessment of diet	78.0	508	87.6	232	69.2	99	<0.001	72.8	177	<0.001
Ask about fruit/vegetable consumption	83.1	539	81.7	233	81.7	116	0.12	77.6	190	0.07
Ask about beverage intake	88.7	579	95.9	254	87.4	125	0.002	81.6	200	<0.001
Ask about feeding practices	48.5	312	52.5	137	52.2	72	0.91	42.2	103	0.19
Ask about frequency of and food choices when eating outside the home	60.9	394	61.3	160	64.8	92	0.44	58.2	142	0.90
Physical activity										
General assessment of physical activity	78.2	507	85.6	226	68.8	97	<0.001	75.7	184	0.01
Ask about amount of daily activity	86.1	557	86.3	226	89.4	126	0.27	84.0	205	0.45
Ask about participation in organized sports	86.1	557	93.9	248	83.6	117	0.003	79.0	192	0.002
Ask about amount of screen time ^a	79.3	487	86.1	222	73.7	101	0.003	74.9	164	0.002
Goal setting										
Strongly agree that goal setting is an effective motivator to help patients choose positive lifestyle behaviors	88.0	563	85.8	223	92.0	127	0.07	88.0	213	0.46
Strongly agree that patients are more likely to adopt healthier lifestyles with provider encouragement	85.1	546	84.6	220	87.8	122	0.39	84.0	204	0.84
Strongly agree they are confident in their ability to counsel patients to set healthy lifestyle habits/goal(s)	72.1	461	68.3	177	73.9	102	0.25	75.2	182	0.09
Strongly agree that wellness goals are documented in the medical records	71.7	454	70.4	181	72.1	98	0.74	72.9	175	0.54

^aScreen time defined as television, computer, video games, and cell phone.

*Chi-squared test; $p < 0.05$ significant.

NP/PA, nurse practitioner/physician's assistant.

PAs were less likely than pediatricians to cite as a barrier: inadequate reimbursement (13% vs. 22%; $p = 0.01$); difficulty of patients to change their behavior (20% vs. 29%; $p = 0.02$); and lack of referral services (41% vs. 51%; $p = 0.03$). A higher proportion of both FPs and NP/PAs versus pediatricians reported inadequate training as a barrier (18–20% vs. 10%; $p \leq 0.02$).

Better tools to communicate problems (55%), better weight-management-related counseling tools (42%), and easy-to-understand management guidelines (38%) were the top three needs identified to assist providers in reducing patients' health issues related to diet, physical activity, and weight (Table 4). Other needs cited include improved reimbursement for counseling (29%), better mechanisms to connect patients to referral services (24%), and more training for providers (20%). A higher proportion of both FPs and NP/PAs, when compared to pediatricians, reported methods to more easily identify problems as an area needing improvement (21–24% vs. 14%; $p < 0.05$). More

FPs than pediatricians (42% vs. 29%; $p = 0.01$), but fewer NP/PAs (21%; $p = 0.05$), reported need for better reimbursement for weight-management-related counseling.

Discussion

The results of our study, among a large sample of pediatric PCPs surveyed before their voluntary attendance at a training on pediatric weight counseling and management, suggest that although it is common practice for them to perform a general assessment of children's diet and physical activity as part of well-child visits, many fail to inquire about specific known risk factors. This includes beverage intake patterns, the use of media/screen time, the frequency of eating meals outside the home, and child feeding practices. We also found that pediatricians were more likely to perform weight-management-related counseling and assessment of physical activity than family practice physicians, a finding similar to that of a previous national study.¹²

Table 2. Lifestyle Counseling and Management Practices for High-Risk Patients by Primary Care Providers in Georgia

	All		Pediatricians		Family practice physicians			NP/PA		
	(N=656)		(N=265)		(N=143)			(N=248)		
	%	n	%	n	%	n	p value*	%	n	p value*
Provide general counseling for change of diet, physical activity, or weight	77.9	496	88.1	229	71.0	98	<0.001	70.7	169	<0.001
Refer to specialist for further evaluation/management	20.2	129	23.1	61	15.8	22	0.09	19.4	46	0.31
Systematically track/follow behaviors or measures related to diet, physical activity, or weight	42.6	272	50.0	130	35.0	49	0.004	39.1	93	0.01
If tracking done, frequency at which patients are re-evaluated:										
Monthly	24.0	52	17.0	18	25.0	7		32.5	27	
Quarterly	49.3	107	58.5	62	53.6	15		34.9	29	
Twice annually	17.1	37	22.6	24	17.9	5		9.6	8	
Annually	5.5	12	1.9	2	3.6	1		10.8	9	
Other	4.1	9	0.0	0	0.0	0		12.1	10	

*Chi-squared test; p < 0.05 significant.

NP/PA, nurse practitioner/physician’s assistant.

Few pediatric PCPs (20%) reported referring high-risk patients to other health professionals for further evaluation or management, a finding also consistent with other studies.^{12,13} In Georgia, PCPs may be reluctant to refer overweight or obese children owing to inadequate referral

services, which was listed as a barrier by 45%. These findings highlight the importance of pediatric PCPs in utilizing screening tools such as BMI, becoming proficient in assessment of diet and physical activity, learning effective and efficient weight-management-related

Table 3. Perceived Barriers to Lifestyle Assessment and Management by Primary Care Providers in Georgia

	All		Pediatricians		Family practice physicians			NP/PA		
	(N=656)		(N=265)		(N=143)			(N=248)		
	%	n	%	n	%	n	p value*	%	n	p value*
Provider barriers										
Insufficient time	59.5	390	57.7	153	70.6	101	0.01	54.8	136	0.51
Inadequate training	15.6	102	10.2	27	18.2	26	0.02	19.8	49	<0.001
Inadequate reimbursement	20.9	137	21.9	58	32.2	46	0.02	13.3	33	0.01
Patient barriers										
Patient not interested	44.2	290	42.3	112	34.3	49	0.12	52.0	129	0.03
Resistance from parents/caregivers	29.4	193	34.7	92	11.9	17	<0.001	33.9	84	0.84
Fear of offending patient	8.8	58	6.0	16	3.5	5	0.27	14.9	37	<0.001
Too difficult for patients to change behaviors	23.9	157	29.1	77	21.0	30	0.08	20.2	50	0.02
Community/resource barriers										
Inadequate referral services	44.8	294	50.6	134	41.3	59	0.07	40.7	101	0.03
Lack of effective tools and information for patients	23.8	156	21.1	56	28.7	41	0.09	23.8	59	0.47
Lack of effective treatments	11.0	72	10.9	29	16.1	23	0.14	8.1	20	0.27

*Chi-squared test; p < 0.05 significant.

NP/PA, nurse practitioner/physician’s assistant.

Table 4. Weight-Management-Related Training and Resource Needs of Primary Care Providers in Georgia

	All		Pediatricians		Family practice physicians			NP/PA		
	(N=656)		(N=265)		(N=143)			(N=248)		
	%	n	%	n	%	n	p value*	%	n	p value*
Training										
Ways to more easily identify problems	18.8	123	13.6	36	23.8	34	0.01	21.4	53	0.02
Better tools to communicate problems	54.9	360	55.9	148	49.7	71	0.23	56.9	141	0.82
Easy-to-understand management guidelines	38.4	252	35.9	95	39.2	56	0.51	40.7	101	0.26
More staff training	16.6	109	14.7	39	20.3	29	0.15	16.5	41	0.57
More training for themselves	20.4	134	22.6	60	16.8	24	0.16	20.2	50	0.49
Counseling and goal setting										
Better reimbursement	29.0	190	29.1	77	42.0	60	0.01	21.4	53	0.05
Better counseling tools to guide lifestyle change	42.1	276	46.4	123	28.0	40	<0.001	45.6	113	0.85
Better information systems to document and track goals	17.5	115	18.1	48	17.5	25	0.87	16.9	42	0.73
Referral										
Better information systems to identify referral services	19.8	130	19.6	52	18.2	26	0.72	21.0	52	0.71
Better mechanism to connect patients to referral services	24.2	159	27.2	72	22.4	32	0.29	22.2	55	0.19

*Chi-squared test; $p < 0.05$ significant.

NP/PA, nurse practitioner/physician's assistant.

counseling techniques, and creating a medical home where high-risk children can be monitored closely.

Among the Georgia pediatric PCPs surveyed, only 43% reported systematically following high-risk patients with pediatricians more likely to report providing this follow-up. These patients are at risk of becoming obese adults and developing the comorbidities associated with obesity and therefore need ongoing management. Savoye and colleagues demonstrated a statistically significant reduction in BMI, percent body fat, total body fat mass, total cholesterol, and low-density lipoprotein in patients who received more intense follow-up than controls who received counseling every 6 months.¹⁴ Children who received the more intense intervention maintained their significant weight loss even after 12 months of no active intervention. Closely tracking and following overweight and obese children is crucial to successful weight management among these patients.

Weight-management-related counseling plays a key role in the ability of high-risk children and their families to make lifestyle changes. Patients who receive high-quality, patient-centered counseling are more motivated to lose weight and have more intention to make positive lifestyle changes, including eating healthier and exercising regularly.¹⁵ Pediatricians in this study more consistently provided counseling in line with existing evidence-based

obesity prevention strategies than other PCPs. When counseling, most PCPs agree that goal setting is an effective strategy for positive lifestyle change (88%), but fewer are confident in their ability to counsel patients to set healthy goals (72%). One strategy to improve weight-management-related counseling, including goal setting, is the use of motivational interviewing, which aims to change attitudes and behaviors through a patient-centered collaborative process driven by the patient's motivation to change.¹⁶ These counseling techniques can be easily incorporated into well-child visits without taking excess time, which is important because insufficient time, especially among FPs, was the most often cited barrier to assessment and management of diet and physical activity.^{10,17}

In order for providers to be able to counsel patients on behavior and lifestyle changes, they need to be adequately paid for their time. FPs were more likely to report inadequate reimbursement as a barrier and better reimbursement as a needed improvement to providing weight-management-related counseling. Payment rates for weight-management-related services for obese children are low and differ significantly among policy type.¹⁸ In one study, a diagnosis of obesity, even with comorbidities listed, was consistently denied payment, whereas the diagnoses of abnormal weight gain, insulin resistance, and/or hyperlipidemia

were paid by most health insurance providers.¹⁷ Insurers are also more likely to pay for surgical treatments of obesity than nonsurgical treatments, such as dietary counseling.¹⁹ Better payment for weight-management-related counseling was one of the many driving factors in the recent declaration by the American Medical Association that obesity is, in fact, a disease.²⁰ Adequate reimbursement was significantly less likely to be a barrier to weight-management-related counseling among NP/PAs.

There are over 100,000 mid-level providers, including NPs and PAs, in the United States with a majority seeing patients in the primary care setting.²¹ Mid-level providers are poised to play an important role in the evaluation and management of childhood obesity. However, mid-level providers report inadequate training as a barrier to effective weight-management-related counseling, highlighting the need to focus additional training efforts here. Another important finding was that NP/PAs more frequently reported fear of offending the patient as a barrier than other provider groups, but were also more optimistic about their patients' ability to change their health-related behaviors.

A large portion of pediatric PCPs in our study listed weight-management-related communication and counseling tools as areas for improvement. This finding was similar to another study, where 96% of pediatricians reported better counseling tools and 90% reported better communication tools as the most helpful clinical resource for obesity management.²² Innovative programs, such as Strong4Life, seek to teach communication and counseling skills to providers. These counseling techniques are designed to be easily incorporated in short time periods allotted for well-child visits, thus also addressing the noted barrier to insufficient time for weight-management-related counseling. Additionally, PCPs attending the Strong4Life Provider Training program are given a toolkit, which includes health assessment forms, colored BMI growth charts, and lifestyle modification prescription pads.

This study has several strengths, including the availability of data from a large sample of providers, data from practices located throughout the state, and the inclusion of NPs/PAs, who represent a growing segment of healthcare providers performing well-child care. Though these data provide insight into the perceptions and practices of pediatric PCPs, they are limited by the fact that they were obtained from a convenience-based sample of providers who voluntarily chose to attend a brief, no-cost training session designed to introduce healthcare providers to better techniques for performing weight-related counseling. Further, given that training was voluntary, there is the potential for selection bias because providers who have an interest in childhood obesity may have preferentially chosen to attend the training.

Conclusions

In conclusion, though many Georgia pediatric PCPs are doing some type of diet and physical-activity-related assessment and counseling as part of well-child visits, im-

portant opportunities exist for improving the quality of these efforts. Many PCPs, particularly FPs and NPs/PAs, have not incorporated an assessment of many known high-risk behaviors into their routine practice. In addition, efforts are needed to increase the self-efficacy of providers regarding their counseling efforts and to ensure that goal setting and long-term follow-up to promote healthy behavior change is consistently done as part of all well-child visits.

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