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Pediatricians' and Family Physicians' Weight-Related Care of Children in the U.S.

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Abstract

Background—Few national data exist to assess primary care physicians' (PCP) clinical practices with regard to childhood obesity.

Purpose—To survey pediatricians and family practice physicians regarding their assessment, counseling, and management of diet, physical activity, and weight status among pediatric patients in the primary care setting.

Methods—A nationally representative cross-sectional survey of pediatricians and family practice physicians sampled from the American Medical Association (AMA) Masterfile was conducted in 2008 and analyzed in 2010. Outcomes included: Physicians' self-reported practice behaviors regarding assessments of pediatric patients' weight status, counseling of diet and physical activity, and referrals and follow-ups.

Results—Response rate excluding physicians listed as "no-contact" by the AMA was 73.7% among pediatricians and 66.9% among family physicians. Less than 50% of all PCPs assessed BMI percentiles regularly in children. Eighteen percent of all PCPs reported referring children for further evaluation or management. Fifty-eight percent of all PCPs reported never, rarely, or only sometimes tracking patients over time concerning weight or weight-related behaviors. Pediatricians were more likely than family physicians to assess weight status and provide behavioral counseling (*Ps*<0.001).

Conclusions—Active PCP participation in assessing or managing childhood obesity in the primary care setting appears low relative to the frequency of the problem in the U.S.

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Introduction

Despite increasing public health attention to the burden of childhood obesity over the past 2 decades, recent data suggest that the epidemic persists in the U.S., with 16% of children being obese[1]. As part of a comprehensive, multi-pronged approach to preventing and controlling childhood obesity, the primary care setting has an important role in preventing inappropriate weight gain or the onset of obesity-related complications among children.[2-3] As such, recent clinical guidelines for the care of children have addressed diet, physical activity, and weight as part of clinical visits.[4-6]

Studies of physicians who treat children also have found that physicians believe that these topics are important for their patients.[7-9] However, information on physicians' clinical practice behavior with respect to childhood obesity is limited. Counseling their patients about these topics appears to vary by the age of the child and the perceived risk status of the child.[7, 10,11] Other factors associated with counseling likelihood include demographic characteristics of the physician,[8, 11,12] physician attitudes and beliefs about the topic or his or her perceived ability to change behavior,[7] and clinical practice patterns.[12]

Despite preliminary reports on factors that motivate physicians to address childhood obesity,[13,14] no national data currently exist on the extent to which primary care physicians (PCPs) deliver diet, physical activity or weight-related care to children. A 1999 study[13] found that most pediatricians reported measuring weight and height against the U.S. reference population, but it is not known whether the same practice extended to the assessment of BMI, or to the calculation of BMI percentiles for pediatric obesity status since the release of the 2000 CDC growth charts.

Jelalian et al. surveyed pediatricians and family physicians in Massachusetts, Rhode Island, and Connecticut and found that 34% of PCPs reported discussing weight with their mildly overweight adolescent patients, and 95% did so with morbidly obese adolescent patients.[15] Elsewhere, another study showed that a majority of overweight adolescents and parents of overweight children also reported that a healthcare professional had not informed them of their or their child's weight status.[14] Nationally, it remains unclear how weight-related issues are being assessed or managed from the perspective of PCPs.[16] Such baseline information is particularly important at this historical juncture, given the pending healthcare reform that could change the way PCPs deliver preventive care related to obesity.

To address this gap, the National Survey of Energy Balance–Related Care among Primary Care Physicians (EB-PCP) was fielded by the National Cancer Institute (NCI) of the NIH in 2008 and analyzed in 2010, with cosponsorship by the Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institute on Diabetes and Digestive and Kidney Diseases, the NIH Office of Behavioral and Social Sciences Research, and the CDC. The goals of this survey were to establish a nationally representative baseline on the use of energy balance risk assessment (i.e., diet, physical/sedentary activity, and weight status), counseling, and referral services among PCPs and to identify the characteristics of physicians and practices that routinely incorporate these activities in patient care.

Methods

Sampling

Sampling methodology details for the overall EB-PCP survey are in a companion paper.[17] The target population included non-Federal, office-based, actively practicing PCPs in the

U.S. Physicians were selected from the following board-certified primary care specialties: family practice, internal medicine, obstetrics/gynecology and pediatrics. A systematic stratified sample of PCPs was obtained using the American Medical Association's Physician Masterfile.[18] Eligible respondents were aged ≤75 years with an active medical license, practicing patient care ≥20 hours per week. Additional information on sample selection, survey fielding, and honorarium is in Appendix A (available online at www.ajpm-online.net).

Survey Instruments

The EB-PCP survey consisted of two versions of a physician questionnaire and a subsequent questionnaire focusing on the physician's practice environment. One version of the physician-focused questionnaire was tailored to PCPs who primarily treat adults, and one was for PCPs who primarily treat children. Each took approximately 20 minutes to complete. All questionnaires can be obtained from NCI.[19] Data for the current paper are based on the pediatric version of the PCP questionnaire, with four descriptive items from the subsequent questionnaire on the physicians' practice environment.

The physician questionnaire assessed clinical practice behaviors, knowledge, attitudes, and personal behaviors in the areas of diet, physical activity, and weight control. This paper presents data about PCPs' practices including: general counseling, specific guidance, referral, tracking patients, and risk assessment. See Appendix B (available online at www.ajpm-online.net) for descriptions of the questions.

Background characteristics were obtained from the AMA Masterfile on several PCP characteristics, including specialty, years since medical school, graduation from an international medical school, board certification, and census region. In addition, demographic information on physicians' age, race/ethnicity, gender, and the patient population and volume that he/she treated was obtained from the physician questionnaire. Information on urbanicity, practice type (e.g., single/multi-specialty), and percentage of patients in managed care was obtained from the practice environment questionnaire.

Data Collection and Survey Yields

Details of the data collection methodology for the overall EB-PCP can be found in the companion paper on adult care practices.[17] PCPs responding to the child care survey included both pediatricians and family practice physicians. Family practice physicians treating adults and children were included in both adult and child questionnaires; however, physicians who treated only adult patients were not sent a child care survey. Figure 1 shows the data collection and survey yields. Of the 815 child care surveys received, 440 surveys were from pediatricians and 375 were from family physicians. However, four family physicians indicated that they did not treat adolescents or children; they were excluded from analyses, leaving an analytic sample of 811.

Data Analysis

Sample weights were developed to compensate for differential selection probabilities, nonresponse, and undercoverage of the target population. For variance estimation, replicate weights were generated using the Jackknife method[20] in SAS-callable SUDAAN (version 10.0).[21] Frequency tables compare the distribution of the PCPs' clinical practice behaviors (counseling, assessment, referral and follow-up) by PCP specialty. Chi-square tests were conducted to test for independent associations between PCP specialty and energy balance practice behaviors.

Ordinal logistic regressions were conducted to examine relationships between background characteristics and the frequency of PCPs' energy balance–related clinical care. Ordinal logistic regression models were chosen because of the ordinal nature of the scaled variables. The proportional odds assumption of these models was examined using standard methods comparing ordinal models to corresponding binary models,[22] and confirmed that the proportional odds assumption was met. Covariates included specialty, years since medical school (an alternative to age), PCPs' gender, race/ethnicity, Census region, and practice urbanicity. Two-way interactions of PCP and patient characteristics were examined but excluded from final models because of nonsignificance. To preserve sample size and reduce bias, missing values for each covariate were treated as a separate category in analyses and not interpreted in results. No regression analyses were performed for assessment practices (assessment of diet, physical activity, sedentary behaviors, and body size) due to small cell sizes.

To further compare the PCPs' counseling behaviors, pair-wise likelihood tests among the three topic areas (diet, physical activity, and weight control) were performed using t-statistics. For each topic area, one binary logistic regression model was estimated (Always + Often vs all other levels) and the predicted probability of each counseling practice was computed from the corresponding logistic regression model.

Alpha values were set at 0.05.

Results

The weighted response rate for the child care survey was 67.7% among pediatricians and 62.2% among family physicians. The cooperation rate (excluding PCPs who were listed as "no-contact" by the AMA) was 73.7% among pediatricians and 66.9% among family physicians. The response and cooperation rates for the current study were calculated using American Association for Public Opinion Research RR3 and COOPR3 formulas.[23] The majority of respondents were non-Hispanic white men, and the mean age was 48 years. Demographic and background characteristics of PCPs treating pediatric patients (stratified by specialty) can be found in Appendix C (available online at www.ajpm-online.net).

Differences in the frequency of provision of general counseling or specific guidance on diet, physical activity, and weight, as well as the frequency of patient referral for further evaluation or management and the frequency of patient follow-up over time, are shown in Appendix D (available online at www.ajpm-online.net). Of note, only 18.3% and 42.0% of all PCPs reported always or often referring patients for further evaluation and management and systematically tracking patients over time, respectively. Multivariate logistic regression showed that family physicians were statistically less likely (all *p*s<0.05, Table 1) than pediatricians to provide general counseling (OR=0.57): or specific guidance on diet (OR=0.43) and physical activity (OR=0.62) as well as to refer patients for further evaluation or management (OR=0.64) and to track patients over time on weight-related issues (OR=0.67). Compared to male physicians, female physicians were more likely to provide general counseling or specific guidance on diet and physical activity, independent of specialty (ORs=1.44–2.14, *P*s<0.01). In general, Asian American physicians and physicians in the Northeast were statistically more likely than other physicians to report providing general counseling or specific guidance on diet, physical activity, and weight (Table 1). No consistent differences were found in terms of years since medical school or practice urbanicity. Overall, PCPs were more likely to often or always provide counseling on physical activity than diet or weight specifically (predicted probabilities = 0.88, 0.86, and 0.61, respectively, *p*s<0.05).

Table 2 shows the frequency of actual assessment of diet, physical activity, and anthropometry by pediatricians and family physicians in children aged 2–17 years. General assessment of food intake patterns and amount of physical and sedentary activities at least occasionally was prevalent by both specialties (>90.0%); however, less common was the specific questioning by PCPs of dietary components (56.6%) or the intensity, duration, or type of physical activity (65.6%). Detailed measurements using standardized questionnaires were rare regardless of specialty (<10.0%). Almost all PCPs (up to 98.0%) reported measuring weight and height regularly in children aged 2–17 years. However, only 61.0% and 49.6% of all PCPs reported calculating BMI and BMI percentiles, respectively, among those aged 2–17 years. Compared to family physicians, pediatricians were more likely to calculate both BMI and BMI percentiles ($p<0.001$). Nevertheless, even among pediatricians, 32.0% did not assess BMI percentiles regularly. Regular assessment of waist or hip circumferences was rare, but family physicians were notably more likely than pediatricians to report conducting this assessment “as clinically indicated” ($p<0.001$).

Among physicians treating infants aged <2 years, > 90% of pediatricians and >80% of family physicians regularly measured weight or height against the growth chart, with weight-for-length growth charts used less frequently by either specialty (Table 2).

Discussion

Despite the severity of the obesity epidemic in the U.S., only 68% of pediatricians and 38.5% of family physicians regularly assessed obesity status by BMI percentile in their pediatric patient population even though most measured patients’ weight and height regularly. Overall, pediatricians were more likely than family physicians to provide obesity-related behavioral counseling or guidance for their patients. The great majority of physicians reported not referring patients for further evaluation/management or systematically tracking patients on their diet, physical activity or weight.

These data suggest that physicians have substantial room for improvement in assessing weight status in the primary care setting. Higher prevalence of routine measurement by PCPs and communicating this information to patients and their families, as well as an integrated team approach to care, may be a small but important step that PCPs can take toward a comprehensive approach to obesity prevention and control.[5,6] There is evidence that computer-assisted counseling in the primary care setting can be integrated into routine care to affect dietary and physical activity outcomes in children.[24]

General assessment of food intake and amount of physical and sedentary activities was generally high in this study which encompassed patients of all weight categories, compared to findings reported by Jelalian et al.[15], suggesting that over the last 7 years, there may have been greater awareness among PCPs of childhood obesity and the need to monitor and intervene in the primary care setting. However, the current study shows that PCPs remain reluctant or constrained in probing specifics about diet and physical activity among their patients.

Consistent differences are notable between pediatricians and family physicians with regard to the prevalence of delivering obesity-related counseling, guidance, or assessment. These may be due to the strong emphasis in most pediatric training programs on anticipatory guidance regarding developmental issues such as nutrient intake.[4, 16] In addition, the American Academy of Pediatrics has been playing an active role in recent years in providing clinical pediatric obesity guidelines.[5] The number of pediatricians also has increased dramatically over the past 3 decades.[25] It is estimated that family physicians see only 16%–26% of pediatric visits in the U.S. depending on the age of the patients.[26] This may have

contributed to increasing levels of weight-related counseling over the years. Prevalence estimates related to assessment, counseling, follow-up and referral by family physicians were quite similar to family physicians who treat adults (see Smith et al.).

It is unclear whether patient characteristics differ among those who present to pediatricians versus family physicians for primary care. It is possible that patient characteristics may contribute to differences between the two specialties, and this warrants further study. Nevertheless, because family physicians remain an essential provider of primary care in children in general, and in particular in rural parts of the U.S. and among adolescents,[26] greater engagement in obesity assessment, prevention, treatment among family physicians is likely to have a positive impact on children's health nationally.

There are interesting gender, race/ethnicity, and regional differences in terms of the prevalence of obesity-related preventive care among PCPs treating children independent of specialty. Regional differences may in part result from the higher concentration of pediatricians in the Northeast due to the higher relative pediatric population density in this region, although controlling for practice urbanicity might have partly adjusted for this issue. Female and Asian-American PCPs, regardless of specialty, were more likely to provide behavioral counseling than men and PCPs in other racial/ethnic groups, although the reasons for this require further study.[12] The Women Physicians' Health Study reported that approximately half of female PCPs nationally thought nutrition and weight were important issues and one in five had received extensive related training. Female pediatricians were particularly likely to provide nutrition and weight counseling to patients.[27]

The relatively higher prevalence of assessment of waist circumference or waist-to-hip ratio, as proxy measures of central adiposity, among family physicians relative to pediatricians may be because these measures have greater standardization in the adult population. Family physicians, on average, treat older children than do pediatricians,[26] and family physicians tend to practice similarly with their adult and pediatric patients (see Smith et al.) Measurement of waist circumference, and risk thresholds for its interpretation, are not standardized for children and no clinical guidelines currently exist for its measurement in routine practice.

The results of this study are relevant to clinical care policy. First, the level of assessment of pediatric weight status and obesity-related preventive care, referrals, and follow-ups in the primary care setting is low relative to the frequency of the problems in children. Much evidence from other chronic disease areas indicates that altering clinical practice will require more than the provision of clinical guidelines and physician education.[28-29] Determining barriers to providing such assessment and management will be important for designing appropriate strategies to change physician behaviors. Lack of training, discomfort about weight-related issues and stigma, time constraints, reimbursement concerns have been cited previously as potential barriers.[15]

Second, use of standardized diet and physical activity assessment tools is limited. Enhanced assessment tools can better equip PCPs to increase their counseling and assessment. For example, one study suggested that color-coded charts could potentially increase physicians' assessment of BMI.[30] The movement toward wider use of electronic medical records will also increase the availability of BMI information to patients and PCPs as the computer can automatically generate such information from measured weight and height, reducing a commonly cited barrier among PCPs.[31] More efficient dietary and physical activity tools, such as computer-assisted technologies, also may be particularly useful in the primary care setting to increase behavioral assessment and counseling. That PCPs were more likely to

provide counseling on physical activity than either diet or weight status, also shown by Jelalian et al.,[15] might be due to differences in the perceived level of ease by PCPs.

The message about physical activity may be less complex than that of diet. Published guidance on physical activity has focused on fewer key messages while that for diet is commonly framed as multicomponent and more complex. Therefore, providing PCPs with better management tools and patient communication strategies may be helpful.[30] Finally, the demands of the current clinical practice in the U.S. preclude the investment of large amounts of time by PCPs in each patient visit. Therefore, greater linkage between PCPs and providers of ancillary medical services, such as nurses, registered dietitians, behavioral or exercise specialists, may be necessary to increase the level of obesity prevention and treatment services available to children and their families.[6]

This study was limited by self-reported data from physicians. Social desirability might have inflated the respondents' response, indicating better care practices than in reality. However, a major strength of the study is that this was the first nationally representative survey among pediatricians and family physicians in terms of their care of children relating to diet, physical activity, and weight, and a substantial percentage of PCPs responded to the survey. Other strengths include the relatively large sample size, as well as the response rate, which is high in comparison to other physician surveys.

In sum, assessment of BMI percentile among children remains lower than optimal in U.S. primary care settings, especially among family practice physicians. Interventions are needed to increase the proportion of physicians who routinely assess BMI percentile and weight-for-length, as well as who routinely provide appropriate weight-related behavioral counseling. Efforts to increase physician training and the development of tools and technologies to enhance the delivery of obesity-related assessment and preventive counseling is an important part of a comprehensive public health approach to obesity prevention and control among U.S. youth.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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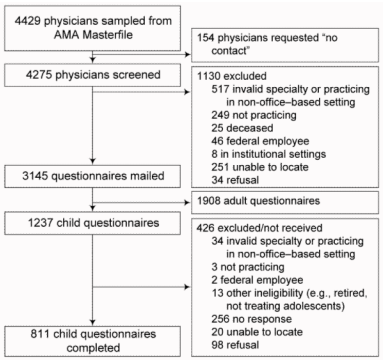

Figure 1.
Survey yields and data collection
Note: AMA, American Medical Association

Table 1

Physician characteristics and counseling behaviors [a]

Physician Characteristics	Provide general counseling OR (CI)	Provide specific guidance on diet/nutrition OR (CI)	Provide specific guidance on physical activity OR (CI)	Provide specific guidance on weight control OR (CI)	Refer patients for further evaluation and management OR (CI)	Systematically track/follow patients OR (CI)
Primary specialty						
Pediatrics	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Family Practice	0.57 (0.44, 0.74)***	0.43 (0.33, 0.56)***	0.62 (0.47, 0.81)***	0.85 (0.65, 1.12)	0.64 (0.43, 0.97)*	0.67 (0.50, 0.91)**
Years since medical school						
<10	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
11–20	0.96 (0.64, 1.45)	0.80 (0.58, 1.11)	1.05 (0.70, 1.56)	1.63 (1.12, 2.35)*	1.55 (0.94, 2.56)	0.83 (0.54, 1.26)
21–30	0.92 (0.63, 1.36)	0.85 (0.56, 1.30)	0.94 (0.59, 1.49)	2.36 (1.56, 3.56)***	1.26 (0.72, 2.18)	1.30 (0.88, 1.90)
>30	1.08 (0.68, 1.73)	1.09 (0.68, 1.75)	1.47 (0.93, 2.34)	3.84 (2.47, 5.98)***	1.68 (0.91, 3.10)	1.58 (0.99, 2.50)
Gender						
Male	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Female	1.68 (1.21, 2.32)**	2.14 (1.53, 3.01)***	1.44 (1.05, 1.97)*	1.11 (0.80, 1.53)	1.22 (0.86, 1.73)	1.16 (0.85, 1.60)
Race/Ethnicity						
White, non-Hispanic	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
African-American, non-Hispanic	1.02 (0.50, 2.08)	0.80 (0.40, 1.63)	1.03 (0.57, 1.86)	1.23 (0.70, 2.16)	1.65 (0.70, 3.93)	1.22 (0.67, 2.22)
Asian American, non-Hispanic	1.82 (1.21, 2.73)**	1.67 (1.10, 2.54)*	2.10 (1.40, 3.17)***	2.06 (1.28, 3.33)**	1.38 (0.84, 2.25)	1.47 (0.96, 2.25)
Hispanic	1.40 (0.68, 2.85)	1.93 (0.89, 4.22)	2.53 (1.24, 5.16)*	1.87 (0.94, 3.72)	1.31 (0.55, 3.15)	2.05 (1.07, 3.90)*
Census region						

Physician Characteristics	Provide general counseling OR (CI)	Provide specific guidance on diet/nutrition OR (CI)	Provide specific guidance on physical activity OR (CI)	Provide specific guidance on weight control OR (CI)	Refer patients for further evaluation and management OR (CI)	Systematically track/follow patients OR (CI)
Northeast	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Midwest	0.48 (0.31, 0.75)**	0.44 (0.29, 0.67)***	0.52 (0.33, 0.81)**	0.55 (0.36, 0.84)**	0.76 (0.44, 1.32)	0.70 (0.43, 1.14)
South	0.44 (0.29, 0.67)***	0.50 (0.33, 0.75)**	0.55 (0.37, 0.83)**	0.70 (0.48, 1.01)	0.61 (0.35, 1.05)	0.73 (0.49, 1.09)
West	0.56 (0.34, 0.91)*	0.54 (0.33, 0.88)*	0.63 (0.39, 1.00)	0.67 (0.42, 1.05)	0.78 (0.44, 1.38)	0.61 (0.38, 0.98)*
Practice urbanicity						
Large city	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Medium city	1.14 (0.74, 1.75)	0.97 (0.60, 1.54)	1.05 (0.69, 1.60)	0.86 (0.54, 1.37)	0.91 (0.49, 1.69)	0.84 (0.51, 1.36)
Small city	0.85 (0.56, 1.31)	0.68 (0.43, 1.07)	0.85 (0.55, 1.31)	0.77 (0.50, 1.18)	0.99 (0.58, 1.69)	0.82 (0.52, 1.28)
Rural	0.57 (0.34, 0.94)*	0.65 (0.39, 1.10)	0.80 (0.46, 1.38)	0.69 (0.41, 1.16)	0.67 (0.32, 1.43)	0.59 (0.34, 1.00)*

[a] Each model includes the following covariates: physician primary specialty, physicians' years since medical school, physician gender, physician race/ethnicity, Census region, and practice urbanicity).

* p<0.05.

** p <0.01.

*** p < 0.001

Table 2

Diet, physical activity, and body size assessment by patient age and physician specialty

	N=811	Family Practice *n*=371	Pediatrics *n*=440	*p*-value
Patients aged 2–17 years	***n* (%)**	***n* (%)**	***n* (%)**	
Diet [a]				
Standardized diet questionnaire	66 (8.0)	26 (6.9)	40 (9.0)	0.315
General questions about food groups	767 (94.0)	338 (90.1)	429 (97.5)	<0.01
General questions about dietary patterns	770 (94.3)	344 (91.7)	426 (96.8)	0.212
Specific questions about diet components	462 (56.6)	173 (46.1)	289 (65.6)	<0.001
Other (written in) assessment	89 (10.9)	44 (11.7)	45 (10.2)	0.385
I do not assess diet	15 (1.8)	11 (2.9)	4 (0.9)	<0.05
Physical activity [a]				
Standardized physical activity questionnaire	54 (6.6)	24 (6.4)	30 (6.8)	0.959
General questions about amount of physical activity	798 (97.8)	360 (96.0)	438 (99.5)	0.127
Specific questions about duration, intensity, type of physical activity	536 (65.6)	239 (63.7)	297 (67.5)	0.617
Other (written in) assessment	50 (6.1)	25 (6.6)	25 (5.6)	0.501
I do not assess physical activity	4 (0.4)	4 (1.0)	0 (0.0)	<0.05
Sedentary behavior				
I do assess	748 (92.9)	331 (91.4)	417 (95.3)	<0.05
Weight measured on scale in office				
Regularly [b]	796 (97.9)	357 (96.7)	439 (99.8)	<0.001
As clinically indicated	13 (2.1)	12 (3.3)	1 (0.2)	
Never	0 (0.0)	0 (0.0)	0 (0.0)	
Other	0 (0.0)	0 (0.0)	0 (0.0)	
Height measured in office				
Regularly [a]	775 (94.7)	339 (91.8)	436 (99.4)	<0.001
As clinically indicated	32 (5.2)	29 (7.9)	3 (0.6)	
Never	1 (0.2)	1 (0.3)	0 (0.0)	
Other	0 (0.0)	0 (0.0)	0 (0.0)	
BMI				
Regularly [b]	523 (61.1)	195 (52.8)	328 (74.9)	<0.001
As clinically indicated	228 (31.5)	143 (38.8)	85 (19.3)	
Never	51 (6.7)	26 (7.3)	25 (5.8)	
Other	4 (0.7)	4 (1.1)	0 (0.0)	
Waist circumference or waist-to-hip ratio				
Regularly [b]	18 (2.6)	12 (3.4)	6 (1.4)	<0.001
As clinically indicated	105 (15.2)	72 (19.5)	33 (7.9)	
Never	669 (81.5)	277 (76.0)	392 (90.7)	
Other	4 (0.7)	4 (1.1)	0 (0.0)	

	N=811	Family Practice *n*=371	Pediatrics *n*=440	*p*-value
Patients aged 2–17 years	***n* (%)**	***n* (%)**	***n* (%)**	
Patients aged <2 years	***n* (%)**	***n* (%)**	***n* (%)**	
Weight-for-age growth charts				
Regularly [b]	715 (87.1)	309 (84.1)	406 (92.0)	<0.05
As clinically indicated	58 (8.4)	39 (10.8)	19 (4.3)	
Never	32 (4.4)	17 (4.8)	15 (3.6)	
Other	1 (0.2)	1 (0.3)	0 (0.0)	
Stature-for-age growth charts				
Regularly [b]	698 (84.7)	298 (81.0)	400 (90.9)	<0.001
As clinically indicated	61 (8.9)	43 (11.8)	18 (4.1)	
Never	46 (6.1)	25 (6.7)	21 (5.1)	
Other	1 (0.1)	1 (0.2)	0 (0.0)	
BMI-for-age growth charts				
Regularly [b]	438 (49.7)	141 (38.6)	297 (68.1)	<0.001
As clinically indicated	206 (26.9)	111 (30.2)	95 (21.5)	
Never	159 (23.4)	113 (31.3)	46 (10.5)	
Other	0 (0.0)	0 (0.0)	0 (0.0)	
Weight measured on scale in office				
Regularly [b]	762 (91.7)	324 (87.0)	438 (99.6)	<0.05
As clinically indicated	4 (0.6)	3 (0.8)	1 (0.2)	
Never	8 (1.3)	7 (1.9)	1 (0.2)	
Inapplicable [c]	37 (6.5)	37 (10.3)	0 (0.0)	
Length measured in office				
Regularly [b]	754 (90.3)	316 (84.8)	438 (99.6)	<0.001
As clinically indicated	10 (1.6)	9 (2.4)	1 (0.2)	
Never	10 (1.6)	9 (2.5)	1 (0.2)	
Inapplicable [c]	37 (6.5)	37 (10.3)	0 (0.0)	
Weight-for-length growth charts				
Regularly [b]	565 (71.2)	270 (72.9)	295 (68.4)	<0.001
As clinically indicated	97 (10.3)	27 (7.1)	70 (15.7)	
Never	102 (11.4)	33 (8.9)	69 (15.5)	
Other	4 (0.5)	2 (0.6)	2 (0.4)	
Inapplicable [c]	37 (6.5)	37 (10.4)	0 (0.0)	
Weight-for-age growth charts				
Regularly [b]	712 (85.8)	303 (81.5)	409 (93.1)	0.24
As clinically indicated	34 (4.2)	15 (4.1)	19 (4.4)	
Never	27 (3.5)	16 (4.1)	11 (2.5)	

	N=811	Family Practice *n*=371	Pediatrics *n*=440	*p*-value
Patients aged 2–17 years	***n* (%)**	***n* (%)**	***n* (%)**	
Inapplicable [c]	37 (6.5)	37 (10.3)	0 (0.0)	
Patients aged <2 years	***n* (%)**	***n* (%)**	***n* (%)**	
Length-for-age growth charts				
Regularly [b]	712 (85.5)	299 (80.4)	413 (94.0)	0.07
As clinically indicated	29 (3.8)	15 (4.1)	14 (3.3)	
Never	32 (4.3)	20 (5.2)	12 (2.7)	
Other	37 (6.5)	37 (10.3)	0 (0.0)	

[a] Diet and physical activity assessment categories are not mutually exclusive.

[b] Body size assessments are mutually exclusive. #x201C;Regularly#x201D; = every well-patient visit, every visit, and annually.

[c] "Inapplicable" is attributable to FPs who do not see children aged <2 years