

Management of Child and Adolescent Obesity: Attitudes, Barriers, Skills, and Training Needs Among Health Care Professionals

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ABSTRACT. *Objective.* The primary aim of this study was to evaluate among health care professionals their attitudes, perceived barriers, perceived skill level, and training needs in the management of child and adolescent obesity.

Methods. A national needs assessment consisting of a mailed questionnaire was conducted among a random sample of health care professionals. The survey was completed by 202 pediatricians, 293 pediatric nurse practitioners, and 444 registered dietitians.

Results. The majority of all respondents felt that childhood obesity was a condition that needs treatment (75%–93%), and affects chronic disease risk (76%–89%) and future quality of life (83%–93%). The most frequent barriers were lack of parent involvement, lack of patient motivation, and lack of support services. Registered dietitians were less likely to identify barriers to treatment compared with pediatricians or pediatric nurse practitioners. The most common areas of self-perceived low proficiency were in the use of behavioral management strategies, guidance in parenting techniques, and addressing family conflicts. All 3 groups expressed high interest in additional training on obesity management of children and adolescents, especially in the area of behavioral management strategies and parenting techniques. Those practitioners with >10 years of practice reported the greatest interest in training.

Conclusions. Pediatric practitioners view child and adolescent obesity with concern and feel that intervention is important. However, several important barriers interfere with treatment efforts and will need to be addressed. There is also a need for increased training opportunities related to obesity prevention and treatment. The results of this study provide directions and priorities for training, education, and advocacy efforts. *Pediatrics* 2002;110:210–214; *child obesity, adolescent obesity, practitioners, treatment barriers.*

ABBREVIATIONS. BMI, body mass index; PNP, pediatric nurse practitioner; RD, registered dietitian; CME, continuing medical education.

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National US surveys have documented the high prevalence of overweight and obesity during childhood and adolescence, and accompanying secular increases in prevalence over the past few decades.¹ Currently, about 11% of US children and adolescents are classified as overweight (body mass index [BMI] >95th percentile), and an additional 14% of children and adolescents have a BMI between the 85th and 95th percentiles of the reference population that places them at risk for becoming overweight.¹ There are both short-term and long-term risks associated with childhood and adolescent obesity.^{2–8}

The high prevalence of childhood and adolescent obesity, coupled with the short-term and potential long-term health implications, has emphasized the need for obesity-related clinical services including assessment, treatment, and preventive care for children and adolescents. Pediatric obesity is one of the most pressing health problems facing children and adolescents today.⁹ However, surprisingly little is known about health care professionals' attitudes, perceived barriers, skill level, and training needs in relation to the evaluation and treatment of childhood and adolescent obesity. Although several studies have described health care professionals' attitudes or practices regarding obesity and weight management, the majority of these have focused on adult obesity.^{10–15} Few studies have focused on childhood and adolescent obesity.^{15–17} Previous studies have indicated that attitudes of health care professionals toward adult obesity and its management are often negative, and knowledge and skills in managing obesity are seldom adequate.¹⁸ Training opportunities for health care professionals are often limited.¹⁸

Health care professionals, specifically pediatricians, pediatric nurse practitioners (PNPs), and registered dietitians (RDs) are on the front line of providing health services to youth and thus are well-positioned to care for overweight children and to provide preventive counseling. Given the concerns about pediatric obesity, information on health care professionals' attitudes, barriers to care, and skill level is important. Such information is needed to identify issues in the provision of care to overweight youth and also to develop training and continuing education programs to strengthen the skills of practitioners.

This report is part of a larger study that gathered

information from a national sample of pediatricians, PNP's, and RDs to evaluate their attitudes, assessment methods, and treatment practices in the management of childhood obesity. This report addresses the following issues:

1. Attitudes toward managing child and adolescent obesity;
2. Perceived barriers in the treatment of overweight children and adolescents;
3. Perceived skill level in obesity management and interest in training; and
4. Preferred sources of information.

In addition, we were interested in assessing whether there were differences in attitudes, barriers, and skill level across the 3 professional groups, and whether differences existed within each professional group by years of practice, gender, and weight status.

METHODS

Study Population and Design

The sampling frame, survey design and administration of the questionnaire are described in detail elsewhere.¹⁹ Briefly, an 8-page questionnaire was mailed to a random sample of 1652 members of the American Dietetic Association (drawn from 2 practice groups: the Pediatric Nutrition Practice Group and the Sports, Cardiovascular and Wellness Nutritionists Practice Group); 1088 members of the American Academy of Pediatrics; and 879 members of the National Association of Pediatric Nurse Practitioners. The response rates among the 3 groups were: RDs 27% ($n = 444$), pediatricians 19% ($n = 202$), and PNP's 33% ($n = 293$). Practice and personal characteristics of the sample by professional group are described by Trowbridge et al.¹⁹

Measures

The same questionnaire was sent to all professional groups. The development of the questionnaire was informed by a review of the literature, discussions with clinicians who work with overweight youth, and obesity experts representing different disciplines. This section discusses only the measures relevant to this article.

The attitudes of the practitioners were assessed using a list of 8 attitudinal statements (see Table 1). Respondents were asked if they agreed with each statement most of the time, often, sometimes, rarely, or never. Perceived barriers to treatment were assessed by providing a list of 9 barriers and asking how often each was an important barrier to effective treatment using the same response scale as in the attitude statements. To assess perceived skills for treating overweight children, respondents were asked for each of 7 areas to rate their skill proficiency and interest in addi-

tional training using a 3-point Likert scale (low, moderate, and high). The survey also included 2 questions on sources of information most frequently used to assess and treat pediatric obesity and preferred continuing medical education methods (CME). Respondents were also asked questions about their type of practice and personal demographic characteristics.

Data Analysis

Data analysis was performed using SAS statistical computing package (SAS/STAT software, 6.12, SAS Institute, Cary, NC). Frequency distributions were run on all variables and were completed separately for each professional group. The χ^2 statistic was used to look at differences among the 3 professional groups for attitudes, barriers, skills, and training interests. χ^2 and analysis of variance were used to examine the relationship among variables of interest by each professional group as well as:

1. Number of years in practice: <5 years, 6 to 10 years, >10 years;
2. BMI level: <25 kg/m², 25 to 29.9 kg/m², and ≥ 30.0 kg/m²; and
3. Gender (physicians only, as 98% of PNP's and RDs were female).

RESULTS

Attitudes

The majority of respondents in all 3 professional groups felt that childhood and adolescent overweight was a condition that needs treatment (75%–93%) and affects chronic disease risk (76%–89%) and future quality of life (83%–93%) (Table 1). Less than 10% of participants felt that overweight children or adolescents would outgrow being overweight. Nearly half felt that childhood or adolescent overweight was more amenable to treatment than adult overweight. Significant differences were found among RDs, compared with PNP's and pediatricians, in all of the attitude statements. RDs were less likely to agree with most of the statements regarding a need for treatment and the negative impact of child and adolescent obesity on health outcomes.

Barriers

The most frequent barriers cited by practitioners overall were lack of parent involvement, lack of patient motivation, and lack of support services (Table 2). A majority of RDs also cited lack of reimbursement as a significant barrier. Over half of the pediatricians and PNP's and one third of RDs identified treatment futility as a barrier either most of the time or often. Lack of clinician time was a major barrier

TABLE 1. Practitioner Attitudes Toward Managing Overweight in Children and Adolescents

Attitude	Percentage Responding "Most of the Time" and "Often"		
	RDs ($n = 441$)	PNPs ($n = 293$)	Pediatricians ($n = 201$)
Childhood overweight needs treatment	74.6*	83.6*	78.1*
Adolescent overweight needs treatment	85.3*	92.8*	89.1*
Overweight children will outgrow their overweight	7.4*	3.7*	4.1*
Overweight adolescents will outgrow their overweight	1.4*	1.0*	2.0*
Childhood overweight is more amenable to treatment than adult overweight	46.1*	46.8*	48.0*
Adolescent overweight is more amenable to treatment than adult overweight	31.5*	22.2*	26.5*
Overweight affects chronic disease risk	76.4*	89.3*	87.4*
Overweight in childhood or adolescence affects quality of life in the future	83.5*	89.8*	93.5*

* Percentages are significantly different; $P \leq .05$.

TABLE 2. Perceived Barriers in the Treatment of Overweight Children and Adolescents

Barrier	Percentage Responding "Most of the Time" and "Often"		
	RDs (n = 441)	PNPs (n = 293)	Pediatricians (n = 201)
Lack of patient motivation	61.9*	78.2*	85.7*
Lack of parent involvement	71.8*	82.5*	81.2*
Lack of clinician time	31.2*	45.9*	58.0*
Lack of reimbursement	68.1*	46.8*	45.8*
Lack of clinician knowledge	23.8*	32.2*	44.0*
Lack of treatment skills	27.3*	32.2*	45.0*
Lack of support services	55.5	57.0	60.0
Treatment futility	37.4*	52.6*	53.0*
Eating disorder concerns	17.2*	12.9*	10.0*

* Percentages are significantly different from one another; $P \leq .05$.

for almost 60% of the pediatricians. In general, lower percentages of RDs identified treatment barriers compared with pediatricians or PNPs.

Skill Level and Interest in Training

Overall, the most common areas of self-perceived low proficiency were in the use of behavioral management strategies, guidance in parenting techniques, and addressing family conflicts (Table 3). RDs were less likely to cite low proficiency in behavioral management, but more likely to identify low proficiency in addressing family conflicts and providing guidance in parenting techniques when compared with PNPs and pediatricians. All 3 groups expressed high interest in additional training for all of the skill areas (Table 3). Over half of the respondents expressed interest in additional training in the use of behavioral management strategies and parenting techniques.

Information Sources

Respondents were asked which methods they would use to improve their ability to treat overweight children and adolescents. Across all 3 professional groups, the preferred method was professional guidelines (>95%), followed by CME courses at local and national meetings (>90%) (Table 4). The least preferred method was telephone conferences (28%).

Participants were also asked how often they used specific sources of information when assessing and treating overweight youth. Past experience was the source of information used most often across all pro-

fessional groups (68% of pediatricians, 65% of PNPs, and 88% of RDs). Workshops/seminars and CME courses were used often by 69% of RDs, 43% of PNPs, and 28% of pediatricians. Journal articles were used by 50% to 62% of participants. Computer-based programs were used by <10% of participants and <4% used information from pharmaceutical companies.

Differences in Attitudes, Barriers, Skills, and Training According to Practitioner Characteristics

Differences in attitudes, barriers, skills, and training interests across practitioners' characteristics (ie, personal BMI, years in practice, gender) were assessed. Among pediatricians, PNPs, and RDs, personal BMI category was not associated with differences in any of the attitudes, skills, or interest in training variables. Pediatricians and PNPs with 6 or more years of practice were significantly more likely to want additional training in all of the specified areas compared with those who had 5 or less years in practice. In both groups (pediatricians and PNPs), those with >10 years of practice expressed the greatest interest in training. Among RDs, more years in practice were associated with more interest in training in behavioral management strategies and modification of eating practices. Few differences were found among any of the 3 groups by type of practice. Among pediatricians, several gender differences were observed. Female pediatricians compared with male pediatricians reported a significantly higher interest in training regarding behavioral management strategies (58% vs 40%; $P < .02$), assessment (64% vs 42%; $P < .005$), parenting techniques (63% vs 35%; $P < .001$), and family conflicts (63% vs 46%; $P < .02$). Female pediatricians were less likely to cite treatment futility as a barrier to treatment (47% vs 62%; $P < .04$) compared with male pediatricians, and were more likely to be concerned about precipitating an eating disorder (15% vs 5%; $P < .02$).

DISCUSSION

The most urgent challenge to nutritional health for the 21st century is addressing the epidemic of obesity.²⁰ Reversal of the rising prevalence of obesity will require multifaceted community partnerships and interventions directed at health care settings, schools, communities, and the environment. Health care professionals have a critical role to play in both prevention and treatment efforts.

TABLE 3. Perceived Skill Level in Obesity Management and Interest in Training Among Practitioners

	% Low Proficiency Level			% High Interest in Training		
	RDs	PNPs	Pediatricians	RDs	PNPs	Pediatricians
Use of behavioral management strategies	15.8*	32.5*	38.9*	54.7	50.7	51.4
Modification of eating practices	2.4*	8.2*	15.1*	34.1*	45.9*	54.9*
Modification of physical activity	10.6	7.2	13.6	47.3*	44.1*	53.6*
Modification of sedentary behavior	12.9	11.0	18.4	48.0	42.6	49.7
Guidance in parenting techniques	31.0*	20.7*	25.0*	57.8	51.5	52.2
Addressing family conflicts	45.9*	30.2*	30.0*	57.4*	32.3*	45.9*
Assessment of the degree of overweight	4.3*	22.3*	16.8*	29.5*	43.1*	47.3*

* Percentages are significantly different; $P \leq .05$.

TABLE 4. Preferred Education Methods Among Health Care Professionals for Receiving Information on Evaluation and Treatment of Pediatric Obesity

Method	% RDs*	% PNPs*	% Pediatricians*
Professional guidelines	95.0	96.8	92.3
CME courses at local meetings	93.1	94.0	91.0
CME courses at national professional meetings	80.6	88.5	79.5
Textbooks	75.0	75.0	67.9
Videotapes	71.0	71.1	62.2
Computer programs/ Web sites	70.5	59.9	52.9
Government guidelines	62.8	69.4	42.8
Televised lectures	63.2	51.1	37.4
Telephone conferences	34.3	30.9	21.1

* Percentage of respondents reporting they would use each method to improve their ability to treat overweight children and adolescents.

This study shows that pediatric practitioners view child and adolescent obesity with concern and feel intervention is important. However, several barriers interfere with treatment efforts. Among the barriers are self-reported low proficiency in counseling-related skills needed to manage pediatric obesity effectively. The results of this study provide directions and priorities for training, education, and advocacy efforts.

Prominent among the perceived barriers to obesity treatment were lack of patient motivation, family involvement, and support services. Lack of reimbursement was also cited as a major barrier for more than two thirds of RDs and nearly half of PNPs and pediatricians. Other surveys have also found that reimbursement is a major deterrent to the treatment of obesity.²¹ Tershakovec and colleagues²¹ found that pediatricians in a pediatric obesity referral clinic were reimbursed for the treatment of obesity only 11% of the time. Reimbursement rates were not associated with degree of obesity. For some youth who had extreme obesity with medical consequences, third-party reimbursement was denied.²¹ Studies such as these clearly point out that unless insurance company and managed care policies change, health care professionals will have no incentive to provide obesity services for children and adolescents. Advocacy efforts and legislative initiatives are needed to ensure coverage for the delivery of both preventive and treatment services for pediatricians, RDs, and PNPs.

Use of behavioral management strategies, guidance in parenting techniques, and addressing family conflicts were the 3 areas in which practitioners commonly expressed low proficiency. Kushner et al²² also found that practitioners report little confidence in their ability to help patients change behaviors. Currently, practitioners have few opportunities to learn the most current assessment and counseling strategies and behavioral management techniques for pediatric obesity treatment. These topics are seldom covered in medical, nursing, or dietetic school curricula, and postgraduate training opportunities are limited.¹⁸ Educational programs that teach counseling techniques in medical and residency training for physicians and in undergraduate and graduate

training for nurses and RDs will help develop skills of future practitioners. In addition, postgraduate education is needed to provide opportunities for current practitioners to improve proficiency.

Current practitioners reported a strong interest in training that could improve the quality and outcome of obesity prevention and treatment. Many practitioners expressed interest in training regarding obesity assessment. Better and more consistent assessment of obesity could increase awareness of the extent of the obesity problem, provide a basis for monitoring individuals and populations, and provide early prevention and treatment efforts. There was also high interest in behavioral management and parenting strategies. Overall, one third to more than half of practitioners expressed interest in behavioral management strategies, guidance in parenting techniques, and addressing family dynamics. Continuing education could provide a readily accessible forum for training in these topic areas. A high proportion of practitioners identified continuing education at local and national meetings and professional guidelines or standards of practice as preferred education methods. In addition, training in obesity-related assessment and counseling needs to be incorporated into preprofessional education programs.

Several practical therapeutic approaches for helping individuals increase their motivation or "readiness to change" eating and physical activity behaviors show promise. These techniques include stages of change counseling, motivational interviewing, brief negotiation, behavioral self-management, and tailored messages.²³⁻²⁵ Recently, several of these approaches have been simplified and adapted for use with patients in clinical encounters.²⁶⁻²⁸ More research needs to examine the effectiveness and time-efficiency of these approaches and whether these approaches can be effectively used by health care providers.

The results of this needs assessment highlight some interesting differences among the practitioner groups in regards to attitudes, barriers, skills, and training needs. Overall, RDs seemed to have a more optimistic view of childhood obesity and were somewhat less concerned about the need for treatment and the impact of obesity on health outcomes. They

perceived fewer barriers to treatment and were more confident about their skills in body weight assessment and behavioral management. They were also more open to computer-based learning and to participation in workshops and seminars. PNPs and pediatricians, on the other hand, seemed to have somewhat less optimistic attitudes and to perceive more barriers. They are concerned about the need for treatment but are also pessimistic about the effectiveness of current treatment strategies.

Strengths of the study are the inclusion of 3 professions (PNPs, pediatricians, and RDs) from across the United States and a comprehensive tool assessing a range of obesity-related attitudes and skills. However, although the results of this study identify issues in the provision of care to overweight youth and highlight areas for additional training, the low response rate limits generalizations. It is possible that health care professionals who had less positive attitudes toward treating pediatric obesity or who had less interest in additional training were less likely to respond to the questionnaire. The extensive length of the questionnaire may also have negatively affected the response rate. Additional research that replicates and extends the findings from this study should be conducted.

CONCLUSION

The majority of practitioners were concerned about pediatric obesity and its health effects and felt treatment was important. Several barriers in treating obesity were reported, including lack of family involvement, patient motivation, support services, time, and reimbursement. Many of the barriers faced by RDs, PNPs, and pediatricians stem from the complexity and intrinsic difficulty of managing a multifaceted behavioral problem such as obesity and the challenges of addressing this problem in the short-term. However, the results of this study indicate that although practitioners perceived low skill levels in several areas such as assessment, behavioral management strategies, and parenting techniques, they also expressed a high interest in training in these areas.

The process of obesity management covers a spectrum ranging from prevention to treatment of obesity and its related conditions. Effective obesity management strategies will need to address both elements through coordinated efforts. This study highlights the need for increased training opportunities on prevention and treatment approaches, specifically aimed at assessment and behavioral management strategies and family interactions and dynamics. Educational efforts from residency and graduate training through continuing education should focus on assessment and counseling skills and behavioral strategies to change eating and physical activity patterns. Finally, there is a critical need for exploring strategies to reduce barriers to prevention and treatment services.

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