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Family-Based Treatment for Pediatric Obesity: Case Study of an Adaptation for a Non-Psychiatric Adolescent Population

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Abstract

Pediatric overweight and obesity, a highly prevalent condition posing risks extending into adulthood, is considered a major public health concern. Findings from the pediatric obesity treatment literature support the efficacy of parental involvement across multiple formats. Family-based treatment is an outpatient intervention for adolescents with eating disorders that enlists parents as the primary agents of symptom management during the acute stages of illness, titrating down their involvement as severity of the disorder decreases. We adapted family-based treatment for pediatric obesity, modifying the original model to recognize that children and adolescents with obesity do not exhibit the developmental regression seen in eating disorders and to reflect the non-psychiatric nature of obesity. Thus, family-based treatment for pediatric obesity modulates the degree of parental involvement as a function of chronological developmental stage, not severity of the condition. To illustrate the implementation of this treatment, we present a case report of a 15-year old with an eight-year history of overweight and a greater than 30-pound weight gain prior to treatment. Through this case study, the three phases of family-based treatment for pediatric obesity and six-month post treatment follow-up results are presented through the lens of response from this adolescent and her family. We present this case report to illustrate the implementation of the intervention's adolescent module, and the potential impact of the approach in the treatment of adolescents with obesity and their families.

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Compliance with Ethical Standards

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from all individual participants included in the study.

[1]Changes to certain details of the case have been made, such that any identifying features have been altered or removed.

Keywords

pediatric obesity; family-based treatment; overweight; adolescents

Pediatric overweight and obesity is considered a major public health concern, with a high prevalence and associated risks extending into adulthood (Ogden et al., 2016; Simmonds, Llewellyn, Owen, & Woolacott, 2016). Research on pediatric obesity, and on related dietary behaviors, have long attended to parent-related variables to identify both family-level risk and protective factors to inform prevention efforts and potential targets and mechanism of intervention for affected youth, including quality of the parent-child relationship (Blewitt, Bergmeier, Macdonald, Olsson, & Skouteris, 2016), parenting style (Sokol, Qin, & Poti, 2017), and parental feeding practices (Shloim, Edelson, Martin, & Hetherington, 2015). Findings from the pediatric obesity treatment literature support the efficacy of parental involvement across multiple formats (Janicke et al., 2014). Family-based treatment likely confers benefit because children are embedded in their home system and parents can modify that environment to promote healthier choices and behaviors. Research suggests that there exists an optimal range of intensity of parental monitoring and that the necessary quantity and quality of parental involvement might vary as a function of child age (Vaughn et al., 2016). For example, the adolescent stage of development requires attention to both an increasing need for independence and continued dependence on parents for resources and structure in the home. However, adolescence has received less attention in the obesity intervention literature relative to childhood, and more treatment development efforts for this age group are necessary. We present a case study that follows an adolescent and her family throughout a course of a novel adaptation of an established family-based treatment, originally developed for adolescents with anorexia nervosa, that has been modified to meet the unique needs of individuals at this developmental phase who are affected by obesity.

Family-based treatment is an efficacious outpatient intervention for adolescents with eating disorders that enlists parents as the primary agents of symptom management during the acute stages of illness, and titrates down their involvement as severity of the disorder decreases (Couturier, Kimber, & Szatmari, 2013; Lock & Le Grange, 2013). A primary goal of this model of therapy is to assist adolescents in ultimately achieving developmentally appropriate levels of independence. Family-based treatment has been adapted for pediatric obesity (Loeb et al., 2015), modifying the original model to recognize that children and adolescents with obesity do not exhibit the developmental regression seen in eating disorders. Thus, this intervention modulates the degree of parental involvement as a function of chronological developmental stage, not severity of illness. Family-based treatment for pediatric obesity aims to empower parents to implement systems-level changes in the home that are health-promoting and appropriate for all family members (i.e., are not overly restrictive), while directly facilitating increasing levels of patient autonomy around energy intake and expenditure. The treatment allows for changeable dietary recommendations and guidelines, guided by the individual family's needs, culture, and economic limitations, as well as by advancing knowledge of nutrition science. It also follows a non-diet approach (e.g., does not prescribe rigid and restrictive eating plans). Instead, sustainable health behavior changes are encouraged and guided by current best nutritional practices.

Both the original therapy (Lock & Le Grange, 2013) and the adaptation for pediatric obesity (Loeb et al., 2015) are formally atheoretical with regard to positing a definitive cause or set of causes of illness and drawing on a single treatment model that extends from the hypothesized etiology. Rather, this form of family therapy focuses on maintaining factors and environmental vulnerabilities, as well as on how a family's response to an eating or weight disorder might inadvertently increase ongoing risk, through action or passivity that may be unwittingly unhelpful. Such maladaptive family-level processes, while viewed as rooted in positive intentions, are the primary targets of treatment. The therapy approach derives from an amalgam of psychotherapy models, including structural family therapy, strategic family therapy, narrative therapy, and Milan systemic family therapy, and is therefore likely to have a range of mechanisms of change. Across the foundation approach as well as its modification for pediatric obesity, the problem behavior is explicitly externalized to foster blame reduction, reduce family conflict around eating, and separate the child from the focus of treatment.

Unlike family-based treatment for anorexia nervosa, in which weight correction is an unequivocal goal, the version for obesity corrects a range of behaviors and environmental variables associated with weight gain, without weight loss as a direct aim (Loeb et al., 2015). This resonates with the multifaceted, complex, and limited understanding in the field about precise determinants of overweight and weight control. In other words, the treatment focuses on what is more proximally modifiable – behavior – and expects a concomitant impact on weight status. Behavior changes include key parenting factors associated with child weight (e.g., parenting style, feeding practices) as well as child factors (energy intake and expenditure). Loss-of-control and negative-affect-driven eating, creating and maintaining a positive family environment with low levels of negative expressed emotion, and avoiding disciplinary choices related to food or eating are among additional targeted topics as applicable. Moreover, the behavioral change fostered in this intervention is universally healthy and generally appropriate for most family members, regardless of individual weight status. In this sense, the intervention capitalizes on parental modeling as a predictor of child eating behavior (Vaughan et al., 2016). Weight stabilization in the context of prospective growth and/or a history of a steep weight trajectory is considered a good outcome.

The case report that follows illustrates the implementation of the intervention's adolescent module, and the potential impact of the approach in the treatment of adolescents and their families. All modules (child, pre-adolescent, and adolescent) consist of three phases across which the identified patient is initially supported more intensively by parents in implementing early change (Phase I) and is later given less scaffolding as new behaviors become more secure (Phase II) until eventually, the family prepares to sustain positive behavior change beyond treatment (Phase III; Loeb et al., 2015). The degree and intensity of parental support varies across age ranges, as developmentally appropriate. The frequency of sessions decreases from weekly in Phase I, to biweekly for the remainder of treatment to mirror the patient's growing independence of the parents, and in a parallel process, the parent's growing independence of the therapist. Ideally, all family members attend all therapy sessions; at a minimum, a patient-parent dyad is necessary to conduct a treatment

session. While assessment of the therapy's comparative efficacy is currently ongoing, this case describes in detail how this innovative treatment adaptation is implemented in practice.

Case Report

Presenting Problem

Maria[1], the oldest of four children from an intact, two-parent home, was a 15-year-old African-American adolescent with an eight-year history of overweight. Her history also included a greater than 30 pound weight gain in the 6 months prior to presenting for treatment. Maria's mother called the clinic to set up an appointment for an initial assessment following a referral from the school nurse, who noted the patient's change in weight status from overweight to obese. Maria presented with a weight of 204.6 pounds at 67.5 inches (body mass index [BMI] = 31.57, BMI-for-Age-Percentile = 97.38%, BMI z-Score = 1.95). Both Maria and her parents reported attempts to exercise more and limit calorie intake to address Maria's overweight status. On examination, Maria did not meet criteria for any psychiatric disorder and did not endorse a history of binge eating. Maria and her parents assented/consented to participate in a study comparing two interventions for adolescent obesity: family-based treatment and nutrition education counseling. Maria was randomly allocated to the family intervention, and she and her parents began a course of 16 sessions of manualized family-based treatment over a six-month period. Most family sessions were conducted with Maria and her two parents, however, some sessions later in treatment were conducted with only one parent present, when a sibling required a ride to an extra-curricular activity. Additionally, nine sessions were also attended by at least one of Maria's siblings, with two sessions attended by the entire family.

Course of Treatment

Session one.—Maria arrived for the first session with both of her parents. The therapist introduced herself and explained that she would first weigh Maria and meet with her alone for five to ten minutes; following this, the entire family would meet together in the therapist's office. The time alone with Maria began by obtaining her height and weight. After establishing initial rapport, the therapist explained the structure of the sessions and how they would meet alone at the start of each visit. The purpose of this time was to allow Maria to check in with the therapist and discuss any issues that may have arisen for her between sessions. The therapist reviewed parameters of confidentiality, including that clinical material pertaining to eating and weight would be openly discussed with her parents when they joined the session, so that they could provide appropriate support around any concerns.

Conflict of Interest:
Dr. Stiles-Shields has received a research grant from the National Institute of Mental Health and declares that she has no other conflict of interest. Dr. Celio Doyle is a faculty member of and consultant for the Training Institute for Child and Adolescent Eating Disorders. Dr. Le Grange receives royalties from Guilford Press and Routledge, and is co-director of the Training Institute for Child and Adolescent Eating Disorders, LLC. Dr. Loeb receives royalties from Routledge, has received a research grant from the National Institute of Child Health and Human Development, and is a faculty member of and consultant for the Training Institute for Child and Adolescent Eating Disorders.

The therapist next invited Maria's parents to join the session. She began by orienting the family to the treatment model, including the three phases of treatment. The therapist then assigned a specific role to each family member, explaining that during the first phase of treatment, Maria's parents would be doing most of the planning around healthy behaviors, with Maria acting as a collaborator. As treatment progressed to the second phase, Maria would take a more active role in these decisions as she demonstrates the ability to sustain healthier eating and activity independently. The final phase of the intervention would center around broader issues of adolescent development, as well as planning for maintenance of treatment gains. Although Maria's siblings were absent from this session, the therapist explained that their role would differ from the parents' and consist of providing general support to their sister. The parents were asked to convey the information from the initial session to the siblings so that they would understand the efforts taking place at home and be prepared to attend subsequent treatment visits.

Maria and her parents seemed receptive to the therapy model. They noted that they had often had times of improving their health behaviors, but that they would deviate from these behavioral changes after a week or two. They hoped that by implementing changes on a family level, they would all benefit and be able to persist in making healthier choices. Further discussion revealed that prior attempts included: 1) removing certain foods from the home that they had difficulty consuming in moderation, 2) substituting diet non-carbonated drinks for soda, and 3) increasing physical activity. The therapist inquired about the strengths and weaknesses of these tactics for the family. She also provided psychoeducation about why many popular weight loss techniques are not appropriate for children and adolescents, nor durably effective even for adults.

Using circular questioning, the therapist next assessed the family functioning and authority structure. This included asking about rules in the home, Maria and her sibling's responsibilities, consequences for not following rules, and decision making around food and activity. The parents reported that while Maria, as the oldest child, assisted them in caring for her younger siblings, they made decisions for the family, including what to serve for dinner.

Maria's typical eating schedule was assessed next. Maria reported that she did not eat breakfast before school on weekdays and ate pizza and fries for lunch every day at school. As Maria did not eat snacks, dinner was her only other meal of the day. Dinner would often involve more than one serving, as Maria described feeling very hungry at night. On the weekends, dinner would also typically include fast food. Shortly before starting treatment, she had made the decision to eat an orange in the place of the fries at lunch. The therapist praised Maria for increasing her produce consumption, but Maria noted that she most likely would not have made this substitution had the fries not been "so gross" at school.

When asked about feelings of blame for Maria's overweight status, Maria's mother conveyed that she and her husband had some degree of fault. The therapist countered that Maria's parents were, in fact, her greatest resource to improve health behaviors and that they should be commended for seeking assistance. The therapist went on to explain that feelings of blame often lead to inaction or, when directed at a child, can even perpetuate eating

problems. The therapist provided psychoeducation regarding the current obesity epidemic, specifically highlighting obesogenic environmental factors. The therapist elicited examples of the effect of the toxic environment upon their lives. Indeed, the family noted that fast food is very accessible to them and "seems easier."

Continuing to remove blame, the therapist externalized the overweight as a body state separate from Maria as a person. This externalization was depicted using a Venn diagram. The therapist described that treatment will target health behaviors that may be associated with overweight, facilitating gradual family-level change to reduce its effect on Maria's life or health status. These behavioral changes would decrease and/or remove the overlap between the two circles in the diagram. Maria stated that she was hoping to ultimately be more physically fit and to "look and feel stronger." The therapist reinforced these goals as psychologically healthier than an exclusive focus on appearance. Maria's father then reported that he noticed that Maria recently seemed more self-conscious of her body and that he hoped that she might gain more confidence by successfully reversing any behaviors associated with her recent marked weight gain.

Following the externalization of the overweight status from Maria, the therapist attempted to mobilize Maria and her parents to make the necessary changes to improve her health. This was achieved by reviewing many of the serious risks and complications associated with being overweight in adolescence. This information was presented in a concerned, yet warm tone. Maria reported that her physician had warned them of some of these issues and had encouraged them to make health-oriented changes. The therapist also reviewed Maria's personal weight status and trajectory in terms of her individualized growth curves as well as population-level BMI percentiles for her age and gender (please see "Presenting Problem").

The therapist concluded the session by assigning the tasks ahead for Maria and her family. This included: 1) working together to create a home environment that modified the quality and relative quantities of energy intake and increased energy expenditure through activity, this item was measured through the use of food logs, which were provided to the family at each session; and 2) to bring a meal to the next session that represents healthy and realistic changes they are making as a family. Maria's parents decided that they would begin modifying portion sizes at dinner by having her father plate and serve food to each person, with the opportunity to have more later in the meal. This would prevent family members from taking more than their bodies needed, thereby using the amount on the plate as a cue for fullness rather than relying on internal indicators of satiety. They also planned to go on walks as a family and increase their use of their treadmill. They agreed to bring a meal to the next session, and upon the therapist's encouragement, also planned to have Maria's siblings attend the next session. The therapist praised the parents' decisions, emphasizing that the changes that were being made for Maria were applicable and beneficial for the health of everyone in the family, including nonoverweight members.

Session 2.—The second session began with the therapist weighing Maria and spending five to ten minutes checking-in with her before inviting her family to join the session. The session was attended by Maria, her parents, and two of her three siblings, as one was unable to miss a school event during the session time. While it is ideal for the entire family to attend

this session, the therapist opted to proceed in an effort to mobilize the family towards behavior change more quickly.

The therapist invited the family to begin their meal. The parents presented their children with prepared plates of food that had been individually wrapped in foil. Maria was tasked with distributing cups to each family member, and poured the beverage. The therapist asked Maria's parents what they chose to bring for the meal and how they believed it was representative of the healthy changes they were making in their home. They explained that they brought a side salad for each person to represent their commitment to increasing fruit and vegetable consumption in the family. They also brought several types of salad dressings, indicating that they each preferred a different choice. Maria's father explained that he had portioned each plate with baked fish and rice, putting a smaller amount of rice on each plate than was normally consumed.

Utilizing the family meal to continue to evaluate the family in terms of structure, as well as their ability to facilitate healthier behaviors, the therapist inquired about how meals are typically planned and implemented at home. Maria's parents explained that they usually chose the meal each night, but if they ate out or "grabbed something on the run," that each person typically placed their own order. On weekdays, the family generally ate dinner together at home, provided that there were no extracurricular conflicts. On weekends, they typically ate at a restaurant or picked up fast food for dinner.

The therapist inquired about what a typical mealtime involved for the family. Maria's father explained that they viewed dinner as an opportunity for the six of them to spend time together. He and his spouse did the grocery shopping, deciding what would be cooked during the week while at the store. The parents alternated cooking responsibilities. The entire family sat at the kitchen table, with an understanding that no one could answer the phone or turn on the television during a meal. Each person had a time to talk about their day, something that the therapist noted occurring during the session. Maria's mother added that their family dinners usually last about an hour. The therapist praised the family for having frequent meals together and described the multiple benefits of this routine.

Observing that Maria was eating her dinner at a rapid pace, the therapist made note of this in a non-judgmental tone. She asked the parents how they might interrupt or slow down Maria's pace of eating. Maria's mother noted that the entire family ate very quickly. She and her husband decided that they would begin to modulate the speed of Maria's eating, asking her to tell them a story during dinner or asking her to put her fork down periodically and possibly take a sip of her beverage. The therapist applauded the family for coming up with a solution collaboratively that is both respectful of Maria and non-critical or punitive in its execution.

The therapist also intervened via the parents when Maria began to eat her side salad. Maria poured at least a cup of the dressing onto her salad. The therapist asked Maria's parents about their reaction to the serving of ranch dressing. They responded that they believe that all of their children use too much dressing, but that they were unsure of how they should portion condiments. With the therapist's guidance, the parents consulted the serving size on

the nutrition label. Using this information, they decided that in the future, Maria would start with a tablespoon to approximate the recommended serving size for her ranch salad dressing, and see if she enjoys the salad before adding additional increments. Maria responded that she "just loves ranch," but that using the serving size as a guide made sense to her so she was willing to try that option.

As the family neared the end of their meal, the therapist asked how they know when they are full. Maria's mother explained that since the first session, she has started prompting herself and her family to attend to their body's signals, and that she has correspondingly observed a reduction in the request for additional portions. The therapist concluded the session by sharing her observations of the meal. She noted that Maria's parents did an excellent job of making supportive and non-critical comments to Maria throughout the meal. She also noted that they appeared to have started making changes to the portions, food choices, and observations of satiety. The therapist encouraged Maria's parents to continue to monitor the speed of everyone's eating and to make healthier choices with Maria.

The Remainder of Phase I.—Figure 1 displays Maria's BMI z-Score, a measure of relative weight adjusted for Maria's age and sex, across treatment. The remainder of the first phase of treatment entailed carefully reviewing with Maria and her parents what efforts they made during the week to facilitate health-promoting decisions and behaviors and to combat the toxic environment's effect on the family. Throughout Phase I, and continuing into Phase II, the therapist reviewed and distributed handouts and materials from a basic nutrition education curriculum with the family. These materials were presented in a didactic yet interactive way, with the therapist engaging the family in how they may use this information to make family-level changes.

Each session began with the therapist obtaining Maria's height and weight, recording her weight in a weight chart, and meeting briefly with Maria alone before inviting her family to join the session. Beginning with the third session, the therapist asked Maria and her parents to complete food and activity logs each day. If Maria and her parents forgot to complete the records, the therapist conducted a 24-hour dietary recall with the family present. Using the food logs or 24-hour dietary recall, the therapist presented individualized feedback at each session.

One discussion resulting from Maria's food records involved the effect of skipping breakfast on her eating patterns later in the day. This discussion led to the realization that Maria's hunger was usually at its highest at lunch and that she ate larger portions later in the day. In response, Maria and her parents decided that it was necessary for Maria to have breakfast each morning. Because Maria usually had limited time in the mornings, her mother decided to make her instant oatmeal. After implementing this change, it also became clear that this task was sometimes forgotten due to the hectic nature of busy mornings. Maria and her mother therefore began to remind each other to take out the oatmeal package at night before bed to function as a cue in the morning. The therapist praised the family for making this change. After about one week of consistent breakfast consumption, Maria noted a change in her appetite throughout the day in association with the addition of a regular breakfast to her diet.

Throughout this phase of treatment, Maria and her parents were able to identify a number of ways in which they believed the toxic environment affected their family's health and health-related choices. The therapist and family then worked to find ways to overcome these obstacles. One such example was how to have healthier snacks at school, rather than relying on products from the school vending machines or nearby convenience store. The family discussed this and arrived at a decision to pack snacks from home the evening before the school day, to avoid running out of time in the morning. They determined that these snacks should consist of fruits, vegetables, and items with protein and fiber. The parents decided that they would pack these snacks for all the children, and involve them in the process so that they could learn about better choices. The parents also chose to pack similar snacks for their own workdays. Another example of an area affected by the toxic environment was physical activity. The family lived in an area where the parents worried for the safety of their children if they walked outside alone. Also, Maria explained that she often had several hours of homework to do each night and that she also was not willing to sacrifice her limited leisure time on the computer or watching television. The family discussed all aspects of the issue and decided together that they would all drive to a local track to walk and run as a family, and reserve a more limited allowance of "screen time" as a reward for homework completion and family exercise. Maria suggested that in addition to this, her parents help remind her to take breaks from homework, the computer, and television to interrupt some of her sedentary time. Maria also noted with excitement that basketball season would be starting again at her school in a few weeks and that she intended to play for the team.

As the family neared the end of the first phase of treatment, Maria expressed disappointment with the amount of weight loss that had occurred. Maria had lost about five pounds from her highest weight reached during the first few sessions (she had continued to gain weight from her baseline assessment until the third session). The therapist explained to the family that they had made some very effective and important changes that had halted Maria's weight gain that had been increasing at a steady rate prior to treatment. The therapist and Maria's parents congratulated Maria on her motivation, contributions, and participation with the many changes the family had made. Following this discussion, Maria explained that she realized how much had changed and that she hoped to continue with the progress that they had made as a family.

Phase II.—The therapist began the second phase of treatment after noting two key changes in the family. First, Maria was no longer gaining weight and had, in fact, lost weight. There was also good compliance with food records. Second, Maria's parents also voiced confidence in their ability to implement health-promoting changes in the home. The structure of the sessions in the second phase of treatment remained similar to the first phase, with a few exceptions. The time Maria spent alone with the therapist could be extended to half of the session if Maria had topics or issues to discuss. Additionally, as an adolescent, Maria was now expected to complete the food logs on her own, asking her parents for assistance only if necessary. The therapist discussed this new responsibility with Maria when they met alone. Maria described this new responsibility as "not a problem unless I have a lot of homework or things to do after school."

Similar to the first phase of treatment, the focus for the family remained on combating the effects of the toxic environment and improving Maria's energy intake and expenditure. Increasing her collaboration in the family-level changes, Maria began to go with her parents to the grocery store to help plan the meals and snacks for the week. Maria also decided to use the treadmill at home on days when the family did not go to the track. She reported feeling excited by how her times were dropping as she was able to cover distances at faster rates than when she first began going to the track.

One specific problem that Maria wished to discuss during this phase of treatment pertained to the school basketball team. Due to a change in coaching personnel, team members were no longer being given equal playing time at practice and games. Concerned about her own and her teammate's opportunities for practice and exercise, Maria discussed the situation in session with her parents and the therapist. The family ultimately decided that Maria and her father would offer alternative practice and game opportunities, as her father had a history of coaching basketball, and Maria identified as being a leader among her teammates. Maria and her father followed this plan and provided a supplement to the school's organized basketball program. Maria and her parents reported that this organized athletic event increased Maria's activity level. The therapist encouraged Maria and her parents to discuss such situations as they arose, working together to find psychologically and physically healthy solutions.

Phase III.—By the time Maria and her family reached the third phase of treatment, all of the nutrition-related didactic material had been presented and discussed. Additionally, Maria had lost about nine pounds from her highest weight in Phase I. The format of the sessions remained similar to Phase II, however the therapist's goals now included: 1) reviewing the principles of adolescent development in order to track Maria's alignment to her expected developmental stage, 2) developing a maintenance plan for continued healthy behaviors, and 3) reviewing ways in which each family member benefited from the changes made in treatment.

Maria's parents felt that Maria was not only at a developmentally appropriate stage, but that the changes she had made in treatment had improved her self-esteem and leadership skills among her peers. Maria functioned as captain of the supplemental basketball team and reported feeling much more confident in terms of her athletic ability, physical stamina, and physical build. These changes represented the attainment of her early goals of treatment.

The therapist reflected to the family that at the start of treatment, they felt that they often made healthy changes for one to two weeks before slipping back into old routines. In planning for continued maintenance of healthy behaviors, Maria's parents felt that they were now able to maintain their healthy choices due to the knowledge they had gained and the support they had provided to each other as a family throughout these changes. This support was also a benefit to treatment reported by the family. Thus, as Maria had gained more autonomy, needing her parents' help in decreasing degrees, so had the family decreased their reliance on the therapist for initiating and maintaining family-level change. Maria and her parents also described increased physical stamina and energy, as well as confidence in their decisions and ability to continue to make healthy choices, better sleep, and a general sense of well-being.

Follow-Up

Maria and her family were contacted for a follow-up assessment about six months after the end of treatment. A research coordinator who was not involved in Maria's treatment conducted the assessment. Maria presented at follow-up with a weight of 191.4 pounds at 68.25 inches (BMI = 28.87, BMI-for-Age Percentile = 94.36%, BMI z-Score = 1.64). Maria and her parents reported that they were continuing to monitor their portion sizes, food choices, and activity levels. They also reported feeling confident for continued success in working together to maintain and further promote health-oriented choices and behaviors.

Discussion

The rates of obesity in youth and the predictable course of obesity tracking into adulthood warrants a treatment approach that can be implemented across a range of ages, particularly adolescence, for which there are fewer established efficacious treatments. Maria's case demonstrates the utility of a family-based, developmentally-sensitive, blame-reduction approach to addressing pediatric obesity. However, not all families are as motivated and willing to make changes as Maria's family. Family-based treatment for pediatric obesity is designed to support developing a healthy lifestyle in families in the context of potential environmental, relational, or psychological barriers to change. Parents are put into an empowered and collaborative role rather than being asked to strictly follow advice from a professional, and results of family changes are then observed over time to gauge interim outcomes and iteratively adjust the intervention to achieve behavioral goals. Other challenges in this treatment can be a lack of alignment between parents or difficulty reducing parental blame directed either toward the adolescent or themselves. Therapists utilizing this approach are trained to specifically emphasize the key tenets of structural alignment, externalization of illness, and blame reduction. The therapist stance and gradual process of empowering parents in the first phase, followed by increasing independence over time for the adolescent or child, provides the time to deal with these and other challenges, and to adjust flexible aspects of the intervention to encompass unique family-level, cultural, and socioeconomic factors.

In summary, family-based treatment for pediatric obesity incorporates best-practice intervention techniques in the original psychotherapy model for anorexia nervosa from which it was derived (Lock & Le Grange, 2013), including family involvement, parental action, blame reduction, and respect for healthy adolescent development and autonomy, and applies these to overweight and obese youth to optimize behavior change. A specific strength of the intervention is its structure as a flexible delivery mechanism for health-based treatment, incorporating a range of dietary recommendations to reflect individual needs of clients as well as developments in nutritional science over time. Family-based treatment for pediatric obesity is particularly unique in its transdevelopmental nature, providing a structure for families to provide varying degrees of support to children, pre-adolescents, and adolescents as they increase knowledge and competency in making behavioral changes for the purpose of health management on their journey to adulthood. Formal evaluation of this approach is underway.

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References

Blewitt C, Bergmeier H, Macdonald JA, Olsson CA, & Skouteris H (2016). Associations between parent-child relationship quality and obesogenic risk in adolescence: A systematic review of recent literature. Obesity Reviews, 17, 612–622. doi:10.1111/obr.12413 [PubMed: 27125464]

Couturier J, Kimber M, Szatmari P (2013). Efficacy of family-based treatment for adolescents with eating disorders: A systematic review and meta-analysis. International Journal of Eating Disorders, 46, 3–11. [PubMed: 22821753]

Janicke DM, Steele RG, Gayes LA, Lim CS, Clifford LM, Schneider EM, ... & Westen S (2014). Systematic review and meta-analysis of comprehensive behavioral family lifestyle interventions addressing pediatric obesity. Journal of pediatric psychology, 39(8), 809–825. [PubMed: 24824614]

Lock J & Le Grange D (2013). Treatment manual for anorexia nervosa: A family-based approach (2nd ed.). New York, NY: Guilford Press.

Loeb KL, Celio Doyle A, Anderson K, Parter A, Sweeney C, Hail L, Craigen K, Hildebrandt T, & Le Grange D (2015). Family-based treatment for child and adolescent overweight and obesity: a transdevelopmental approach In Loeb KL, Le Grange D, & Lock J (Eds.) Family Therapy for Adolescent Eating and Weight Disorders: New Applications (pp. 177–229). New York: Routledge.

Ogden CL, Carroll MD, Lawman HG, Fryar CD, Kruszon-Moran D, Kit BK, & Flegal KM (2016). Trends in obesity prevalence among children and adolescents in the United States, 1988–1994 through 2013–2014. JAMA, 315(21), 2292–2299. doi:10.1001/jama.2016.6361 [PubMed: 27272581]

Shloim N, Edelson LR, Martin N, & Hetherington MM (2015). Parenting styles, feeding styles, feeding practices, and weight status in 4–12 year-old children: A systematic review of the literature. Frontiers in Psychology, 6, 1849. doi:10.3389/fpsyg.2015.01849 [PubMed: 26696920]

Simmonds M, Llewellyn A, Owen CG, & Woolacott N (2016). Predicting adult obesity from childhood obesity: A systematic review and meta-analysis. Obesity Reviews, 17(2), 95–107. doi: 10.1111/obr.12334 [PubMed: 26696565]

Sokol RL, Qin B, & Poti JM (2017). Parenting styles and body mass index: A systematic review of prospective studies among children. Obesity Reviews, 18(3), 281–292. doi: 10.1111/obr.12497 [PubMed: 28086262]

Sung-Chan P, Sung YW, Zhao X and Brownson RC (2013). Family-based models for childhood-obesity intervention: A systematic review of randomized controlled trials. Obes Rev, 14, 265–278. doi:10.1111/obr.12000 [PubMed: 23136914]

Vaughn AE, Ward DS, Fisher JO, Faith MS, Hughes SO, Kremers SPJ, . . . Power TG (2016). Fundamental constructs in food parenting practices: A content map to guide future research. Nutrition Review, 74(2), 98–117. doi:10.1093/nutrit/nuv061

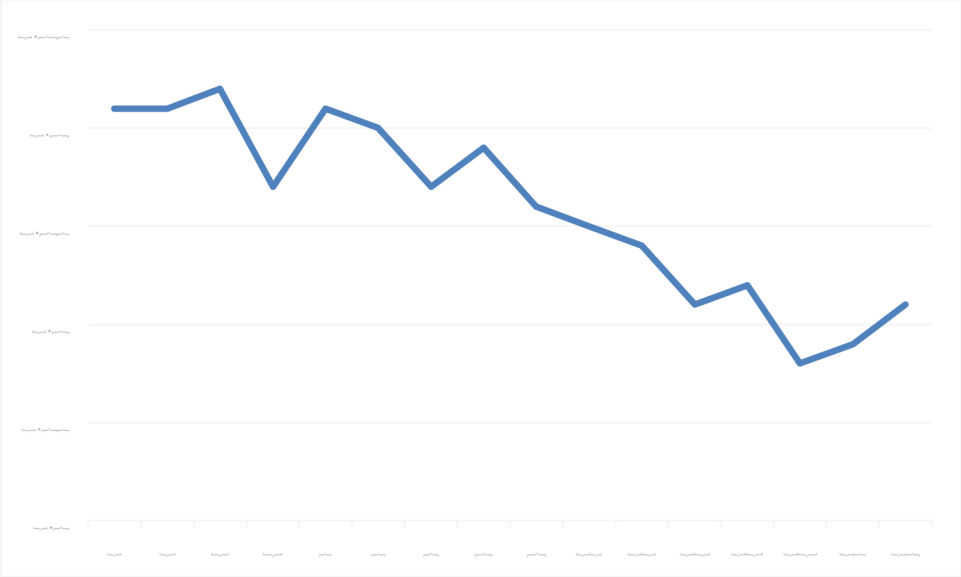

Figure 1.
BMI z-Score Across 16 FBT-PO Sessions
Note. BMI = body mass index; FBT-PO = family based treatment for pediatric obesity.