Published in final edited form as:
Fam Syst Health. 2010 September ; 28(3): 236–246. doi:10.1037/a0020101.

Motivational Interviewing in a Family-Based Pediatric Obesity Program: A Case Study

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Abstract

Motivational Interviewing (MI) is an effective method for clinicians to guide and support individuals who wish to make complex health behavior changes; however, little research is available to support its use in the treatment of obesity, particularly in family based therapy and multidisciplinary team settings. The objective of this case report is to demonstrate the application of MI within a family based, multidisciplinary treatment program, and provide examples of MI in obesity treatment. We report a case study on the use of MI with behavioral therapy in a pediatric, family based, multidisciplinary weight management program (Brenner FIT Program). Tina, a 14-year-old White female, and her mother participated in the Brenner FIT Program where we successfully integrated MI into her obesity treatment. Further work is needed in the application of MI to diverse care teams to determine frequency of training required for effective use of MI in obesity treatment, its limitations, and its feasibility in community-based programs.

Keywords

obesity; pediatric; motivational interviewing; treatment; family

Over the past three decades, the prevalence of overweight and obese children ages 2 to 19 years in the United States has nearly doubled from 15.3% in 1971–1974 to 31.9% in 2003–2006 (Jolliffe, 2004). The prevalence of obesity alone has tripled, during that time, from 5.1 to 16.3% (Koplan, Liverman, & Kraak, 2004; Ogden et al., 2006; Ogden, Carroll, & Flegal, 2008). The pediatric obesity epidemic accompanies a vast number of consequences, which

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further validate the need for immediate and widespread treatment options. Escalations in childhood obesity prevalence correspond directly to mounting health care costs (Hampl, Carroll, Simon, & Sharma, 2007; Wang & Dietz, 2002) estimated to be $14 billion annually to care for obese children and weight-related comorbidities (Marder, 2006). Determining the most effective treatment methods for this population is crucial.

The American Academy of Pediatrics' (AAP) Recommendations for Treatment of Child and Adolescent Overweight and Obesity, published in 2007 (Barlow, 2007), recommend a staged approach to evaluation and management of pediatric obesity. These recommendations detail the evaluation, prevention, and treatment of pediatric obesity, beginning with prevention in the primary care physician's office to tertiary-care referral. Emphasized within these recommendations is the use of patient-centered communication as a means to help motivate families to change behaviors. Motivational Interviewing (MI) is a recommended tool clinicians can utilize to support families through the process of behavior change.

MOTIVATIONAL INTERVIEWING

Miller and Rollnick (Miller & Rollnick, 2002) define MI as a "client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence." Central to MI is a caregiver who expresses empathy and understands that patient ambivalence about change is normal, and thus responds to such ambivalence nonjudgmentally. Rather than taking a confrontational approach, the caregiver guides patients toward health-related goals by helping the patient express his or her own reasons and methods for change. Although the clinician provides expertise and shares ideas about change, the process of information exchange is collaborative, involving frequent opportunities for the patient to respond, with the clinician asking the patient for permission before sharing information (Resnicow, Davis, & Rollnick, 2006).

The clinician's qualities of being empathetic and collaborative are important ingredients in the interpersonal "spirit of MI," proposed to be one of two crucial, active elements in MI (Miller & Rose, 2009). The second is the use of technical skills designed to elicit and reinforce a patient's argument for change. For instance, in MI a clinician relies heavily on reflective listening techniques and open-ended questions to focus communication toward change, versus maintenance, of the status quo. As the patient experiences dissonance between their current health behavior and expressed goals or values, commitment to change increases. The clinician can aid in the development of this discrepancy by reflecting patient statements about health and the prospect of change, or by asking specific questions about the patient's desire, ability, and reasons for change.

Despite the increasing interest in the use of MI in pediatric obesity, only two published studies have utilized MI in a pediatric obesity treatment setting. Resnicow et al. (Resnicow, Taylor, Baskin, & McCarty, 2005) utilized MI in the intensive arm of a church-based obesity intervention in 12 to 16-year-old African American girls. The study authors concluded that the intervention was not effective in reducing adiposity, but was well received by participants. Schwartz et al. (Schwartz et al., 2007) conducted a pilot study in primary care pediatricians' offices, training providers and dietitians in the use of MI for overweight children 3 to 7 years of age. Both the minimal and intensive interventions utilized MI for treatment; however, the control group did not. While there were differences between the groups in BMI change pre- and poststudy, they were not statistically significant, likely because of the small number of participants. Again, participants appeared to respond well to the interactions facilitated by MI, as evidenced by positive parent perceptions of counseling. Among adults, one study reported positive results using MI as a supplement to

obesity treatment, with participants significantly decreasing weight, improving physical activity levels, and improving dietary intake versus controls (Carels et al., 2007).

Using MI to treat pediatric obesity is an attractive option for many reasons. Although MI began as an approach for alcoholism (Miller, 1983), it has since evolved into an empirically validated method to treat other ailments involving challenging health behavior change, such as drug abuse (Burke, Arkowitz, & Menchola, 2003), diabetes management (Channon et al., 2007), and HIV (Naar-King et al., 2008). Although MI is a "counseling" method, other practitioners (e.g., nurses, dietitians, physicians) can receive training and successfully adopt MI in practice. Furthermore, research has shown that MI is useful as a brief intervention and is particularly effective in combination with other empirically validated approaches (Hettema, Steele, & Miller, 2005).

Of particular interest in obesity treatment is the utilization of MI within ethnic minority populations. In a meta-analysis of 72 clinical trials for a wide variety of problem behaviors, Hettema et al. (2005), found that interventions using MI produced effect sizes three times larger for ethnic minority populations than for White samples. More recently, a report showed that bilingual clinicians delivered a Spanish version of an MI-based treatment for substance abuse (Santa Ana et al., 2009) with improved treatment outcomes for Spanish-speaking clients with alcohol use disorders (Carroll et al., 2009). As obesity affects racial/ethnic minorities more than Whites (Ogden et al., 2008; Skelton, Cook, Auinger, Klein, & Barlow, 2009), MI may be an important tool in the development of culturally competent interventions.

However, challenges exist when attempting to integrate MI into forms of pediatric obesity treatment that are still relatively untested. Pediatric obesity is rarely isolated to the child, as family members often share the same or similar habits that influence the child's weight-related behaviors. Therefore, engaging parents and other influential family members is important for the child to adopt lifestyle changes designed to improve health outcomes (Epstein, Paluch, Roemmich, & Beecher, 2007; Epstein, Valoski, Wing, & McCurley, 1990, 1994; Golan & Crow, 2004). AAP guidelines emphasize the use of multidisciplinary teams (Barlow, 2007), often comprised of individuals from diverse practice disciplines, working with families rather than individual patients. This complexity of treatment can be challenging to clinicians caring for obese children and their families. This case study will attempt to address this challenge by describing a case in which: (a) a family based intervention used MI and (b) a multidisciplinary team effectively utilized MI as part of an obesity treatment program.

BRENNER FIT PROGRAM

The Brenner FIT (Families In Training) Program, located within Brenner Children's Hospital, a part of Wake Forest University Baptist Medical Center, is a pediatric, family focused weight management clinic. The multidisciplinary team is comprised of two pediatricians (a gastroenterologist and a general pediatrician), a registered dietitian, two family counselors (a licensed clinical social worker or a marriage and family therapist), a physical therapist, and an exercise physiologist. Children are seen by referral-only from their primary care physician or a subspecialist provider. The program accepts children ages 2 to 18 years who are obese (body mass index [BMI] ≥ 95th percentile for age and sex by standard growth charts (CDC National Center for Health Statistics: 2000 CDC Growth Charts: United States, 2000) with one or more obesity-related comorbidities, including dyslipidemia, insulin resistance, fatty liver, orthopedic problems, pseudotumor cerebri, sleep apnea, or hypertension.

Given the prevalence of obesity in northwest North Carolina, there is a 3 to 6 month waiting period between acceptance into the program and an intake appointment. During this waiting period, a social worker with training in MI provides “phone coaching” for the family to ensure they understand the treatment approach, the commitment needed by the family, and the processes involved. The counselor maintains regular interaction by phone with the patient and their family to help guide them toward small behavior changes before their first visit. Families interested in beginning the treatment process during the waiting period receive educational materials pertaining to activity and nutrition.

Once patients are scheduled, families are seen in individual appointments by the Brenner FIT team for an intake visit consisting of the following: medical and social history, family composition, physical examination by the physician, musculoskeletal and cardiovascular endurance testing, dietary recall, and psychosocial and behavioral assessment by the family counselor. The visit focuses on the identification of modifiable risk factors, medical comorbidities, and family goals. The treatment plan is developed by the family, based on self-identified health behaviors, which reflect all goals that the family chooses to address as they strive to adopt healthier habits. These goals are then incorporated into a short-term “care plan” utilizing MI techniques with the guidance of the team. In rare cases, the team will suggest, with permission, a modification for the family’s treatment plan.

Treatment consists of three phases, each 4 months long. The initial phase is the most intensive and consists of biweekly visits with different team members (dietitian, family counselor, physical therapist, exercise specialist) according to the family’s needs. The second phase consists of monthly visits with team members, and incorporates advanced goal setting and problem solving. The final phase is designed specifically for each family, with those experiencing success having only one or two visits in the last 4 months, while others struggling will continue with biweekly or monthly visits. Review visits occur with the physician every 4 months in between phases to review laboratory studies, weight and BMI, overall progress, and satisfaction.

INTEGRATION OF MI INTO A MULTIDISCIPLINARY TEAM

Intensive training, specifically incorporating workshops with follow-up practice feedback and/or coaching, is crucial if clinicians hope to utilize MI effectively in practice (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004). MI training for the Brenner FIT team occurred in several steps, the first involving the family counselor’s participation in a 3-day introductory program. Afterward, the family counselor familiarized the team with MI and proposed how Brenner FIT could utilize this approach in the program. The entire team then underwent training, including the secretary/ coordinator, who has considerable contact with families. Two members of the Motivational Interviewing Network of Trainers (MINT, 2010) provided the team-wide training over 2 days, using case studies, role playing, and open discussion to customize the use of MI for a multidisciplinary team. After this training, the team coordinated and adapted their treatment protocols to multidisciplinary assessments and treatments. Follow-up training and consultation continued with one of the original cotrainers.

Brenner FIT utilizes MI with behavior therapy as a patient-centered strategy to engage families in the process of pediatric obesity treatment. Behavioral therapy in obesity treatment includes working with families in goal setting, stimulus control, and self-monitoring to modify behaviors contributing to weight gain (De Santis-Moniaci & Altshuler, 2007). Throughout the intake visit, the team employs MI to guide the family as they identify one or two habits on which to focus before their next visit. The subsequent visit

occurs within 2 weeks. Table 1 is an example of generic nutrition and activity habits made available to families as a guide for choosing appropriate weight management goals.

CASE STUDY

To protect the patient, her name, specific identifying characteristics, and other details have been changed.

Referral

Tina, a 14-year-old White female, was referred to the Brenner FIT Program by her pediatric Endocrinologist. At the initial visit with the team, Tina's BMI was 35 kg/m^2 and she had polycystic ovary syndrome (PCOS), evidenced by insulin resistance (hyperinsulinism) and oligomenorrhea.

Phone Coaching

Before attending clinic visits, the counselor contacted Tina to participate in MI-facilitated phone coaching. At that time the counselor learned that Tina was a freshman in high school and a soccer player who missed school often because of issues related to her parents' divorce. Tina lived with her mother. She reported that she was a vegetarian who generally ate a large breakfast, but skipped lunch because she did not like to eat at school. Tina and her mother did not keep sugar-sweetened sodas or "junk food" in the home. Both Tina and her mother ate their meals while watching TV. During the phone coaching process, the counselor discussed participation in the Brenner FIT program. The total phone coaching session lasted ~30 min. Tina and her mother expressed interest in setting goals with the counselor before their clinic intake, and scheduled a follow-up phone coaching session. During the second phone coaching session, Tina chose the goal of increasing her fruit and vegetable intake from two to five fruits and vegetables per day. Tina indicated that she felt better when more fruits and vegetables were incorporated into her daily diet. In addition to her fruit and vegetable goal, Tina chose to also pay more attention to her body, noticing how her stomach feels when she eats larger quantities of food. To monitor these goals, Tina and her mother began tracking her fruit and vegetable intake using a chart that she created at home. Tina indicated that she would bring this chart with her to the first clinic visit. A third phone coaching session was scheduled, but no contact was established at this time. Tina's intake visit at the Brenner FIT clinic followed within 2 weeks of the final phone coaching session. The counselor spoke with Tina's mother by phone once and with Tina twice during the phone coaching process.

Clinic Participation

Tina attended her intake visit with her mother. Tina's father, who lived outside the home, reportedly suffered from a significant mental illness. Tina described a positive relationship with her mother, and although she had weekly visits with her father, their relationship was strained. Tina identified significant family stress related to worries over her father's safety and the fears posed by his threatening relationship with her mother.

At intake, Tina and her mother selected goals for themselves from a menu of options (see Table 1). The list of healthy habits was provided as a guide for the family. The habits are based on expert committee recommendations for weight management and are areas in which families frequently need support for healthy lifestyle change (Barlow, 2007; Spear et al., 2007). This menu of options is also consistent with a commonly used strategy that MI clinicians employ to help elicit ideas from clients about change (Arkowitz & Burke, 2008). Tina and her mother chose to focus on eating meals together with the TV off and to continue eating more fruits and vegetables. As a first step in addressing these goals, they decided to

clear off the dining room table and begin eating meals together. Tina and her mother also chose to continue tracking their daily fruit and vegetable intake. Through the next six visits, Tina and her mother slowly added goals to eat slower, limit daily servings of grains, monitor portion sizes, perform calf stretches to ease shin-splint pain, and maintain activity involvement through team sport practices. Tina continued to build upon her previous goals, but began to identify more specific barriers to change and develop strategies to overcome them. Table 2 describes a session where the Brenner FIT dietitian used MI to help Tina and her mother identify challenges, generate change talk, and modify change plans.

This example demonstrates the dietitian's ability to selectively evoke and reinforce change talk from Tina, while effectively adhering to the spirit of MI through the establishment of a collaborative relationship with the family. Furthermore, the dietitian expressed the value of the family's autonomy as they modified Tina's plan to meet her goals. Team members continued to utilize MI to guide Tina and her mother toward key changes in lifestyle patterns most likely to result in weight loss or maintenance. At the end of this visit, Tina's care plan was revised to reflect a new goal: Tina's mother would pack a lunch one time each week for Tina to eat at school. In subsequent visits, Tina reported further success with her goals, explaining that her mother packed lunch for her daily and she had begun eating at school every day, consistently.

Efficacy of Brenner FIT

Upon starting the program, Tina weighed 98.2 kg, with a height of 167.6 cm, and a BMI of 35, which is considered obese for a female of her age (99th percentile BMI). Her laboratory studies showed evidence of insulin resistance (high normal fasting insulin level, 17 U/L) borderline triglycerides (94 mg/dL), and low high-density lipoprotein cholesterol (36 mg/dL). After participating in the program for 4 months, without structured diet or exercise plans, she decreased her weight to 94.5 kg and BMI to 33.6, a significant improvement. In addition, her laboratory studies showed normal values (Insulin 11.5, triglycerides 56, but HDL remained unchanged at 36), and she had symptomatic improvement in her PCOS in combination with medical treatment. She continues in the program, making great progress in all areas of her health.

Tina's case is an example of successful integration of MI into pediatric obesity treatment. With the support and involvement of her mother in the change process, Tina was able to make progress toward her goals and see improvements in health parameters. Her mother also reported making individual changes consistent with the family goals, and indicated that she had lost weight (but did not quantify the amount of weight lost). The Brenner FIT Program has found this approach useful with a wide variety of patients, families, and situations, and continues to develop and refine the approach.

DISCUSSION

This case study illustrates the successful use of MI in a family based obesity treatment program, and demonstrates collaboration between team members in applying the behavioral principles of tracking, stimulus control, and goal setting, as well as the long-term follow-up of patients in treatment. Furthermore, obesity treatment requires the assessment of daily habits as they pertain to nutrition and physical activity, which will create many opportunities to intervene. Successful use of MI in obesity treatment cautions against the clinician setting goals and areas of focus. The study above provides an example of a family setting their own agenda for change and choosing the areas of focus. A clinician-developed plan for this family may have been more nutritionally balanced or focused on different health habits; however, the likelihood for patient success and adherence to the plan would have been small in comparison.

Because families appreciate and are responsive to the use of MI in discussing weight issues (Schwartz et al., 2007), family centered approaches may improve program adherence. As families may have frequent visits with one or more team members, it may be difficult for a family to build strong therapeutic relationships with each member of a multidisciplinary team. Lending itself to the establishment of such relations, the MI approach may assist in building better working relationships with families, and likely aided Tina and her mother in doing so with the Brenner FIT team.

There are limitations to the application of this case report in clinical practice. MIs efficacy in this field is relatively untested, and its use in a team setting has not been evaluated in a research setting. Furthermore, a standard for multidisciplinary delivery of MI is not yet established. In the Brenner FIT program, patients see different team members based upon the needs and/or goals they wish to address at any given time. This can diffuse the focus of the families' plan, which may limit the use or effectiveness of MI. Furthermore, pediatric obesity treatment is typically family based (Epstein, Myers, Raynor, & Saelens, 1998; Epstein et al., 2007; Epstein et al., 1990, 1994), and clinicians must often focus on changing the behavior of children, their caregivers, and possibly multiple family members. MI has not been applied in this setting, much less in pediatric obesity treatment. The multidisciplinary treatment of pediatric obesity may mean that team members who utilize MI more frequently may become more adept in its use, leading to divergent approaches among team members. Teams using MI require regular training to improve their skills and stay abreast of changes in the field, which may be expensive and difficult for some. As new team members are added, it is necessary that they be trained and integrated into the care team, as well. Finally, this case study featured an adolescent, which required a therapeutic relationship with both mother and child. The application of MI in a family based treatment program will be different with parents of younger children.

Inherent in combining MI with a family centered approach to care is the risk that each family member may have different goals or choose those that do not address their immediate health needs, in this instance, obesity. When this occurs, MI methods can be helpful to explore parent and child differences. It is usually possible to identify mutual goals after exploring interests of each family member. When this is not possible, the family can establish separate goals for parents and children. In early pioneering studies of childhood obesity, parents were the targets of weight loss, and this approach appeared to impact the child's success (Epstein et al., 1990, 1994). In the goal-setting process, providers may struggle with supporting families who select goals that may not be optimal or do not address the child's specific health needs. MI techniques can be useful in addressing this issue as clinicians attempt to strike a balance between respecting the family's choices and offering suggestions with permission. Our experience has shown that the habits most important to the child's weight and health eventually emerge when the family determines they are ready to address them. While applying MI to family centered care can be challenging, it also provides a framework for improving family success with health habit changes.

In summary, this case study reflects the effective use of MI to treat pediatric obesity in a multidisciplinary, family based treatment setting. Many treatment scenarios not represented in this case study are also pertinent to obesity treatment, such as its use with parents of younger children, in racial/ethnic minority populations, and in long-term weight-related outcomes. Future research in these areas will greatly enrich treatment options for clinicians. Further work is also needed in the application of MI to diverse care teams to determine frequency of training required for effective use, limitations of its application, and the ability to translate MI into community-based programs.

Acknowledgments

This work was sponsored in part by grants from The Duke Endowment and the Kate B. Reynolds Charitable Foundation. We thank Karen Klein for providing helpful revisions of this article.

References

Arkowitz, H.; Burke, BL. Motivational Interviewing as an integrative framework for the treatment of depression. In: Arkowitz, H.; Westra, HA.; Miller, WR.; Rollnick, S., editors. Motivational interviewing in the treatment of psychological problems. New York: The Guilford Press; 2008. p. 145-172.

Barlow SE. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: Summary report. Pediatrics. 2007; 120(Suppl):S164–S192. [PubMed: 18055651]

Burke BL, Arkowitz H, Menchola M. The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. Journal of Consulting and Clinical Psychology. 2003; 71:843–861. [PubMed: 14516234]

Carels RA, Darby L, Cacciapaglia HM, Konrad K, Coit C, Harper J, Versland A. Using motivational interviewing as a Supplement to obesity treatment: A stepped-care approach. Health Psychology. 2007; 26:369–374. [PubMed: 17500624]

Carroll KM, Martino S, Ball SA, Nich C, Frankforter T, Anez LM, Farentinos C. A multisite randomized effectiveness trial of motivational enhancement therapy for Spanish-speaking substance users. Journal of Consulting and Clinical Psychology. 2009; 77:993–999. [PubMed: 19803579]

CDC National Center for Health Statistics. 2000 CDC Growth Charts: United States. 2000. Retrieved from www.cdc.gov/nchs/data/nhanes/growthcharts/bmiage.txt

Channon SJ, Huws-Thomas MV, Rollnick S, Hood K, Cannings-John RL, Rogers C, Gregory JW. A multicenter randomized controlled trial of motivational interviewing in teenagers with diabetes. Diabetes Care. 2007; 30:1390–1395. [PubMed: 17351283]

De Santis-Moniaci D, Altshuler L. Comprehensive behavioral treatment of overweight and the pediatric practice. Pediatric Annals. 2007; 36:102–108. [PubMed: 17330573]

Epstein LH, Myers MD, Raynor HA, Saelens BE. Treatment of pediatric obesity. Pediatrics. 1998; 101(Pt 2):554–570. [PubMed: 12224662]

Epstein LH, Paluch RA, Roemmich JN, Beecher MD. Family-based obesity treatment, then and now: Twenty-five years of pediatric obesity treatment. Health Psychology. 2007; 26:381–391. [PubMed: 17605557]

Epstein LH, Valoski A, Wing RR, McCurley J. Ten-year follow-up of behavioral, family-based treatment for obese children. Journal of the American Medical Association. 1990; 264:2519–2523. [PubMed: 2232019]

Epstein LH, Valoski A, Wing RR, McCurley J. Ten-year outcomes of behavioral family-based treatment for childhood obesity. Health Psychology. 1994; 13:373–383. [PubMed: 7805631]

Golan M, Crow S. Targeting parents exclusively in the treatment of childhood obesity: Long-term results. Obesity Research. 2004; 12:357–361. [PubMed: 14981230]

Hampl SE, Carroll CA, Simon SD, Sharma V. Resource utilization and expenditures for overweight and obese children. Archives of Pediatric and Adolescent Medicine. 2007; 161:11–14.

Hettema J, Steele J, Miller WR. Motivational interviewing. Annual Review of Clinical Psychology. 2005; 1:91–111.

Jolliffe D. Extent of overweight among US children and adolescents from 1971 to 2000. International Journal of Obesity and Related Metabolic Disorders. 2004; 28:4–9. [PubMed: 14652618]

Koplan, JP.; Liverman, CT.; Kraak, VA. Preventing childhood obesity: Health in the balance. Washington DC: The National Academies Press; 2004.

Marder WD. Childhood obesity: Costs, treatment patterns, disparities in care, and prevalant medical conditions. Thomson Medstat Research Brief. 2006

Miller WR. Motivational Interviewing with problem drinkers. Behavioural Psychotherapy. 1983; 11:147–172.

Miller, WR.; Rollnick, S. Motivational Interviewing: Preparing people for change. 2. New York: The Guilford Press; 2002.

Miller WR, Rose GS. Toward a theory of motivational interviewing. American Psychologist. 2009; 64:527–537. [PubMed: 19739882]

Miller WR, Yahne CE, Moyers TB, Martinez J, Pirritano M. A randomized trial of methods to help clinicians learn motivational interviewing. Journal of Consulting and Clinical Psychology. 2004; 72:1050–1062. [PubMed: 15612851]

Motivational Interviewing Network of Trainers. Motivational Interviewing: Resources for clinicians, researchers, and trainers. 2010. Retrieved from www.motivationalinterview.org

Naar-King S, Lam P, Wang B, Wright K, Parsons JT, Frey MA. Brief report: Maintenance of effects of motivational enhancement therapy to improve risk behaviors and HIV-related Health in a randomized controlled trial of youth living with HIV. Journal of Pediatrics Psychology. 2008; 33:441–445.

Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999–2004. Journal of the American Medical Association. 2006; 295:1549–1555. [PubMed: 16595758]

Ogden CL, Carroll MD, Flegal KM. High body mass index for age among US children and adolescents, 2003–2006. Journal of the American Medical Association. 2008; 299:2401–2405. [PubMed: 18505949]

Resnicow K, Davis R, Rollnick S. Motivational interviewing for pediatric obesity: Conceptual issues and evidence review. Journal of the American Dietetic Association. 2006; 106:2024–2033. [PubMed: 17126634]

Resnicow K, Taylor R, Baskin M, McCarty F. Results of go girls: A weight control program for overweight African-American adolescent females. Obesity Research. 2005; 13:1739–1748. [PubMed: 16286521]

Santa Ana EJ, Carroll KM, Anez L, Paris M Jr, Ball SA, Nich C, Martino S. Evaluating motivational enhancement therapy adherence and competence among Spanish-speaking therapists. Drug and Alcohol Dependence. 2009; 103:44–51. [PubMed: 19394164]

Schwartz RP, Hamre R, Dietz WH, Wasserman RC, Slora EJ, Myers EF, Resnicow KA. Office-based motivational interviewing to prevent childhood obesity: A feasibility study. Archives De Pediatrie Adolesc Med. 2007; 161:495–501.

Skelton JA, Cook SR, Auinger P, Klein JD, Barlow SE. Prevalence and trends of severe obesity among US children and adolescents. Academics of Pediatrics. 2009; 9:322–329.

Spear BA, Barlow SE, Ervin C, Ludwig DS, Saelens BE, Schetzina KE, Taveras EM. Recommendations for treatment of child and adolescent overweight and obesity. Pediatrics. 2007; 120(Suppl):S254–S288. [PubMed: 18055654]

Wang G, Dietz WH. Economic burden of obesity in youths aged 6 to 17 years: 1979–1999. Pediatrics. 2002; 109:E81–E81. [PubMed: 11986487]

Table 1

Family Goals Worksheet

Brenner FIT healthy habits	Example of how to get started
Eating more fruits and veggies	Our family will try to include 1–2 fruits and vegetables a day
Choosing more water and sugar-free drinks	Our family will try Propel and flavored waters this week
Eating 3 meals a day	Our family will eat breakfast most days
Eating slowly, tasting every bite!	We will put down our fork between bites at dinner
Snacking smart	Enjoy structured snacks at the table Try different foods for snacks
Preparing more family meals at home	Our family will eat at home one extra night
Noticing hunger and fullness to eat the right amount for my body	Pay attention to how your stomach feels as you eat
Learn about foods we can choose more often to keep my body healthy	Try higher fiber cereals this week Choose lean meat more often this week
Plan meals ahead of time and make a grocery list	Our family will plan 1–2 meals ahead of time this week and use our grocery list at the store
Cooking healthier	We will try baked chicken instead of fried
Eating meals together as a family, limiting distractions	We will increase the number of meals we eat together at the table as a family
Entire family working together as a team	We will include all household members in making the habit changes we choose
Getting the right amount of sleep your body needs each night	Go to sleep and wake up at same time most days Having a calming bedtime routine
Spending more minutes in motion	Our family will turn on the radio and dance for 15 min
Enjoying more nonscreen time with the family	We will enjoy a TV-free night playing a fun family activity
Other:	

Table 2

Transcript of MI Session With Tina (Pt), Her Mother (Pt Mother), and the Dietitian (RD)

RD: Tell me what you have noticed since we saw you last.	
Pt: I have to be honest. I have not done the lunch thing at all. There is no good excuse. I just haven't done it. I've done okay with the other goals, just not lunch.	Brief mention of success embedded in sustain talk
RD: You're feeling pretty good about two of the three goals you identified.	Selectively reflecting change talk
Pt: Yeah, I've been good about my stretches. That's been easier than I thought it would be. I'm also doing pretty good at not overeating at home. Sometimes I overdo it, but not as much as before.	Pt expanding on several areas of success
RD: You are persistent and you've found quite a bit of success so far.	Affirmation
Pt: I guess so, except with the whole lunch thing.	Sustain talk regarding lunch goal
RD: I appreciate your honesty. Tell me more about lunch at school. What kind of things have gotten in the way?	Open-ended question
Pt: I am just lazy. I haven't wanted to pack and really, I just don't like to eat at school. The girls at lunch are all so skinny and complain about getting so full eating just an apple.	Sustain talk: Pt. not interested in packing lunch, struggling with other "skinny" girls
RD: It's hard seeing the other girls eating just an apple. It makes you not want to eat at school.	Reflection: Expressing empathy and rolling with resistance
Pt: Yes, exactly. I mean, later on I kick myself for not eating lunch because I know that leads to me getting really hungry and then I overeat. And I notice my energy is really low at practice. I just can't decide what I could pack that I like and is easy. I know my mom would pack it for me.	Increasing change talk. Listing cons of not eating lunch. Identifying barriers for success with possible solution involving mother.
RD: So on a scale from 1 to 10, how important is it for you to eat lunch at school?	Assessing importance of lunch goal
Pt: Usually a 2. Except on game days, then it's more like a 4 or 5. I have started to buy a slice of pizza on game days, but that is no good. Pizza is a bad choice.	Sustain talk and change talk
RD: What is it about game days that make it more important for you?	Open-ended question focusing on change talk
Pt: I know I need my energy to play well and I usually can't get home before the game. So I have to eat at school. It's just that my choices could be better.	Reason for eating lunch. Acknowledging possibility of better choices
RD: So, you choose not to skip lunch on game days and typically order a slice of pizza. Even though this is a step in the right direction, you are thinking about making different choices.	Reflection about changes made. Affirming the effort
Pt mother: Well, you only ate one slice of pizza, not a whole box. It is great that you are eating on game days.	Mother expressing support for Tina
Pt: Actually, I use more energy on practice days because we have to run 2 miles at the start of practice and do all kinds of intense drills. I really should just take something for lunch but I can't get myself to pack anything. And if my mom were to pack it, I can't even think about what I would want to tell her to give me.	More change talk, eliciting help from mother
Pt mother: I would be happy to pack your lunch for you and I have asked what I could get at the grocery store for your lunches.	Supporting change talk
RD: Tina, you are interested in taking your lunch to help with your energy and your performance during soccer, you have your mom's support, and you are willing to take lunch if you can find the right thing to take.	Summary
Pt: Peanut butter sandwiches would be easy and the perfect choice but we cannot have peanut butter in the house because I always eat too much of it.	Pt developing change plan, identifies another barrier
RD: You know this is a trigger food that you overeat at home, yet eating peanut butter would be a good option for you at lunch.	Double-sided reflection ending with change talk
Pt. Mother: We could get the little individual containers of peanut butter, or I could keep it with me and make your sandwiches.	Family generating change plan
Pt: Yes, and we could buy the pre-sliced apples that I can eat with my braces.	Strengthening plan
RD: So, on a scale of 1–10, how confident are you about your new lunch plan?	Assessing confidence of change plan
Pt. 10/10. I know this is going to work.	Change plan
RD: When do you think you can start?	Seeking commitment with start date
Pt: Mom, can we stop at the store on the way home?	Seeking help from mother

Mother: Absolutely.	Support
RD: Looks like you guys have a plan that you are excited about.	Reflection