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Implementing Motivational Interviewing and Healthy Behavior Goal Setting at Well-Child
Visits: A Practice Improvement Project

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Abstract

Objective: Pediatric obesity is a growing epidemic, yet effective preventative interventions remain elusive. The American Academy of Pediatrics recommends universal exercise and nutrition counseling as the initial step in prevention of pediatric obesity; however, there is no one established method for the ideal delivery of this counseling in the primary care setting. This practice improvement project aimed to improve the delivery and documentation of pediatric healthy behavior counseling by implementing the use of motivational interviewing (MI) and patient-driven goal setting during well-child visits. **Methods:** The clinic team in this federally qualified health center implemented use of an interactive behavior survey and goal-setting worksheet during all well-child checks to guide delivery of MI-based pediatric obesity counseling. Patient goals were documented in the EHR for future reference and reinforcement. Follow-up counseling was scheduled for patients with BMI in the overweight or obese range. **Results:** In the 2 weeks prior to implementation, healthy behavior counseling was documented in 0% of well-child chart notes; no charts included patient-specific goals. During the 12-week implementation, healthy behavior counseling was documented in 50% and patient-specific goals in 37% of well-child visits. Additionally, 31% of well-children were scheduled for follow-up counseling, including 100% of children with BMI in the overweight or obese range. The provider and team expressed satisfaction with the intervention, citing increased patient engagement. **Conclusion:** Motivational interviewing with the use of patient-specific goal setting during well-child visits is an effective method for improving the delivery of pediatric obesity prevention counseling in the primary care setting.

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Background

Pediatric obesity is a growing problem in both the United States and globally, yet effective interventions for prevention of this problem remain elusive. Recent estimates identify as many as 24% of American children and adolescents as overweight and another 18% as obese [1]. The most recent National Health and Nutrition Examination Survey (NHANES) found increasing rates of obesity in all pediatric age groups and genders as well as numerous racial and ethnic groups [1]. Higher rates of obesity are correlated with race, education and low socioeconomic status, with 22.4% of Hispanic children and 20.2% of non-Hispanic black children affected in 2011-2012 compared to 14.1% of non-Hispanic white children [2]. Also at higher risk are children whose adult head of household did not complete college and children from lower-income families [2].

Pediatric overweight and obesity presents significant population health concerns. Children who are overweight or obese are more likely to become or remain obese as adults [1]; an overweight adolescent has as high as a 70% likelihood of remaining overweight or obese as an adult [3]. While medical complications of obesity were once perceived to affect only adult populations, obese children are now experiencing medical complications at earlier ages. Obese children and adolescents may present with orthopedic conditions, type 2 diabetes, dyslipidemia, metabolic syndrome, and hypertension [3]. A large cardiac study demonstrated that overweight or at risk for overweight children were 2.4 times more likely to suffer from abnormal blood lipids, hypertension, and hyperinsulinemia [3], each of which lead to increased morbidity and mortality. A diagnosis of type 2 diabetes alone increases the risk of future myocardial infarction,

heart failure, or cerebrovascular accident occurring as early as the third or fourth decade of life [3].

Beyond individual morbidity and mortality, childhood obesity places a large economic burden on the healthcare system. An analysis of six studies examining the costs of obesity found that, after adjusting for life expectancy, changes in body mass index over time, and inflation, the estimated lifetime medical cost is \$19,000 for a 10-year-old obese child; the direct medical cost of childhood obesity is estimated at \$14 billion for one age cohort alone [4]. With a healthcare system increasingly impacted by rising costs and budget cuts, a reduction in the healthcare expenditures associated with obesity could significantly impact the delivery of quality, cost-effective care.

The primary care setting is the ideal context for addressing obesity prevention. The frequency of primary care interactions during childhood create an ideal opportunity for periodic reinforcement of interventions [5]. However, time and resource constraints, especially in settings serving underprivileged children, create the need for innovative strategies and approaches to obesity prevention. Creative, cost-effective, evidence-based interventions must be implemented in primary care settings to effectively prevent the increasing incidence of pediatric obesity.

Purpose and Identification of Practice Need

This implementation study to evaluate a motivational interviewing intervention was conducted in a federally qualified health center serving a large population of minority and low-income residents in a large metropolitan area. Despite serving a pediatric population at high risk for overweight and obesity, this clinic had no standard protocol in place for obesity prevention counseling. Additionally, counseling was not being consistently delivered or documented. The

need for this intervention was identified through a series of meetings with the clinical team, which consisted of two physicians, two medical assistants, a registered nurse, and an administrative assistant. Childhood obesity prevention was identified by the clinic health care providers as a needed area of improvement. While the exact population of overweight and obese children served by this clinic was unknown, the clinic served many low income and minority individuals, well over half of whom were Medicaid eligible. Because children from minority groups and of low socioeconomic status are at a disproportionate risk for pediatric overweight and obesity, the team perceived their population as one that would benefit significantly from improved prevention efforts.

Literature Review

An Expert Committee endorsed by the American Academy of Pediatrics (AAP) evaluated guidelines for pediatric obesity and recommended a shift toward universal assessment and preventive health counseling in the primary care setting [6]. The Expert Committee identified childhood as an opportunity to establish healthy behaviors, both in nutrition habits and physical activity, that can protect children against developing future obesity [6]. Based on these guidelines, a literature search was conducted to identify the most effective delivery method of this preventive health counseling in the primary care setting.

A literature review revealed multiple studies that examined the effects of motivational interviewing on child/adolescent body mass index (BMI) and healthy behaviors. Cloutier et al. studied the effects of brief motivational interviewing to facilitate behavior change, guided by behavior surveys on preschool-aged children in an urban primary care clinic [7]. The behavior survey examined four behaviors shown to influence weight status in children: amount and type of milk consumption, amount of juice and sweetened beverage consumption, amount of screen

time, and amount of physical activity [7]. The intervention resulted in statistically significant decreases in BMI percentile in the intervention group as well as decreases in the consumption of juice and whole milk [7]. Tucker et al. reported the results of a similar intervention based on the Let's Go 5-2-1-0 program developed by the Maine Youth Overweight Collaborative [8], which advocates for five or more servings of fruits and vegetables per day, two hours or less of screen time per day, at least one hour of physical activity per day, and rare consumption of sugar-sweetened beverages [8]. The children and adolescents receiving the intervention, delivered both in-person and by telephone, displayed statistically significant increases in fruit and vegetable consumption and active play time and decreases in amount of screen time. Renisow et al. also reported positive effects of motivational interviewing, showing a statistically significant reduction in BMI for children receiving motivational interviewing sessions from both a provider and registered dietician in pediatric primary care compared to controls [9].

Two studies examined the efficacy of interventions that included motivational interviewing techniques. Looney and Raynor compared the effectiveness of informational newsletters, newsletters with monthly growth monitoring, and newsletters with both monthly growth monitoring and behavioral counseling on BMI, dietary intake, and physical activity levels [10]. While all groups displayed decreases in BMI and increases in healthy behaviors after a 6-month period, the group receiving behavioral counseling showed the largest effect. The behavioral counseling focused on self-management and positive reinforcement, strategies inherent in motivational interviewing [10]. Taveras et al. also examined the efficacy of motivational interviewing, referred to as self-guided behavior change, coupled with computerized clinical decision support [11]. Researchers compared the effectiveness of both clinical decision support and clinical decision support with self-guided behavior change to usual

care, examining effects on quality of care, BMI, and healthy behaviors [11]. Participants receiving self-guided behavior change showed statistically significant increases in healthy behaviors compared to the usual care group. While not reaching statistical significance, both intervention groups also showed decreases in BMI compared to usual care, with the greatest improvements among children receiving the self-guided behavior change intervention [11].

Implementation Methods

Description of Intervention

After institutional review board approval, the clinic team implemented a motivational interviewing intervention for use at all well-child visits. This intervention was based on the guidelines endorsed by the AAP as well as the effectiveness of motivational interviewing demonstrated in the literature. Consideration also was given to the Chronic Care Model, which emphasizes patient self-management as a critical component in achieving quality outcomes [12]. The intervention consisted of both assessment of obesogenic behaviors and patient-driven goal setting based on the 5-2-1-0 message studied by Tucker et al. [8]. Patients age 2 and older arriving at the clinic for a well-child visit were roomed by the medical assistant, who provided the child (and/or parent, as dictated by age-appropriateness) with a 5-2-1-0 behavior survey to be completed while waiting for the clinician. The medical assistant explained to the parent and child that the clinic was implementing a program to help children increase healthy behaviors.

During the well-child visit, the provider asked the parent and child for permission, a key tenet of motivational interviewing, to discuss the responses to the healthy behaviors survey. The provider used information from the survey responses, motivational interviewing techniques, and a healthy behavior goal-setting worksheet to jointly provide counseling on healthy behaviors and help the child and/or parent identify a specific behavior goal. The parent and/or child also chose

a non-food reward for goal completion and signed the goal-setting worksheet, a strategy intended to increase child engagement and goal ownership. The provider then documented the chosen goal in a “patient goal” feature in the electronic health record, allowing any clinic provider caring for the patient to evaluate and reinforce the goal at future visits. Finally, any child with a BMI in the overweight or obese range was referred for additional nutritional counseling to be completed by the clinic dietician.

Theoretical Guide to Implementation

Lewin’s Force Field Analysis, which views change as a three-phase model dependent on the dynamic balance of driving and restraining forces [13], was used to guide implementation. Both driving forces and restraining forces were considered in implementation planning, with efforts made to specifically alter these forces to move toward the desired state of change.

Driving forces. Weight assessment, physical activity, and nutrition counseling is a 2016 Medicare and Medicaid quality report measure developed by the National Committee for Quality and Assurance [14], and recent clinic audits showed poor documentation rates of physical activity and nutrition counseling. The clinic’s low compliance with this quality measure as well as the desire for improved pediatric outcomes created a strong sense of commitment to change among clinic team members. Information regarding the AAP endorsed guidelines, the increasing pediatric obesity epidemic, the clinic’s high risk patient population, and the potential for improved outcomes through effective obesity prevention counseling highlighted the need and urgency for change.

An additional driving force for change within the clinic was the clinic leadership’s strong commitment to practice improvement and increased quality, a factor critical to the success of organizational change [15]. Because the clinic manager was committed quality-focused practice

improvement, care teams within the clinic felt supported in their practice improvement efforts. In addition, the clinic manager could act as a liaison for change between clinic care teams and administrative and executive staff, pushing change efforts forward as needed.

Finally, a strong sense of involvement and buy-in from care team members was perhaps the strongest driver toward change. Multiple pre-implementation planning meetings ensured open lines of communication with the care team, who not only assisted in identifying the problem, but also suggested solutions for integrating the intervention into the established workflow.

Restraining forces. Prior to implementation, the primary anticipated barrier to practice change in this FQHC was the lack of financial resources dedicated to this project. This intervention did not require substantial financial resources, with the only costs being those of printing surveys and worksheets. The use of reusable, laminated patient surveys further reduced this cost burden. However, multiple studies referenced in the literature review included additional resources for patients, such as water bottles, pedometers, and informational pamphlets. This FQHC did not have funding for these additional resources, but the influence of these items on overall study outcomes is unknown.

An additional anticipated barrier to change was the project manager's inability to maintain a daily presence throughout the implementation period. As a doctoral student not affiliated with the clinic, the project manager anticipated the possibility of being somewhat disconnected from change efforts as implementation progressed. To combat this barrier, the project manager planned for bi-weekly check ins with the team either in person, by telephone, or through email. During these check-ins, feedback from the team regarding implementation

successes and difficulties was elicited, allowing for continual assessment of the process and integration of feedback into any necessary workflow or process changes.

Project Measures and Evaluation

The practice improvement project was evaluated with descriptive data on two outcome measures: the number of well-child visits during which healthy behavior counseling was completed and documented and the number of children scheduled for follow-up counseling. Goals were to increase completion and documentation of healthy behavior counseling to 75% and follow up to 50%. Rates of healthy behavior counseling were collected through a chart review of provider documentation, with completion constituted by either a statement indicating counseling delivery in the chart note or the use of the ICD-10 codes for dietary and physical activity counseling. Follow-up was measured by either the presence of a scheduled follow-up visit in the child's chart or a statement in the chart note indicating referral to the clinic dietician.

Process measures evaluated the frequency of patient-specific goal documentation as well as team satisfaction with the intervention. Patient-specific goal documentation was also evaluated through a chart review of the EHR's goal-setting feature, with the documentation of any goal pertaining to the four healthy behaviors constituting completion. Additionally, a meeting with the team to discuss satisfaction with the intervention as well as intervention strengths and areas for improvement was conducted after the implementation period.

Results

A chart review prior the practice change revealed that, in the 2 weeks prior to implementation, healthy behavior counseling was not documented in any well-child visit notes. The implementation period, initially scheduled to be 8 weeks, was extended to 12 weeks due to an insufficient number of visits during the first four weeks. During the first four weeks of the

twelve-week implementation period, healthy behavior counseling was documented in 33% of well-child visits. During the final eight weeks, healthy behavior counseling was documented in 50% of well-child visits. Thirty-one percent of children seen for well-child visits were scheduled for follow-up counseling. Additionally, 100% of children with BMI in the overweight or obese range were scheduled for follow-up counseling.

Throughout the twelve-week implementation period, patient-specific goals were documented in 37% of well-child visits. In the post-implementation evaluation meeting, provider feedback indicated that the worksheets were helpful as a launching pad into a motivational interviewing encounter. Additional provider feedback cited an improved ability to engage pediatric patients in the healthy behavior counseling by having them actively participate in completing their goal-setting worksheet; providers perceived greater ownership of health behaviors among children and/or parents. A medical assistant, however, cited difficulty remembering to distribute the surveys to patients along with other necessary responsibilities. One team member commented that “when we remembered to do it, it worked great.”

Discussion

At the end of this 12-week practice improvement project, completion and documentation of healthy behavior counseling during well-child visits increased to 50% and the use of patient-specific goals increased to 37%, indicating that healthy behavior counseling and patient driven goal-setting during well-child visits is a viable method for improving obesity prevention efforts in a FQHC. While improvement efforts did not meet the goal of 75% counseling and 50% follow-up, these goals were set before conducting a chart review, with the assumption that current counseling completion and documentation occurred at a rate of approximately 25%.

Considering healthy behavior counseling was not documented in any charts in the pre-intervention review, an improvement to 50% was determined as a clinically significant outcome.

The frequent check-ins with the team throughout implementation led to a process change that enabled the team to better accommodate the intervention. Initially, the intervention workflow included follow-up with all children participating in well-child visit goal setting. Children/parents who wished to follow-up with the provider in person would do so four weeks from the initial well-child visit. Those children/parents who did not want to follow up in person would be offered telephone follow-up with the team's registered nurse to assess progress toward the chosen goal. However, as implementation progressed, it became evident that the workload of both the provider and registered nurse would not allow for follow-up with all well-children without adding significant time pressures to an already overloaded schedule. Therefore, the process was altered to follow-up with only those children who had a BMI in the overweight or obese range. These children were referred to the dietician for further counseling. This process change ensured follow-up for those children at highest risk while also continuing to counsel all well-children.

Multiple difficulties arose throughout the implementation process. First, one provider on the two-provider team left the clinic just before implementation. While another provider did join the team approximately 4 weeks into implementation, well-child visits completed by this provider were excluded from data collection due to his joining after the planning and beginning stages of implementation. Therefore, data was collected only on well-child visits completed by one provider. This resulted in a smaller data pool than anticipated, which should be considered when generalizing the results. Numbers of well-child visits ranged from zero to three visits per

week. This was, however, consistent with the average number of well-child visits for this provider during the pre-intervention comparison weeks.

As discussed previously, the initial implementation period for this practice improvement project was 8 weeks. Unusual inclement weather resulted in closure of the clinic on three separate occasions, as well as multiple days during which members of the clinic team were unable to report to the clinic. These closures, coupled with planned holiday closures, necessitated an extension of the implementation period to 12 weeks.

An additional barrier was inconsistent access to the electronic health record (EHR). Ideally, weekly or biweekly data collection would have allowed for the delivery of timely feedback to the clinic team, allowing for more accurate process evaluation and consistent intervention delivery throughout the implementation period. The student project manager's EHR access expired on week 2 of the implementation period due to changes to the initial implementation date, and access was not reinstated until implementation week 9. Access to the EHR throughout the entire implementation period would have allowed for periodic reinforcement of successes, which may have resulted in greater overall counseling completion rates.

Recommendations

This intervention was successful in increasing the frequency of healthy behavior counseling and patient-specific goal setting when implemented by one provider; however, variances in provider practices and team dynamics may present different barriers in a clinic-wide implementation. Therefore, the clinic was provided with the recommendation to implement the intervention on a clinic-wide scale, collecting the same data on the measures outlined in this report for a defined trial period. Should the clinic-wide implementation show similar increases

in the frequency of obesity prevention counseling, the intervention should be implemented as standard process within the clinic.

Clinic teams wishing to implement this or similar interventions should consider a number of points. First, a significant issue throughout implementation was lack of a standard process for distribution of the behavior surveys by the medical assistant. An incorrect assumption was made that the medical assistant could easily integrate this step into the usual workflow without any additional process changes. Developing a process, such as the use of pre-made well-child packets, to better integrate survey distribution into the medical assistants' workflow would facilitate consistency. Second, teams duplicating this implementation process should consider early involvement of both the dietician and a technology or EHR specialist. The dietician, while not initially involved in planning for implementation, proved invaluable to successful follow-up with at risk children. Earlier involvement of this specialty may allow for more creative methods of follow-up and reinforcement of the intervention with all children and not only those at highest risk. A technology or EHR specialist could have provided valuable information about the use of real-time EHR dashboards to track progress, a technique that may have both reinforced current efforts and highlighted areas for improvement. Finally, any team duplicating this work should carefully consider implementation timing. While many factors including staff turnover and uncharacteristic weather cannot be predicted, all efforts should be made to implement the intervention during a time where clinic operations will remain otherwise stable.

Implications for Practice

Successful delivery of pediatric obesity prevention counseling is critical for improvement of pediatric patient outcomes. While primary care is the ideal setting for delivery of this counseling, prevention efforts have yet to slow the rapidly rising rates of pediatric obesity. Brief

motivational interviewing has emerged as a successful, evidenced-based method for improvement of healthy behaviors in various pediatric populations. This practice report describes the successful implementation of one such intervention. Primary care clinics serving low-income, underserved populations can use the processes and measures outlined in this report to implement similar interventions. Widespread successful adoption of these counseling methods could dramatically improve children's healthy behaviors, leading to decreased future rates of obesity, decreased costs, and decreased morbidity and mortality.

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