**Pediatrician Perceptions of the LiveWell Greenville At the Doctor Toolkit in Improving Patient Communication Regarding Healthy Lifestyle Behaviors**



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**Abstract**

In the United States, childhood overweight and obesity is a growing problem associated with a lifetime of poor health outcomes. Health care settings provide an important opportunity for providers to message lifestyle behavior recommendations. Despite this ideal health promotion setting, a high percentage of health care professionals miss the opportunity to counsel patients. In response, in 2011 LiveWell Greenville launched the At the Doctor initiative to support local pediatric practitioners in their efforts to communicate healthy behavior recommendations. A toolkit was utilized to provide standardized body mass index (BMI) screening practices, practitioner training in motivational interviewing, and educational resources. The purpose of this evaluation was to determine physician perceptions of the At the Doctor Toolkit in improving their ability to communicate healthy behavior recommendations. The evaluation team developed a 12-question survey assessing demographics and physician perceptions regarding opinion of the toolkit, toolkit usefulness, and barriers associated with toolkit use. The results of this evaluation indicated pediatricians are using the toolkit to guide patient counseling with 67% of pediatricians finding most of the LiveWell Toolkit materials to be very helpful or extremely helpful in communicating healthy living options to their patients. Ninety-seven percent reported the toolkit improved the quality of BMI discussions. More than 50% of the practitioners did not use motivational interviewing as a counseling aid, but many were interested in further training. Finally, the toolkit may be improved with the addition of material such as caloric guidelines, material for older children, and information on community recreational opportunities.

**Background**

Obesity among children in the United States (U.S.) is a growing problem affecting 17% of children and young adults 2 – 19 years of age [1]. Obesity severely threatens the health of children through an increased risk of developing cardiovascular disease, pre-diabetes, musculoskeletal problems, sleep apnea, and mental health issues [[2](#_ENREF_2)]. The immense burden of obesity is likely to follow a child into adulthood. Obesity beginning between the ages of five and seven years, as well as in adolescence, significantly increases the risk of obesity into adulthood [[3](#_ENREF_3)].

The serious health issue of childhood overweight and obesity is exacerbated in South Carolina, affecting 29% of children ages two to four years and 30% of high school students, significantly higher rates than the national average [[4](#_ENREF_4), [5](#_ENREF_5)]. South Carolina spends an average of $1.2 billion per year in the treatment of obesity-related medical issues [[5](#_ENREF_5)]. Reducing the prevalence of obesity in South Carolina will improve health care outcomes and reduce its economic burden.

Because of the severity of risks associated with childhood obesity, researchers have considered how early life conditions influence the tendency toward obesity [[2](#_ENREF_2)]. Preventing childhood obesity and subsequent adult obesity requires a population-oriented approach in which environmental and policy changes impact broadly across all population segments [[2](#_ENREF_2)]. An individual treatment approach is usually delivered in a health care setting and is valuable for children who are already overweight [[2](#_ENREF_2)].

The U.S. Preventive Services Task Force recommends children aged six years and older be screened for obesity in addition to counseling and behavior change intervention advice [6]. The primary care setting provides a critical opportunity for health care providers to screen for overweight and obesity while providing lifestyle behavior recommendations. Eighty percent of patients report trusting their physician to provide accurate health care advice [[7](#_ENREF_6)]. Despite this ideal health promotion setting, a high percentage of health care professionals miss the opportunity to counsel patients on dietary and physical activity recommendations [[8](#_ENREF_7)]. In one study [9] of overweight and obese patients, 68% of those surveyed reported receiving lifestyle modification advice from their primary care physician. Furthermore, patients who received physician counseling were more likely to attempt lifestyle modification behaviors intended to control their weight. [[9](#_ENREF_8)].

Given the prevalence of childhood obesity, it is important to consider the potential barriers in the health care setting that may be inhibiting effective screening, prevention and treatment of this condition. Misidentification of overweight and obesity in children as normal weight by parents and pediatricians has been reported in the literature [10, [1](#_ENREF_14)1]. Inaccurate body mass index (BMI) screening may account for some reported error [[1](#_ENREF_15)2]. Additionally, primary care practitioners report insufficient time, poor counseling training, and a lack of educational materials as barriers that prevent appropriate lifestyle modification counseling to patients [[1](#_ENREF_9)3].

One study addressed these barriers by providing pediatric health care providers a “toolkit” incorporating color coded BMI charts, physical activity and diet assessment materials and counseling advice aimed at educating parents about their child’s weight status [10]. A three-month follow-up revealed significant physical activity and eating changes by children whose parents were counseled using the toolkit materials. Similar results were demonstrated when an educational toolkit containing BMI screening materials was mailed to pediatric practices [14]. These results suggest that easy-to-use tools may aid in the assessment, prevention, and treatment of childhood obesity in the pediatric primary care setting.

In addition, motivational interviewing (MI) is a counseling technique used to encourage patients to take on behaviors they are intrinsically reluctant to pursue [15]. MI has been shown to improve the eating habits awareness among families of obese children [1[6](#_ENREF_11)]. MI is a promising counseling tool that may improve practitioner communication and patient compliance.

**Context and Purpose**

In response to the South Carolina obesity epidemic, in 2011 LiveWell Greenville launched a community action program called LiveWell At the Doctor. This initiative supports local pediatric practitioners in their efforts to reduce overweight and obesity among their patients. LiveWell Greenville is a coalition of dozens of community partnerships intent on improving the health and wellness of Greenville County residents through policy and environmental changes impacting the population at large. Formed in 2011, LiveWell Greenville partners support healthy living initiatives targeting school, workplace, worship, community, and health care settings throughout Greenville County, SC. The goal of LiveWell At the Doctor is to effectively prevent and treat overweight and obesity in the primary care setting through standardization of BMI screening practices, practitioner training in motivational interviewing techniques, and providing a “toolkit” of educational resources for patients and practitioners. The purpose of this evaluation was to determine physician perceptions of the LiveWell At the Doctor Toolkit in improving his/her ability to communicate healthy behavior recommendations to pediatric patients and their parents.

**Intervention**

A pediatric practitioner partnering with LiveWell Greenville invited 73 pediatric practitioners in 10 pediatric practices in Greenville County to participate in the LiveWell At the Doctor initiative. At each practice, the LiveWell Greenville pediatric partner conducted an one-hour training session on the components of the LiveWell At the Doctor Toolkit. The training session included standardization methods of BMI screening and an introduction to motivational interviewing. The practitioners were provided with a visual tool for BMI measurement and instructed in its use. The pediatrician presented several slides on motivational interviewing as a technique intended to guide patient behavioral counseling. A link to a motivational interviewing website describing the technique in detail was also provided.

During the training session the LiveWell Greenville pediatric partner reviewed and provided each practice with the LiveWell At the Doctor Toolkit, which contained educational materials for pediatric practitioners and their patients. The 5, 2, 1, 0 brochures provided in both English and Spanish contain nutrition and activity advice for children. Foods for Your Child 1-3 years, Foods for Your Child 4-8 years, Foods for Your Teens, and Go Slow Whoa in both English and Spanish contain nutrition information. Rethink your Drink - Juice and Rethink your Drink – Soda recommend alternatives to sugary beverages. Other print and online resources included Breakfast is Best, Keep your Portions in Proportion, Use Canned or Frozen Fruits or Veggies, 7 Healthy Habits, and Physical Activity Every Day. Each practice designated an office “champion” who was the contact person to whom LiveWell Greenville would communicate new information or provide additional toolkit supplies.

**Methods**

LiveWell Greenville conducted a follow-up survey with practitioners after the practices had been using the LiveWell At the Doctor Toolkit for one year. The survey questions were categorized into sections on usage, perception, barriers, and demographics (Appendix A). The LiveWell Greenville pediatrician partner e-mailed the online survey to the practitioners at each facility. This data can be used to inform the specific objectives of this proposed study.

**Results and Discussion**

All pediatric practitioners (n=73) in all pediatric practices in Greenville County, South Carolina (n=10) were provided access to the LiveWell At the Doctor Toolkit for use with their patients. Not all of the practitioners were present for each training session. Of the 73 practitioners who were invited to participate in the follow-up survey, 35 returned completed surveys for a response rate of 48%. Of the respondents, 86% described themselves as pediatrician or physician, 3% as nurse practitioner, 3% as physician assistant, and 6% as other. Seventy-nine percent of respondents have been in practice for 0 – 15 years.

The results of this evaluation indicated pediatricians are using the toolkit to guide patient counseling with 67% of pediatricians finding most of the LiveWell Toolkit materials to be very helpful or extremely helpful in communicating healthy living options to their patients. Ninety-seven percent reported the toolkit improved the quality of BMI discussions. More than 50% of the practitioners did not use motivational interviewing as a counseling aid but many were interested in further training. Finally, the toolkit may be improved with the addition of material such as caloric guidelines, material for older children, and information on community recreational opportunities.

Opinion of Materials Provided

The At the Doctor Toolkit contained educational material intended to guide physician/patient discussions regarding making healthy lifestyle choices. Health outcomes may improve when health care providers counsel patients with education materials [17,18]. A majority of the pediatricians who participated in the At the Doctor initiative considered the 5/2/1/0 per Day, the Foods for your Child, and the Go Slow Whoa handouts to be very or extremely helpful (Table 1). Comments regarding the handouts included the following statements: “Parents loved the age group handouts with portion sizes,” “Handouts slow go whoa are invaluable,” “LOVE the Go Slow Whoa handouts for both kids and adults!” Other responses included recommendations to improve the educational material efficacy: “I used some initially and then fizzled. Need more instruction on how to be efficient with their use,” and “Need food recommendations for handouts for the 9 to 12 year old and the teenager.”

Few of the respondents found the Prescription Pads for Healthy Living and the Rethink your Drink posters very or extremely helpful (Table 1). Practitioners who are overwhelmed by choices in educational material or when provided with educational material with redundant information may be less likely to use available material.

Sixty-seven percent of the respondents considered the LiveWell Toolkit to be very or extremely helpful in aiding the discussion of healthy lifestyle choices with their obese and overweight patients (Table 1). Comments included: “Again, I just fizzle with the use. We are so limited in time with patients,” and, “Good to have a visual to go along with the discussion and something to send home with the patient to refer back to. Obesity requires multiple visits and lots of reinforcement of same material, so it’s good to have something to give them to review what we discussed at the visit.” These comments reflect both potential barriers and opportunities present in this initiative. Making educational materials available and easily accessible to clinicians may improve their utility and make it more likely that the clinician will have time to use them.

The At the Doctor initiative provided educational material for practitioners including the American Academy of Pediatrics (AAP )summary of clinical practice guidelines, National Initiative for Children’s Healthcare Quality, Childhood Obesity Action Network (NICHQ/COAN) expert recommendations for the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obese, Furman Study of Childhood Baseline Obesity rates in Greenville County, obesity coding sheet, and motivational interviewing materials and website. Thirty-eight percent of practitioners considered the AAP guidelines and obesity coding sheet to be very or extremely helpful. The motivational interviewing materials were the least helpful with only 9% of practitioners reporting them to be very or extremely helpful (Table 1). Comments regarding the these materials included: “Sorry, I will try to go to the motivational website”, “Sorry-I must have missed these ore misplaced them. Sounds like they would be helpful,” and, “Did not have time to review or use as much of this as I would have liked. Never enough time in the day.” It is unclear if these materials were less helpful because of time constraints from the clinicians or if they were simply unaware of the availability of these materials.

**Table 1.** Perception of Toolkit Material Helpfulness in Discussion Healthy Lifestyle with Patients

|  |  |  |  |
| --- | --- | --- | --- |
| Question | | Very Helpful or Extremely Helpful | Did Not Use |
| How helpful were the following in your daily practice? | | | |
|  | 5/2/1/0 per Day | 69.7% | 3% |
|  | Foods for your child (3 different age groups) | 66.7% | 6.1% |
|  | Go Slow Whoa | 53.1% | 18.8% |
|  | Prescription Pads for Healthy Living | 28.2% | 25% |
|  | Rethink your Drink Posters | 39.4% | 33.3% |
| How helpful was the LiveWell Toolkit in discussing healthy lifestyle choices with your obese and overweight patients? | | 66.7% | 6.1% |
| How helpful were the following provider educational materials? | | | |
|  | AAP 1- page summary of clinical practice guidelines | 37.5% | 21.9% |
|  | NICHQ/COAN expert recommendations for the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obese | 30.3% | 42.4% |
|  | Furman Study of Childhood Baseline Obesity rates in Greenville County | 15.2% | 45.5% |
|  | Obesity Coding Sheet | 36.4% | 33.3% |
|  | Motivational Interviewing website, kphealtheducation.org | 9.1% | 57.6% |
|  | Motivational interviewing materials | 9.1% | 51.5% |

The BMI screening tool was the most influential item of the At the Doctor Toolkit (Table 2) with 82% of respondents reporting in the affirmative to the question, “Has the LiveWell Toolkit affected how likely you are to discuss BMI in your office?” Comments included the following: “Initially maybe. I just didn’t give it a thorough read and I wasn’t present for the initial presentation,” “I always discussed BMI anyway,” “Was already discussing BMI with my patients,” “Mention high BMI and need to improve. Often order baseline labs,” “I generally discuss at every visit 2 years and up when we print the BMI growth chart,” “I discuss BMI at every visit and give parents copies of growth charts,” “I was already discussing it at all WCC,” “Patients ask about posters. We bring it up at all kinds of visits. The pamphlets have been well received,” “Handouts were great to have,” and “Even more likely to mention it at every check up”.

Ninety-seven percent of respondents (Table 2) reported “yes” to the question, “Has the LiveWell Toolkit improved the quality of the discussion with your patients regarding BMI?” Comments included: “I just need to use it more often,” “Now we have more targeted hand outs,” “Materials in simple language are valuable for parents,” and “More visual aids have been helpful”. The BMI tools may have reinforced the practice of BMI screening and helped improve the conversations practitioners have about BMI with their patients. This is consistent with the literature [19].

There were mixed responses to the question, “Has the LiveWell Toolkit affected how likely you are to use motivational interviewing with your patients?” Fifty-seven percent of respondents reported “yes” to this question (Table 2). Comments included, “I need more instruction,” “Have not spent the time on the front end to get familiar with it,” “Feel it works better than the old way I was using,” “Was doing it anyway,” “I have not reviewed the material on motivational interviewing in the Toolkit,” “More likely to encourage exercise and food changes if there is written/pictorial examples and maps of parks,” and “I did not have time to review it and practice implementing it yet.” It appears that the practitioners were interested in using motivational interviewing but did not always feel properly trained or did not have time to review material on their own. Better training and more concise written tips on the use of motivational interviewing may improve compliance to this counseling technique.

**Table 2.** Perception of Toolkit Usefulness in Discussing BMI and the Use of Motivational Interviewing

|  |  |  |
| --- | --- | --- |
| Question | Yes | No |
| Has the LiveWell Toolkit affected how likely you are to discuss BMI in your office? | 81.8% | 18.2% |
| Has the LiveWell Toolkit improved the quality of the discussion with your patients regarding BMI? | 96.9% | 3.1% |
| Has the LiveWell Toolkit affected how likely you are to use motivational interviewing with your patients? | 57.6% | 42.4% |
|  |  | |

Barriers

Respondents were asked the following question in regards to barriers they may have encountered in using the toolkit: “Have you encountered any of the following potential problems or barriers while using the LiveWell Toolkit materials?” The most prevalent barrier was, “We ran out of the toolkit content,” with 48% of respondents agreeing. Twenty-five percent of respondents reported not having enough time to use the toolkit materials (Table 3). Other comments included: “Sometimes not enough time to use toolkit, but certainly found it helpful when time allowed,” and “Handouts were replenished.” The response to potential barriers and these comments suggest that few barriers existed in the implementation of the At the Doctor Toolkit. Most practitioners found the material to be a useful and relevant in educating their patients about the prevention and treatment of childhood obesity.

**Table 3.** LiveWell Toolkit Barriers Encountered by Clinicians

|  |  |  |  |
| --- | --- | --- | --- |
| Have you encountered any of the following potential problems or barriers while using the LiveWell Toolkit materials? | | Strongly and Mildly Disagree | Strongly and Mildly Agree |
|  | We ran out of toolkit content. | 35.5% | 48.4% |
|  | The material was difficult for my patients to understand. | 87.5% | 6.3% |
|  | I did not have enough time to use the toolkit materials with my patients | 56.3% | 25% |
|  | I did not like or agree with the material content | 93.8% | 0% |

Use of Materials

The survey included two questions regarding use of the LiveWell Greenville At the Doctor Toolkit material: “If the LiveWell materials are important to your office and they are regularly used, would you like your office to be designated “LiveWell Greenville Friendly” on our website?” and “Are there other materials, website additions, or topics that would be very helpful to you in the prevention or treatment of obesity?” Ninety-four percent of respondents wanted their practice to be recognized as LiveWell Greenville friendly implying their continued interest in participating in the At the Doctor initiative. It appears the practitioners found value in the toolkit materials and would likely continue to use the toolkit to guide conversations with patients regarding healthy living behaviors.

Seven respondents gave suggestions for other materials that would be useful in the prevention and treatment of childhood obesity. Comments included, “List of inexpensive options for children to have exercise opportunities, e.g. YMCA with contact info, costs, etc., rec centers,” “I just need more instruction – wasn’t there for initial presentation,” “Guidelines on caloric requirements at various ages for older children/teens males and females,” “Apps,” “Pamphlet/information regarding complications of obesity,” and “Would be nice to have sample ‘X calorie per day’ diets in a range (ie. 1600, 1800, 2000, 2200 cal per day) so patients get a sense of quantity and portion size.” Previous commenters have requested information for older children and this is an area in which the tool kit can be improved. Resources on caloric guidelines, community recreational choices, and smart phone applications are opportunities for improving the toolkit further.

**Conclusion**

Solving the growing problem of childhood obesity requires collaboration from a variety of community partners bringing resources together to effectuate successful prevention and treatment. LiveWell Greenville’s At the Doctor initiative exemplifies this effort by helping improve the practitioner/patient conversation regarding lifestyle behavior changes. The results of this evaluation indicate pediatricians are using the toolkit materials to guide patient counseling. The toolkit has positively impacted BMI screening through the use of a more standardized technique. Clinicians are interested in motivational interviewing as a counseling aid but are unsure yet of how to use it and require additional training to improve its efficacy. Finally, the toolkit may be improved with the addition of material such as caloric guidelines, material for older children, and printed material on community recreational opportunities.

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