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Weight Management in Primary Care

Sarah Helpa

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Weight Management in Primary Care

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Abstract

**Background:** Obesity is a problem in present day primary care. Being overweight or obese affects more than one third of US adults, and has been known to lead to the development of hypertension, hyperlipidemia, type II diabetes, and an overall poor state of health. Dietary and physical activity changes are the first line treatment for overweight or obese patients. Primary care providers report feeling overburdened in treating the overweight and obese, citing a lack of time and resources as primary reasons this issue is not addressed during visits.

**Purpose:** To address this problem, a toolkit was developed for use by providers and patients based on current US Department of Health and Human Services dietary and physical activity recommendations accompanied by a PowerPoint presentation by the DNP student.

**Outcome:** Data collection consisted of pre- and post-toolkit intervention provider surveys. The toolkit was instituted into provider practice for a 45-day period, and a follow-up survey was conducted. The common response was that the toolkit was a valuable educational resource as a first step to weight management education. An overall increase in provider awareness was seen and an improvement of perceptions of weight management patient education.

**Conclusion:** The use of an educational resource packet was helpful in giving primary care providers an efficient and effective way to begin the process of weight management with patients in need. Outside factors such as patient motivation and the patients’ socioeconomic status have been found to be barriers to weight management.

*Keywords: Obesity, Overweight, Hypertension, Hyperlipidemia, Type II Diabetes, Prevention Education, Weight management, Primary care, Toolkit, Lifestyle Modifications*
Background and Evidence of Problem

Obesity has become a growing health concern linked to the development of chronically debilitating physical and mental illnesses affecting the general population (Bennett, et. al, 2015). The United States Centers for Disease Control (CDC) defines overweight and obesity in terms of body mass index (BMI), which is calculated by a height-weight ratio. Overweight is defined as a BMI of 25-29.9 and obesity is defined as a BMI of 30 or over. The CDC cites that more than one third (34.9% or 78.6 million) of U.S. adults are obese. According to the office on Women’s Health, subdivision of the U.S. Department of Health and Human Services (USDHHS), 60 percent of U.S. women are overweight with one third of the 60 percent classified as being obese. Obesity has been actively linked to the development of such chronic diseases as type II diabetes, cardiovascular disease, strokes, certain types of cancers, and mental illness such as depression (Brown, et. al, 2014).

Weight management education and health promotion should address the contributing factors that lead to being overweight and obese. Primary contributors include individual behaviors and environmental factors that lead to excess caloric intake and inadequate amounts of physical activity (USDHHS, 2001; USDHHS, 2003). More specific nutrition factors that lead to weight gain are high calorie-dense foods, larger portion sizes, increased snacking, an increase in the consumption of high sugar beverages, and more meals being eaten outside the home—especially fast-food. Primary care providers must battle the mainstream media promotion of fast, easy, cheap, unhealthy food choices. Another major contributing factor for weight gain is sedentary lifestyles and a lack of physical activity. Causative factors for the adoption of sedentary lifestyles are technological advances such a computers and hand-held devices that save on labor, increased media use (TV, video games), limited access to exercise facilities, limited
time for physical activity due to long workdays, and a dependence on motorized transportation rather than walking/biking.

Primary care providers are armed with the knowledge of what contributes to weight gain and how it affects their patients’ health but addressing the problem is cumbersome. There is evidence supporting the claim that healthcare professionals feel poorly equipped to confront the problem of obesity. A 2006 study cited that only 68% of obese patients were advised to lose weight by their primary care provider, for which one reason was a lack of practical resource tools (Rae, et al., 2013).

**Problem Statement**

The complications related to being overweight and obese are on the rise. It is estimated that more than two thirds of adults ages 20 years and older are overweight, and one third are obese. Primary care providers are efficient at diagnosing overweight and obesity but provide little follow up or education (McManamon, 2015). The development of a toolkit of high quality educational information and resources for patients would be a beneficial start for providers to address weight management. The toolkit approach offers primary care providers an organized, and quick way to initiate weight management talks with patients.

**Review of the Literature**

The focus of this review of literature was on weight management tools and their use in primary care setting. A thorough review utilizing the Academic Search Premier, CINAL Complete, and PubMed databases yielded hundreds of articles identifying research related to weight loss, weight management, and application of tools into primary care practice. At the culmination of the search, roughly 3,000 articles and guidelines were identified. To narrow this search, inclusion criteria consisted of peer-reviewed, full-text articles, published in the English
language, in the time frame of the past 5-10 years, and referencing adults greater than 18 years old. After reviewing the article abstracts using the inclusion criteria, 20 articles, from 2007-2015 were chosen.

There was a general theme throughout the research, linking obesity and poor health outcomes as well as the lack of resources for primary care providers to intervene. Primary care providers are aware of the problem of obesity, which can easily be identified, but lack the knowledge, time, and tools to effectively treat it (McManamon, 2015). Moreover, there is a disconnect between identification of obesity and knowing what steps are needed to educate and treat patients. It is evident that there is a vast amount of information known about obesity and its contributions to the development of chronic illnesses. Providers are routinely identifying overweight and obese patients and documenting through diagnostic coding in primary care (Clark, 2015). However, this review of literature demonstrated a gap between diagnosis and patient education/follow-up.

To fully understand why the gap between obesity diagnosis and patient education exists, an understanding of primary care provider’s opinions and attitudes must be explored. The American Academy of Nurse Practitioners (2007) found that primary care providers diagnosed obesity in patients, but did not pursue weight management with them. The AANP (2007) cited reasons for this disconnect as primary care providers having too little time, not enough training, lack of financial incentives, and a general belief that patients will not be successful. These identified limiting factors to weight management were kept in mind during the construction of the toolkit and toolkit presentation.

Another important aspect to the literature review was gaining an understanding of patient attitudes and preferences on weight management. In a cross-sectional study by Yoong, et al.
patients reported that improvement in their overall health was the main motivating factor to lose weight. Over 50% of those in the study showed a preference to having their primary care provider (PCP) assist them in managing their weight, with favoring PCP advice compared to dietician referral. Primary care patients are interested in weight loss and are seeking the support and guidance from their primary care providers (Yoong, et al., 2013). This literature is important to the project because it gives weight to the need for provider based educational tools. It also gives providers general feedback on the impact of their professional guidance for patients.


This information provides a solid foundation to construct a toolkit to be used by primary care providers. The guideline summarizes the recommendations for treatment of obesity, starting with identification and diagnosis through height, weight, body mass index calculation, and waist circumference measurement (Jensen, et al., 2014). According to the guideline, once the diagnosis is established providers must inform patients of the increase risk for the development of cardiovascular disease (hypertension, hyperlipidemia), type 2 diabetes(hyperglycemia), and all-cause mortality. The AHA/ACC/TOS (2014) explain matching treatment benefits with risk profiles for overweight and obese patients. Their research states, lifestyle changes that produce a sustained modest weight loss of 3%-5% can produce clinically meaningful health benefits (Jensen, et al., 2014).

To achieve weight loss, the AHA/ACC/TOS (2014) guideline first suggests dietary
changes, a reduction in food and caloric intake (1200-1500 kcal/d for women, and 1500-1800 kcal/d for men). They also recommend providers to prescribe a 500-750 kcal/d energy deficit to promote weight loss. The AHA/ACC/TOS guideline also proposes information on dietary control, physical activity, and the use of educational material such as “The Guide to Physical Activity,” “The Guide for Behavior Change,” and the importance of logging and tracking food intake (Jensen, et al., 2014).

One of the major guidelines for the treatment of obesity in adults is the “Dietary Guidelines for Americans” (2015) (https://health.gov/dietaryguidelines/2015/guidelines/). The construction of this guideline is a joint effort between the US Department of Health and Human Service and the US Department of Agriculture, and includes a review of current scientific evidence, guideline development criteria and key elements of healthy eating patterns. The key elements of healthy eating patterns are an extensive, multi-dimensional guide to dietary principles. This includes how to create new dietary patterns, the formation of a supportive environment for dietary change with an inclusion of physical activity recommendations (USDA/HHS, 2015).

Key recommendations of healthy eating patterns are inclusion of a variety of vegetables, whole fruits, grains (with half being whole grains), fat-free or low-fat dairy, a variety of proteins such as lean meats, poultry, seafood, soy products, nuts, seeds, and eggs. The USDA/HHS (2015) dietary guideline highlights four dietary components that should be limited and of specific public health concern in the US, that being sugar, saturated fats, sodium, and alcohol. This guideline is favored because of its easy to follow structure in primary care and its focus on lifestyle modification and management.

The USDA/HHS Dietary Guidelines for Americans (2015) also includes physical activity
recommendations in Appendix 1 of their publication called "Physical Activity Recommendations for Americans." A major highlight from these recommendations is that for substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity performed in episodes of at least 10 minutes spread throughout the week (USDA/HHS, 2015). The guideline is like previously mentioned guidelines by defining overweight and obesity and providing a variety of weight management techniques, that include diet/nutrition, physical activity, and behavior therapy.

Notable research published in Clinical Obesity by Osunlana, et al., (2015), is consistent with the NHLBI and AHA/ACC/TOC guidelines for weight management. The 5As team toolkit is a comprehensive guide for providers regarding obesity. It provides information on diagnoses, clinical practice importance, challenges in primary care, guide to implementation of toolkit, and assessment of the benefits of the intervention. The 5As toolkit (Ask, Assess, Assist, Agree, and Advice) is comprised of provider tools: Physical Activity prescriptions for patients with existing co-morbidities, 4Ms core messaging for interdisciplinary team-based care, Obesogenic drug table, and patient tools: Stress and eating handout, What is driving your hunger tool, Obesity Fact sheet, and the 5AsT sustaining the change: my relapse prevention tool (Osunlana, et al., 2015). This example of a toolkit tailored for primary care providers was found to be useful when providers were asked to evaluate. The 5As toolkit exemplifies the research not only by the NHLBI and AHA/ACC/TOC, but in other articles such as “Practical weight management in primary care” (McManamon, 2015). This article mirrors the current research by featuring patient/provider communication, dietary modifications, physical activity recommendations, and giving providers guidance and follow-up plans.
Another highlight from the literature was the significance of mobile weight loss applications as a tool for primary care providers to suggest to those patients in need of weight management. The easy access to mobile applications such as MyFitnessPal, Loseit, and My Diet Coach allow users to track their calories, macronutrients, water intake, and exercise. "In December 2013, a Pew survey found that 58% of Americans own smartphones and ownership is increasing among every demographic group including low-income populations" (Laing, et al., 2014). These applications are deeply rooted in self-directed lifestyle change, which can pose a barrier for patients to be successful in managing weight.

In a randomized controlled trial published in the Annals Internal Medicine Journal, by Laing et al., (2014), the effectiveness of one said application, MyFitnessPal (MFP), was explored in adult primary care patients. "My Fitness Pal incorporates elements of social cognitive theory, including self-monitoring, goal setting, and feedback. The objective of the study is to test the impact of providing this free, widely-used smartphone application for weight loss to patients in their primary care clinic" (Laing, et al., 2014). It was found that the use of the smartphone application in the Laing et al., (2014) study yielded mixed results, most participants rarely used the application after the first month of the study and a few individuals continued to login regularly in the sixth month. It was suggested that if the patient was highly motivated to lose weight and track calories smartphone applications were a helpful tool for providers to recommend (Laing, et al., 2014).

The results were consistent with a similar study about the effectiveness of a smartphone application for weight loss in overweight and obese primary care patients. That being, the application is a useful, time, and cost effective tool for providers to initiate if patient motivation is present (Granado-Font, et al., 2015). The patient weight loss results are heavily based on self-
driven, self-monitoring, and independent goal setting. Primary care providers can suggest mobile applications as a tool, although patient counseling and patient participation continues to be key in weight management.

Primary care providers can be the ones to help motivate and steer patients into long lasting weight loss and weight loss benefits. Explored in research conducted by McManamon (2015), intensive weight loss programs with behavioral dietary counseling are highly recommended by the US Preventative Services Task Force (USPSTF). These intense weight loss programs typically require patient education and referral by the primary care provider. Initiating patient-provider conversation is the first step in recognizing weight as an issue. There has been research suggesting that only 38% of primary care providers discuss weight with their patients (McManamon, 2015).

The literature review yielded that the most widely accepted publication for weight management in primary care is The American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society and the National Heart, Lung, and Blood Institute (NHLBI) "Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: Evidence Report", although older, last updated in 2000, it is still one of the most current, comprehensive evidence based recommendations. This guideline encompasses all aspects of weight management, including screening, identification, and management in the primary care setting.

The US Department of Health and Human Services and the US Department of Agriculture (2015), “Dietary Guidelines for Americans” is the most up to date and the most inclusive evidence when it comes to nutrition and dietary guidelines. Both guidelines stress the significance of primary care providers to recognize obesity, evaluate the risk for associated
conditions, formulate a medical plan, educated patients, and discuss lifestyle modifications along with providing the proper plan and tools to set and achieve weight loss goals.

**Application of Research into Practice**

The literature and guidelines available for primary care providers to facilitate weight management with their patients appear to be relevant. They can be practically applied in the primary care settings if providers devote sufficient time and dedication. Screening standards such as height, weight, BMI calculations, waist circumference are simple ways to identify those overweight or obese in need of weight management interventions. Many providers find it difficult to dedicate time to weight management and counseling. There has been a positive correlation between primary care provider discussion about weight and patients taking action to do so.

**Theoretical Framework: Health Promotion Model by Pender**

The Health Promotion Model (HPM) developed by Nola Pender (1996) is the theoretical framework chosen as a guide for this project. The HPM lays a foundation for self-driven health modification. The HPM makes four assumptions; (1) Individuals strive to control their own behavior, (2) Individuals work to improve themselves and their environment, (3) Health professionals such as nurses and doctors, comprise the interpersonal environment, which influence individual behaviors, and (4) Self-initiated change of individual and environmental characteristics is essential to changing behaviors (Marriner & Raile, 2005).

The HPM provides a systemic framework for health care providers to understand the series of events that lead to the health problem, in this case obesity. It also allows for the healthcare providers to suggest behavior modifications to treat the health problem. The HPM has three main focuses: individual experiences, behavior-specific knowledge
as well as affect, and behavior outcomes.

Relating this theory to the treatment of obesity, first we must assess past behaviors and personal factors that have led to the development of obesity. Individuals being able to pinpoint their barriers to health promoting behaviors will translate into a change in those behaviors to produce a certain health outcome, such as weight reduction. After identification of individual characteristics and experiences that have led to obesity, behavior specific cause and effect is addressed. The individual will dedicate themselves to behavior modification actions that will lead to a reduction in weight and an adaptation of a healthy lifestyle.

The healthcare provider’s role is to outline the benefits of the action, explore the perceived barriers to the action, and to promote self-efficacy. Self-efficacy is the confidence in one’s ability to have control over one’s own motivation, behavior, and social environment. All are important factors to initiate and maintain health promotion behaviors that lead to positive health outcomes.

The HPM also involves identifying interpersonal and situational influences that affect health-promoting behaviors. This is crucial in the development of weight management tools because research has shown that social and environmental interactions have a major effect on the development of obesity (Shay, et al., 2009). Once the individual commits to the weight management intervention, the support and dedication phase of the HPM commences. This phase involves encouragement and reinforcement by the individual’s health care provider, family, friends, and others who influence the person’s actions and behaviors.
**Project Design and Methods**

This quality improvement project which included a weight loss toolkit, was presented by PowerPoint to the Advanced Practice Practitioners (Nurse Practitioners [NP] and Physician Assistants [PA]) at a health center in Massachusetts. Providers then identified patients in need of weight management, verbally educated them and provided them with the contents of the toolkit. The written material in the toolkit given to patients helped guide them and act as a reference for their healthy lifestyle journey. Prior to instituting the toolkit, healthcare providers were pre-tested on their attitudes and thoughts regarding current weight management education. After the toolkit was integrated into part of their practice for an approximately 45-day period the group was post tested on their opinion of the effectiveness and usefulness of the toolkit. This helped to determine whether the toolkit was a proper way for primary health care providers to provide time efficient and effective weight management education.

**Toolkit**

**Toolkit Objectives.** The objective of the project was a presentation of a toolkit to bridge the gap between provider and patient with weight management. The toolkit allowed for patient provider dialogue regarding their weight, concerns for obesity, and associated health concerns related to being overweight. Providers and staff were electronically presented with a toolkit that includes educational material, handouts, and a pamphlet with dietary ideas, modifications, physical activity suggestions, and ways to track, measure food and progress. (refer to Appendix C) The DNP student also wanted to get provider perception of obesity and determine how it was addressed currently and post toolkit intervention. This was accomplished through the pre- and post-test questionnaires that providers will be given (Appendix B).
Setting and resources

The health center is a Joint Commission accredited, FTCA deemed, Federally Qualified health center that offers a variety of services including primary care, maternal childcare, behavioral health, and dental care. The focus of interest was Advanced Practice Primary care providers (Nurse practitioners and physician assistants) caring for adult patients ages 18 years or older. There was a total of 17 of these providers in the health center system, nine nurse practitioners and eight physician assistants. The resources needed to complete this project were centered on the construction of the toolkit. A print and graphic design expert was used to help assist in putting the ideas and concepts for the toolkit into a pamphlet and eye-catching handouts. A digital version of the toolkit was also being made available to the project site.

Description of the group, population and community

The community of Worcester, MA is a large one, it being the second largest city in Massachusetts with an estimated population of 182,000. Worcester boasts a diverse population of people for which many health systems serve. Some of those main healthcare systems being University of Massachusetts healthcare system, St. Vincent’s Hospital, Reliant Medical Group, and smaller community based locations like the Family Health Center.

Participants included the primary care advanced practice clinicians with direct patient care with a focus on nurse practitioners and physician assistants. They were given the pre/posttest and provided patients with the toolkit information. The inclusion criteria for this group were that they must have direct patient care, and service adult primary care.

Presentation of Toolkit

The PowerPoint presentation and verbal presentation was provided via phone call and in person to the director of the advanced practice clinicians. The presentation was based on the
above review of literature and the US Department of Health and Human Services 2016 dietary and physical activity recommendations. The presentation consisted of the definition of overweight and obesity, its impact, the risks associated, and the role of primary care providers. The intervention also included the three-part toolkit, consisting of dietary guidelines, physical activity recommendations, and progress tracking.

All advanced practice clinicians were emailed by the director of advanced practice clinicians with the PowerPoint presentation, a brief overview, the electronic version of the toolkit, and a pretest survey. The DNP student’s contact information was made available to all clinicians, and hard copy versions of the toolkit were given to providers by their director. Patient records and health related information was not accessed or made available. The site policies and procedures were maintained and adhered to. All provider surveys were anonymous and filtered through the director of advanced practice clinicians. Minimal risk was identified for human subjects, and per the University of Massachusetts Institutional Review Board (IRB) human subjects approval was waived. (refer to Appendix A)

Presentation of and administration of the tool kit took place in February 2017 through the director of advanced practice clinicians. All pre- tests were administered via email communication by the director, with frequent communication prior to presentation with the DNP student and director. Throughout toolkit implementation, constant communications by email, text messaging, phone calls, and site visits were made throughout February and March of 2017. The director of advanced practice clinicians acted as the DNP student’s mentor throughout the project, assisted in gathering pre/post test data from the advanced practice clinicians and made the toolkit available to them.
Outcomes & Results

Advanced practice clinicians were surveyed through pre-presentation/toolkit implementation and post-presentation/toolkit implementation questionnaires. In total, there were 17 advanced practice clinicians at the DNP project site. The pre-survey yielded 11 out of the 17 clinicians responding (65%) and the post survey included 10 out of the original 11 respondents (90%) from the pre-survey.

Pre-Toolkit Survey Results. Initial survey questions were designed to gain specific provider information. Seven nurse practitioners and eight physician assistants, for a total of eleven providers that completed the survey. The data is presented in Table 1.

<table>
<thead>
<tr>
<th>Type of Provider</th>
<th>Years in Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD: 0</td>
<td>0-5 years: 4</td>
</tr>
<tr>
<td>NP: 7</td>
<td>5-10 years: 5</td>
</tr>
<tr>
<td>PA: 4</td>
<td>10-20 years: 2</td>
</tr>
<tr>
<td>Total: 11</td>
<td>20+ years: 0</td>
</tr>
</tbody>
</table>

*total providers 11, with an average of 8.8 years in practice

The pre-toolkit survey went on to assess patient information including the average number of patients that the providers see a week that need weight management counseling. The majority (six providers) reported that they see 10-20 patients a week on average that need weight management counseling. Providers were also asked what the average time was that they spent educating patients on weight management and most providers (seven) reported spending 5-15 minutes. One provider said, “I spend little time on weight management and do not feel equipped to be the one doing the educating.” Table 2 provides an overview of clinician answers to questions 3 and 4 in the pre-toolkit survey.
The last section of the pre-toolkit survey collected information regarding provider-patient relationship. Providers were asked to list what they felt were barriers to providing proper weight management counseling. Answers to this question were consistent with the top three notable answers being time, resources, and incentive. One provider said, “There is little motivation to counsel patients because most patients won’t follow through with losing weight.” The providers were then asked about referring to specialists. The eleven providers surveyed indicated they refer to specialist and cited dieticians, weight loss clinic, and endocrine as their typical referrals for weight loss. Table 3 presents the data from the last part of the pre-toolkit survey.

<table>
<thead>
<tr>
<th>Top 3 barriers providers listed to weight management education</th>
<th>Do you refer to specialist?</th>
<th>What type of specialist?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time</td>
<td>Yes: 11</td>
<td>1. Dieticians</td>
</tr>
<tr>
<td>2. Resources</td>
<td>No: 0</td>
<td>2. Wt. Loss Clinic</td>
</tr>
<tr>
<td>3. Incentive</td>
<td></td>
<td>3. Endocrine</td>
</tr>
</tbody>
</table>

*Providers find time, resources, and incentive as barriers to wt. loss educations. Providers will refer patients to dieticians, the wt. loss clinic, or endocrine if needed.*

Overall respondents cited the top barriers to providing patients in need with proper weight management counseling as time and resources. This is consistent with evidence found in
the literature review. Clinicians also responded that they referred out some patients in need of weight management for nutrition consults, endocrine consults, or in extreme cases referrals were made to the weight loss clinic at a local hospital. The providers did express positive interest in a resource education packet to provide to patients as a jumpstart to weight management counseling. The toolkit was given to providers to offer to patients in need for a 45-day period. Several emails, calls, and texts communications were relayed throughout this time with the DNP project mentor to answer any questions, concerns, and to get preliminary feedback on the toolkit and its use. After 45 days of the toolkit being made available for providers a post-survey was distributed via email to collect post toolkit intervention data.

**Post-toolkit Survey Results.** The post toolkit intervention survey began with questions regarding the utilization of the toolkit, however one of the original respondents to the pre-survey questionnaire did not complete the post-survey. Providers were asked to report how often they typically distributed the toolkit, with most using it 1-3 times per week. Providers also reported a reduction in their typical weight management education time. One provider reported that, “The resource did not reduce education time, but made the education delivered more complete.”

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Utilization of Toolkit</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many times a week did you use the toolkit?</td>
<td>Was there a reduction in time spend educating patients on weight management?</td>
</tr>
<tr>
<td>1-3: 9</td>
<td>Yes: 6</td>
</tr>
<tr>
<td>4-6: 1</td>
<td>No: 4</td>
</tr>
<tr>
<td>6-10: 0</td>
<td></td>
</tr>
<tr>
<td>Average # of times used: 2 times/ per week</td>
<td></td>
</tr>
</tbody>
</table>

*The toolkit was used on average 2 times a week with 60% of providers reporting a reduction in time spent on wt. management education.*
The second part of the post-toolkit survey assessed provider-patient feedback on the toolkit resource. All participants responded that the toolkit structure was well received. Some providers also got feedback from patients on the toolkit and those that did get feedback, reported it to be positive. One provider wrote that, “a patient commented on how it was nice to have some material to reference to at home.” Table 5 gives an overview of the data on provider-patient feedback.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Provider- Patient Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Do you like the structure of the toolkit?</strong></td>
<td><strong>Did you get pt. feedback about toolkit?</strong></td>
</tr>
<tr>
<td>Yes: 10</td>
<td>Yes: 7</td>
</tr>
<tr>
<td>No: 0</td>
<td>No: 3</td>
</tr>
</tbody>
</table>

*100% provider approval of toolkit structure. 70% patient feedback with 100% of the patient feedback was positive.

The last part of the post-toolkit survey assessed providers’ opinion on how to improve the toolkit and if they were likely to use it in the future. The take home points for toolkit improvement were to offer it in more languages other than English, put less content on each handout because it can be overwhelming, and to have a section dedicated to exercise. All providers surveyed reported that they would be likely to use the toolkit in the future if it was offered.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Toolkit Improvement/Future Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top 3 Responses on how to improve toolkit</strong></td>
<td><strong>How likely would you be to use the toolkit in the future?</strong></td>
</tr>
<tr>
<td>1. Multi-languages</td>
<td>Very Likely: 0</td>
</tr>
<tr>
<td>2. Simplify - less content</td>
<td>Likely: 10</td>
</tr>
<tr>
<td>3. More focus on physical activity</td>
<td>Not Likely: 0</td>
</tr>
<tr>
<td></td>
<td>Never: 0</td>
</tr>
</tbody>
</table>

*Providers suggested to have the toolkit available in multiple languages, with less overwhelming content, with more information about exercise.*
Some respondents reported forgetting about the resource until the patient has already left. Those times that providers used the toolkit as an educational resource, they reported feeling that the education time was reduced and that the education they did provide was more complete. Providers that utilized the toolkit also reported that the resource made more of an impact on their patients. The common response was that the toolkit was a valuable educational resource as a first step to weight management education. The educational toolkit option is an effective way to approach the subject of weight with patients and allow them to independently manage their weight before going towards a more intensive route.

**Summary of Results.** An educational PowerPoint, electronic presentation, and weight management toolkit was presented to one clinical site in February 2017. After the weight management toolkit was put into practice, providers reported a decrease in the time spent on weight management counseling and an increase in the weight management counseling they provided. After the 45 days with the weight management toolkit available to providers using it 1-2 times a week at best and patient feedback was scarce. Valuable feedback from providers included that the toolkit be offered in other languages, and that they be given more time to integrate the toolkit into their daily practice. Taking that into consideration, regarding time constraints and limited multi-language options, further investigation is needed.

**Discussion**

**Benefits of the Toolkit**

There were many positive benefits for the toolkit including that it had the most up to date nutrition recommendations put forth by the U.S. Department of Health and Human Services. Next being that the toolkit was bright, engaging, and was simple and easy for a variety of patients to understand. The toolkit gave providers a more complete, less time-consuming way to
jump start patients in need of weight management counseling. The toolkit gives a more in-depth patient education experience in conjunction with traditional patient-provider discussions.

The toolkit emphasized the importance of self-driven health modification, patient accountability, and responsibility of their own health. This is beneficial because the first line defense against obesity is prevention through lifestyle changes. Advanced practice clinicians are often limited to the 20-40-minute patient appointment for preventative, educational medicine. The toolkit allowed for clinicians to provide patients with some important resources to start lifestyle modifications that have been proven to translate into weight loss.

Limitations

In the pre- and post-toolkit surveys clinicians echoed the same limiting factors being time, resources, and skepticism regarding patient compliance. Some clinicians stated that they chose to spend more time on other health topics with patients rather than weight management, due to the fear of patient non-compliance and wasted time. Another limitation of the toolkit was clinicians’ perception of obesity. One provider said that the diagnosis of obesity or being overweight is a frequent occurrence with their patients making it is such a large undertaking to try and manage it through education. The frequency and overwhelming nature of weight management continues to persist in part because much of the responsibility lies with the patient.

The resource toolkit is meant to be a beginning step in the process of weight management. Through the process of implementing the toolkit resource at this clinical site it became apparent how multi-dimensional weight management counseling is. The toolkit is a small piece in a much larger puzzle to successfully help patients lose weight and maintain healthy lifestyle modifications.

Secondary limitations to the toolkit were time constraints, communication with the
clinical site liaison, and cost. A longer time for adoption of the toolkit into practice would have allowed clinicians to adapt to it as a useful resource. Change takes time and some clinicians admitted they simply forgot the toolkit was available to them. Communication is also a key factor in having success with clinical practice changes. At times a lack of communication, and poor response time hindered the data collection process. Lastly, cost became a limitation in the toolkit design. The cost of designing and printing full color handouts and a brochure was considerable. Not being able to offer the toolkit in other languages due to high cost of printing multiple versions was another limitation of the toolkit.

The current research is inundated with quantitative data such as percentages and statistics related to obesity and weight management programs. The type of open-ended survey questions used were necessary to gather qualitative data needed to improve this provider education tool. The qualitative data also can allow for the development of more effective and timely provider-patient education opportunities.

**Future Recommendations**

Primary care providers are proficient in screening for obesity, overweight, and its associated medical conditions but often don’t have the time to address the issue sufficiently in primary care visits. Current research is trending more towards prevention and provider-guided lifestyle modifications. More research is needed to develop provider-guided education and counseling, more effective, time efficient, and cost saving tools.

The toolkit resource packet developed for providers based on the U.S. Department of Health and Human Services diet and exercise recommendations was a small step in improving primary care weight management counseling. Further investigation into the most effective weight management teaching methods for providers would be beneficial. The U.S. Department
of Health and Human Services continues to provide recommendations and tools to better serve populations in need of dietary change and increase in physical activity. This has and will be a valuable resource for providers to increase their knowledge, identify those at risk, diagnose, educate, and manage patients in need of weight loss.

It is importance to address the barriers that clinicians face educating, counseling, and motivating those patients diagnosed as obese or overweight. Providers identify these patients and diagnose obesity and being overweight, but often fail to follow up with the health education about healthy lifestyle modifications. Weight management counseling is a broad subject that is approached differently depending on the provider. Moving forward the goal of having primary care providers adopt standard weight management resources and education methods can be attained through further research.

**Conclusion**

Obesity has a negative impact on one’s overall state of health and has been linked to the development of chronic illnesses such as hypertension, diabetes, chronic pain syndromes, and depression. The purpose of the DNP project was to deliver a toolkit to put into practice to increase provider knowledge and simplify patient education without cutting corners. The toolkit was constructed using the Health Promotion Model, The U.S. Department of Health and Human Services dietary and exercise recommendations, a review of current literature and current mobile device applications.

The Health Promotion Model (HPM) by Pender (1996) acted as a guide for the development of the toolkit because of its overall theme of self-driven health modification. The HPM is a theoretical framework that explains the underpinnings of self-motivated behavior change. Losing weight is a self-driven process that providers can educate patients on but cannot
physically preform for them. Therefore the Health Promotion Model is a great fit for encouraging patients to adopt healthy lifestyle changes that will lead to weight loss. The HPM model was key in developing the first handout in the toolkit (Appendix C) about how to get started and stay motivated during a weight loss journey.

Provider perception on usefulness, time efficiency, and effectiveness of the toolkit is important to help with early identification of weight gain and the prevention of obesity and its associated medical conditions. By preparing providers to initiate discussions with patients on their weight allows for dialogue and education, creating a positive environment for lifestyle changes.

The data collected through pre- and post-surveys on provider attitudes and opinions on weight management in primary care agrees with current research. Providers report a lack of weight management counseling to time constraints, lack of resources, and absence of initiative. When resources are made available, providers are inclined to use them and get positive feedback from patients. Many of the providers found the toolkit resource to be a useful way to initiate discussion, education, and guidance to obese or overweight patients. Weight management education can alter the way providers talk to patients about lifestyle modifications and the importance of self-directed patient outcomes.
References


MEMORANDUM – Not Human Subject Research Determination

Date: January 26, 2017
To: Sarah Helpa, Nursing

Project Title: Weight Management in Primary Care
IRB Number: 17-10

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination based on the information provided to our office:

☐ The proposed project does not involve research that obtains information about living individuals.

☐ The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information.

☒ The proposed project does not meet the definition of human subject research under federal regulations (45 CFR 46).

Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO.

Please do not hesitate to call us at 413-545-3428 or email humansubjects@ora.umass.edu if you have any questions.

Iris L. Jenkins, Assistant Director
Human Research Protection Office
Appendix B

Weight Management and Healthy Lifestyle Education in Primary care

Provider Pre-Test

Please Circle One

1). What type of provider are you?
   a) MD
   b) NP
   c) PA
   d) Other: Please indicate_________________

2). How many years have you been practicing?
   a) 0-5 years
   b) 5-10 years
   c) 10-20 years
   d) 20+ years

3). On average how many patients a week do you see who are in need of weight management counseling?
   a) 0-5
   b) 5-10
   c) 10-20
d) 20+

4). On average, how much time do you spend educating patients about weight management, exercise, and nutrition?

a) 5-15 minutes

b) 15-30 minutes

c) 30+ minutes

*Please Write a Short Answer*

5). What do you see as barriers to providing proper weight management education?

6). Do you refer patients to specialists instead? If so what type?

7). Do you feel a weight management/healthy lifestyle packet of information, resources, and references would be beneficial to your practice and overall patient wellness?
Weight Management and Healthy Lifestyle Education in Primary Care

Provider Post-Test

Please Write a Short Answer

1). How many times a week did you use the weight management toolkit?

2). Did utilizing the toolkit help reduce weight management education time?

3). Do you like the structure and design of the toolkit?

4). Did you receive a positive patient response when providing them with the kit?

5). Did you get any patient feedback about the toolkit? Negative? Positive?

6). What could be done to improve on the toolkit?

7). How likely would you be to use it in the future?

8). Any comments or feedback?
Appendix C

Overview of PowerPoint Presentation given to advanced practice clinicians:

Objectives

- Learn current obesity facts and weight loss recommendations.
- Understand how obesity effects our patients and their health.
- Gain insight into the perception of the treatment of obesity in primary care.
- Introduce resource toolkit and explain usage.
- Open forum for advanced practice clinician questions.

Overweight & Obese Definition from the U.S Centers for Disease Control

Prevalence

Comorbidities Associated with Obesity

Contributing Factors Leading to Weight Gain and Obesity

Primary Care Provider Role

Barriers to Patient Education

Description of Educational Toolkit

How to Utilize the Toolkit

Benefits of the Toolkit

Concluding Thoughts
How to Get Started & Stay Motivated

1st POSITIVE MINDSET

- Develop a plan ~ set small, measurable goals that will translate into a bigger goal
- Find support from friends and family ~ have them help hold you accountable
- Start tracking your food, exercise, and weight in a journal or a smartphone application
- Be prepared with healthy foods and snacks on hand, especially if you leave the house for an extended period of time
- Plan out your meals for the week
- Substitute our processed foods for whole foods
- Limit the amount of junk food in your home
- Recognize your trigger foods that can lead to over-eating ~ limit or avoid these foods
- Do not let a set-back ruin your progress— if you deter from your healthy eating or miss a few workouts, get back to it, do not fall back into bad habits
How to Get Started & Stay Motivated

Processed Food vs. Whole Food

How to Make Better Food Choices

**Meats**
- Processed: bacon, sausage, chicken fingers, fish sticks, hot dogs, deli meats, potted meats and spam
- Whole Food: fresh lean meats, fresh fish/shellfish, eggs

**Fruits & Vegetables**
- Processed: fruit or vegetable juices, fruits canned in heavy syrup, fruit snacks/fruit roll ups, veggie or potato chips
- Whole Food: fresh fruits, fresh vegetables, frozen vegetables, frozen fruits

**Dairy**
- Processed food: ice cream bars, processed cheese such as Velveeta, sweetened yogurt/parfaits
- Whole foods: low-fat milk (skim or 1%), plain yogurt, low-fat cheese and cottage cheese
How to Get Started & Stay Motivated

How to Construct a Well-Balanced Meal

A good place to start is increasing your vegetable intake, focus on making half your plate vegetables

- Begin with Green Vegetables (Green beans, Broccoli, Spinach) and then add in some color (Carrots, Summer Squash, Beets)
- Prepare your vegetables without sauces, gravies, or glazes to lower the amount of sodium, saturated fat, and added sugars.
- Instead use seasonings like garlic, onion, combinations seasonings like Mrs. Dash to add flavor to bland vegetables.

Next, make the other half of your plate a quarter lean protein and a quarter whole grains

- Protein choices include animals – based such as, meat, poultry, seafood, eggs and plant-based such as beans, peas, soy products, nuts and seeds. Avoid, breading or frying your protein, Grilling, roasting, broiling, or baking are good ways to good animal-based proteins that do not add extra fat.
- 3-4oz of protein is a goal portion for most
- Whole grains include rice, wheat, oats, cereal grain, barley, and whole wheat pastas.
- Other grains like bread in whole wheat or sprouted grain form is also a favorable choice.
- ½ cup to ¾ cup grains is a goal portion for most
**Food Tracking**

- Tracking your diet and exercise can help to keep you motivated and help you stay focused.
- A pen and paper notebook style tracking can work. If you are looking for a more interactive and user-friendly way to keep track of your diet, exercise, and progress there are many free smartphone applications that may be right for you! Check them out!

There are many applications out there to track your food intake, there are just a few apps to get you started. Many of these apps are available at no cost and even have had great success in helping them lose weight and diet goals. You can always check by keeping track of a notebook and pen when you first start with the application option.

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**Exercise and Fitness Trackers**

- **5K Couch to 5K**
  - Ease back into working out and getting active by using the couch to 5K application
  - This program consists of 50 miles a day, 13 weeks, 61 weeks to get you up to the 5K
  - Beginning 5K is a step progress for all levels of experience. Atoms gives you some tips to understand how to plan your workout.
  - The application's interactive feature can also help you to track your progress.
  - The application allows you to save your personal best times.

- **Keep Track, Stay on Track**
  - Free 5K support calculates your distance and pace, which can be saved and shared.
  - Tracks your performance and helps maintain your fitness levels, average pace, and more.
  - Keep Track, Stay on Track analyzes your performance in the game.
  - If you are interested in running, the application offers a guide to the couch to 5K app.

**Fitness and BodyBuilding**

- Ready to try some weight training then this application is great for beginners.
- Provides a set for weight training, body building, fitness, and powerlifting.
- Many exercises and suggests a good routine for each session.
- Keeps track of your progress, body weight, and body composition.
- Interchangeable graphs that measure weight loss, progress, performance, weight, and specifications.
- It is time and exercise planner automatically to plan your weight loss.
- Determines your weight loss and speed up your progress.

- This application is great to control your own muscle and speed down the lines to your fitness.