Spring 5-28-2022

Implementation of Nola Pender's "Clinical Assessment for Health Promotion Plan" to Increase Patient Self-Efficacy, Weight Loss and Health Promoting Behaviors Such as Improving Nutrition and Increased Physical Activity in Obese Women in a Weight Loss Clinic

Christine Ngwazini
University of San Diego, cngwazini@sandiego.edu

Acknowledgments

I would like to express my gratitude to Dr. Kathy James and Dr. Kevin Maxwell, my faculty advisors, and mentors throughout this program. Our shared passion for obesity prevention in the United States made this experience very enriching. Your guidance, expertise, and reassurances during the challenges in this time made this project and program a success.

I want to thank my family and friends for your endless support and encouragement. You have all been cheering me on since starting my journey began. You encouraged me to chase my dreams and press on when things became tough. I want to you for always lifting me up and encouraging me to be my best self. I love you all.

To my fiancé, Taylor. You have been my rock, sounding board, cheerleader, and a shoulder to cry on through it all. You believed in me even when I questioned if all of this was possible. We survived late nights, busy schedules, planning a wedding, and a pandemic during this journey and I couldn't have done it without you. I love you so much and I cannot wait to start this next chapter together.

Manuscript Implementation of Nola Pender's "Clinical Assessment for Health Promotion Plan" to increase patient self-efficacy, weight loss and health promoting behaviors such as improving nutrition and increased physical activity in obese women in a weight loss clinic

Christine Ngwazini, DNP student, BSN, RN

Kathy James, DNSc, APRN, FAAN , Kevin J Maxwell PhD, DNP, FNP-BC, RN

University of San Diego

Abstract

Purpose: The purpose of this evidence-based practice Doctor of Nursing Practice (DNP) project was to review research-based studies on Nola Pender's Health Promotion Model for weight loss and implement the evidence. The goal was to increase patient self-efficacy, weight-loss, and health promoting behaviors such as improved nutrition and increased physical activity among obese women in a weight loss clinic.

Background: Obesity leads to an increased risk of heart disease, stroke, type 2 diabetes, cancer, and premature death (CDC, 2020). From 2016 to 2017, 42.4% of people in the United States were obese (2020). Worldwide, over 650 million people were obese in 2016 (World Health Organization, 2020). According to the CDC, only 1 in 10 adults eat the recommended intake of vegetables and only 1 in 4 adults meet physical activity guidelines (CDC, 2021). Research shows that with a balanced diet and health-conscious lifestyle practices, obesity is preventable and reversible. Increased self-efficacy can promote utilization of these practices and increase engagement.

Methods: Nola Pender's Clinical Assessment for Health Promotion Plan questionnaire was used to assess self-efficacy and perceived barriers affecting participant's engagement of health promoting behaviors such as improving nutrition and increasing physical activity. Educational materials at the clinic were gathered to create an individualized education plan for the participant. Baseline measurements for weight, abdomen and waist were documented prior to the project. Meetings were conducted weekly over the course of 12 weeks. The participant completed the questionnaire following the completion of the intervention and final measurements were documented.

Results: There was a correlation between increased self-efficacy and increased health promoting behaviors. This was consistent with previous studies which found a significant increase in self-

efficacy and health promoting behaviors after receiving individualized education and materials. After the 12-weeks, the participant lost a total of 12 pounds and 4 inches around the waist and abdomen.

Evaluation/Conclusion: Nola Pender's "Clinical Assessment for Health Promotion Plan" allows providers to understand the variables that may affect a patient's success at engaging in health promoting behaviors and guide counseling. Additional barriers to health promoting behaviors may be considered such as socioeconomic status and access to resources.

Keywords: Weight Loss, Obesity, Nola Pender, Health Promotion Model.

Background and Significance

After smoking tobacco, obesity is one of the leading preventable causes of death in the United States (Danaei, G et al., 2009). Obesity is linked to an increased risk of heart disease, stroke, type 2 diabetes and cancer, which may lead to premature death. (CDC, 2020). The high prevalence of obesity in the United States and worldwide has been documented by the Centers of Disease Control over the last decade. From 2016 to 2017, 42.4% of people in the United States were obese (2020). Worldwide, over 650 million people were obese in 2016 (World Health Organization, 2020). Aside from the health risks resulting from obesity, the financial cost for treating obesity relation conditions costs the United States billions of dollars annually. In systematic review by U.S Department of Health, it was found that the annual cost of obesity was $147 billion in 2008 (Hammond & Levine, 2010). They also found that in comparison to patients of a heathy weight, obese patients spend 46 percent more in inpatient costs and 80 percent more on prescription drugs (2010).

Current evidence shows that with a balanced diet and health-conscious lifestyle practices like eating healthy, staying hydrate, regular exercise, low alcohol intake, low screen time, increased activity, and reduction of unhealthy or processed foods, obesity is preventable and reversible. Unfortunately, the implementation of health promoting behaviors such as increased nutrition and physical activity in the United States has been low. According to the CDC, only 1 in 10 adults eat the recommended intake of vegetables and only 1 in 4 adults meet physical activity guidelines (CDC, 2021).

A vital ingredient in setting a weight loss goal, succeeding, and maintaining that goal, is self-efficacy. The American Psychological Association states that, increased self-efficacy can promote the utilization of these practices and increase engagement (APA, 2009).

The journal also states that, “Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments” (APA, 2009). In her book, Health Promotion in Nursing Practice, Nola Pender writes that high self-efficacy results in increased vigor and persistence to engage in a behavior despite obstacles or aversive experiences (Pender, 2014)

Current outpatient treatments for weight loss involve oral or injectable medications for short-term weight loss. Erlandson, Ivey, and Seikel state that “multiple sympathomimetic agents, including phentermine, are approved for short-term treatment (less than 12 weeks)” (Erlandson et al., 2016). For long-term maintenance however, Khodaveisi, Omidi, Farokhi, and Soltanian state that the HPM is a widely used tool to change unhealthy behaviors and promote health (Khodaveisi et al., 2016, p.166). Using individualized education material can better address patient needs and result in positive long-term weight loss outcomes.

Purpose/Aims

The role of healthcare providers in preventing and treating obesity includes proper patient assessment, intervention and education of health promoting behaviors. The purpose of this evidence-based practice Doctor of Nursing Practice (DNP) project was to review research-based studies on Nola Pender’s Health Promotion Model for weight loss and implement the evidence in a local clinic. The project goal was to increase patient self-efficacy, weight-loss, and health promoting behaviors such as improved nutrition and increased physical activity and provide guidance for future practice in the clinic.

Evidence-Based Practice Model/Theoretical Framework

The Iowa model was chosen to guide this project because of its systematic approach to evidence-based practice implementation. The model’s clear seven-step process for implementing

an evidence-based intervention empowers the user to research, develop, and implement a positive change for the patients in the clinic. The greatest strength of this model is the focus on teamwork and collaboration in creating change. The user is not alone in the formation and implementation of this evidence-based change. Katherine Dontje states that "the Iowa model highlights the importance of considering the entire healthcare system from the provider to the patient, to the infrastructure, using research within these contexts to guide practice decisions" (Dontje, 2008). This requires collaboration and interaction with others at all levels of the practice and making an informed plan for change.

Pender's health promotion model was chosen for this project because it poses a framework for merging behavioral science and a nursing approach to factors influencing patient health behaviors (Pender, 2014). The model offers a guide to the biophysical processes that motivate an individual to perform health enhancing behaviors (Pender, 2014). The model organizes these processes into three categories: individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcome (Pender, 2014). According to Nola Pender, the behavior-specific cognitions and affect category is the core of health promotion because these variables can be modified through interventions (Pender, 2014). The variables include perceived benefits, perceived barriers, perceived self-efficacy, activity-related affect, interpersonal influences, and situational influences (Pender, 2014). The goal of assessing each of these patient variables is to provide individualized educational materials for patient's seeking to engage in health promoting behaviors. The Health Promotion Model (HPM)HPM assessment is versatile because it can be applied to any health promoting behavior and can be as specific as the provider would like it to be. This literature review focuses on studies using the HPM to help participants increase physical activity and improve nutrition through increased self-efficacy.

Literature Review

Search Methods

The aim of this review was to synthesize evidence that Nola Pender's Clinical Assessment for Health Promotion Plan can be used as a tool to increase patient self-efficacy and health promoting behaviors such as improving nutrition and increased physical activity. A computer search was conducted using the CINHAL, PubMed, and Medline databases with the keywords; Pender, health promotion model, weight-loss, and obesity. 15 studies were reviewed.

Inclusion criteria included the following: Studies had to mention Pender's health promotion model specifically, mention behaviors for weight loss such as exercise or healthy eating, be available by full text, published in English, and be from 2005-2020. The search yielded 48 articles including research studies and literature reviews. 34 were excluded due to unavailability, published earlier than 2005, and not being written in the English language. The two main goals in the studies were increasing physical activity and improving nutrition among participants.

Increasing Physical Activity

Several studies found that health behaviors and self-efficacy serve as a predictor for physical activity among participants. In a quasi-experimental study of by Khodavesi, Roshanaei, and Sazvar, 130 office staff in a health insurance office in Iran were randomly assigned into two experimental and control groups. A pretest was performed on both groups to gather descriptive data for individual variables that could influence physical activity such as BMI, vehicle use, smoking, place or residence, and monthly income (Khodavesi et al, 2019). In addition to this,

both groups were assessed using the Pender's health promotion questionnaire where variables such as perceived benefits of physical activity, perceived barriers to physical activity, physical activity- related affect, self-efficacy, situational influences, interpersonal influences, and commitment to plan of physical activity were rated on a 5-point Likert scale from infrequently to very frequently. For the experimental group, three 30-minute HPM-based sessions were provided using educational booklets. They included benefits of physical activity and the skills needed to perform them, materials on barriers to physical activity, and materials for increasing self-efficacy, commitment, and interpersonal influences. Participants in the experimental group were told to implement these behaviors for two months and the Pender's HPM assessment was performed again on completion. The results demonstrated a significant increase ($P < 0.05$) in the mean score for physical activity in the experimental group post intervention.

A qualitative study by Shin, Yun, Pender and Jang was performed in 2005. The study was used to test Pender's HPM as a causal model of commitment to a plan of exercise among Korean adults with chronic illness. The seven constructs examined were prior experience of exercise, perceived health status, exercise benefits, exercise barriers, exercise self-efficacy, social support for exercise, and options for exercise (Shin et al., 2005). 403 adults from hospitals in Seoul via convenience sampling. Inclusion criteria included (1) having one of more chronic illnesses such as diabetes, hypertension, or arthritis, (2) having sufficient mobility to exercise, and (3) no risk for medical complications from exercise (Shin et al., 2005). Participant health beliefs and self-efficacy were assessed using Pender's HPM based, Likert style questionnaires. The questionnaires all had reliability as evidenced by each of their Cronbach's coefficient scores which were calculated at 0.9 and 0.8. The results of the study demonstrated that exercise benefits and exercise barriers directly influenced commitment to a plan for exercise (Shin et al., 2005).

The strongest explanatory variable of the study was the effect of prior exercise experience and perceived exercise benefits on commitment to plan for exercise (Shin et al., 2005). This result supports the use of Pender's HPM questionnaire as an intervention for individualized educational material for health promoting behaviors.

A comparative analysis of two quantitative studies examining determinants of physical activity among Taiwanese and American adolescents was performed by Wu, Pender, and Yang in 2002. In both studies, Pender's HPM questionnaire was used to assess variables affecting physical activity including perceived benefits, perceived barriers, self-efficacy, activity-related affect, interpersonal influences, situational influences, commitment to a plan of action, and immediate competing demands (Wu et al., 2002). 696 adolescents provided data for the Taiwanese study and 286 adolescents provided data for the American study (Wu et al., 2002). Results from the studies demonstrated that boys were more active than girls in both studies (2002). It was also demonstrated that barriers to physical activity were more of a predictor of physical activity in American adolescents than the Taiwanese adolescents (2002). It was also found that self-efficacy directly predicted physical activity in the Taiwanese adolescents but indirectly predicted it among American adolescents (2002). These differing findings demonstrate cultural influence on health promoting behaviors.

Improving Nutrition

Several studies that focused on using the HPM to improve nutrition among participants found that self-efficacy has a significant influence on healthy nutritional behaviors. A quasi-experimental study by Khodavesi et al was performed in 2016. The focus of the study was to examine the effect of Pender's HPM in improving the nutritional behavior of overweight and obese women (Khodavesi, 2016). 108 women were randomly assigned to experimental and

control groups (2016). Data was obtained from both groups in the form of pre-tests including demographics, Pender's HPM constructs and Likert scale, and nutritional behavior questionnaires (2016). The experimental group was given a Pender's HPM based intervention which consisted of three training sessions and educational materials about (1) the benefits of healthy nutritional behaviors and skills to promote them, (2) barriers to healthy nutritional behaviors and ways to overcome them, and (3) measures to promote their self-efficacy to healthy nutritional behaviors (2016). After the trainings, the women in the experimental group were given a material consisting of daily interventions from each of the areas discussed in the training. The post-test was administered two months after the intervention. The study found that the "overall and qualitative comparison of the nutritional behaviors between the two groups demonstrated that the number of people with nutritional behaviors at the unfavorable level decreased and the number of people with nutritional behaviors at the favorable level increased" (Khodavesi et al., 2016). It was also found that "in the experimental group, there was a significant difference between the mean scores of perceived benefits, perceived barriers, perceived self-efficacy, behavior- related affect, interpersonal and situational influences, commitment to action, and nutritional behaviors between before and after the intervention ($P<0.001$)" (Khodavesi et al., 2016). Another significant finding was that healthy nutritional behaviors improved in the experimental group after learning the perceived benefits (2016).

An experimental study focusing on the effect of nutritional education intervention on breakfast consumption was performed by Elseifi, Abdelrahman, and Mortada in 2020. The study consisted of 244 preparatory school students in Egypt (Elseify et al., 2020). After being randomly assigned to experimental and control groups, both groups were given three questionnaires (2020). The first questionnaire assessed sociodemographic information, BMI,

frequency of breakfast intake per week, and quality of breakfast which was assessed by consumption of certain food groups per breakfast meal (2020). The next questionnaire was Pender's HPM questionnaire which assessed Prior related behavior, perceived benefits of eating breakfast, perceived barriers to breakfast, perceived self-efficacy, positive affect of eating breakfast, negative affect of eating breakfast, interpersonal influences, situational influences, immediate competing demands and preferences, and commitment to planning for breakfast eating which were all answered on 5-point Likert scales (2020). Over a five-week period, the experimental group was given nutritional education sessions via power-point presentations once a week (2020). In these sessions, the importance of eating breakfast, the consequences of skipping breakfast, recommended frequency, and methods to deal with barriers to eating breakfast were presented including group discussions where students could discuss their plan for implementing this education in their daily lives (2020). After the five weeks, the post-test was given. The study found that among the students who skipped breakfast in the pretest for the experimental group, they decreased skipping breakfast by 19.6% in the posttest, while those who ate breakfast more often increased breakfast intake by 44.7% in the posttest ($p < 0.05$) (2020). It was also found that after the intervention, the perceived benefits, and perceived self-efficacy, positive effects scores for eating breakfast were significantly increased and the scores of perceived barriers and negative effect were significantly decreased within the experimental group ($p < 0.05$) (2020).

A quasi-experimental study by Fidanci, Akbayrak, and Arslan performed in 2017 to assess the effect of a Pender's HPM based intervention on the health behaviors and self-confidence obese Turkish children. The study consisted of 86 obese children from eight and eighteen years old and their parents (Fidanci et al., 2017). Qualitative data was collected using

two three forms (2017). In the first interview, a Pender's HPM based form was used to allow participants to express their feelings on obesity, health issues and behaviors, and their needs for education through open-ended questions (2017). Participants were also given a form for sociodemographic and medical characteristics (SMCP) which assessed variables such as age, gender, height, weight, and education, and addressing the education of the parents (2017). The next from assessed nutrition and activity. It consisted of 27 questions about the number of meals eaten per day, frequency of fast-food and snack consumption, duration of exercise, duration of sedentary activity, and the eating habits and activity patterns of the family (2017). The third form was the Piers-Harris Children's Self-Concept Scale (PHCSCS) which was used to assess the thoughts, feelings, and attitudes of children, and determine their development of self-concept and the relationship between personality and environmental elements (2017). The PHCSCS consisted of 80 "yes" or "no" questions assessing physical appearance and attributes, intellectual and academic status, happiness and satisfaction, freedom from anxiety, behavioral adjustment, and popularity (2017). After all the data was gathered, individualized educational materials were developed within the framework of Pender's HPM (2017) for the experimental group. The materials were made considering the child's self-perception of his or her weight, identification of strong and weak aspects of the child, need for support in participating in a weight control program, need for help in determining goals for weight management, and the properties of a healthy diet and exercise program for the child (2017). The content was presented in a 60-minute group session which included general information regarding obesity, regulation of nutrition, number of meals per day, foods to be avoided, rules to be followed during mealtimes, nutrition education by a dietician, calculation of calories, nutrient exchange lists, regulation of exercise activities, discussion on lifestyle modifications and follow-up visits (2017). Three

months after the intervention, the questionnaires were completed again (2017). The control group received a delayed intervention after posttest data was collected from both groups (2017). The study found significant increases in healthy behaviors in the experimental group. For example, in the experimental group, healthy eating habits showed a significant increase after the education in terms of eating at least one meal together as a family (P =0.14), the child's participation in the process of food preparation (P<.001), noting food portions (p <.001), and choosing water instead of sugary drinks (p <.001) (Fidanci et al., 2017). The experimental group also showed significant decrease in average daily time spent in front of the television or computer after education (p G .001), whereas no significant change was observed in the control group (p = .48) (Fidanci et al., 2017). The mean self-confidence scores of the experimental group were significantly higher than those of the control group after the intervention (Z = 5.971, p G .01, vs. Z = 3.796, p G .01) (2017). These findings support the Pender's health promotion model which projects that the greater one's perceived efficacy, the more vigorously and persistently an individual will engage in a behavior, even in the face of obstacles and aversive experiences (Pender, 2014).

Design

Nola Pender's Clinical Assessment for Health Promotion Plan questionnaire was used to assess self-efficacy and perceived barriers affecting participant's engagement of health promoting behaviors such as improving nutrition and increasing physical activity. Existing educational materials at the clinic were gathered to create an individualized education plan for the participant based on their answers. Baseline measurements for weight, abdomen and waist were documented prior to the project. Meetings were conducted weekly over the course of 12 weeks. The participant completed the questionnaire following the completion of the intervention and final measurements were documented.

Methods and Justification

A stakeholder presentation was completed with the clinic owner and staff for approval to implement the project. Once approved, the student presented the project to perspective patients in the clinic which was limited to those currently enrolled in or seeking to enroll in the weight-loss program. A poster explaining the project's purpose, process and timeline was shown to each of these patients. Patients were aware that the project was completely optional and that they could discontinue the project at any time. These presentations were conducted over four weeks with a goal of ten to fifteen participants. Existing weight loss educational materials from the clinic were gathered for use during the patient meetings. The materials consisted of 129-page document that included three modules for improving patient behavior, diet, and physical activity.

Patients who were interested in participating were given the health promotion questionnaire to complete. The questionnaire included open-answer questions addressing variables affecting physical activity and improved nutrition including perceived benefits, perceived barriers, self-efficacy, activity-related affect, interpersonal influences, situational influences, commitment to a plan of action, and immediate competing demands. The bottom of the questionnaire included a Likert-scale for the patient to rate their self-efficacy to engage in health promoting behaviors one a scale from 1-10; 1 being "very unsure" and 10 being "very sure". Baseline measurements such as weight, abdominal and waist circumference were recorded at this time along with contact information including the patient's phone number and email.

Patients were contacted shortly after the meeting and the weekly follow-up schedule was decided upon at this time. Due to varying schedules, participants were given the chance to

conduct these follow-up meetings in person, over the phone or on zoom. Of ten possible candidates for the project, five agreed to participate but only one completed the project in its entirety.

At the first meeting, the student and patient discussed the completed questionnaire and desired weight loss goals. Educational materials were given to the patient to implement based on their individual concerns stated in the questionnaire. For example, patients who reported adequate exercise, but poor diet would be given materials addressing nutrition whereas patients reporting poor discipline and motivation, but adequate diet would be given modules addressing behavior. Follow-up meetings were conducted once a week for a total of twelve weeks. The purpose of these meetings was to check-in with patient progress, answer questions and provide support. Upon completion of the project, the patient completed the Likert-scale portion of the questionnaire again. Time was also set-aside for final thoughts and feedback from the patient along with a final weight, abdominal and waist measurements.

Figure 1.

Health Promotion Model
Clinical Assessment for Health Promotion Plan

Example: Increasing Physical Activity

Assess current stage of physical activity [pre-contemplation (PC), contemplation (C), planning/preparation (P), action (A), maintenance (M)]. If in stages C, P, or A, continue. If in stage M, reinforce positive behavior. If in stage PC, reinforce benefits of physical activity, and assess readiness at a later time.

Prior Behavior

What attempts have you made in the past to be physically active?

_____
_____
_____
_____

What did you learn from these experiences?

_____
_____
_____

Personal Influences

What are the personal **benefits** of becoming more active?

_____
_____
_____

What problems **(barriers)** might you have trying to be more active?

_____
_____
_____

How sure are you **(self-efficacy)** that you can overcome these barriers to being more active?

1 2 3 4 5 6 7 8 9 10
Uncertain Very Sure

What physical activities do you enjoy most? **(activity-related affect)**

_____
_____

Interpersonal Influences

Social Norms - Do any of your family members or friends expect you to be physically active? Yes No
If so, who? _____

Social Support - Who will encourage you to be active or be active with you?

_____

Role Models - Is anyone in your family or any of your friends physically active 3-5 times every week? Yes No
If so, who, and what do they do?

_____
_____

Situational Influences

Where could you be physically active doing what you enjoy**?**

_____
_____

Commitment to a Plan of Action

Are you ready to set goals and develop a plan to become more active? Yes No

Steps of Plan

_____
_____
_____
_____

Competing Demands and Preferences (At Follow-up)

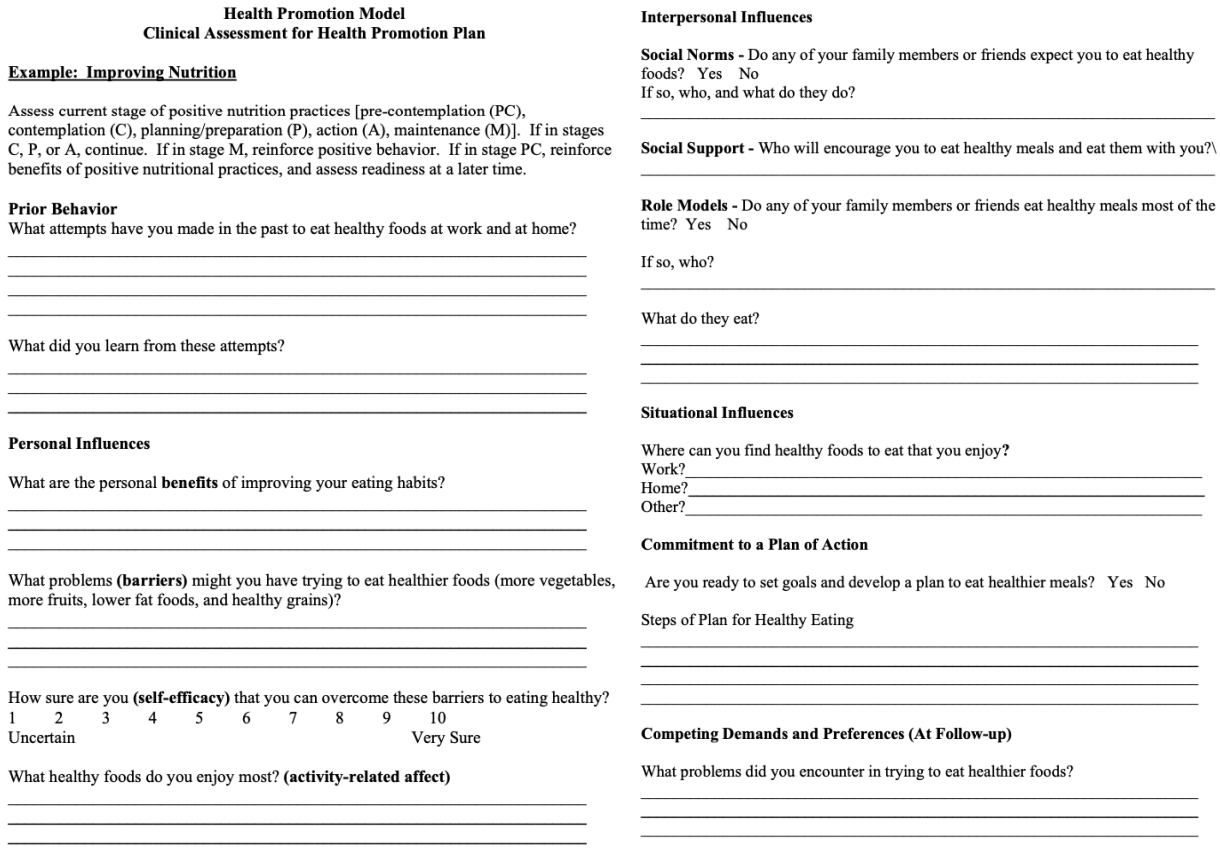
What problems did you encounter in trying to be more active?

_____
_____
_____

How can you avoid these problems in the future?

_____
_____
_____

Figure 2.



Health Promotion Model
Clinical Assessment for Health Promotion Plan

Example: Improving Nutrition

Assess current stage of positive nutrition practices [pre-contemplation (PC), contemplation (C), planning/preparation (P), action (A), maintenance (M)]. If in stages C, P, or A, continue. If in stage M, reinforce positive behavior. If in stage PC, reinforce benefits of positive nutritional practices, and assess readiness at a later time.

Prior Behavior
What attempts have you made in the past to eat healthy foods at work and at home?

What did you learn from these attempts?

Personal Influences

What are the personal **benefits** of improving your eating habits?

What problems **(barriers)** might you have trying to eat healthier foods (more vegetables, more fruits, lower fat foods, and healthy grains)?

How sure are you **(self-efficacy)** that you can overcome these barriers to eating healthy?
1 2 3 4 5 6 7 8 9 10
Uncertain Very Sure

What healthy foods do you enjoy most? **(activity-related affect)**

Interpersonal Influences

Social Norms - Do any of your family members or friends expect you to eat healthy foods? Yes No
If so, who, and what do they do?

Social Support - Who will encourage you to eat healthy meals and eat them with you?\

Role Models - Do any of your family members or friends eat healthy meals most of the time? Yes No

If so, who?

What do they eat?

Situational Influences

Where can you find healthy foods to eat that you enjoy**?**
Work?
Home?
Other?

Commitment to a Plan of Action

Are you ready to set goals and develop a plan to eat healthier meals? Yes No

Steps of Plan for Healthy Eating

Competing Demands and Preferences (At Follow-up)

What problems did you encounter in trying to eat healthier foods?

Ethical Considerations

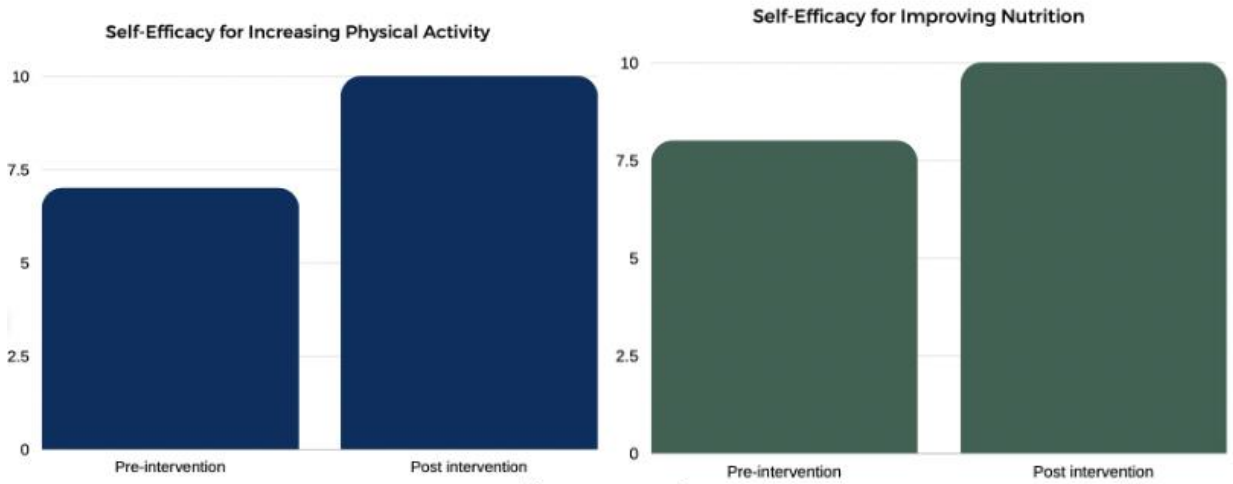
This study was approved by the Institutional Review Board of the University of San Diego, Hanh's School of Nursing (IRB-2021-47).

Results

The results of this project demonstrated a positive correlation between increased self-efficacy and increased health promoting behaviors. This was consistent with previous studies which found a significant increase in self efficacy and health promoting behaviors after receiving individualized education and materials. Upon completion of the project, the participant lost a total of twelve pounds and four inches around the waist and abdomen over twelve weeks. The patient shared that she felt more supported and motivated to reach her goals due to receiving

individualized education instead of generalized weight loss information. She also reported that the weekly meetings provided a sense of accountability due to the knowledge that her implementation of the modules (or lack thereof) would be discussed at the next meeting.

Figure 3.



Measurements

	Weight	Waist	Mid Abdominal	Lower Abdominal
Pre-intervention	208	36	41	44
Post-intervention	**196**	**32**	**35**	**40**

Study Limitations

Although there were ten patients who were great candidates for this project, there were two barriers which may have contributed to the lack of participation. These barriers included scheduling issues and timing of the project. The project required patients to participate in weekly meetings for three months. However, patients who were enrolled or seeking to enroll in the clinic's weight loss service were those in need of assistance after trying and/or failing other conventional methods for weight loss. Although patients were able to schedule a time that best fit their needs, this may have been difficult for patients with busy schedules and personal obligations outside of the clinic. The study also took place at the beginning of the holiday season which is known for increased intake of baked goods, sweets, and fatty foods followed by

decreased physical activity. This may have been a barrier for patients who did not want to forego their holiday traditions and activities during that time.

Discussion

Overall, there was an immense amount of support for the project from the owners and staff at the clinic. Although they did not all participate in the project, patients verbalized excitement for the project and its potential for success in reaching their weight loss goals. Continuation of this study would require consideration of timing and frequency of the meetings to better fit patient needs.

Evidence to Action

Implementation of this evidence is significant in advanced nursing practice. Application of Pender's HPM allows providers to gain understanding of various determinants of health promoting behaviors and allows them to guide behavioral counseling and promote healthy lifestyle practices among their patients. In turn, increased patient performance of these behaviors will reduce the risk of fatal illnesses caused by obesity such as hypertension, diabetes, and heart disease.

Implications for Future Research

There are current gaps in data regarding studies completed in the United States. Because culture may play a role in the variables assessed in the Pender's HPM assessment, additional studies performed on participants in the United States will provide additional accuracy and insight for providers practicing in this country.

Conclusions

The current studies focusing on Pender's Health Promotion Model have tested the model for its effectiveness and applicability to women, adolescents, and children alike. The studies help

provide evidence of the versatility of the HPM as a tool for creating individualized interventions that can help patients engage in healthy behaviors. This can be applied to any practice setting where there is a need for promoting healthy behaviors. Assessing the variables that may affect a patient's success at engaging in a health promoting behavior equips providers with tools necessary to create individualized plans. By providing individualized education plans, self-efficacy is increased resulting in increased engagement for health promoting behaviors. This leads to better patient outcomes and reduced healthcare costs.

References

Danaei, G., Ding, E. L., Mozaffarian, D., Taylor, B., Rehm, J., Murray, C. J., & Ezzati, M. (2009). The preventable causes of death in the United States: comparative risk assessment of dietary, lifestyle, and metabolic risk factors. *PLoS medicine*, *6*(4), e1000058. https://doi.org/10.1371/journal.pmed.1000058

Dontje, K. (2008, January 23). Evidence- Based practice: Understanding the process. Medscape. https://www.medscape.com/viewarticle/567786_4

Elseifi, O. S., Abdelrahman, D. M., & Mortada, E. M. (2020). Effect of a nutritional education intervention on breakfast consumption among preparatory school students in Egypt. International Journal of Public Health, 65(6), 893-903. https://doi.org/10.1007/s00038-020-01439-7

Eren Fidanci, B., Akbayrak, N., & Arslan, F. (2017). Assessment of a health promotion model on obese Turkish children. Journal of Nursing Research, 25(6), 436-446. https://doi.org/10.1097/jnr.0000000000000238

Hammond, R., & Levine. (2010). The economic impact of obesity in the United States. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, 3, 285-295. https://doi.org/10.2147/dmso.s7384

Khodaveisi, M., Jafari, A., Omidi, A., Roshanaei, G., & Sazvar, A. (2019). The effect of a Pender's health promotion model-based educational intervention on physical activity in office staff. Sport Sciences for Health, 16(1), 31-38. https://doi.org/10.1007/s11332-019-00568-8.

Shin, Y., Yun, S., Pender, N. J., & Jang, H. (2005). Test of the health promotion model as a causal model of commitment to a plan for exercise among Korean adults with chronic

disease. Research in Nursing & Health, 28(2), 117-125. https://doi.org/10.1002/nur.20060

Wu, T., Pender, N., & Yang, K. (2002). Promoting physical activity among Taiwanese and American adolescents. Journal of Nursing Research, 10(1), 57-64. https://doi.org/10.1097/01.jnr.0000347583.62586.5a