Adolescent Weight Loss Model: Theory Development, Presentation and Evaluation

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Background and Significance

Obesity is increasing in epidemic rates across America. Once thought to mostly affect adults, obesity is now dramatically affecting young children and adolescents. The U.S. Department of Health and Human Services (2008) reported that nationally, 65% of Americans are overweight, and the number continues to rise each year. Armstrong, Anderson, Le and Nguyen (2009) further reported that approximately 9 million people in the United States are morbidly obese having a body mass index (BMI) of over 40.

Obesity is a major health risk for many diseases (e.g., diabetes and heart disease), therefore Nurse Practitioners must have the knowledge to address this growing problem. The development of co-morbidities related to obesity can have a major negative impact on a patient's life. Nurse Practitioners need to know how to best approach the topic of obesity with their patients at an earlier age, and how to best develop a care plan to address obesity problems before it becomes a major health risk. Adolescent and preschool rates of obesity are on the rise. The obesity prevalence in children ages 6-11 years has risen from 4% to 16% over the past 30 years (Durand, Logan and Carruth, 2007). This increase in childhood obesity has made policy makers name it as one of the top health concerns in children for the 21st Century.

Obesity is a problem that is commonly overlooked by healthcare providers. Ina study by Spivack, Swietlik, Alessandrini and Faith (2010), only 32% of providers were able to accurately identify the prevalence of obesity in America. Their study also found that only about 15% of the time, providers talked to parents about topics directly related to obesity in the first year of their child's life; like excessive juice drinking, snacking, fast food, lack of exercise, and excessive TV watching (Spivack, et. al., 2010). These findings suggest that many providers do not discuss behaviors that have been positively correlated to childhood obesity with their clients. Spivack

and associates also found that 55% of practitioners never mentioned exercise or fast food consumption within the child's first year of life during routine clinical examination. According to Rao (2008), the risks for obesity need to addressed early on in a child's life (3 months of age) because health problems directly related to obesity are now being seen in children as young as 18 months old.

One major focus that needs to be investigated is "Do healthcare professionals have an adequate tool/theory to address adolescent obesity with their patients, and are they aware of the impact it has a patients overall health state?".

In the United States, over one-third of adolescent patients (12 years and older) are overweight or obese (Spivack, et al, 2010). Obesity can lead to numerous medical problems for patients. In the forefront of these medical conditions are hypertension, diabetes, hyperlipidemia, and high cholesterol. These medical conditions are now being seen in younger patients due to the obesity epidemic (Spivack, et al, 2010). In addition, there is evidence to suggest that morbidly obese patients also suffer from co-morbid psychopathology (Kelly, 2004). Rao (2008) also found that 80% of obese children grow up to be obese adults with even worse medical conditions.

Obesity is not just a physical problem affecting the human body; it is an economic problem as well. Large states, like California, Texas and New York, spend approximately $4 billion dollars on the treatment of health related issues caused by obesity (Armstrong, et al, 2009). In 1998, the Medical Expenditure Panel Survey reported that Medicaid paid $2.8 billion, Medicare $10,8 billion and private insurance $9.5 billion for the treatment of obesity related issues (Armstrong, et al.).

Obesity is an epidemic that can affect the patient at a very young age, and have drastic effects on their wellbeing later on in life. Donaldson and Crowley (1978) cited that the discipline

of nursing focuses on the wholeness or health of a person. Donaldson and Crowley (1978) also highlight that nursing's perspective evolves from the practical aim of optimizing the human environment for health. Identifying that obesity is a health care concern that carries such a major impact, it is critical to investigate if practitioners are equipped with a tool to provide patient's with the knowledge to obtain 'optimal environments of health'. Current research has suggested that the awareness of obesity needs to be brought to the forefront early in a patient's life, but there is research that suggests practitioners are spending little time on the topic of obesity when meeting with patients. By providing practitioners with a tool/theory to address the effects of childhood obesity, it may help increase the amount of time spent on the topic with patients. Spivack and colleagues (2010) concluded that their study was the first to look at the amount of time practitioners spent with patients discussing obesity related behaviors. The nursing discipline could benefit from knowing if providing a tool to practitioners would thus increase the amount of time spent on the topic and positively impact patient outcomes. Gaining knowledge in this area will allow nursing to better understand the impact early intervention of obesity has on an individual. This knowledge is critical because obesity has such a major impact on so many functions of the person as a whole.

Theoretical Framework

Advanced practice nurses are interested in helping patients, families and communities improve their lives through life style modifying factors based on health promotion. In seeking a way to produce greater longevity and well-being, some nurses are attracted to interventions that will enhance health and quality of living (McCallagh, 2009). The Health Promotion Model (HPM) has achieved popularity amongst the discipline of nursing as a model that serves this

purpose. Its holistic and humanistic view is congruent with many nurses' own personal philosophy of health and nursing.

Nola Pender first published her Health Promotion Model (HPM) in Health Promotion in Nursing Practice in 1982. It was subsequently revised (Pender, 1996) and published recently in the fourth edition (Pender, Murdaugh, & Parsons, 2002). Updates to the theory can also be found on Pender's webpage. The additions to the model, based on the recent research and theoretical considerations, were made to increase its explanatory power and it's potential for use in structuring health-promoting nursing interventions (McCallagh, 2009). This model is based on theories of human behavior, it is an intricate model that promotes health behaviors and will be used to deduce a middle-range theory for addressing adolescent obesity.

Health professionals focus on interventions that guide clients toward adopting healthy lifestyles. There is increased recognition of the role of behavior in health promotion. Motivation for healthy behavior may be based on a desire to prevent disease or to achieve a higher level of well-being. The Pender HPM is based primarily on three theories of health behavior: the theory of reasoned action, the theory of planned behavior, and the social-cognitive theory (McCallagh, 2009).

While health promotion and primary intervention are distinct theoretical concepts, in practice they often overlap (McCallagh, 2009). Health promotion is intended to increase the level of well-being and self actualization of an individual or group. Health promotion is an activity directed toward the actualization of human potential through goal-directed behavior, competent self-care, and satisfying relationships with others, while adjustments are made as needed to maintain structural integrity and harmony with relevant environment (Pender, et al, 2002). The concept of health promotion is based on Pender's expanded definition of health that facilitates a

holistic approach while enhancing the positive aspects of health. This definition applies to all persons, including persons who are well and those who are experiencing an illness or disability (McCallagh, 2009). Refer to Appendix A for a detailed depiction of the Health Promotion Model.

Pender has proposed a model of health promotion to guide nurses in helping clients achieve improved health, enhanced functional ability, and improved quality of life (McCallagh, 2009). The phenomena addressed by this model are straightforward and applicable to numerous health care settings.

From the Health Promotion Model, the Adolescent Weight Loss Model (AWLM) has been deduced. In the AWLM the practitioner needs to assess and address the clients current activity level and physiological thoughts on their weight. From there the practitioner will; with the patient, address the patient's behavior specific cognitions and affect about their weight and weight loss goals. This step reflects the Individual Characteristics and Experiences stage of the Health Promotion Model. The next phase involves the practitioner educating the client on weight loss technique and benefits. A weight loss plan must be developed including identification of specific interventions (exercise/diets). Barriers must also be identified and key people named. This stage is a reflection of the Health Promotion Model's Behavior Specific Cognitions and Affect phase. Then the practitioner and the patient agree upon a goal for weight loss and both must commit. This is the Behavior Outcome reflection of the Health Promotion Model; and the final stage. It is hypothesized that when this model is followed weight loss will be achieved. The relationships between each of the concepts of the AWLM and the HPM have been substructed in detail in Appendix B.

Middle-range Theory

The Adolescent Weight Loss Model was developed, as a tool to aide practitioners in address and treating weight loss needs in adolescent populations. It was developed in response to the increasing incidence of adolescent obesity in today's healthcare population, and the research findings that practitioners are spending little time with adolescent patients on the topic of obesity and weight loss. The theory is based on the belief that in order to elicit certain human behaviors (weight loss) the practitioner must engage the client/patient and promote health behaviors and awareness on the health condition (obesity). The model is being applied to the adolescent population because of the given area of study interest; but it could be applied to adult populations as well with some adaptations. The theory has three major areas that will be addressed. The first is the patient's current perspective on their weight and current physical weight condition/activity level. The second area is behavior specific changes including; perceived benefits of weight loss, barriers to weight loss, physical activity planned and desired, and interpersonal influences and role models. The third is the commitment to the weight loss plan and achievement response/reward. The theory has been displayed in a theoretical map in Appendix C.

In the first part of the theory the practitioner must interview the patient to assess their current activity level. The practitioner should use some form of a self-administered physical activity checklist and/or could utilize the use of a standardized program like the FITNESSGRAM©. At this time the practitioner needs to also interview the adolescent for their current psychological state for how they feel about the current state. Particular attention should be paid to if the child views themselves as overweight; do they receive any harassment or bullying about the weight from peers, family members or other adults. Cultural and ethnical

views should also be assessed because in some cultures children who are medically overweight do not view themselves as such because culturally it is an acceptable weight.

The second stage of the theory is where the practitioner will engage the patient first by educating them on the effects of obesity, benefits of weight loss and the patients own feelings on how successful they will be. In this state the patient and practitioner will also develop an age appropriate intervention for weight loss and exercise. It is imperative that both parties agree on the plan or adherence to it by the patient cannot be expected. The practitioner needs to also identify key personal influenced the adolescent will have for their weight loss goal. This person should act as a motivator/coach/support person/role model for the adolescent and should be present at all interactions between the client and practitioner. This person will be a key player in the adolescent's success in their weight loss goals. In a study by Sartor and Youniss (2002) they found a positive correlation between positive parental involvement and achievement of goals in adolescent populations.

The third and final stage of the theory is where the practitioner and the adolescent commit to a plan and develop an achievement/reward plan. In the same study by Sartor and Youniss (2002) it was found adolescents would stick to a plan for success when they were rewarded for their achievements. It is recommended that the practitioner and the child set these goals together and they should be achievable easily (reached in 1 weeks time). By doing this it will increase the adolescent's sense of self-achievement and encourage them to stick with the weight loss plan. It should be noted that at any time the plan can be reversed back to stage two for re-analysis and then new goals can be set between the practitioner and adolescent. This may need to be done if there are external influences on the adolescent that alter the weight loss plan or effect the child's on a psychological well-being.

Also, the key personal will play an important role between visits with the practitioner; helping the child stay on track and keeping them motivated. This should also be the person the adolescent feels comfortable going to if they are discouraged or frustrated with their progress.

The Adolescent Weight Loss Model is based on the following theoretical principals that have been adapted from Pender's (2011) principals originally used in the Health Promotions Model.

- Prior behavior and inherited and acquired characteristics influence beliefs, affect, and enactment of health-promoting behavior.
- Adolescents commit to engaging in behaviors from which they anticipate deriving personally valued benefits.
- Greater perceived self-efficacy results in fewer perceived barriers to a weight loss plan.
- Adolescents are more likely to commit to and engage in a weight loss plan when significant others model the behavior, expect the behavior to occur, and provide assistance and support to enable the behavior.
- Situational influences in the external environment/personal life of the adolescent can increase or decrease commitment to or participation in the weight loss plan.
- The greater the commitments to a weight loss plan, the more likely weight loss will be maintained over time.
- Commitment to a weight loss plan is less likely to result in the desired behavior when competing demands over which the adolescent has little control require immediate attention.

- Commitment to a weight loss plan is less likely to result in the desired behavior when other actions are more attractive and thus preferred over the target behavior.
- The adolescent and practitioner can modify cognitions, affect, and the interpersonal and physical environment to create incentives for weight loss.

The endpoint for the Adolescent Weight Loss Model is for the adolescent to achieve or exceed their goal of weight loss that was originally set by them and their practitioner.

Evaluation of Middle-range Theory

The Adolescent Weight Loss Model was evaluated using the criteria suggested in Walker and Avant (2011). They believe that all six steps are important to complete a theory analysis; though some disagree.

The Adolescent Weight Loss Model was deducted from Nola Pender's Health Promotion Model. The model was developed because a need was found which showed that practitioners were spending a considerably small amount of time with adolescents discussing obesity, related illnesses, prevention and weight loss plans. It was also noted that obesity is a major epidemic that has an incredibly steep increase in incidence rates across the country. The model was developed so it could be used as a tool to help practitioners guide their discussion with adolescents; thus increasing the amount of time spent discussing the topic.

The meaning of the theory was found to strongly correlate and be directly deducted to Pender's Health Promotion Model. This was found to be appropriate because, weight loss would be a health promotion behavior that would be an acceptable and desirable behavior for the overweight adolescent population. The meaning of the theory is reflected in the language and is clearly defined and understandable by readers.

The logical adequacy of the theory is sound. A practitioner would be able to accurately predict the outcome of a situation when applying the theory. There are no major logical fallacies noted in the wording of the theory.

The usefulness of the theory seems to be very strong. By definition the usefulness of a theory is defined by if Intervention A consistently leads to Patient Behavior B (Walker & Avant, 2011). When looking at the AWHM it would be safely assumed that if followed and agreeable goals were set the weight loss plan (intervention) would lead to weight loss by the adolescent (behavior). This theory also provides usefulness because it arms practitioners with a tool they can use to address obesity (intervention) thus increasing the amount of time spent discussing obesity related issues (behavior).

The Adolescent Weight Loss Model could be generalized or transferred to an adult or geriatric setting with few alterations. This makes the theory easy to use in a number of settings without causing the practitioner too much difficulty, or loosing the authors intended integrity of the theory.

The parsimony of the theory is easily done as the theory can be easily restated; yet complete in explanation of the phenomenon (weight loss). There could be some discussion on this topic though if the cultural definition of obesity differs from the medical definition. In a situation like this is may be very difficult to explain the phenomenon to the client because they do not view themselves as obese or overweight. This may be one area that could be studied individually and may provide some interesting insight on cultural and ethnical views of weight and obesity.

The Adolescent Weight Loss Model could be easily tested in any clinical setting without too much difficulty or cost for the practitioner/investigator. The theory also meets the criteria for

testability because it is easy to generate the hypothesis: If the Adolescent Weight Loss Model were applied to a patient, then weight loss would occur. The model could be tested using a group of adolescents with in a specific age range and BMI. One group could be the control group and not have the model applied, where the other was the test group and the AWLM was applied.

The Adolescent Weight Loss Model could be extremely beneficial in practice and research. In practice it would provide practitioners with an easy to apply tool that will make weight loss goal setting and education easy to implement. Research wise it will provide a statistical look at how effective weight loss interventions are on adolescents, an area that is just starting to gain attention and research. From an administrative standpoint the AWLM would not impact things majorly. It could help though reduce health care costs if implemented on a larger scale (community or large population), by reducing the rates of adolescent obesity.

Criticism to the theory may include that cultural and ethnic background could have a major impact on outcomes. Socioeconomic status may also play a role because of foods and access to activities could be limited to adolescents from lower socioeconomic status families. Physical environment may also play a factor; adolescents living in large metropolitan areas, or unsafe communities may find it hard to find places to engage in activity like parks, playgrounds or community centers.

In conclusion practitioners need to start playing an active role in addressing adolescent obesity. A practitioner's job is to promote welling being and enhance and facilitate well behaviors in our patients. Practitioners in today's world need to be on the forefront of addressing obesity early on, since it is showing up more and more in younger populations, causing health problems earlier in life. It is our job and duty to promote healthy behaviors and the Adolescent Weight Loss Model is a tool that could be found effective to do so.

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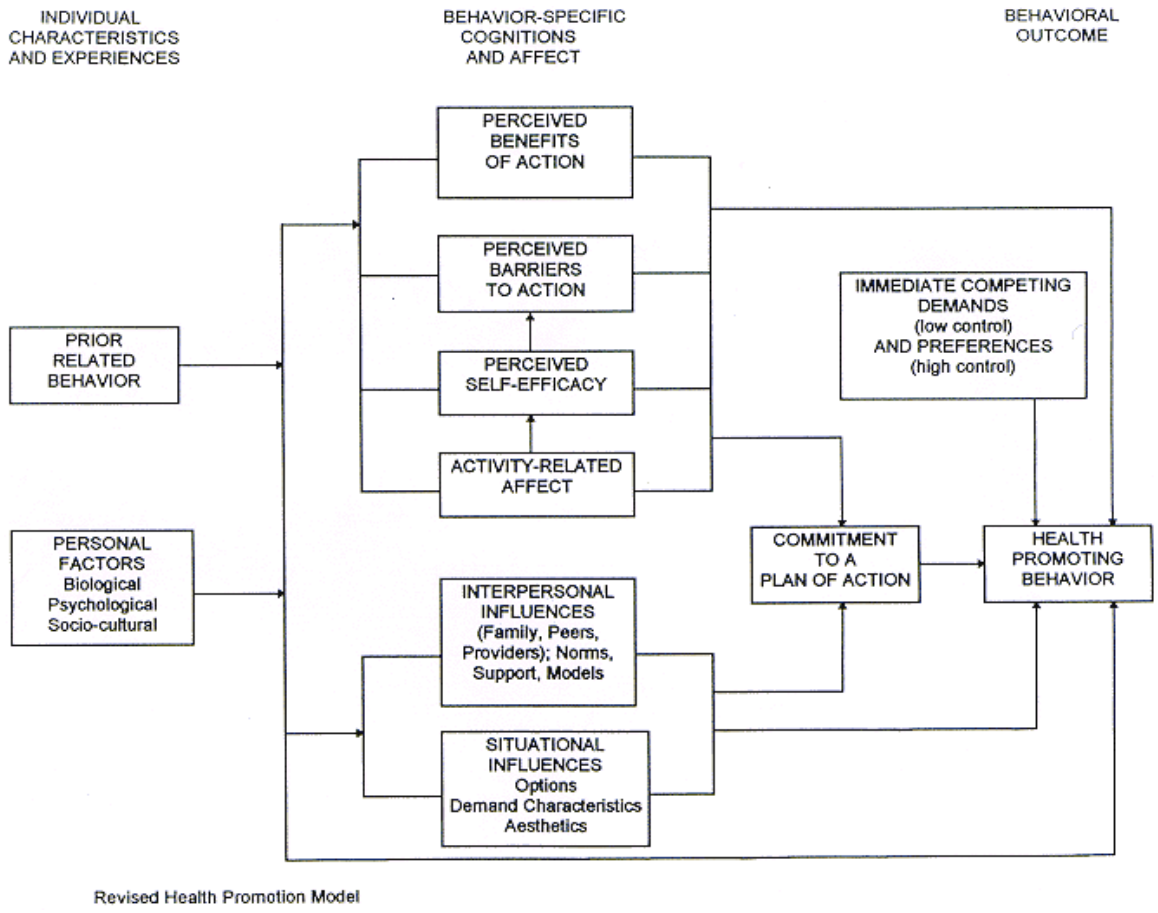
Appendix A

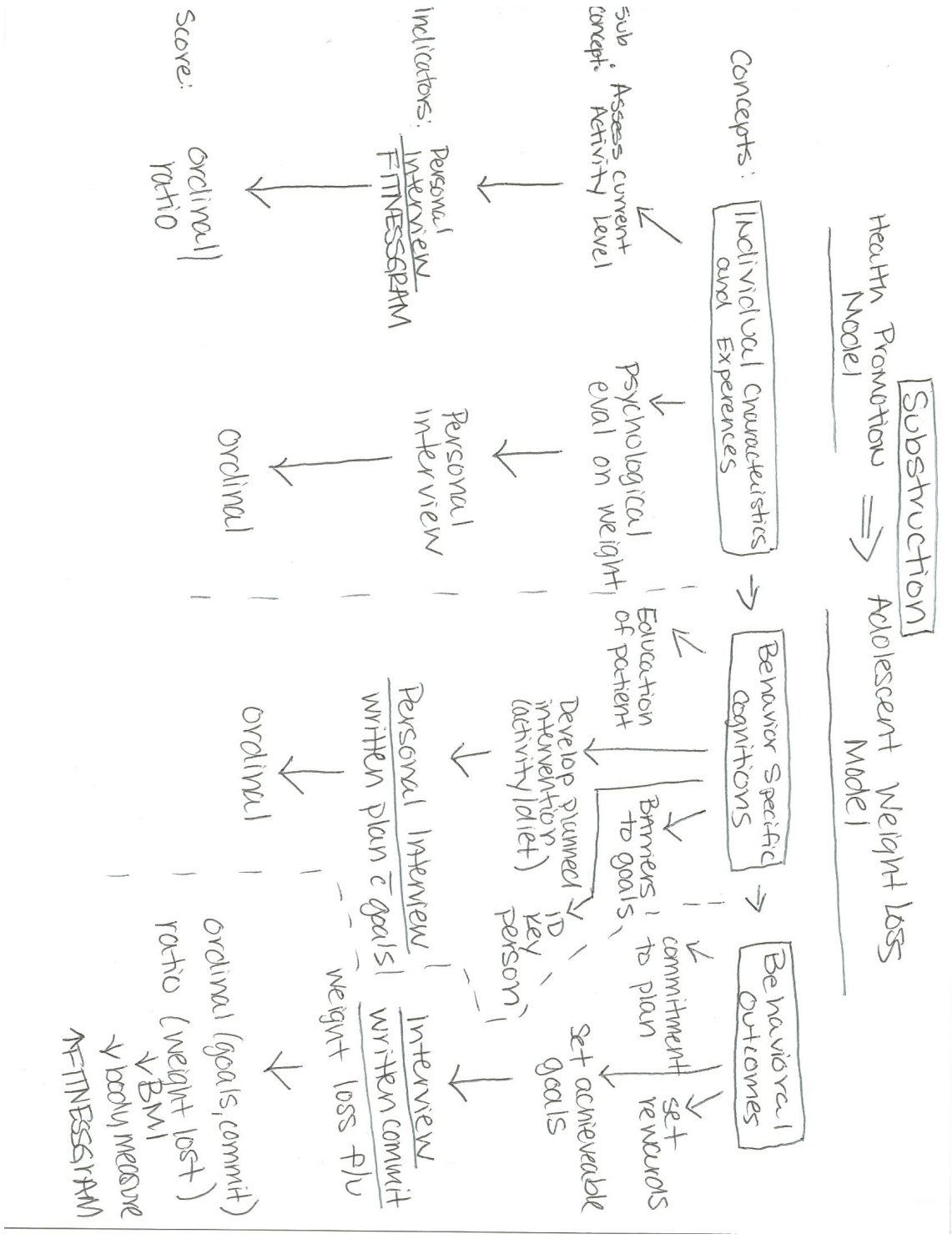
The Health Promotion Model



(Pender, 2011)

Appendix B

Substruction of Health Promotion Model



Appendix C

Adolescent Weight Loss Model