

# A Review of the Use of the Health Belief Model for Weight Management

*Research found in the professional literature on the Health Belief Model and its use in weight management programs is reviewed. Within this model, the primary motivation to change is the level of perceived threat or risk of a specific condition (obesity), and the primary resource for change is self-efficacy or confidence to make the change to lose or maintain a healthy weight.*

**O**besity has become America's most serious epidemic. After smoking, it is the leading cause of preventable, premature death in the United States. An estimated 400,000 deaths are attributed to obesity in the United States each year (Christou et al., 2004). Nurses are involved in many aspects of care of the overweight or obese patient, either directly in a weight management program (teaching and counseling for conventional weight management or bariatric surgery) or through providing care to the patient affected by one or more of the many co-morbidities of obesity. Lifestyle changes are especially relevant when a patient's body mass index (BMI) has increased to the point of being overweight (see Table 1).

Behavior change models are important in preventing weight gain and the subsequent loss of excess weight to help the person meet the goal of living a healthier, longer life. The Health Belief Model (HBM) addresses the effects of beliefs on health and the decision process in making behavioral changes (see Table 2). Bowden, Greenwood, and Lutz (2005) identified it as one of the most studied theories in health education, used with varying populations, health conditions, and interventions. The model provides a comprehensive framework for understanding psychosocial factors associated with compliance. In this article, a summary of the limited research found in a professional literature review of the Health Belief Model as applied to weight management is offered. To qualify for inclusion, an article had to be either an analysis or research performed using the Health Belief Model to maintain a healthy weight or to lose weight for the person already overweight or obese.

**Table 1.**  
**Obesity and BMI Classes**

Category	BMI
Overweight	25-29.9
Obese – Class I	30-34.9
Obese – Class II	35-39.9
Extreme Obesity – Class III	40 or higher

**Source:** Goldman & Ausiello, 2004.

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**Table 2.**  
**Health Belief Model**

Perceived susceptibility	A person's perceived risk for contracting an illness or health condition of concern to the researchers
Perceived severity	A person's perception of the personal impact (clinical or social) of contracting the illness
Perceived benefits	A person's perception of the good things that could happen from undertaking specific behaviors, especially in regard to reducing the threat of the disease
Perceived barriers	A person's perception of both the difficulties in performing the specific behaviors of interest and the negative things that could happen from performing those behaviors, cues to action such as environmental events (e.g., learning that a parent had a heart attack), bodily events (e.g., aches or pains), or stories in the media that trigger perceptions of susceptibility
Self-efficacy	A person's belief or confidence that he or she can perform a specific behavior

**Source:** Baranowski et al., 2003.

### **A Review of Behavioral Change Models in Preventing Weight Gain**

Baranowski, Cullen, Nicklas, Thompson, and Baranowski (2003) compared the various behavior change models for applicability in preventing weight gain. They found that behavioral change may occur as a result of change in variables that mediate interventions. These mediating variables come from theories or models used to understand behavior. This review of seven different categories of models and theories defined the concepts and identified the motivational mechanisms and resources a person needs to change, the processes by which behavioral change is likely to occur, and the procedures necessary to promote change. After analysis was completed, authors identified the most promising model as the Theory of Planned Behavior (TPB) and Social Ecology rather than the Health Belief Model. They concluded that the best step would be to take the most promising concepts from each model and integrate them for use with specific populations.

Authors provided information regarding the HBM and its relation to weight management. The model

includes perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy related to illness. The primary motivation to change is the level of perceived threat or risk of a specific condition, and the primary resource for change is self-efficacy or confidence. The person with a greater level of confidence will more likely engage in a specific behavior to improve health. This process occurs in several steps. Certain cues would stimulate the person's threat of the disease by influencing perceived seriousness, susceptibility, or both. With more powerful cues, those with more personal relevance, or the accumulation of cues, the person is stimulated to take action. This may occur when the person watches a television program about a co-morbidity of obesity, or an obese family member or close friend is affected by a co-morbid condition. The person's action results from perceived benefits, perceived barriers that could be overcome, costs that could be avoided, and the person's confidence in his or her ability to perform the new behavior. Individuals select from the alternative behaviors to minimize the perceived threat.

According to the authors, current research focuses on performing or not performing a specific behavior; little research has been completed related to cues to action. Internal cues, such as feeling better physically or mentally after taking an action, were rated as the most likely to prompt action. The authors found that people may not rate the importance of a cue to change accurately. They also found a contradiction to the Health Belief Model in the fact that young adults experiencing an obesity-related co-morbidity were no more likely to initiate weight loss or increase physical activity regardless of the threat. They concluded that this may be due to a disagreement on how to project objective disease risk and discrepancies in the perception of disease risk and the objective risks in the health dangers.

In addition, Baranowski and colleagues (2003) noted that fear-based communications (using statements or explanations that promote fear to encourage positive changes) have been investigated as a means to promote behavior change by affecting the perceived susceptibility and seriousness of an illness. This form of communication effectively influenced the person's perception of a threat and the selection of a behavior to reduce the threat based on the efficacy of a response (whether the behavior reduces the threat) and self-efficacy (whether the person is confident that the behavior can be performed).

### **Perceived Benefits and Barriers Related to Postpartum Weight Loss of Overweight/Obese Postpartum WIC Participants**

Lambert, Raidl, Safaii, Conner, Geary, and Ault (2005) attempted to clarify the perceived benefits and barriers related to weight loss in a group of overweight/obese postpartum participants in the Women, Infants, and Children (WIC) program and identify interventions through the WIC program to support the participants' weight loss efforts. Concepts from the Health Belief Model served as

the basis for questions to guide the focus group that were used as a qualitative research tool to elicit insights of experiences and attitudes of the participants. The HBM indicates that individuals will change their behavior if they first believe that their health is at risk and their current behavior could lead to detrimental consequences. The individuals must believe that the benefits of making the desired behavior changes outweigh the barriers they may face while attempting to make the changes.

The authors received positive, relevant responses on all six concepts of the HBM and concluded that it was a helpful, appropriate guide for their study. Participants' responses indicated that participants may not perceive their own susceptibility to or severity of risk from being overweight/obese to the extent that it would motivate them to take action. Because individuals make changes if they believe that their health is at risk and their current behavior could have serious consequences, researchers recommended emphasizing the risk and severity of the medical conditions and health complications that can occur from being overweight/obese.

### The Behavior and Psychology Of Weight Management

Kelly (2004) discussed the Health Belief Model as a behavioral change model that can be used to assess and treat overweight and obese patients, stressing the importance of addressing the psychological co-morbidities that can affect long-term success. The HBM was offered as a tool that can be used to determine a patient's general health-related thoughts concerning personal prevention strategies. The author applied the model to the health-related changes occurring when a patient has interest in and concern about his or her personal health, perceiving both a personal vulnerability to a particular health threat and potential negative consequences if change does not occur. If the person's health beliefs do not support the management of overweight and obese-

**Table 3.**  
**Applying the Key Components of the Health Belief Model to an Overweight Patient**

Component	Ask the Patient
Perceived susceptibility	What health risks do you think your weight poses for you?
Perceived seriousness	What do you think will happen if you don't lose weight?
Perceived benefits of action	How do you think you will benefit by losing the weight?
Barriers to action	What prevents you from losing weight?
Cues to action	What will motivate you to lose weight?

**Source:** Kelly, 2004.

ty, he or she is less likely to achieve and maintain weight loss. Kelly provided examples of questions for the provider to use to assess the components of the Health Belief Model in the overweight patient (see Table 3).

### Comparing the HBM and the Theory of Planned Behavior In Predicting Dieting and Fasting Behavior

Nejad, Wertheim, and Greenwood (2005) compared the Health Belief Model, a modified version of the HBM including intention, and the TPB for their ability to predict dieting and fasting. The study sample consisted of 373 female undergraduate psychology students ages 17-52. They were from Australia and their marital status was listed, but body mass index was not provided. The study compared two frequently cited cognitive approaches, the HBM and the TPB, in their ability to predict two types of weight loss behaviors which differed in their severity level. The Health Belief Model and the Theory of Planned Behavior variables were constructed according to previously published guidelines.

The authors of this study found that the best prospective predictors of dieting using the TPB were the intention to diet and indirect perceived control. The 35% variance in dieting was comparable to earlier prospective research on a variety of health behaviors. The HBM showed a 29% variance for dieting and 19% for fasting. The HBM predictors

for dieting and fasting with variances not included in the TPB were perceived benefits of dieting and self-rated susceptibility. This suggested that the best predictors of behavior to encourage weight loss were the women's view of dieting as beneficial and their belief that they were prone to gain weight. Beliefs that others would not disapprove of weight loss behaviors were not useful in predicting behaviors in this sample.

Clinical implications for both the prevention and intervention of dieting and fasting were found in this study. For dieting, intention and benefits appeared to be the most relevant variables because they were the strongest predictors of dieting behavior. Intention was most strongly predicted by attitude measures, benefits in the HBM, and direct attitude in the theory of planned behavior, indicating that interventions are needed that aim to change salient beliefs or to introduce previously nonsalient beliefs.

In this study, the authors found the theory of planned behavior and the modified Health Belief Model, but *not* the non-modified version of the HBM, were able to predict the variance in intention to diet, to fast, follow-up dieting, and fasting behavior. Because they were unable to explain the large percentage of variance in follow-up dieting and fasting, they recommended that future models use modified versions of current models to answer more questions relevant to weight loss and obesity.

## Motivational Predictors of Weight Loss and Weight-Loss Maintenance

Williams, Grow, Freedman, Ryan, and Deci (1996) identified the HBM as the motivational approach most frequently applied in health care settings. Relating recent formulations of the model (with concepts of locus of control and self-efficacy) to weight loss, the authors suggested that people will be motivated to lose weight if they believe that it will decrease their likelihood of contracting a life-threatening disease, have an internal locus of control and expect that specific behaviors will yield significant loss, and are confident that they are able to perform the requisite behaviors. The researchers thoroughly reviewed the Health Belief Model but stated preference for the Self-Determination Theory. Related to weight loss, they suggested that lasting behavior change necessary for maintenance depends not on complying with demands for change

but rather on accepting personal ownership of the regulation for change. This process requires internalizing values and regulating relevant behaviors, integrating them with a sense of self so they can become the basis for autonomous regulation. Results of the study indicated that patients' autonomous motivation to participate in a weight-loss program is related positively to their staying in the program and losing weight, then being able to maintain the weight loss.

### Nursing Implications

Of the five studies reviewed, only two studies (Kelly, 2004; Lambert et al., 2005) identified the Health Belief Model as effective and appropriate for use in successful weight management. The goal of the staff should be to work with the patient in a supportive manner to increase his or her level of confidence to lose weight. Education should be provided to ensure the patient's understand-

ing of the seriousness of obesity and its relation to his or her comorbidities. As stated by several of the researchers, it may be appropriate to use the best concepts from several models to meet the patient's needs. ■

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