UTILIZING THE HEALTH BELIEF MODEL TO OPTIMIZE PATIENT EDUCATION WITHIN FSPRx

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Introduction

With its sky high rates of obesity, diabetes, and heart disease, it should come as no surprise that the United States of America is considered one of the unhealthiest countries in the world. A large part can be attributed to developing technology making a sedentary lifestyle increasingly more accessible, leading to a lack of exercise and movement. An even larger part can be traced back to poor diet quality and behaviors. Rural and underserved communities suffer from this at an exponentially higher rate, as they often have less resources to access good quality foods and a lower health literacy.

The Fresh Start Produce Prescription program (FSPRx) is a 20-week strategy that tackles the lack of fresh fruit and vegetable provision, while also incorporating education and behavioral support through classes and patient centered sessions. The target demographic is individuals with type II diabetes who live in rural, Eastern North Carolina that have demonstrated a need for better access to nutritional resources. With the utilization of health coaching and food literacy classes, FSPRx aims to improve “lifestyle behaviors and health outcomes” (Sastre and Stroud, 2023). In order to do this, said classes must be designed with patient behavior in mind. Following the Health Belief Model is one of the most effective ways to facilitate change in patient behavior. Through carefully curated surveys before and after the program, shifts in action can be noted and the effectiveness of sessions can be recorded.

Background

The health belief model is credited to be one of the earliest versions of health behavior theories. Developed in the 1950s by psychology experts in the U.S Public Health Service, it originally aimed to comprehend the limitations in tuberculosis screening. As time passed and

public health/ technology advanced, the health belief model also continued to develop. As it stands today, the HBM focuses on perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Jones et al., 2014). Additionally, two concepts often referenced are self-efficacy (belief in one's own potential to succeed in developing a behavior) and cues to action (triggers for health behaviors).

The term 'perceived' is the way in which an individual regards something (an object, another person, an idea, etc). As such, the HBM is based on said individual's own perspective and beliefs on their health. These beliefs are a heavy influence on the decisions they make and their health related behavior in general. There is a sociological concept called the "self-fulfilling prophecy" that aligns perfectly with the HBM. Essentially, it details how one's expectations can subconsciously drive actions, which ultimately results in the expectations being fulfilled (Cherry, 2022). This crossover between the HBM and the self-fulfilling prophecy highlights the importance of acknowledging the social/emotional factors of health.

To further understand the HBM, each factor must be defined and broken down. The first of these is perceived susceptibility. Being susceptible to something is lacking resistance to it, or to its resulting consequences. The HBM outlines perceived susceptibility by stating that people will take steps to prevent illnesses if they believe that they are susceptible to that particular illness (Jones et. al, 2014). In the context of chronic disease, this can explain a patient's likelihood to engage in preventative care, healthy behaviors, and risk mitigation. For example, a patient with low perceived susceptibility may not acknowledge that their family has a history of coronary heart failure. This causes them to continuously engage in consuming LDL (bad cholesterol) heavy foods, alcohol, and living a sedentary lifestyle. Because they deny their high

risk of developing heart disease, changing their health behavior seems like an empty or useless act (Allen, 2017).

Perceived severity is how serious a patient believes a condition to be, or if it has potentially serious consequences (Jones et al., 2014). Having the desire to avoid consequences is a part of human nature. The more serious a result may be, the more actions and behaviors will be employed to evade it. This does not exclusively apply to physical pain/sickness. It can also be social, emotional, and financial burden. A patient may not believe that contracting the flu will result in severe physical harm, but they do believe that the resulting unpaid time off from work has potential to affect their finances (Allen, 2017). As such, they are more likely to get a flu vaccination, practice hygiene, and be cautious around afflicted individuals.

Perceived benefits is a more simple concept than the former two. As the name suggests, it is when a patient evaluates what good a particular course of action will bring into their life, or even if any good exists at all. Using chronic disease as an example again, one of the leading causes of skin cancer is long term exposure to ultraviolet rays from the sun. It is generally recommended to incorporate sunscreen into one's daily routine, as it acts as protection from these harmful UV rays. If a patient agrees that sunscreen does indeed aid in preventing skin cancer, they are exponentially more likely to wear it regularly than one who believes it is useless (Allen, 2017).

Finally, perceived barriers are the difficulties and obstacles an individual believes they will face in pursuing a certain health goal/behavior. Often, this is one of the most significant aspects of the HBM, as it has the ability to overpower the other factors. If one has high perceived susceptibility, severity, and benefits but also has high perceived barriers, it can prevent them from seeking out certain courses of action. In regards to health and disease, some pertinent

barriers are inconvenience, expenses, danger, pain, and inadequate resources (Allen, 2017). These obstacles are especially present in communities with low socioeconomic status.

There are countless sources detailing the relationship between socioeconomic status and the likelihood of implementing change in health behaviors. This can be traced to health beliefs being built and supported by one's own health literacy and knowledge. Because of systematic barriers, people living in low SES environments often do not have the resources to increase their health literacy (having a good enough understanding of health and wellness to make informed decisions about themselves). As a result, their perceived susceptibility, severity, benefits, and barriers towards a certain behavior may not be accurate. Providing accessible education is then pushed to the top of the priority list, as there is a positive correlation between knowledge and "protective health beliefs" (Wilkinson et al., 2009). As the HBM is a good scaffold for understanding human behavior and perceptions on health, said education should be guided by this model.

A study done at the Hamadan University of Medical Sciences in Iran is a good example of HBM based education. Their main focus was physical activity rather than diet. Khodaveisi et al. found that with the conclusion of the training sessions, the experimental group of subjects displayed significant changes in perceived susceptibility, severity, benefits, and barriers. This was compared to the control group, which showed little to no change. One of the most notable changes was with self efficacy. The study found that this (self efficacy) was one of the most critical predictors of exercise, with "...people's belief that they are able to correctly perform health behaviors can be effective in promoting self-efficacy in the community" (Khodaveisi et al., 2021). As this study found that HBM guided education and training can lead to significant

changes in health behaviors, it can be predicted the same will happen in the case of dietary and other lifestyle changes.

Another study at the Heart Surgery Department of Shahid Behesti Hospital of Qom in Iran followed a similar vein, with coronary artery bypass graft surgery patients being the subjects and their dietary behavior being the independent variable. The latter was measured via questionnaire, and focused primarily on perceived susceptibility and severity. The interventions explored in this study were nutrition education focused, with training sessions and take-home pamphlets (Shojaei et al., 2016). The conclusion was similar to the last study, in that adequate HBM guided education results in significant positive effects on subject knowledge and as a result, lifestyle and health behaviors.

Both studies display a prevailing need for increased health and wellness knowledge in communities (including rural and underserved). In terms of limitations, the study by Khodaveisi et al. had a small sample size and there was a difficulty in measuring the levels of physical activity (Khodaveisi et al., 2021). The study by Shojaei et al. mentioned that the subject matter's previous studies and surveys are mostly incomprehensive and not as inclusive as they should be (Shojaei et al., 2016). As such, when developing the material for FSPRx, there should be in depth consideration regarding how to reflect all aspects of the HBM while remaining accessible and engaging for participants.

Purpose of Study

The purpose of this project is to evaluate the effectiveness of HBM guided education on the health behaviors of individuals diagnosed with diabetes in rural North Carolina. Specifically, there will be a focus on enhancing the current set of survey questions in order to make it all

inclusive and comprehensive to further highlight aspects of the HBM. By doing this, the changes in perceived susceptibility, severity, benefits, and barriers (along with self efficacy and cues to action) can be accurately recorded.

Research Question

How can the Health Belief Model be most effectively utilized to guide education for participants in order to facilitate changes in health behavior?

Methodology

With the start of FSPRx's nutrition program, there will be administration of the curated surveys. These survey results will be collected and recorded in order to note the initial status of participant's health behavior/mindset. Following the conclusion of the necessary sessions, the same surveys will be utilized in order to record changes in said health behavior. The optimal result will be a significant increase in perception of all aspects of the HBM.

Conclusion

The topic of health and wellness is vital to the medical field, as chronic conditions like obesity, diabetes, and heart disease make their way to being America's number one killers. From a healthcare provider's perspective, this is especially valuable as the early warning signs often show up in the primary care office. The knowledge gained by patients from providers is what keeps them from maladaptive health behaviors and benefits their overall health. Chronic disease management actions are the main fighting force against these deadly diseases that take so many lives today.

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