

Is Information- Motivation - Behavioral Skills Model Appropriate for Interventions on Health Education and Promotion?

***Masoumeh Ebrahimi Tavani¹, Fazlollah Ghofranipour²**

Introduction

During the recent decades, many theoretical models have been introduced to explain and modify the health-related behaviors and influence theory-based education [1, 2]. Each model has its own advantages and weak points; however, none has yet provided a comprehensive framework for interventions on health behaviors [1, 2].

Information-Motivation-Behavioral skills (IMB) model is one of the newest and the most comprehensive models for the behavior change. It is both simple and economical and some studies have confirmed its efficacy in changing health behaviors [3]. IMB was introduced by Jeffrey D Fisher and William A Fisher in 1992 and then in 1996 using the elements of the previous theories, the final conceptual, comprehensive and parsimonious model, which is a thinking and searching guide

for the complex behaviors, was announced [4-7]. IMB model as a health behavior change model, which is based on the integration of the theories in social psychology and health education and promotion theories as well, emphasizes on information, motivation and behavioral skills as the basic determinants of the health-related behaviors [7].

Constructs of IMB model

DiClemente classified the IMB model among the value-expectancy theories [6]. It consists of three constructs: information, motivation and behavioral skills [3-10].

"Information" refers to awareness and knowledge about one's own medical situations and the efficient strategies to manage them. In other words, information refers to awareness and knowledge about the illness and injury and the

1- Ph.D. Candidate, Department of Health Education and Health Promotion, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran Email: masoumeh.ebrahimi@modares.ac.ir

2- Professor, Department of Health Education and Health Promotion, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran Email: ghofranf@modares.ac.ir

related health behavior as a necessary condition to follow the health advices. In addition, wrong information has a negative effect on adherence to such advices.

"Motivation" is a social and individual incentive to adhere to health behaviors. Motivation includes approaches and individual beliefs about health behaviors, their outcomes, their evaluations and the social supports received for those behaviors. Social motivation consists of the individual's perception of social support rendered by the people who play a crucial role in his/ her life and their inspiration to accept those people's wills.

The third construct is "behavioral skills", which means possessing the required instruments for the health behavior.

Behavioral skills are necessary to comply with a health behavior. They include objective skills and self-efficacy for healthy behavior. They reflect one's confidence in being eligible for doing health behaviors.

IMB model indicates that information is necessary but not enough for behavior change. Motivation and behavioral skills are independent and more important than behavior [4, 5]. Information and motivation work through behavioral skills to affect behavior; however, when behavioral skills are familiar and non-complicated; for example, taking a medicine based on information given by a health provider, they may directly affect the behavior.

The relationship between information and motivation is not string. In practice, a highly motivated person may have little information or unlikely a highly informed individual may have low motivation. If an individual is well informed and highly motivated in other words if he/she possesses the necessary behavioral skills, their behavior change is highly possible [3]. In this regard, changing attitudes, emotional responses and social norms are important.

However, in the IMB model, the presence of both information and motivation constructs increase the likelihood of adherence and behavior change [3].

The initial view of the model is depicted [3, 6] in the figure1. The figure shows direct and indirect pathways among the model constructs and behavior.

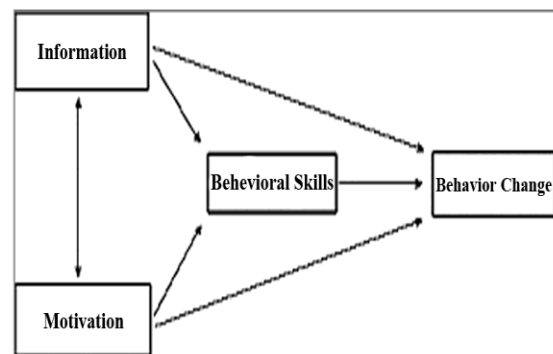


Figure 1 Information-Motivation-Behavioral skills model

Application and Effectiveness of IMB in Health Education and Promotion Interventions

Applicability and effectiveness of the IMB

model in promotion of the health behaviors have been considered specifically in the AIDS studies. Fisher J D and Fisher W A in 1992 introduced the model and applied it for the first time in behavior changes concerning the HIV/AIDS. Since then, the model was used consistently in the HIV/AIDS literature and some related subjects [3-6, 9, 11]. This model has been used in other areas such as breast self-examination (BSE), education about alcohol and drugs, diabetes self-care, nutrition and exercise, medication compliance, sexually transmitted diseases (STDs), education of healthy sexual behaviors, and condom usage as well [7-24].

Iranian and foreign studies conducted using this model reveal the model's efficacy in various health education disciplines as below: Zarani conducted a study about effectiveness of the IMB model in adherence to health behaviors among the patients undergoing Coronary Artery Bypass Graft. The results revealed that in the intervention/test group the compliance was significantly higher than that in the control group [7, 12-13]. Gavvani considered the effectiveness of the IMB model in the promotion of self-care behaviors and measurement of glycosylated hemoglobin (HB A1c) among the adults infected by diabetics B in Tabriz-Iran. This study confirmed that the model is comprehensive, economical and provides short-term framework for behavior

change among population. The authors assumed it as a proper method to improve self-care behaviors of the diabetics B patients [14]. Another study was conducted by Sabzmakan on application of the IMB model in evaluation of self-care behavior prediction among the diabetic patients who referred to the Yazd Diabetes Research Center. Their study showed a meaningful correlation between diabetes knowledge and self-care. No significant relation among the other constructs was reported in their study. They did not consider the model as an appropriate and comprehensive framework for self-care behavior among diabetic patients [15]. Bahrami used IMB model to study the risky sexual behavior among the male students and found a meaningful relationship between HIV infection risk perception and sexual behavior [16].

Fisher J D and Fisher W A performed an HIV prevention program based on the IMB model for high school students. The results confirmed the efficacy of the program in reduction of HIV risk behaviors among the participants in a three-month follow up. Students who were sexually active before the intervention showed a considerable sustainment in using condom during the intercourse [4]. Sharma investigated the need for education about alcohol and drug using IMB model. He reported that the information, motivation and behavioral skills are applicable in the education and points the

advantages of the model as being economical, consisting just three constructs and easily operational. The model has been tested on HIV preventive behaviors and provides a prominent predictability [8]. Amico used the IMB model to study the adherence to antiretroviral therapy and reported improvement in adherence to the medications [11]. Vural compared the sexual health education model in Turkey with IMB model and suggested that the earlier one is efficiently used in the Turkey to implement sexual health educational program. They applied the IMB model to help people reducing high-risk sexual behaviors, preventing sexual problems and guiding people to enhance their sexual health [17]. Cornman in a survey on IMB-based intervention to prevent HIV among the Indian truck drivers studied the participants' sexual behavior. They found the intervention was efficient in using condom [18]. Misovich studied breast self-examination (BSE) using the IMB model. The IMB variables revealed a significant variance in the prediction of breast self-examination behavior and confirmed the relationship between the IMB and BSE [19]. Jaworski studied the effect of an IMB-based educational program for female college students concerning the sexually transmitted diseases. They found some evidence of decrease in high-risk sexual behaviors among the target group. Their results supported the IMB-based interventions [20].

Hong in a survey with the title of "development of a theory-based program to promote sexual and reproductive health and HIV prevention among the Chinese adolescents" found a statistically important improvement in the scores of IMB, concerning the HIV prevention and sexual and reproductive health, after the intervention. The researchers concluded that the IMB model is applicable in non-western contextual studies [21]. Osborn focused on applying IMB in order to investigate the nutrition and exercise behavior of the Puerto Ricans diabetic patients. They reported meaningful relationships among sport and nutrition behavior, information and motivation and controlling the blood sugar. They found the IMB model effective in educational programs for the target group [22]. Mayberry and Osborn performed a survey on medical adherence of diabetic patients, based on the IMB model. In their study, the constructs predicted 41% of adherence behavior variance. The results confirmed that IMB model affects the intervention programs for diabetic patients' medical adherence [23]. Chang in 2014 reviewed an IMB model-based intervention in chronic diseases. They emphasized on behavioral interventions and controlled trials and concluded that the model is potentially a good solution for designing behavioral interventions [24].

According to the studies, wide range of topics

has been considered using the IMB model. Moreover, most of the IMB model-based interventions affected the behavior change in a variety of clinical and educational applied programs. In those studies, the IMB has devoted 33% of the behavior change (in average) both in correlational and prospective studies [3]. According to some other studies the predictive variance of the model between 10% to 75% [5, 9, 13].

A few disadvantages and restrictions of this model have been mentioned in literature. For instance, information construct of this model is necessary but not adequate for behavioral change. The second limitation is that information and motivation are interrelated and such association creates problems in the use of IMB model. Finally, the model needs environmental and cultural components, which are important in predicting and explaining behaviors [8].

Conclusion

A review of the literature on the health behavior adherence studies shows that the interventions which apply IMB model are significantly involved in changing health behaviors. This is considered as one of the IMB model-based interventions' advantages [7, 8]. Moreover, the IMB model is suggested for health education and promotion interventions, with regard to the following advantages:

- The model is new and its application in health promotion and education has innovative dimensions, specifically in Iran, where there are rare studies in this regard.
- It is a conceptual, comprehensive and extendable model based on the present sources and this point makes it practicable in various fields.
- The model's small number of constructs facilitates its application.
- Application of this model is easier than that of to the more complex models.
- IMB model is operatively simple; hence, health system's employees can use it in various fields as a comprehensive and applicable model.
- The model's application scope is expanded through using and integrating the theories in social psychology, health education and promotion, with emphasis on the IMB components as the key determinants of health-related behaviors.
- Covering different aspects of the IMB model, including cognitive, motivational and behavioral aspects is another positive characteristic of the model.
- Empirical test of this model and its effectiveness in increasing individuals' adherence to health behaviors is another advantage of the model.
- Its proper variance in the health behavior change and its productiveness has been shown in various studies.

- The model has been proposed as a new model of behavior change by the World Health Organization [3].
- Although the IMB model has some limitations and disadvantages as any other health education and promotion model, it can be a proper model for the related interventions because it has just three constructs and it is expandable to various subjects. Besides, it possesses a favorable variance of behavior predictability.

Keywords: Information-Motivation-Behavioral skills (IMB) model, Health Education and Promotion, Effectiveness

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