

Using Health Information Technology and Behavior Change Model to Increase Exercise Adherence in Obesity

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INTRODUCTION

Two thirds of American adults and one third of children and adolescents are overweight or obese [7]. Overweight children and adolescents are likely to be obese as adults. Overweight and obesity increases the risk of major health problems, such as high blood pressure, diabetes, and heart disease. Physical inactivity and sedentary lifestyle are contributing factors of overweight and obesity [4]. Increasing exercise adherence in overweight and obese individuals can potentially lower the risk of major health problems associated with overweight and obesity. The purpose of this paper is to review and explore how health information technology (HIT) can be leveraged to increase physical activity adherence in overweight and obese individuals using a personalized web-based application grounded on a behavior change model.

MATERIALS AND METHODS

Peer reviewed published articles were considered in this review. A search for systematic reviews using combinations of key words: obesity and health IT, behavior change model, Personal Health Record (PHR), physical activity, and exercise adherence were applied in this review.

RESULTS

Internet based physical activity interventions has been shown to be an effective tool in weight management [1, 2, 6]. PHR can be used as a self-management tool to record, track and edit information, to store medical and health information, and to encourage an individual's active participation in their healthcare [8]. Behavior Change Models (BCM), such as the Theory of Planned Behavior (TPB) [3], has been successful in identifying the key factors involved in personal health behavior decisions including physical activity [3]. The integration of BCM theories in web-based applications has shown promising results; however, the prior attitude of participants utilizing these solutions has been criticized [5]. For example, smokers who visit a BCM based smoking-cessation web-application; already have an attitude to search for such information in the first place while non-motivated users may not visit the web-application at all. In this review, no prior studies were found

utilizing electronic PHR systems based on customized BCM interventions in the context of exercise adherence (Fig 1).

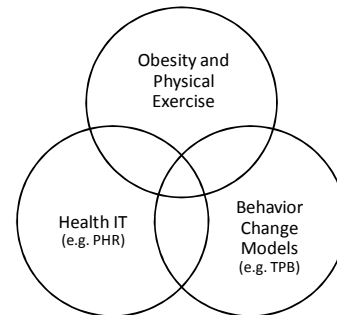


Fig. 1. Integration of HIT, BCM and Physical Exercise

CONCLUSION

Combined use of behavior change models such as TPB and HIT solutions such as PHR can be a valuable tool to prevent and manage chronic conditions such as obesity; however, the integration of PHR with TPB should not result in conflict with the integrated behavioral interventions. To target non-motivated users, the PHR should attract the users (i.e. patients) for reasons other than disease management only. For example, adolescents use a social networking website or an interactive application for reasons other than disease management. Thus, an embedded PHR solution in such social/interactive applications can extend the BCM (e.g. TPB) interventions to motivated, non-motivated, obese and non-obese users. Consequently, this integration can be an effective approach in increasing physical activity adherence and obesity prevention among adolescents.

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