Multiple health behavior change: a synopsis and comment on “A review of multiple health behavior change interventions for primary prevention”

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ABSTRACT

The ninth column on Evidence-Based Behavioral Medicine is a synthesis of a recent systematic meta-review of multiple health behavior change (MHBC) interventions published by Prochaska and Prochaska in the *American Journal of Lifestyle Medicine* (Am J Life Med 5:208–221, 2011). Health risk behaviors are highly prevalent and increase the risk of developing and exacerbating chronic disease. The purpose of the meta-review was to examine the efficacy of MHBC interventions in a variety of populations and settings. The available literature was synthesized into three health behavior domains including energy-balance behaviors (physical activity and nutrition), addictive behaviors, and disease-related prevention. Twelve systematic reviews were identified that summarized more than 150 randomized clinical trials. Findings suggest that: (1) Physical activity and nutrition interventions are effective in producing weight loss among adults and female youth, (2) treating two addictive behaviors produces a higher long-term abstinence rate than treating a single behavior, and (3) although preventive interventions for cardiovascular disease and cancer significantly reduce health risk behaviors, reductions in disease incidence are yet to be demonstrated.

KEYWORDS

Multiple risk, Behavior change, Risk behavior, Lifestyle change, Primary prevention

INTRODUCTION

A significant proportion of the American population engages in multiple health risk behaviors. Approximately 95 % of individuals fail to meet the recommended guidelines for physical activity, 75 % do not achieve daily targets for fruit and vegetable intake, and 30 % are obese [2]. Further potentiating health risk, many of these risk behaviors often co-occur, increasing the risk of chronic diseases, disability, and premature death. Treating health risk behaviors individually is a costly approach because it fails to capitalize on interrelationships among health risk behaviors that are responsible for complementary and substitution effects of multiple

Implications

Researchers: Researchers are charged with better understanding of the methods to best approach multiple health behavior change and the mediators, moderators, and long-term health outcomes of such interventions.

Practitioners: Practitioners can capitalize on the available literature by offering individuals and populations interventions that target multiple health risk behaviors to help reduce the risk of serious morbidity.

Policymakers: Policymakers should consider ways to facilitate environmental change to promote change in multiple health risk behaviors.

health behavior change (MHBC) (for reviews, see Spring et al. [2]). Consequently, MHBC interventions offer a viable alternative to treating health risk behaviors in isolation. This article summarizes the findings of a recent systematic meta-review of the efficacy of MHBC interventions across the lifespan.

KEY QUESTION

What is the efficacy of MHBC interventions targeting physical activity and nutrition, substance use, and the prevention of cardiovascular disease (CVD) and cancer, across the lifespan among youth and adults?

SEARCH STRATEGY

The authors searched Medline, PsycInfo, and the Cochrane Library from January 2004 to December 2009. Search terms included: multiple risk behaviors, health behaviors, risk factors, primary prevention, obesity prevention, and specific behavioral pairings (e.g., tobacco and alcohol, physical activity, and nutrition). Studies were limited to systematic reviews and randomized clinical trials that focused on MHBC in youth and adults. Studies were excluded if interventions concentrated on multiple behavioral outcomes (e.g., fruits and vegetables; fat) within only a single behavioral domain (e.g., nutrition).

RESULTS

Physical activity and nutrition

The authors reviewed the literature on MHBC interventions targeting energy-balance behaviors of physical activity and nutrition. Primary and secondary outcomes included weight change and adherence to physical activity and diet changes. Intervention components included energy intake/expenditure games to enhance knowledge, health and physical activity education, providing structured meals, individual counseling and feedback, self-monitoring, and group meetings.

Overall, MHBC interventions targeting physical activity and nutrition among both youth and adults significantly reduce body weight or body mass index. However, these findings among youth were found primarily among girls. Only one study with adults explored a sequential versus simultaneous approach to changing diet and activity behaviors for weight loss, compared to a waitlist control group. The findings of which showed no significant difference between the simultaneous or sequential approaches; however, both interventions were superior to a waitlist control group [3].

Addictive behavior treatment

Several school- and community-based MHBC interventions have targeted a variety of risk behaviors including alcohol and tobacco use, HIV/AIDS prevention, and violence and dating safety. The results of interventions for reducing addictive behaviors have been inconsistent and limited by methodological shortcomings. Some MHBC interventions among youth have been found to reduce the initiation of substance use and engagement in delinquent behaviors (i.e., stealing, property damage, violent acts). However, several studies did not report attrition rates or analyze data according to the intent-to-treat principle. Among adults, physical activity has been studied as a strategy to reduce substance use by reducing tobacco-related cravings, negative affect, and physiological withdrawal symptoms. Results have been modestly positive. Importantly, physical activity does not appear to adversely influence abstinence.

Findings from studies investigating dietary interventions as an adjunct treatment to tobacco cessation outcomes have been varied. Smoking cessation during the treatment for other addictive behaviors has been found to result in increased abstinence and, in some cases, improved adherence to drug/alcohol treatment.

MHBC for disease prevention

MHBC interventions to prevent CVD and cancer have been a focus of research efforts for the past several decades. MHBC interventions have been shown to improve physiological markers (blood pressure, weight, cholesterol) and behavior (increased physical activity and improved diet quality). However, researchers have failed to demonstrate significant reductions in fatal or nonfatal clinical events, or the incidence of CVD.

MHBC interventions studies have shown a significant reduction in cancer-related risk behaviors including tobacco use, alcohol consumption, poor diet quality, physical inactivity, and sun exposure. Overall, studies have shown success in changing multiple behaviors simultaneously with results ranging from decreased smoking rates, decreased alcohol consumption, improved diet intake, weight loss, decreased sun exposure, and increased physical activity. It was also found that improving diet quality and reducing sun exposure did not decrease the efficacy of smoking cessation treatment.

DISCUSSION

The authors identified 12 systematic reviews that summarize close to 150 clinical trials. Overall, physical activity and nutrition interventions were efficacious in producing weight loss among adults and female youth. School- and community-based MHBC interventions were efficacious in reducing initiation of substance use and participation in delinquent behaviors among youth. Although studies have shown that MHBC interventions targeting diet, activity, and weight management improve certain physiological markers (e.g., BP, cholesterol), reduction of the risks of developing CVD or cancer has not been demonstrated.

COMMENT

The findings of the meta-review by Prochaska and colleagues suggest that MHBC interventions hold potential to reduce the prevalence of multiple health risk behaviors. Although the results of such interventions are encouraging, further research is needed in three specific areas. First, the optimal manner in which to change multiple health risk behaviors is unclear. For instance, MHBC can be produced either simultaneously or sequentially, and the order in which individual health risk behaviors are best addressed to initiate and maintain healthy behavior change is unclear. Second, further research examining the mediators and moderators of MHBC interventions is needed to understand the mechanisms and conditions under which such interventions produce change. Lastly, long-term follow-up is needed to determine whether improvements in multiple health risk behaviors results in decreased incidence of chronic diseases, such as CVD and cancer. Continued research in these priority areas will empower clinicians, researchers, and policy makers to effectively intervene upon a large proportion of the American population that is at risk for serious morbidity due to multiple risk behaviors.

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