

Impact of Perceived Barriers to Healthy Eating on Diet and Weight in a 24-Month Behavioral Weight Loss Trial

Jing Wang, PhD, MPH, RN¹; Lei Ye, PhD²; Yaguang Zheng, MSN, PhD, RN³; Lora E. Burke, PhD, MPH, FAAN, FAHA³

ABSTRACT

Objective: To examine longitudinal changes in perceptions of barriers to healthy eating and its impact on dietary intake and weight loss in a 24-month trial.

Methods: A secondary analysis was conducted using data from a behavioral weight loss trial (n = 210). The Barriers to Healthy Eating (BHE) scale was used to measure perceived barriers to healthy eating. Weight, total energy, and fat intake were measured. Longitudinal mixed regression modeling was used for data analysis.

Results: The BHE total score decreased from baseline to 6 months and increased slightly from 6 to 24 months ($P < .001$). Changes in BHE total and subscale scores were positively associated with changes in total energy and fat intake ($P < .05$) as well as weight ($P < .01$).

Conclusions and Implications: Reducing barriers could lead to improved short-term dietary changes and weight loss. Innovative strategies need to be developed to prevent barriers from increasing when intervention intensity begins to decrease.

Key Words: eating barriers, weight loss, dietary intake, behavioral intervention, behavior change (*J Nutr Educ Behav.* 2015; ■:1-5.)

Accepted May 15, 2015.

INTRODUCTION

The prevalence of overweight and obesity remains high at approximately 66% among US adults.¹ Although behavioral intervention studies focusing on healthy eating and physical activity have demonstrated that individuals can achieve an average weight loss of 10.4 kg at 6 months and maintain a weight loss of 8.1 kg at 18 months,² reevaluation of current efforts to tackle obesity is essential to improve the long-term effect of such an approach to behavioral intervention.³ Perceived barriers is one of the most studied concepts and important predictors of behavior change.⁴ How-

ever, most studies in obesity and/or healthy eating have used qualitative inquiry or cross-sectional designs to examine perceived barriers to healthy eating,⁵⁻⁹ which limits the ability to evaluate how individuals' perceptions of barriers to healthy eating change over the course of a behavioral intervention.

Several researchers have studied perceptions of barriers to healthy eating and identified multiple barriers. A qualitative study revealed 4 key factors that can lead to adolescents' perception of barriers to healthy eating: physical and psychological reinforcement of eating behaviors, perceptions of food and eating

behaviors, perceptions of contradictory food-related social pressures, and perceptions of the concept of healthy eating itself.⁹ A cross-sectional study of African American adults (mean age, 50 years) found that participants reported that the high price of healthy foods was the biggest barrier to healthy eating; other barriers included healthy food being less palatable, not being able to find and/or cook healthy foods, and the absence of social support for having healthy foods available.⁵

Few studies have reported changes in barriers to healthy eating over time along with an association with dietary intake and weight change. Turk et al¹⁰ found that increases in barriers to healthy eating predicted weight gain among black and white adults. Another behavioral weight loss clinical trial reported declines in perceived barriers to healthy eating; eg, reduced perception of lack of control and lack of time were significantly associated with greater weight loss over 12 months in an adult sample that was predominantly white.¹¹ However, neither of those 2 studies examined the trend of how individuals' perceptions of barriers to healthy

¹School of Nursing, University of Texas Health Science Center at Houston, Houston, TX

²Center for Aging and Population Health, University of Pittsburgh, Pittsburgh, PA

³School of Nursing, University of Pittsburgh, Pittsburgh, PA

Conflict of Interest Disclosure: The authors' conflict of interest disclosures can be found online with this article on www.jneb.org.

Address for correspondence: Lora E. Burke, PhD, MPH, FAAN, FAHA, School of Nursing, University of Pittsburgh, 415 Victoria Bldg, 3500 Victoria St, Pittsburgh, PA 15261; Phone: (412) 624-2305; Fax: (412) 383-7293; E-mail: lbu100@pitt.edu

©2015 Society for Nutrition Education and Behavior. Published by Elsevier, Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jneb.2015.05.004>

eating change over the duration of a 24-month behavioral intervention and how such changes in individuals' perceived barriers to healthy eating contribute to changes in weight and individuals' dietary habits. Filling this gap of knowledge will help researchers examine long-term effectiveness of counseling strategies to overcome barriers to healthy eating in a behavioral intervention for overweight and obesity. Thus, this study aimed to examine changes in perceptions of barriers to healthy eating and its associations with changes in dietary intake and weight loss over 24 months in a behavioral weight loss trial.

METHODS

The design of this study is a secondary analysis using data from a behavioral weight loss trial: the Self-Monitoring and Recording using Technology Trial.¹² This was a 24-month, 3-group, randomized clinical trial that tested the efficacy of a behavioral weight loss intervention with 3 different approaches to self-monitoring of diet and physical activity: (1) using a paper diary, (2) using a personal digital assistant (PDA), or (3) using a PDA and receiving a daily tailored feedback message delivered via the PDA at random times. Regardless of treatment assignment, all study participants received a standard group-based behavioral weight loss intervention based on Social Cognitive Theory.¹²

Group meetings were held in the evening and lasted approximately 45–90 minutes. They were held weekly for the first 4 months, biweekly for months 5–12, and monthly for months 13–18; 1 maintenance session was held at 21 months, totaling 39 group sessions. Participants were prescribed a calorie goal between 1,200 and 1,800 depending on their gender and baseline weight, and were asked to limit fat intake to 25% of their daily calories. They also received exercise goals given as weekly minutes, which increased throughout the study, eg, to achieve 150 minutes of physical activity by the third month and 180 minutes by the sixth month. All participants were instructed to self-monitor daily energy and fat intake and physical activity using a paper di-

ary or PDA as described above.¹² Barriers related to healthy eating were addressed in the context of the group counseling sessions.

Participants were eligible if they were aged 21–59 years and had a body mass index between 27 and 43 kg/m². Individuals who had a major medical condition requiring dietary and exercise supervision or a psychiatric condition that might interfere with completing the study, had participated in a weight loss program in the previous 6 months, or planned a pregnancy in the next 24 months were excluded.¹² A total of 704 individuals were screened over the phone; 210 eligible participants were randomized. The sample size of 210 was chosen to have at least 0.80 power for 2-sided hypothesis testing at a significance level of .05. Retention was 84.7% with no differential attrition at 24 months.

The researchers collected sociodemographic data including age, gender, race (white/black), education, marital status (currently married, never married, or widowed), employment status (full-time or not full-time), and income levels using the Socio-demographic and Lifestyle Questionnaire, which is a self-administered, standardized questionnaire. The questionnaire was developed by the research staff at the University of Pittsburgh School of Nursing Center for Research in Chronic Disorders and has been used extensively for over 15 years in an array of populations. Participants' perceived barriers to healthy eating were measured by the Barriers to Healthy Eating (BHE) Scale. To the authors' knowledge, it was the first scale designed to measure perceptions of various barriers to healthy eating systematically among individuals undergoing weight loss treatment. The BHE is a 22-item questionnaire asking individuals to rate various feelings or situations related to following the calorie- and fat-restricted diet, eg, feelings of deprivation or cost of the recommended eating plan. It has 3 subscales: Emotions (11 items), Daily Mechanics of Following a Healthy Eating Plan (8 items), and Social Support (3 items). The potential range for the BHE total score is from 22 to 110 and the potential range for each of the subscales is as follows: Emotions, 11–55; Daily Mechanics, 8–40; and Social Support,

3–15. A higher score indicates higher perceived barriers. It has good internal consistency reliability with a Cronbach alpha of .7 in this study and predictive validity with weight loss at 6 months ($r = .28$) in a previous study.¹³

Total energy and total fat intake were assessed using data extracted from 2 unannounced 24-hour dietary recalls guided by the Five-Step Automated Multiple-Pass Method^{14,15} and the Nutrition Data System for Research (NDSR) software program (Nutrition Coordinating Center, University of Minnesota, Minneapolis, MN). To reflect the marketplace throughout the study, dietary intake data were collected using NDSR software versions 2006, 2007, and 2008. Final calculations were completed using NDSR version 2010. The NDSR time-related database updates analytic data while maintaining nutrient profiles true to the version used for data collection. One recall was conducted for a weekday and another for a weekend day. The average of the total energy and total fat intake from the 2 recalls was used to summarize participants' daily dietary intake. Research staff measured participants' weight using a digital scale (TBF-300A, Tanita Corporation of America, Inc, Arlington Heights, IL) after an overnight fast with participants wearing light clothing and no shoes. All measures were completed every 6 months (at baseline and 6, 12, 18, and 24 months). The study was approved by the University of Pittsburgh Institutional Review Board.

The researchers conducted statistical analyses using SAS (version 9.2, SAS Institute, Cary, NC, 2008). Significance was set at .05 for 2-sided hypothesis testing. Summary statistics were reported as mean (SD) or frequency count (%) as appropriate. Linear mixed modeling was used to examine the main effects of treatment groups and time (at baseline and 6, 12, 18, and 24 months) on the weight, dietary intake, BHE total score, and subscale scores. Because there was no significant treatment group effect on the weight, dietary intake, BHE total score, and subscale scores ($P > .05$ for all variables), the researchers merged the data from the 3 groups and used the full sample to examine associations between BHE scores and

Download English Version:

<https://daneshyari.com/en/article/361088>

Download Persian Version:

<https://daneshyari.com/article/361088>

[Daneshyari.com](https://daneshyari.com)