SSM -Population Health 2 (2016) 62–67

Contents lists available at ScienceDirect

SSM -Population Health

journal homepage: www.elsevier.com/locate/ssmph

Article

Self-efficacy is associated with increased food security in novel food pantry program

Katie S. Martin [a,*], Angela G. Colantonio [b,1], Katherine Picho [c,2], Katie E. Boyle [d,3]

[a] University of St. Joseph, 1678 Asylum Avenue, West Hartford, CT 06117, United States
[b] Urban Alliance, Inc., 62 Village Street, East Hartford, CT 06108, United States
[c] Department of Medicine, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814, United States
[d] University of St. Joseph, 1678 Asylum Avenue, West Hartford, CT 06117, United States

ARTICLE INFO

Article history:
Received 18 July 2015
Received in revised form
26 November 2015
Accepted 2 January 2016

Keywords:
Food pantry
Freshplace
Self-efficacy
Food security
Client choice

ABSTRACT

We examined the effect of a novel food pantry intervention (Freshplace) that includes client-choice and motivational interviewing on self-efficacy and food security in food pantry clients. The study was designed as a randomized control trial. Participants were recruited over one year from traditional food pantries in Hartford, CT. Participants were randomized to Freshplace or traditional food pantries (controls) and data collection occurred at baseline with quarterly follow-ups for 18 months. Food security was measured using the USDA 18-item Food Security Module. A newly developed scale was utilized to measure self-efficacy. Scale reliability was measured using a Cronbach alpha test; validity was measured via correlating with a related variable. Analyses included chi-square tests for bivariate analyses and hierarchical linear modeling for longitudinal analyses. A total of 227 adults were randomized to the Freshplace intervention ($n=112$) or control group ($n=115$). The overall group was 60% female, 73% Black, mean age=51. The new self-efficacy scale showed good reliability and validity. Self-efficacy was significantly inversely associated with very low food security ($p<.05$). Being in the Freshplace intervention ($p=.01$) and higher self-efficacy ($p=.04$) were independently associated with decreased very low food security. The traditional food pantry model fails to recognize the influence of self-efficacy on a person's food security. A food pantry model with client-choice, motivational interviewing and targeted referral services can increase self-efficacy of clients. Prioritizing the self-efficacy of clients over the efficiency of pantry operations is required to increase food security among disadvantaged populations.

Introduction

Food insecurity, or not having the resources to obtain enough safe, nutritionally adequate food to support an active, healthy life, is a significant public health issue in the United States. In 2013, 14.3% (17.5 million) of American households experienced food insecurity at some point during that year (U.S. Department of Agriculture, 2015). The underlying risk factors for food insecurity include unemployment, low levels of income and education, high housing and heating costs, lack of access to transportation, poor mental health and low social capital (U.S. Department of Agriculture, 2015; Poppendieck, 1998; Gorton, Bullen & Mhurchu, 2010). The private emergency food system, comprised of food banks, food pantries, and soup kitchens, has grown tremendously over time and currently provides a vital source of assistance for millions of Americans (Daponte & Bade, 2006). In 2014, Feeding America, the largest organization of emergency food providers in the country, served an estimated 46 million people, an increase of almost 25% from 2009 (Feeding America, 2014). The Feeding America network consists of 200 food banks and 60,000 local charitable agencies. Since 2009 the number of food pantries and meal programs providing food has decreased by 1,000 agencies, meaning there are fewer programs providing more meals to families in need.

Food insecurity is associated with a range of negative health outcomes, including poor physical health of infants, low educational achievement among children, mental health issues among adolescents and adults, and nutrient deficiencies (Fox and Cole, 2004). The diets of food insecure individuals and families increase risk for chronic health conditions, including obesity (Fox and Cole, 2004; Seligman, Bindman, Vittinghoff, Kanaya, & Kushel, 2007), diabetes (Seligman et al., 2007), heart disease (Stuff, Casey, &

* Corresponding author. Tel.: +1 860 231 5235.
E-mail addresses: ksmartin@usj.edu (K.S. Martin), angela.colantonio@urbanalliance.com (A.G. Colantonio), edpsychresearch@gmail.com (K. Picho), kboyle@usj.edu (K.E. Boyle).
[1] +1 860 986 7724x704.
[2] +1 301 295 0952.
[3] +1 860 227 9558.

http://dx.doi.org/10.1016/j.ssmph.2016.01.005

Connell, 2007), high blood pressure (Fox and Cole, 2004) and high cholesterol (Stuff et al., 2007).

While food pantries were designed to provide "emergency", short-term food assistance, many clients visit pantries regularly (Martin, Wu, Wolff, Colantonio, & Grady, 2013; Weinfield, Mills, & Borger, 2014). Food bank directors and food pantry staff are increasingly looking for ways to address the underlying issues of poverty rather than only give away food (Martin, Wu, Wolff, Colantonio, & Grady, 2013; Saul & Curtis, 2013).

The role of self-efficacy in increasing food security

The national food bank network has grown in numbers and scope over three decades while the prevalence of food insecurity has also risen (U.S. Department of Agriculture, 2015; Feeding America, 2014). Many food pantry clients are not just in need of food, but are also in need of employment with livable wages, additional education, affordable health care, improved affordable housing conditions, mental health services, and affordable child-care (Poppendieck, 1998; Feeding America, 2014). Families facing these challenges likely experience very low confidence in their ability to become self-sufficient.

The Freshplace food pantry intervention in Hartford, CT was designed to address the underlying causes of poverty through a community approach. Freshplace originated from a collaboration between three community organizations (Foodshare, Chrysalis Center, and Junior League of Hartford) to help residents living in the North End neighborhood of Hartford acquire long-term food security and self-sufficiency (Martin, Shuckerow, O'Rouke, & Schmitz, 2012). Freshplace strives to offer a more fundamental approach to the problem of hunger, and uses case management, motivational interviewing, and wrap-around services within the greater community to address the root causes of poverty. The history of Freshplace has been described previously (Martin, Shuckerow, O'Rouke, & Schmitz, 2012). People who attend Freshplace are called members.

Recognizing the obstacles impeding food security, the Freshplace intervention uses Bandura's Social Cognitive Theory and its core set of determinants to address the problems of hunger and food insecurity (Bandura, 1998; Van Ryzin, Ronda, & Muzzio, 2001). These determinants include knowledge of risks and benefits of health behaviors, perceived self-efficacy, outcome expectations, health goals, perceived facilitators, and social and environmental impediments that may present barriers to achieving health goals.

Self-efficacy refers to an individual's confidence in their ability to plan and follow through with a series of actions that will result in desired outcomes or achievements (Bandura, 1998). Without a sense of self-efficacy, individuals will not feel compelled to change their behavior, believe in themselves, or persevere through challenges to reaching their goals (Bandura, 2004). Research studies examining the association between self-efficacy and behavior change related to weight loss (Walpole, Dettmer, Morrongiello, McCrindle, & Hamilton, 2013), nutrition (Richert et al., 2010; Anderson, Winett, Wojcik, & Williams, 2010), exercise (Anderson, Winett, Wojcik, & Williams et al., 2010; Williams and French, 2011), and chronic disease management (King, Glasgow, & Toobert, 2010; Lyles, Wolf, & Schillinger, 2013), have demonstrated the pivotal role of self-efficacy in improving health.

Knowing that behavior change is a process that involves several stages, the Freshplace intervention also uses the Stages of Change Model (Prochaska, 1983) to help clients make positive changes in behavior by setting small, achievable goals. Given that self-efficacy appears to regulate transitioning between all stages of change bidirectionally, high self-efficacy acts as a universal facilitator of progression through all stages of behavior change (Bandura, 1998).

Research goals

This study builds upon previous research on food security, diet quality and obesity (Robaina & Martin, 2013) and tests the hypothesis that participating in Freshplace increases self-efficacy, which in turn decreases the prevalence of food insecurity. The research team developed a self-efficacy scale for food security to measure self-efficacy within the context of an emergency food assistance program intervention. Hereafter, the term "self-efficacy" refers to "self-efficacy for food security" specific for this intervention. To the authors' knowledge, no other study has explored the relationship between food insecurity and self-efficacy in this context. As such, the goals of this study were to (1) identify associations between self-efficacy and food security; (2) evaluate whether the Freshplace intervention increases self-efficacy; and (3) evaluate whether self-efficacy reduces the food insecurity of study participants over 18 months.

The freshplace food pantry intervention

There are three major components of Freshplace that make it different from traditional food pantries, each of which are designed to increase the food security and self-efficacy of members: (1) fresh food, including fruits, vegetables, meat, and dairy, is provided in client-choice format where members choose their own food and shop with dignity, and nutrition education is offered on site; (2) program members attend monthly case management meetings with a Project Manager during which they receive motivational interviewing; and (3) individualized referral services to community programs and social services, providing assistance with housing, education, employment, health care, and other basic needs, are offered to members based on their goals (Robaina & Martin, 2013). Another core feature of Freshplace is that members are given appointment times so they do not wait in line. Traditional food pantries commonly hand out pre-packaged bags of non-perishable food to clients who wait in line and do not offer any additional services.

Materials and methods

Study design

The evaluation of Freshplace consisted of an experimental study with a randomized, control group design. Freshplace opened in 2010 and outcomes were measured for study participants over 18 months. The primary outcomes of interest for this study were the food security and self-efficacy status of Freshplace members in comparison to a control group participating in traditional food pantries. The University of Connecticut Institutional Review Board approved the study protocol.

Participants and recruitment

Recruitment of study participants took place in two traditional food pantries located near the Freshplace food pantry in the North End of Hartford. After receiving consent and collecting baseline data, participants assisted with randomization into either the Freshplace intervention group or the traditional food pantry control group by blindly selecting one of two colored balls from a bag indicating either Freshplace (red) or control group (blue). Sample