



Assessment of a Chronic Disease Self-Management Program to Increase Physical Activity of Adults With Severe Mental Illness



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ABSTRACT

Individuals with severe mental illness (SMI) experience excessive co-morbidities and early mortality. Self-management programs have the potential to increase physical activity levels of individuals with SMI and reduce the incidence of co-morbidities. The purpose of this quality improvement project was to assess a chronic disease self-management program (CDSMP) to increase physical activity of adults with SMI measured by daily steps tracked with a pedometer. Results of data analysis indicated no statistically significant difference in steps across the six-week program. However, findings suggested that individuals with SMI are capable of using a pedometer and tracking steps on a daily basis.

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OVERVIEW

The average life span of individuals with severe mental illness (SMI) is nearly twenty-five years shorter than the general population (Knapik & Graor, 2013, p. 283). Severe mental illness (SMI) includes schizophrenia, bipolar disorder and major depression and affects an estimated 9.6 million adults, 4.1% of individuals, eighteen years or older in the United States (National Institute of Mental Health (NIMH), n.d.a). In patients with SMI, metabolic syndrome and obesity are potential complications of psychotropic medications (Scott & Happell, 2011). In addition to the personal cost of co-morbidities for patients and their families with SMI, the cost to society is substantial. According to NIMH, health care costs in the United States have climbed steadily to an estimated 57.5 billion dollars in 2006 (National Institute of Mental Health, n.d.b.).

Lifestyle patterns and a lack of integration of physical and mental health care complicate the health of patients with SMI (Van Hasselt et al., 2013). Physical inactivity occurs frequently and contributes to medical comorbidities (Kilbourne, Brar, Drayer, Xu, & Post, 2007). According to Janney et al. (2013), patients with SMI engage in less activity than the general population. One strategy to reverse this trend is self-management programs that have the potential to increase physical activity levels and decrease incidence of co-morbidities. Patients who engage in self-management are self-directed and knowledgeable about their illnesses, participate in a collaborative relationship with the health care team, and are seen as the experts of their own care (Lorig & Holman, 2003).

One example of a self-management program is the Chronic Disease Self-management Program (CDSMP). The CDSMP is an evidence-

based program that enables an individual to be an active partner with a health care provider to collaborate in setting personal activity goals (Bodenheimer, Lorig, Holman, & Grumbach, 2002). The CDSMP has been successfully implemented for patients with chronic physical and mental health conditions and consists of a series of six workshops, each lasting two and one-half hours. Topics include education conducted by peer trainers about exercise, medications, nutrition, sleep management and communication skills (Lorig, Ritter, Pifer, & Werner, 2014). An anticipated outcome upon completion of the program is an increase in physical activity for patients with SMI.

The purpose of this quality improvement project was to evaluate the effectiveness of the CDSMP to increase physical activity among participants with SMI. Daily steps tracked with a pedometer during a six-week period measured physical activity. The pedometers were assessed for total steps during each week of the program. In addition, the project aligned with the Physical Activity Guidelines for Americans (U.S. Department of Health and Human Services, 2008).

THEORETICAL FRAMEWORK

The integrated theory of health behavior change, a mid-range theory, was selected to guide nursing practice in the context of self-management of patients with SMI (Ryan, 2009). The theory proposes that participation in self-management behaviors is critical to overall health behavior. Additionally, the importance of knowledge and beliefs is emphasized. Knowledge and beliefs refer to information related to the health condition coupled with the patient's personal perception (Ryan, 2009) and are integral to self-management. A central proposition of the integrated theory of health behavior change is that health behavior change is enhanced by: 1) knowledge and beliefs; 2) self-regulation skills and abilities; and 3) social facilitation (Ryan, 2009, p. 164). Enhanced knowledge promotes self-confidence and the ability to recommend strategies

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as an expert member of the treatment team (Loring, Ritter, Pifer, & Werner, 2014, p. 97). These behavioral changes are prerequisites to the attainment of optimal health status. Expected outcomes include a reversal of the major health burden of severe mental illness complicated by chronic medical illness. The integrated theory of health behavior change (Ryan, 2009) was a useful framework to guide the evaluation of the effectiveness of the CDSMP to improve self-management behaviors of patients with SMI.

LITERATURE REVIEW

A review of the literature supported the CDSMP as an example of an evidence-based practice effective in increasing physical activity. The CDSMP has been evaluated in studies of individuals with chronic somatic illness such as arthritis and diabetes (Kennedy et al., 2007; Lorig & Holman, 2003), as well as chronic mental illness (Lorig et al., 2014). Interviews, surveys, and questionnaires have been used to determine changes in self-management variables and behaviors, including physical activity (Druss et al., 2010; Lorig et al., 2014). For example, Lorig, Ritter, Pifer, and Werner (2014) reported a descriptive study of the CDSMP taught by peer leaders at ten community-based psychiatric settings in Michigan. Participants completed questionnaires on health-related variables at the beginning of the self-management program ($N = 139$) and six months after completion ($N = 104$). Using t tests, the authors found that 62% of the health variables related to somatic and mental health were significantly improved at six months regardless of the participant's specific psychiatric diagnosis ($p < .05$). Results of the study demonstrated the potential of community-based, peer-led CDSMP for adults with SMI to enhance self-management behaviors.

Druss et al. (2010) reported positive results from a similar study. The Health and Recovery Peer Program (HARP), a program based on a peer-led CDSMP for adults with SMI, included 80 participants randomized to an intervention or a non-intervention group and interviewed at the beginning of the program and six months later. Results indicated that participants in the intervention group improved in self-management skills ($p = 0.01$). Moreover, physical activity of the intervention group increased by forty minutes per week.

In other studies, pedometers and daily step counts measured physical activity of individuals with SMI. Pedometers are a low-cost source of objective data. They are a reliable and easy-to-use method to track an individual's total number of daily steps (Beebe & Harris 2013). Among patients with SMI, increased physical activity is a low risk intervention and has the potential to improve long-term health status through improvement of metabolic risk factors, including obesity, hyperlipidemia and hyperglycemia (Daumit et al., 2005). Beebe and Harris (2013) and Richardson, Avripas, Neal, and Marcus (2005), utilized a pedometer to calculate daily steps, an objective measure that is a departure from questionnaires or interviews to estimate physical activity level. Findings supported the feasibility of using a pedometer as an objective measurement of physical activity of adults with SMI.

METHODOLOGY

Project Design

This quality improvement project used the integrated theory of health behavior change as a basis for developing an approach to determine the effectiveness of the CDSMP for a group of individuals with SMI. The title of the CDSMP was The Living Well Program, an evidence-based self-management program supported by the Maryland Department of Aging (Maryland Department of Health and Mental Hygiene, 2014). The aim of the project was to determine if the intervention increased level of physical activity as measured by the weekly number of steps tracked by each participant's pedometer. Prior to implementation, a summary of the project was submitted to the University of Maryland

Baltimore's Human Research Protections Program (HRPO) for review and was determined to be non-human subjects research.

Sample

A convenience sample of twelve psychiatric rehabilitation program (PRP) consumers who routinely attended a rural PRP participated in the project. In accordance with HRBO restrictions, demographic data of the population was not collected. Typically, this PRP program population consists of ambulatory adults with diagnosed severe mental illness between the ages of thirty and sixty years.

Setting

The setting was a rural PRP located on Maryland's Eastern Shore. Psychiatric Rehabilitation Programs are designed to assist consumers with SMI to live independently within a community setting. Psychosocial skills and stress reduction strategies are key components of the programs (National Alliance on Mental Illness, n.d.). Consumers at the site of this project are also enrolled in the Health Home Program, a care management program designed to integrate physical and mental health care within a holistic perspective (Medicaid.gov, n.d.). The goal of the PRP as well as the Health Home Program is to build consumer self-management expertise to attain optimal health outcomes of recovery and independence.

Procedures

Six months prior to the implementation of the scholarly project, key mental health stakeholders met, including the PRP site coordinator, the Health Home nurse, the Living Well Program Coordinator and a psychiatric nurse practitioner who practices in the local mental health clinic. An overview of the program was presented by the Living Well Program Coordinator, including the evidence-based curriculum; the process of obtaining participant's consent; and the training of peer facilitators. The use of pedometers to track the steps of participants during the program was also described. The PRP Coordinator agreed to distribute pedometers and pocket-sized calendars as well as instruct participants on pedometer use and how to record daily step totals. Based on the alignment of The Living Well Program with PRP and Health Home objectives, the program was scheduled at the local PRP site and offered to all PRP consumers.

Prior to the implementation of the scholarly project, Lifesource pedometers, model X1-25, were purchased by one of the stakeholders at a cost of \$5 each. This pedometer was selected because of accuracy, affordability, and a seven-day memory function (Park, Lee, Ku, & Tanaka, 2014). PRP staff was instructed on the functions of the pedometer. Pocket-sized calendars were also purchased for each participant at the cost of \$1 each.

Intervention and Data Collection

Twelve participants of the PRP program enrolled in The Living Well Program. Weekly program sessions were conducted by trained facilitators, two and one-half hours each, for a total of six consecutive weeks. Participants were taught self-management concepts that included physical activity, exercise, sleep, diet, problem-solving and communication skills (Lorig et al., 2012). Healthy snacks were provided to model and promote healthy eating. PRP staff distributed the pedometers and calendars to participants following the first session of the program and the participants were instructed on use of the pedometer and calendar. PRP staff also recorded the total number of steps per day of each participant on a step log. The memory function of the pedometers was utilized if the participant's calendar was not available.

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