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Feasibility of implementing a meditative movement intervention with bariatric patients

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ABSTRACT

Successful interventions are needed to help improve obesity rates in the United States. Roughly two-thirds of adults in the United States are overweight, and almost one-third are obese. In 1991, the National Institutes of Health released a consensus statement endorsing bariatric surgery as the only means for sustainable weight loss for severely obese patients. However, approximately one-third of bariatric patients will experience significant post surgical weight gain.

Purpose of study: This study is designed to determine if meditative movement (MM) would be a feasible physical activity (PA) modality to initiate weight loss in bariatric surgery patients who have re-gained weight.

Methods used: A feasibility study was recently completed in 39 bariatric patients at Scottsdale Bariatric Center (SBC) during regularly scheduled bariatric support groups at SBC. A short demonstration of MM was presented after which a short focus group was conducted to gauge interest level, acceptability and the potential demand for MM programs in this population. Attitudes and intentions surrounding MM were also collected.

Findings: Approximately 75% of participants indicated they would consider practicing MM as part of their post surgical PA routine.

Conclusions: MM may be a feasible PA modality in bariatric patients to improve bariatric surgery weight outcomes.

1. Introduction

1.1. Statement of the problem

While obesity rates have plateaued within the last decade (Flegal, Carroll, Ogden, & Curtin, 2010), two-thirds of the United States population is currently classified as overweight (defined as a BMI of 25–29.9 kg/m^2) or obese (a BMI greater than 30 kg/m^2) (Flegal, Carroll, Ogden, & Curtin, 2010). Obesity is a serious issue, not only because of its impact on morbidity and mortality rates, but also due to the financial burden it puts on both the individual and society.

Obesity is associated with increases in cardiometabolic disease, certain types of cancer, premature death, osteoarthritis, and breathing problems (CDC, 2010). Additionally, in 2005, an estimated $190 billion, or approximately 21% of the United States health care expenditures, was spent on obesity-related issues (Cawley & Meyerhoefer, 2012).

In general, surgical interventions are more effective than behavioral treatments in both the short and long term (Buchwald & Williams, 2004; NIH, 1998). However, for certain bariatric patients, between the first and second years following surgery, weight loss often stabilizes and a substantial proportion of individuals begin to regain lost weight (Hsu, Sullivan, & Benotti, 1997; Hsu et al., 1998). It is estimated that more than 20% of bariatric surgery patients will regain a significant amount of weight that was initially lost (Meguid, Glade, & Middleton, 2008). While statistics vary per procedure and intervention, approximately 30–40% of surgically treated patients regain up to one-third of their initial weight loss long term (Bond et al., 2008) at the 5-year mark.

1.2. Physical activity (PA) and bariatric surgery

Although PA is recognized as an integral part of the non-surgical management of obesity for weight loss and weight loss maintenance (Jakicic et al. 2001; Wing & Phelan, 2005), the relationship between PA levels and weight loss or maintenance following bariatric surgery is unknown. There are currently no randomized controlled trials of physical activity and weight loss in bariatric patients, however

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observational studies have found that post-surgical exercise is positively associated with improved weight outcomes.

There are currently no standard PA recommendations for bariatric surgery patients; however walking to the point of volitional fatigue with small increases in daily step counts is a common recommendation (Petering & Webb, 2009). The American College of Sports Medicine (ACSM) has no specific guidelines for bariatric patients but does indicate that aerobic exercise should be the focus of a post-bariatric surgery program, as it burns the most calories and is the best way for a previously sedentary individual to ease into physical activity (ACSM, 2011). Additionally, the American Society for Bariatric Surgery (ASBS) recommends initiating walking from postoperative day one (Silver, Torquati, Jensen, & Richards, 2006).

1.3. Meditative movement

Alternative forms of exercise are gaining in popularity in the general population, especially those that include a focused, meditative or mind–body component (La Forge, 2005). Meditative movement (MM) has recently been proposed as a category of exercise with some elements of practice that differ substantially from conventional versions of exercise (Larkey, Jahnke, Etnier, & Gonzalez, 2009). In contrast to many other forms of PA, many of the MM practices are low impact, and moderate- to low-intensity and encourage people to move slowly and gently. The most current comprehensive definition of MM was generated by Larkey et al., 2009 and includes four components: focus of the mind; some form of body movement or postural positions; focus on breathing and a deep state of relaxation. Some of the most common examples of MM are tai chi (TC), qigong (QG) and yoga. These types of meditative activities may be beneficial and more feasible to initiate for physically de-conditioned individuals such as the overweight/obese or in bariatric patients.

Tai chi easy (TCE) is a simple MM form that was developed by Dr. Roger Jahnke and formulated into a standardized research intervention protocol by a team of researchers (Jahnke, Larkey, & Rogers, 2010). The TCE intervention combines simplified TC movements with QG methods that include gentle flowing movements and slow shifts of body weight while incorporating deep, soothing breathing. It has been used in several prior projects (Jahnke, Larkey, & Rogers, 2010; Larkey et al., 2012) and one recently completed randomized controlled trial (RCT) with breast cancer survivors showing reduction in fatigue and depression, and improved sleep and physical function (Larkey et al., 2011).

There is growing evidence that MM practices may help with weight loss and/or maintenance in overweight or obese populations, possibly by reducing maladaptive eating behaviors. A 12-week yoga program reduced incidences of binge eating in a group of obese females (McIver, O'Halloran, & McGartland, 2009). Specifically, women perceived an overall reduction in the quantity of food they consumed, decreased eating speed, and an improvement in food choices throughout the program. A meditation-based intervention also found significant decreases ($p < .001$) in binge eating disorder in obese females, and time spent meditating was significantly associated ($p < .01$) with less binge eating episodes (Kristeller & Hallett, 1999). And in bariatric patients, the practice of mindful eating has been shown to be effective in maintaining weight loss post surgery (Engstrom, 2007).

Given the absence of interventions using MM in the bariatric population, a feasibility study was conducted to determine the overall interest in, acceptability of and potential demand for MM programs in bariatric surgery patients as well as their attitudes and intentions towards MM using a questionnaire based on the theory of planned behavior (TPB) (Ajzen, 2006). According to the TPB, behavioral beliefs produce a favorable or unfavorable attitude toward the behavior; normative beliefs result in perceived social pressure or subjective norm; and control beliefs give rise to perceived behavioral control. When combined, attitude toward the behavior, subjective norm, and perception of behavioral control lead to the formation of a behavioral intention (Fig. 1). In general, the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person's intention to perform the behavior in question. Intention, when supported by these predictors, is more likely then to result in behavior change. Our study was designed to explore bariatric patients' responses to a direct experience of TCE and to rate TPB factors that could best predict enrollment and adherence to such an intervention.

2. Methods

2.1. Recruitment sites and study population

This is a cross-sectional study with a qualitative component in a convenience sample of 39 bariatric patients at Scottsdale Bariatric Center (SBC), located in the southwestern United States. The SBC performs bariatric surgery on approximately 350 men and women annually (Blackstone & Cortes, 2010). The mean age of the study participants was 49.42 ± 14.41 years. Reflecting the demographic statistics of the SBC population, 67% of the subjects were female, and 80% were White, non-Hispanics.

Participants were recruited by research staff during ongoing and regularly scheduled post surgical support group meetings at SBC. Three separate support groups were invited to participate in the study with purposeful selection across time post-surgery: 1) 0–4 months 2) 1 month; and 3) > 4 months. The largest study support group was the 1- month post-surgery group ($n = 16$), followed by 0–4 months ($n = 13$). Individuals over 4 months post-surgery had the smallest attendance ($n = 10$). These decreasing numbers of participants is consistent with how the SBC program usually observes declining participation in the support process over time.

2.2. Ethical considerations

The institutional review boards associated with the university that conducted this research and the hospital where the data were collected approved this study, and all participants were provided a written information letter. An informed consent was not necessary for this study and not provided.

2.3. Procedures

During regularly scheduled weekly support groups, an information letter was placed on the chairs when participants entered the room with a description of the study as "…testing the feasibility of engaging bariatric patients in a meditative movement intervention as a potential strategy for continued weight loss." Participants were told that they were invited to participate in a demonstration of MM at the end of their session that day, and then join in a brief focus group to share their responses, and a short survey, and that they were welcome to join or simply leave at the end of the support group session if they preferred not to participate.

At the end of the support group session, for those that remained, members of the research team described the current study and answered questions regarding the study. The research team included the principal investigator and a research assistant. A brief, 2–3 minute oral presentation was given on MM, including what it is and what benefits have been shown in a wide variety of participants. After answering any questions, a short demonstration using a 5–7 minute protocol based on Tai chi easy (TCE) (Jahnke, Larkey, & Rogers, 2010) was presented with an invitation to the support group members to participate if physically able and/or interested. Approximately 95% of those that remained after the support group participated in the study.