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Weight Reduction Goal Achievement with High-Intensity MOVE!® Treatment

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ABSTRACT ***Objective:*** The purpose of this study was to examine the effect of high-intensity treatment with the behavioral weight reduction program, MOVE!®, available at Veterans Administration Medical Centers, on achieving at least a 5% weight reduction 6 months after enrolling in the program. MOVE!® is free to veterans but little is known about the recommended number of sessions. ***Design and Sample:*** Using longitudinal clinical data from electronic health records of 216 MOVE!® program participants, weight reduction was examined in this secondary data analysis. ***Measures:*** Based on the 2013 guidelines for overweight and obesity management, weights were evaluated at baseline and 6 months following enrollment in the program, and high-intensity MOVE!® was determined by attending 14 or more sessions within the first 6 months following enrollment. ***Results:*** High-intensity MOVE!® participants were five times as likely to achieve at least the 5% weight reduction goal at 6 months compared to those participants with low intensity, while controlling for age, gender, and race ($OR = 4.74$; *CI*: 1.3, 17.2; $p < .02$). ***Conclusion:*** This research supports the 2013 recommendations for high-intensity lifestyle intervention as participants who completed 14 or more sessions were almost five times more likely to achieve a 5% weight reduction.

Key words: guidelines, obesity, obesity management, obesity treatment, veterans, weight loss, weight management program, weight reduction.

Background

Similar to other Americans, obesity is prevalent among Veterans (Almond, Kahwati, Kinsinger, & Porterfield, 2008; Das et al., 2005; Koepsell, Forsberg, & Littman, 2009). Veterans have a free program, the MOVE!® program, available to address obesity and assist with weight reduction (Kinsinger et al., 2009). While the program may differ slightly from one Veterans Administration Medical Center (VAMC) to another, most VAMCs offer a MOVE!® program with behavioral treatment including group classes. However, little is known about the recommended number of sessions.

The MOVE!® program has a defined structure, but resource allocation and emphasis regarding program implementation vary across VAMCs. The structure begins with an initial assessment, including the MOVE! 23 Questionnaire, to determine weight management history, behavior, motivation, and readiness to make changes. Handouts are provided to participants based on results of the MOVE! 23 Questionnaire. The structure of MOVE!® continues with five levels. Level 1 is self-management support. Level 2 adds group sessions and/or individual specialty consultation. Level 3 adds medication for weight reduction. Level 4 includes brief residential treatment. Level 5 involves surgical intervention for weight reduction. While staffing and resource allocation vary and affect implementation, most VAMCs offer at least Level 1 and Level 2.

Recent guidelines for managing overweight and obesity emphasized a 5% weight reduction as the initial weight reduction goal and recommended in-person, high-intensity sessions (≥14 sessions in 6 months) with trained interventionists as the most effective behavioral treatment for obesity (Jensen

et al., 2014). High-intensity sessions were recommended for persons with a body mass index (BMI) ≥30 or a BMI ≥27 with comorbidity (Jensen et al., 2014). The guidelines highlighted three key components of an effective high-intensity, on-site, comprehensive lifestyle intervention including: (1) a prescription for a moderately reduced caloric diet; (2) a program of increased physical activity; and (3) the use of behavioral strategies to facilitate adherence to diet and physical activity recommendations (Jensen et al., 2014). Although MOVE!® programs may vary somewhat from one VAMC to another, most offer these three key components of effective lifestyle interventions.

Evaluations of existing MOVE!® program outcomes were favorable but varied by age, race, gender, and number of sessions attended (Dahn et al., 2011; Garvin, Marion, Narsavage, & Finnegan, 2015; Littman, Boyko, McDonell, & Fihn, 2012; Romanova, Liang, Deng, Li, & Heber, 2013). In the Miami program, females and African-Americans lost less weight than their counterparts who were male and White (Dahn et al., 2011). In the Los Angeles program, participation in three or more group sessions was associated with a 4.8 pound weight reduction at 1 year (Romanova et al., 2013). Participation in six or more group sessions was associated with an additional 2.6 pound weight reduction over nonparticipants at 6 months postenrollment, while females were less likely to achieve a significant weight reduction in programs in four Western states (Littman et al., 2012). In the Augusta, GA program, older age and a greater number of sessions attended predicted at least 5% weight reduction (Garvin et al., 2015). No evaluation of MOVE!® programs examined the association of outcomes with the number of sessions recommended in the recent guidelines (Jensen et al., 2014). Therefore, the purpose of this study was to examine the effect of high-intensity MOVE!® on achieving at least a 5% weight reduction at 6 months after enrolling in the program.

Methods

Design and sample

Using longitudinal clinical data from electronic health records, a secondary data analysis was conducted to examine the effect of high-intensity MOVE!® on achieving at least 5% weight reduction at 6 months postenrollment. Participants included 216 veterans who enrolled at the Charlie Norwood VAMC in Augusta, GA between July 1, 2008 to May 31, 2010 and who had a recorded weight 6 months postenrollment. Enrollment required a BMI ≥30 or a BMI ≥27 with comorbidity of diabetes, hypertension, hyperlipidemia, or dyslipidemia. Participants were excluded if the baseline age was 90 years or more; there was a history of surgical intervention for weight reduction; or pregnancy occurred during the study. Following institutional approvals, all data were collected directly from the electronic health record.

For this MOVE!® program, group sessions were optional. Participants were not randomized, but self-selected to attend one or more 1-hr group sessions addressing goal setting, nutrition, behavior change, physical activity, and use of My HealtheVet, an online resource for health care management in the VAMC. Data were collected retrospectively from electronic health records of MOVE!® participants. Participant baseline data were collected for the time of enrollment. Participation data were collected over the 6 months following enrollment and weight was collected at 6 months postenrollment to determine the outcome.

Measures

The outcome variable was a dichotomous indicator representing whether or not participants achieved weight reduction equal to or greater than 5% of the baseline weight. Weights were collected at enrollment in the MOVE!® program and again at 6 months postenrollment. The total number of group sessions attended during the first 6 months following enrollment was recorded. Consistent with the new guidelines, high intensity was defined as attending 14 or more sessions within the first 6 months of enrollment (Jensen et al., 2014). Age, gender, and race were included as control variables. Age was recorded in years and gender as female or male. As the sample contained only African-Americans and Whites, race was categorized accordingly.

Analytic strategy

Statistical analyses were conducted using IBM SPSS Statistics 22. Descriptive statistics were used to characterize the sample. Participants served as their own controls with baseline weight compared to weight 6 months postenrollment. Logistic regression was

used to examine the effect of high-intensity MOVE!® on achievement of 5% or greater weight reduction 6 months postenrollment while controlling for age, gender, and race.

Results

The sample of 216 MOVE!® participants was 81% male and 58% African-American. The mean age of participants was 57.5 (*SD* = 10.9) years ranging from 26 to 81 years. The mean BMI of participants was 35.3 (*SD* = 6.2) ranging from 27.0 to 62.7. Eighty-five percent of the participants had one or more comorbidities including diabetes (33%), hypertension (70%), and hyperlipidemia or dyslipidemia (59%).

The number of group sessions attended during the 6 months following enrollment in MOVE!® ranged from 0 to 24 with an average attendance of 4.0 (*SD* = 4.9) session. Approximately, one third (32%) of the participants attended no group sessions beyond enrollment, while participants attending seven or more group sessions accounted for 27% of the sample. Five percent of the participants attended 14 or more group sessions of MOVE!® and thus achieved high intensity.

At 6 months following enrollment, 15.7% (*N* = 34) of participants met the 5% weight reduction goal. While controlling for age, gender, and race, high-intensity MOVE!® participants were almost five times as likely to achieve at least 5% weight reduction at 6 months compared to those participants who attended less than 14 group sessions (*OR* = 4.74; *CI*: 1.3, 17.2; $p < .02$); see Table 1.

Discussion

High-intensity participation in MOVE!® was significantly associated ($p < .02$) with achieving at least 5% weight reduction at 6 months following enrollment. In fact, participants who reached high intensity were almost five times more likely to meet the 5% weight reduction goal at 6 months compared to those participants who attended less than 14 group sessions during that time regardless of age, race, and gender. The findings of this study are consistent with earlier reports that more weight reduction was associated with attending more sessions of MOVE!® (Garvin et al., 2015; Littman et al., 2012; Romanova et al., 2013). More importantly, the findings of this study are consistent with the recent guideline recommendations for 14 or more sessions within 6 months as an effective behavioral treatment for obesity (Jensen et al., 2014).

TABLE 1. *Logistic Regression Model for 5% Weight Reduction at 6 months*

Variable	*b*	*OR*	*p*	95% *CI*
Age	.004	1.04	.85	0.97, 1.04
Female	−.76	0.47	.26	0.12, 1.77
African-American	−.36	0.70	.37	0.32, 1.52
High-intensity MOVE!®	1.56	4.74	<.02*	1.31, 17.16

Note. *$p < .05$.

This study has implications for practice and policy. The high-intensity MOVE!® of 14 or more sessions was associated with at least a 5% weight reduction at 6 months for those most in need of weight reduction. High-intensity MOVE!® was the significant predictor of achieving at least 5% weight reduction regardless of age, race, and gender; however, the average number of sessions attended by participants in this study was well below the cut point for high intensity. Reasons for lower attendance may be because this program was not originally designed to have 14 sessions, because of limited opportunities to attend due to time and travel constraints, due to reduced motivation, due to lack of early success, or due to limited program novelty. In the future, MOVE!® providers should assess for and address these potential barriers. Options for enhancing novelty could include embracing the newest technology as assistive aids or demonstrating how to cook, preparing a new recipe or modifying an old favorite. To enhance the chance of 5% weight reduction at 6 months, a goal of 1% per month would be appropriate. After 2 weeks, weight reduction could be assessed and the plan individually modified if the participant had not achieved a weight reduction of at least one half of 1%. In addition, program policies could be modified so that MOVE!® could be expanded to include at least 14 sessions within 6 months. Ultimately, establishing an expectation that participants attend at least 14 sessions within the first 6 months following enrollment would be important regardless of any other program or policy modifications. Effort should be placed on educating providers and potential participants about the benefit of attending 14 or more sessions within 6 months of enrollment. If

potential participants were informed at enrollment about the benefit of attending 14 or more sessions within 6 months of enrollment, participants may be better equipped and motivated to make plans regarding participation in MOVE!® in an effort to treat their chronic obesity and ultimately reduce their weight. Public health nurses should investigate the availability of MOVE!® in their communities and consider referring qualified veterans to MOVE!® as an effective option for weight management with high-intensity treatment.

Using clinical data was an advantage in this study. This study consisted of retrospective practice-based evidence that was not biased by the participants' awareness that they were being observed for this study (Polit & Beck, 2012; Twisk, 2003). Using practice-based evidence allowed the researcher to examine the program outcomes in the real world with veterans (Horn & Gassaway, 2007). The findings from evidence-based practice research may translate more easily back to practice for both health care providers and veterans.

Variables of interest were limited to the information already collected in the electronic health record. A number of other unmeasured factors could have contributed to participation in MOVE!® and to weight reduction. This study did not assess for significant weight reduction early in the observation period that may have contributed to continued participation and, ultimately, weight reduction. This study did not differentiate between the loss of fat or muscle contributing to weight reduction. Furthermore, this study did not capture caloric intake or energy expenditure. In addition, generalizability may be limited particularly as each VAMC may implement the program somewhat differently and as participant background characteristics may vary from one VAMC to another. In addition, participants who achieved 5% weight reduction at 6 months but failed to achieve high-intensity MOVE!® deserve further study.

In summary, this is the first known study to examine the influence of high-intensity MOVE!® on a goal of at least a 5% weight reduction at 6 months following program enrollment. The findings of this study were consistent with the new guidelines recommending 14 or more sessions within 6 months. Participants in this study were among those most in need of weight reduction as 85% of the participants had at least one obesity-related comorbidity. Participants who achieved high-intensity MOVE!® were almost five times more likely to meet the weight reduction goal of at least 5% at 6 months than those participants who attended fewer sessions.

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