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Motivations of Older Veterans and Dependents in a Physical Activity Program

Candace S. Brown, Ismail Mustafa Ajjazuddin, and Miriam C. Morey

Abstract

Motivation to engage in physical activity (PA) is of research interest due to the United States' failure to achieve significant gains in the rates of individuals meeting national PA recommended guidelines. Veterans have physical deficiencies at a greater rate than the general population, and older veterans (≥ 65 years) are the least physically active of all veteran cohorts. The purpose of this pilot study was to ascertain the motivations of older veterans participating in an ongoing exercise program supervised and supported by the Department of Veterans Affairs. Participants ($N = 63$) self-reported their preferred exercises within the program and completed the Motives for Physical Activity Measure–Revised (MPAM-R), which assessed their exercise motivations in terms of interest/enjoyment, fitness, appearance, social factors, and competence. The most performed aerobic activity was walking, and the most popular anaerobic activity was yoga. Mean results of the MPAM-R indicated fitness as the highest rated motivation ($M = 6.53$, $SD = 1.1$), with a strong desire among participants for veterans to maintain health and well-being. The lowest rated statements were those related to social factors ($M = 4.96$, $SD = 1.8$), specifically, spending time with others. Fitness was statistically significant to interest/enjoyment, competence, and appearance ($p < .01$) but not to social motivation. However, interviews ($n = 4$) with participants of 10+ years revealed social factors to be a strong motivator for long-term participation in the exercise program. Exploring participants' motivations produces valuable information that may broadly impact the development of future exercise programs.

The benefits of physical activity (PA) are well established, but veterans' motivations for engaging in PA are of research interest due to the United States' failure to achieve significant gains in the rates of older veterans meeting national recommended PA guidelines over the past decade. Older veterans represent the largest segment of the veteran population (Amaral et al., 2018), and they are the least physically active of all veteran age cohorts (Pebole & Hall, 2019). The Centers for Disease Control and Prevention (CDC, 2020) recommends that all older adults (age 65 and older) complete between 75 and 300 minutes of PA per week, including both moderate-intensity and vigorous-intensity aerobic PA. For additional health benefits, the CDC encourages weekly muscle strengthening of all major muscle groups on two or more days. However, the most recent data available indicate

that only 53.6% of U.S. older adults are achieving the recommended minutes of aerobic activity, and only 23.7% are carrying out the recommended muscle-strengthening exercises (CDC, 2020). Although veterans are generally more engaged in PA than civilians are (Bouldin & Reiber, 2012; Littman et al., 2009), they consistently report poorer health (Schult et al., 2019), with only 43.1% of veterans age 50 and older meeting the CDC's recommendations (Littman et al., 2009). Following military discharge, many veterans adopt a more sedentary lifestyle that, coupled with the stress of returning to civilian life, increases their risk of becoming overweight or obese leading to concerningly high rates of disease and disability (Batch et al., 2020) that are likely to continue to increase as the population ages (Amaral et al., 2018; Dattilo et al., 2014).

Behavioral intervention research focused on group exercise has demonstrated to be an effective strategy for increasing PA and decreasing the number of sedentary veterans. These interventions and programs have evaluated the potential effects of PA on function (Bulat et al., 2007; Morey et al., 2002; Paden et al., 2017), post-traumatic stress disorder (Hall et al., 2016), and depression (Harada et al., 2013).

Team Red, White, and Blue, a nonprofit, veteran-led organization, establishes supportive relationships among civilians and veterans through physical and social activities. Bringing civilian community members together with veterans reintegrating into civilian life allows space for veterans to strengthen their physical health through community social networks as opposed to veteran-exclusive networks (Angel et al., 2018).

The national evidence-based management program MOVE! was introduced by the Veterans Health Administration in 2006 to support self-management of diet and PA among veterans (Romanova et al., 2013). Thousands of veterans have participated in the program and various studies have explored its impact on veterans with mental illness (Goldberg et al., 2013; Harrold et al., 2018), post-traumatic stress disorder (Goldstein et al., 2018), and programs adjacent to MOVE! (Fletcher et al., 2017; Harrold et al., 2018; Rosenberger et al., 2011).

While the health benefits of these interventions have been established, less work has been done to understand the factors of motivation that compel veterans to join and remain in these exercise programs. Recent research focusing on the MOVE! program has highlighted motivation and the importance of the program's social impact on veterans. Participants' desires to improve both their health and their laboratory reports (e.g., their cholesterol numbers) served as intrinsic and extrinsic motivators, respectively, for losing weight. Participants indicated they were more successful in the program when they attended group classes more regularly as they had other veterans encouraging them to show up (Batch et al., 2020). The extension program MOVE OUT provided peer leaders for the veteran exercise program, and participants reported that camaraderie, commitment, and regular meeting times motivated them to stay in the program (Fletcher et al., 2017).

Motivation is defined as the internal and external factors that stimulate a person to initially direct and sustain action toward a goal

(Brown, 2019). Because motivation drives intent toward a goal, this behavioral construct is key to understanding why older people engage in PA. Drawn from theoretical perspectives including social identity theory (Pelssers et al., 2018, 2019), economic theory (Farooqui et al., 2014), and personal investment theory (Sullivan et al., 2002), research indicates that older adults who participate in PA interventions have increased levels of autonomous motivation guided by their desire to be healthier. However, time, finances, weather, and the opportunity for participation in other activities can serve as barriers to continued PA once the interventions have ended (Van Roie et al., 2015).

Self-Determination Theory (SDT), a macro theory of human motivation, describes how both intrinsic and extrinsic motivations relate to psychological, physical, and social domains of life (Deci & Ryan, 2008). It examines the differential effects of personal choice and/or outside influence on individuals' motivation to engage in PA (Deci & Ryan, 2008; Teixeira et al., 2012). Because behavior is not always intrinsically motivated, certain external pressures (e.g., social factors) may motivate individuals to participate in PA. The purpose of this exploratory study was to find out what motivates veterans who participate in an ongoing VA exercise program.

Methods

Design

We used a dual-method design in which quantitative and qualitative data were collected and analyzed independently. This approach helped us to obtain different yet complementary data to answer the research questions. Quantitative and qualitative data are reported separately in the results and then merged in the discussion to give an overall interpretation of the findings.

Training Program

Established in 1986 at the Veterans Affairs Medical Center (VAMC) in Durham, North Carolina, Gerofit is an ongoing exercise intervention program for veterans age 65 and older (Peterson et al., 2004). Currently, there are 17 nationally recognized Gerofit locations that span the country from Miami, Florida, to Honolulu, Hawaii. Program enrollment occurs on a rolling basis. Before veterans can participate, their primary care providers must confirm their stable health and their ability to independently function physically and cognitively in a group setting. Occasionally, when participation has been

low, enrollment has been opened to veterans of any age. Spouses of veterans can also participate in the program if a current primary care physician confirms their independent physical and cognitive function.

Upon joining the program, participants undergo a physical function assessment that includes the 8-foot up-and-go and a 6-minute walk. In addition, body height, weight, and waist circumference are recorded, and veterans respond to a series of questionnaires that assess their overall health, quality of life, current levels of PA, and comorbidities and symptoms. Based on this information, participants receive an individually tailored exercise prescription that focuses on improving any identified functional impairments. The full assessment is repeated at the third and sixth month of the first year and then annually afterward to facilitate continuous updates and monitoring of the exercise program for as long as the veteran participates (Morey et al., 2006).

Supervised exercise sessions are offered three times a week, with session times divided into two groups that each comprise 60 to 75 participants. Exercise-health professionals lead group exercise classes (e.g., stretching and floor exercises) and monitor personalized aerobic (e.g., elliptical, treadmill) and muscle strengthening (e.g., free weights) activities. These exercises both help participants meet national PA guidelines and target their functional deficits as identified by the annual assessments. Sessions occur year-round, and veterans are encouraged to attend as often as possible. Veterans' active status in the program is changed to inactive following two months of unexplained absence (Brown et al., 2019).

Gerofit's mission is to promote physical exercise among older-adult veterans. Initially, the Durham branch of Gerofit held its classes at the Durham VAMC. However, due to space constraints at the medical center campus, the VAMC contracted with a local, private, community-based fitness gym to provide access to the program for 2.5 hours on three days of the week. Gerofit participants share equipment and space with community members, and, because there is no cost associated with being in Gerofit, older civilian gym members are welcome to join Gerofit's group-based classes. Several civilian gym members have consistent interaction with program participants. Gerofit members and civilian gym members will walk next to one another on treadmills, assist one another with weights, spend time standing around talking

about the week's events, and even join the program's biannual celebrations.

One of the Gerofit team members (who is both a veteran and the lead author on this paper) volunteered with Gerofit and became interested in understanding what motivated the older veterans to participate and remain in the program. An earned postdoctoral fellowship from Duke University's Center for the Study of Aging and Human Development supported this interest, and she remained with the Gerofit program while completing that fellowship and a subsequent research position in Duke's Motivated Cognition and Aging Brain Lab.

Data Collection

The Durham VAMC institutional review board reviewed and approved the protocol for this ancillary study annually (MIRB# 02021/0027). Gerofit staff invited veterans active in the program to participate in this study, and they informed prospective participants that the study included a 30-item survey. Once survey data collection was complete, Gerofit staff asked long-term participants if they would agree to an in-depth, follow-up interview. Only those who had been in the program for longer than 10 years at the start of the study were eligible to participate in this stage of the research. Purposive sampling was used to select participants for these semi-structured interviews.

All Gerofit participants provided written consent to have their clinical data entered into a research database for use in future investigations. Each interviewee consented to an audio recording and field notes of the face-to-face interview. The quantitative data were collected starting in 2017, and the qualitative data were collected in April 2018 following the quantitative data analysis. The quantitative data guided qualitative development of the semi-structured interview guide.

Measures

A demographic questionnaire captured self-identified information, including age, race, gender, and the exercises prescribed and executed on a weekly basis. Exercises were separated into individual activities—including the treadmill, weights, stationary bike, and recumbent stepper—and group activities—stretching or floor exercises, balance or dance class, and tai chi.

Motives of physical activity measure—revised (MPAM-R). The MPAM-R survey was used to assess the strength of five motives for exercise in physically active veterans. These motives

are described by the measure's Appearance, Competence, Fitness, Interest/Enjoyment, and Social subscales. The Appearance subscale measures respondents' motivation to stay physically active to maintain or improve their physical attractiveness, such as by developing defined muscles or achieving/maintaining a desired weight. The Competence subscale measures respondents' desire to stay physically active to improve, meet a challenge, or learn a new skill. The Fitness subscale refers to wanting to be physically healthy, strong, and energetic. The Interest/Enjoyment subscale measures PA completed because it provides good feelings and makes the participant happy. Finally, the Social subscale assesses respondents' desire to be physically active so that they can be with friends and/or meet new people (Ryan et al., 1997). Thirty statements covering these types of motives are set to a Likert scale ranging from 1 (*Not at all true for me*) to 7 (*Very true for me*).

MPAM-R semi-structured interview guide.

We used the newer approach to qualitative methods, survey transformation, to develop an interview guide (Brown et al., 2018). By transforming the statements of the MPAM-R we aimed to gain a more in-depth understanding of why veterans participate in the Gerofit exercise program. Interviewees first answered four questions related to their experience with exercise, the consistency of their past exercise regimen, the time they have spent in the current program, and their reasons for beginning the Gerofit program.

Survey transformation allows researchers to develop semistructured interview questions directly from surveys. This method saves time and resources, as it is not always feasible to develop a qualitative survey for a new population. The difference between the formative grounded theory approach, which is used to develop new surveys, and survey transformation, which transforms a valid survey into a qualitative guide, is that the transformation method retains the original scales and statements of the survey and thus takes into account the general implications already believed to exist within the concepts of the survey. The open-ended questions created through survey transformation allow respondents to provide a more in-depth explanations of their beliefs of the statements from the survey (Brown et al., 2018). In a full version of the transformation, all 30 statements from the MPAM-R would be categorized into their respective categories and 30 questions would be written. For this study, a

modified version of survey transformation was performed, including four of the five original MPAM-R subscales (Interest/Enjoyment, Appearance, Competence, and Social). Twelve open-ended questions were developed to capture deeper explanations of participants' motivations.

For example, the MPAM-R survey asks respondents about the degree to which they relate to certain social motives for exercise, including "being with friends," "being with others," "meeting new people," "friends want me to," and "enjoy spending time with others doing this activity." To further understand these social motivations, this open-ended question was added to the interview guide: "Some people talk about exercise as being another way to connect with people and make friends. What role does exercise play in your social life or connecting you with others?" This semistructured question allowed the interviewer to explore social motives of interest and allowed interviewees to discuss issues that the interviewer may not have anticipated.

Analysis

Quantitative analysis. We used descriptive statistics to analyze the participant demographics (i.e. race/ethnicity, exercise modality) and means and standard deviations to report the MPAM-R results. Next, *t* tests between the Fitness subscale and the other subscales were conducted to compare means. The significance threshold was set at .05.

Qualitative analysis. We used a predominantly inductive thematic approach to analyze the qualitative data (Braun et al., 2017). The lead author conducted the interviews and transcribed the data. Pseudonyms were provided to help protect the identities of the participants. Codes were generated transcript by transcript; codes developed and applied to earlier transcripts were applied to subsequent transcripts, and earlier transcripts were revisited as new codes were generated. Themes were then identified and reviewed by rereading coded material and the full data set. Qualitative analyses were completed before the quantitative analyses to minimize interpretation biases.

Results

Quantitative Results

Of all participants ($N = 63$), 57 were men and six were women. Four of the six women were veteran dependents, one was a veteran, and one was a volunteer who had a long-standing relationship with the program. Participants self-identified as being Black/African American ($n = 32$) or

White/Caucasian ($n = 28$). One participant identified as being more than one race, and two veterans identified as being part of the “human race.” The average age of the participants was 75; the youngest participant was 58 years old, and the oldest was 93 years old.

Because exercise is individually tailored, many participants engaged in more than one individual and/or group activity focused on aerobic and muscle strengthening activities. Based on participants’ self-reports, the most performed individual aerobic activity was walking or jogging

($n = 43$) on the treadmill or outside (when weather permitted), and the least performed individual aerobic activity was using a recumbent bicycle ($n = 21$). The group activity with the most participation was the stretching group exercise ($n = 26$), and the dance class had the least participation ($n = 7$), as seen in Table 1.

Response means for individual MPAM-R statements ranged from 3.66 to 6.86 with fitness and social statements ranked highest and lowest, respectively (Table 2). Specifically, participants rated motivation statements representing the

Table 1. Descriptive Metrics as Reported by Participants

Number of participants by demographics			
Race/ethnicity	No. of women (%)	No. of men (%)	Total
Black or African American	2 (6%)	31 (94%)	33
White	4 (13%)	26 (87%)	30
More than one race/ethnicity	0 (0%)	1 (100%)	1
Not reported	0 (0%)	2 (100%)	2
Total	6 (9%)	60 (91%)	66

Note. Mean participant age was 75 years old, with a range of 58–93 years old.

Number of participants by exercise modality			
Individual exercises	No. participating (%)	Group exercises	No. participating (%)
Walking/jogging	43 (65%)	Stretching exercises	26 (39%)
Weights	41 (62%)	Floor exercises	20 (30%)
Stationary bike	30 (45%)	Tai chi	17 (26%)
Recumbent bike	21 (32%)	Balance class	13 (20%)
		Dance class	7 (11%)

desire to “maintain health and well-being” and “to have energy” as highest. While there is not a large disparity between the means for each subscale, the lowest rated statements were those related to social motivation, indicating that participants were not motivated to exercise to “[spend] time with others” or “because friends wanted [them] to be physically active.”

To determine the statistical significance of the relationship between the Fitness subscale and the other subscales, a one-tailed paired *t* test was performed. Results indicated no statistical significance between the Fitness and Social subscales ($t[4] = 2.4, p = .02$); however, there was significance with Interest/Enjoyment, Competence, and Appearance ($p < .01$), providing strong evidence that the population means are different (Table 3).

Qualitative Results

Four participants who had been in the program for more than 10 years were interviewed to gain a more in-depth understanding of how motivations influenced their long-term participation. Since the results of the MPAM-R indicated fitness as the highest motivation quantitatively, questions for the interview guide were directed toward themes of competence, appearance, interest/enjoyment, and social

motivations. The interviewees included two White veteran participants, interviewed separately, and a Black couple (a male veteran and his wife) who were interviewed together. We audio-recorded the interviews to keep verbatim accounts and took field notes during the interviews to assist in formulating relevant follow-up questions in the moment (Galli, 2009). The recorded interviews were transcribed, and out of 21 codes, two main themes were gleaned.

Maintaining health and wellness was a primary motivation to begin the Gerofit program. All the interviewees had previous experiences with exercise, ranging from jogging, hunting, playing semipro baseball, and being part of other gyms to doing home workouts with Jack LaLanne. The interviewees had all learned about the Gerofit program (i.e., from other physicians or other veterans) at a time in their lives when they were not active, and the idea of participating was desirable. Chris joined the program because of physical issues, stating, “I had been going to VA about my knees and the doctor here recommended Gerofit... I’ve been there ever since.” Sam gave his account of joining the program, stating, “I had a friend [and] he thought it was an excellent program. He said it was a ‘good way to exercise instead of sitting around and feeling sorry for yourself.’” It was not difficult to convince Sam’s wife, Sarah, to join the

Table 2. MPAM-R Results of Veterans

Subscales	Number of questions	<i>M</i> (<i>SD</i>) total	Highest rated statement	<i>M</i> (<i>SD</i>) highest	Lowest rated statement	<i>M</i> (<i>SD</i>) lowest
Fitness	5	6.54 (1.1)	Maintain health and well-being	6.66 (1.0)	To have more energy	6.41 (1.1)
Interest/Enjoyment	7	5.75 (1.4)	Enjoy this activity	6.04 (1.3)	It’s interesting	5.20 (1.7)
Competence	7	5.61 (1.5)	Keep up current skill level	5.98 (1.4)	Want to obtain new skills	4.76 (1.9)
Appearance	6	5.17 (1.9)	Lose or maintain weight so I look better	5.88 (1.6)	Feel physically unattractive if I don’t	3.96 (2.0)
Social	5	4.97 (1.8)	Enjoy spending time with others	5.79 (1.5)	Friends want me to	3.06 (1.9)

Table 3. Fitness MPAM-R Subscales *t* Tests

Subscale	<i>t</i> (<i>df</i>)	<i>t</i> stat	<i>p</i>
Interest/Enjoyment	7	4.62	.001
Competence	8	4.16	.001
Appearance	7	4.44	.001
Social	6	2.44	.02

program when it opened up to spouses because she “was already interested in exercise.”

While fitness was the main reason why participants began the program, social interaction was a key motivator for interviewees continued and/or long-term participation participation. When asked about competence and interest/enjoyment motivations, participants responded with explanations related to social motivation. When describing what he had learned through participation in the program (competence), Sam answered:

I realize that if you participate you develop a circle of friends. It’s not just exercising, it’s a way to socialize. You develop a circle of friends. It’s a way of socializing and I think that’s what keeps a lot of people coming back—the camaraderies.

James said, “[You] learn about people [through] conversations. What they did for a living. Amazing what you learn if you let people talk. Different attitudes, different politics. You learn about that.”

The interviewees were also asked specifically what they enjoyed about exercising. For Sarah, it was “the way y’all reach out.” She gave a lot of credit to the program director, who consistently reached out to follow up with participants. She continued, “The special holidays [are important]. We are not just coming to exercise. When somebody is missing, we know. We all feel like family.” Sam followed up by reiterating how being around a certain type of people is what makes the difference, saying, “I enjoy all of it—the activities and the socializing. And the relationship I maintain with the staff. I like all of it.”

The question of how the program helped participants stay connected (related to social motivation) elicited an unexpected answer

from James. He said that he did not know if the program helped spouses and thought that it was an unnecessary expense to allow them to join. His point of view was based on personal experience; he noted that his wife “was in it for a while...I don’t know why she didn’t like it,” and he attributed her decision to leave to her inability to successfully perform some of the exercises. However, Sarah, the spouse of a veteran and a current participant, said that she looks forward to the program because she knows, “I’m going to see certain people...After I miss Mike, after several days I have an attitude, [I’m] more cranky.”

The interviewees all believed that their continued engagement in the program had a big impact on their health and wellness. They enjoyed the camaraderie and the opportunity to learn relatable health information from another, which added to their social interactions. Sarah also spoke of how important it was for her to be welcomed by the veterans. She suggested that the program’s social and physical aspects were equal, stating, “You can’t separate the two. Both are cherished.”

Discussion

The benefits of exercise are well known, and to increase the number of active older veterans, the Department of Veterans Affairs (VA) offers various exercise programs. While information has been reported regarding the barriers (Pebole & Hall, 2019), facilitators (Hoerster et al., 2015), and self-efficacy (Brown et al., 2019) of exercise among older veterans in various VA programs, previous research has not addressed their motivations for participation. To our knowledge, we are the first to explicitly collect primary data on the motivations of older veterans who participate in the VA exercise intervention program Gerofit.

According to our quantitative analysis, fitness ($mean = 6.54$) was the most noted motivation in both surveys and interviews. This was not a surprise, considering that most people who choose to participate in exercise programs do so because they have a vested interest in sustaining their physical health (Etnier et al., 2017). Extrinsic motivations can be self-directed or other-directed and are dependent on the attainment of extrinsic outcomes for maintenance. In this study, fitness was considered an extrinsic motivation because the veterans were exercising for outcomes (e.g., to have more energy) apart from participation itself (Ryan et al., 1997). However, the overall results for the Interest/Enjoyment subscale indicated that exercise and the purpose of the program also promoted intrinsic motivation (Deci & Ryan, 2008).

An innovation of our study was the survey transformation (Brown et al., 2018) of the MPAM-R, which expanded our understanding of some of the participants' personal views on motivation. Social factors were the least likely to be indicated as motivators on the survey. When the questions from the MPAM-R were asked aloud, however, qualitative results confirmed that social factors (e.g., social support, reinforcement) provided extrinsic motivation and were important to the long-term participants of the exercise program. This is consistent with other findings from the literature that note the importance of social motives for exercise among civilians (Etnier et al., 2017; Rivera-Torres et al., 2019).

Regarding the development of future VA programming that promotes long-term exercise, our results suggest that a program may attract continuous participation if it is built around both fitness and social aspects that are important to the participants. Social motivation cannot be forced, but opportunities for organic social processes that promote camaraderie may allow for more social interaction and, thus, motivation. An inability to connect with others may support why James's wife did not continue the program who was primarily concerned with fitness but unsuccessful at developing social connections. Exemplifying the organic social motivation that grew out of Gerofit, a group of five program participants regularly visited McDonald's for breakfast after working out. Chris said, "I was in Gerofit, being a loner, minding my own business, and [a member] here asked if I wanted to come to McDonald's... and we've been coming to McDonald's ever

since." Although people may begin an exercise intervention program because of their interest in changing their current health or fitness status, our data suggests that it may be the additional connection, found through social motivation (i.e., camaraderie), that is associated with continuous participation.

In sum, the results from this study indicate that veterans' high levels of extrinsic motivation to participate in Gerofit were driven by fitness, maintenance of their health and well-being, and the social opportunity to spend time with others. The highest rated intrinsic motivation (second overall) was interest/enjoyment, indicating that future research is needed to test how these and the other collected motivations (i.e., competence, appearance) may influence participation rates in group exercise programs aimed at older adults. Additionally, since the current study was limited in its number of participants (both men and women), its results cannot be generalized to the general population. With the increased number of Gerofit programs around the country, an expanded research agenda may be feasible. Using convenience recruitment methods to target participants, we could assess differences in participation rates based on program descriptions (as they differ) and locations. Environment has been shown to play a part in self-efficacy as it relates to participating in Gerofit (Brown et al., 2019), it and would likely have a direct effect on motivation. Filling gaps in knowledge by exploring the motivations of exercise program participants will produce valuable information that may help those who design exercise programs retain participants for a longer number of years.

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