



# Exercise preferences and perceived benefits and barriers of physical activity among US veterans with post-traumatic stress disorder

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## ABSTRACT

**Objective :** Veterans are at an increased risk for post-traumatic stress disorder (PTSD) and are less likely to respond to traditional PTSD treatments . Exercise has not been extensively studied in veterans, but there is increasing evidence that exercise interventions can be implemented as an adjunctive treatment for the management of PTSD. The purpose of this study was to determine levels of physical activity, perceived barriers to exercise, and specific exercise preferences among veterans with PTSD. **Methods:** A total of 97 veterans (83% male, mean age of 56.6 years) currently receiving PTSD treatment completed a brief survey of their current exercise practices and preferences. **Results:** Approximately, half (47.4%) of the veterans reported exercising regularly during the past 3 months, and 32% of veterans reported no physical activity at all. The majority of inactive veterans expressed interest in initiating an exercise program. Perceived barriers to exercise included: Not having enough energy, feeling unmotivated, not having anyone to exercise with, not enough spare time, being overweight, and not being able to keep up. Inactive veterans reported the following exercise preferences: Exercising with friends, exercising at the VA hospital, and exercising with structured/supervised help. **Conclusions:** Findings suggest that while veterans with PTSD are not engaging in optimal levels of physical activity, they are interested in initiating an exercise program. In addition, the identified barriers and specific exercise preferences may help inform the development of effective, adjunctive physical activity programs for veterans with PTSD.

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## INTRODUCTION

Post-traumatic stress disorder (PTSD) is a highly prevalent, often chronic psychiatric disorder [1]. An estimated 82% of Americans will be exposed to a traumatic event [2], and 7% will meet lifetime criteria for PTSD [1]. PTSD often co-occurs with

other psychiatric disorders and is associated with occupational and social dysfunction, and can lead to chronic disability [3,4]. PTSD is also a risk factor for a number of health-related concerns including chronic pain, cardiovascular disease, respiratory conditions, diabetes, arthritis, and metabolic syndrome [5-9]. The economic burden of PTSD is high, costing billions of

dollars annually in the United States [10]. Not surprisingly, PTSD is also associated with significantly worse the quality of life [11]. Despite efficacious approaches for treating PTSD (e.g., prolonged exposure therapy; cognitive processing therapy), the majority of patients continue to have substantial residual symptoms after treatment [12,13].

Veterans are at increased three-fold risk for PTSD [14] and are less likely to respond to traditional PTSD therapeutic approaches than non-veterans [12,13]. Indeed, existing PTSD treatments have been found to be less effective with veterans with PTSD. In particular, treatment appears to yield the lowest effect sizes for veterans with combat-related trauma than other trauma types [12,13]. Veterans with PTSD often experience difficulty engaging in traditional cognitive behavioral therapy (CBT) approaches, which can trigger the uncomfortable emotional arousal that is typically avoided [15]. Further, the effects of (a) repeated trauma exposure from multiple and longer deployments, (b) mental health stigma within military culture, and (c) high costs and resources associated with treatments [16], collectively contribute to difficulties with implementing PTSD intervention and may also the lower efficacy of treatment. Thus, there is a need to develop novel, efficacious therapeutic approaches for this particularly difficult-to-treat subgroup of individuals with PTSD. Although relatively unexplored, one potentially adjunctive approach for the treatment of PTSD in veterans is aerobic exercise.

There is a growing body of literature supporting the efficacy of exercise interventions on reducing depressive symptoms [17-20]. Evidence also suggests that aerobic exercise may be an effective approach in the treatment of anxiety disorders [21], including panic disorder [22-24], and to a lesser extent in obsessive-compulsive disorder [25,26], generalized anxiety disorder [27,28], and social phobia [29]. Initial findings also suggest aerobic exercise may help reduce the severity of PTSD symptoms [21,30].

The association between PTSD and physical inactivity is well-documented [31]. Data generally indicate that individuals with PTSD are less likely to engage in regular physical activity [32] and are more likely to be inactive than those without PTSD [33]. In addition, more severe PTSD symptoms are associated with the lower levels of physical activity [34,35]. Veterans with PTSD are less likely to engage in regular exercise than those with other mental disorders [33]. Thus, PTSD symptoms may impede exercise. Of these veterans with PTSD, they are more likely to feel stressed, depressed and have physical pain as barriers to physical activity than those without PTSD [36]. Importantly, it is worth noting that physical activity can decrease and has therapeutic effects on symptoms of people with PTSD [37]. For example, military personnel that reports increases in vigorous physical activity are less likely to develop new PTSD symptoms or persist with existing PTSD symptoms compared to those who do not report increases in physical activity [38]. Several non-veteran trials have found promising results of aerobic exercise for reducing PTSD and depression symptoms [15,39-45]. Therefore, increasing veteran's

engagement in exercise could be a valuable strategy toward decreasing PTSD symptomatology.

To inform the development of effective exercise interventions for veterans with PTSD, it is important to understand the exercise preferences among these individuals. Veterans may be more likely to engage in and enjoy an exercise program if it were designed according to their preferences. Studies examining exercise preferences have often considered: Interest for participating in a program, type of exercise preference, preferred intensity of activity, location, company (i.e., alone or with others), extent of supervision, and preference for structure and duration of exercise [46-53]. Further, examination of perceived benefits and barriers to engaging in exercise has helped to inform the development of more feasible interventions for various patient populations.

The purpose of this study is three-fold. First, we aimed to examine the extent to which veterans with PTSD engage in regular exercise that meets the public health recommendations [54]. Second, we examined the perceived benefits and barriers of engaging in physical activity, which was explored in veterans who were currently active versus those who were inactive. Finally, we examined veterans' specific exercise program preferences, which is information that could help inform the future development of physical activity programs.

## METHODS

### Procedure

Data were collected as part of a larger program evaluation of the physical activity needs and exercise preferences of veterans seeking treatment at two separate clinics - PTSD Clinic and Returning Veterans Clinic - at the Providence Veterans Affairs Medical Center (VAMC). Accordingly, informed consent was not required from the Institutional Review Board (IRB) before data collection as data were collected as part of standard operating procedures at the clinic. Permission to publish data was obtained from the facility director and the IRB after data collection in accordance with federal regulations on publishing data collected through VA non-research activities.

Participation was anonymous and voluntary. Questionnaire packets were placed in the waiting rooms of both clinics near the check-in desk for approximately 2 months. A sign describing the nature of the program evaluation was placed near the surveys. Veterans who chose to complete the survey did so in the waiting room, sealed the completed survey in an envelope, and placed the envelope in a bin. Blank surveys were refreshed and completed survey envelopes were collected weekly.

### Participants

Veterans ( $n = 108$ ) completed the survey, of which 97 veterans self-reported a diagnosis of PTSD. These 97 cases were retained

**Table 1: Demographic, physical activity, and health characteristics (n=97)**

Characteristics	Entire sample (n=97) (%)	Active veterans (n=46) (%)	Inactive veterans (n=51) (%)
Age Mean±SD	56.6±12.5	56.6±13.6	56.6±11.4
Gender (%male)	84.2	90.9	78.4
Racial group (not mutually exclusive)			
American Indian	9.4	8.9	9.8
Asian	1.0	2.2	0
Black	4.2	0	7.8
White	82.3	88.9	76.5
Native Hawaiian or Pacific Islander	2.1	4.4	0
Other	11.5	8.9	13.7
Hispanic	6.1	5.6	6.5
Marital status			
Single	18.6	19.6	17.6
Married	58.8	65.2	52.9
Separated	6.2	0	11.8
Divorced	15.5	15.2	15.7
Widowed	1.0	0	2.0
Era served			
Korea	4.2	4.4	3.9
Vietnam	55.2	64.4	47.1
Persian Gulf	17.7	11.1	23.5
Iraq	16.7	17.8	15.7
Operation enduring freedom	14.6	20.0	9.8
Operation new dawn	2.1	2.2	2.0
Other	12.5	8.9	15.7
Employed	17.7	17.8	17.6
Physical activity			
Exercise regularly during past 3 months	47.4	100	0
If not, interest in starting exercise? (% Yes)	-	-	69.4
Days/week of exercise M±SD (P<0.001)	2.4±2.1	4.0±1.6	0.9±1.2
Minutes/week of exercise M±SD (P<0.001)	162±202	291±201	56±129
Rating of perceived exertion M±SD	12.6±2.3	13.3±1.9	11.1±2.3
Health status			
Smoker	24.2	19.6	28.6
Being overweight	55.2	44.7	65.3
High cholesterol	44.7	42.6	46.8
High blood pressure	40.0	34.0	45.8

Bolded rows indicate significant differences between active and inactive veterans ( $P$ 's<0.05). SD: Standard deviation

for analyses. Participants were mostly male (84%), middle-aged (mean = 56.6, standard deviation [SD] = 13.6 years), and primarily self-identified race as white (82%). Just over half of the participants were currently married (59%), and few were employed (18%). The majority were Vietnam veterans (55%). Table 1 shows for complete demographic characteristics.

## Measures

### *Demographic and clinical characteristics*

Information was collected regarding participants' age, sex, ethnicity, marital status, employment status, and war era served. Participants were also asked about their general health, including high blood pressure/cholesterol, cigarette smoking, and overweight status (all yes/no answer format).

### *Engagement in current exercise program*

Participants were asked whether, over the past 3 months, they engaged in a regular exercise program with yes or no as the response options. Those participants answering yes were

considered "active" while those answering no were categorized as "inactive" in subsequent analyses. Participants were also asked to estimate how many days/week they engaged in physical activity, how long they exercised, and at what rate of perceived exertion (RPE) [55].

### *Perceived benefits of physical activity*

The motives for physical activity measure [56] were used to assess motives (i.e., perceived benefits) for participating in physical activities. Questions on the measure were rated by the participant on a 7-point Likert scale ranging from 1 (not true at all for me) to 7 (very true for me). Internal consistency of the items was Cronbach's  $\alpha = 0.92$ . Scores  $\geq 4$  were considered a perceived benefit.

### *Perceived barriers to physical activity*

Barriers to physical activity were assessed through an 18-item measure [57] which classified barriers into five categories: Physical barriers, emotional barriers, motivational barriers, time barriers, and availability barriers. This instrument uses a 7-point

Likert scale ranging from 1 (not true at all for me) to 7 (very true for me). Internal consistency of the items was Cronbach's  $\alpha = 0.90$ . Scores  $\geq 4$  were considered a perceived barrier.

*Exercise preferences*

Exercise preference items were adapted from items used with cancer patients [48,52]. Participants in this study were asked their exercise preferences for the following: Type of activity (e.g., walking, running, gym equipment, swimming, and organized sport), company (alone, with other veterans, and with family), location (home, community fitness center, at the VAMC), intensity (low, moderate, and vigorous), and structure (supervised vs. self-paced, scheduled vs. spontaneous/flexible). In addition, participants were also asked whether they would be interested in participating in an exercise program if it were offered by the VAMC as well as whether they would be physically able to engage in such a program.

*Preferred activity*

Participants were provided with a list of 10 different types of physical activities (walking, running/jogging, strength/resistance training, sports, cycling, swimming, exercise videos, aerobic equipment at home, gym/YMCA, and yoga/stretching) and were asked to rate their top three choices by indicating with "1" for

their most preferred activity, followed by "2" and "3" for their next most preferred activities.

**RESULTS**

**Current Levels of Physical Activity**

Less than half (47%) of the sample reported being active, measured by regular exercise during the past 3 months. Table 1 shows for demographic, physical activity, and health characteristics for the sample, stratified by active versus inactive exercise status. There were no demographic differences between veterans who were active versus inactive, with one exception: Inactive veterans relative to active more frequently identified race as black (7.8% vs. 0%;  $P < .05$ ). Across the entire sample, participants reported exercising an average of 2.4 (SD = 2.1) days per week, for a median of 180 min per week at a mean RPE of 12.6 (SD = 2.3). Approximately, one-third of the sample (32%) reported 0 min of physical activity per week. As expected, one-way ANOVA analyses revealed greater frequency of exercise ( $F(1, 88) = 104.5; P < 0.001$ ), duration of exercise ( $F(1, 90) = 45.9; P < 0.001$ ), and intensity of exercise ( $F(1, 65) = 17.2; P < 0.001$ ) among active veterans relative to non-active veterans. Among physically inactive veterans, 69.4% expressed an interest starting an exercise program. Veterans self-reported high rates of cardiovascular risk factors:

**Table 2: Benefits and barriers to exercise**

Benefit and barrier items	Entire sample (n=97) (%)	Active veterans (n=46) (%)	Inactive veterans (n=51) (%)
<b>Benefits to physical activity</b>			
I would be physically fit	93.0	95.0	91.3
I would lose weight	85.1	92.5	78.7
I would feel less anxious	85.1	90.2	80.4
I would feel physically stronger	95.5	95.2	95.2
I would look better	92.0	97.6	87.2
I would feel less depressed	80.7	87.8	74.5
My health would improve	89.7	93.0	89.7
I would manage stress better	83.1	88.1	78.7
I would have more energy	92.1	95.2	89.4
I would sleep better	85.4	88.1	83.0
I would feel a sense of accomplishment	87.5	85.7	89.1
I would be healthier	92.9	92.7	93.2
I would have more structure in my life	87.5	81.6	92.9
<b>Barriers to physical activity</b>			
I haven't got time	18.3	11.1	23.9
My health is not good enough	41.4	31.6	49.0
There's no one to do it with	32.9	13.9	47.8
I can't afford it	15.7	10.8	19.6
I'm too old	19.8	8.3	28.9
I have an injury or disability that stops me	45.9	36.8	53.2
I'm too shy or embarrassed	20.7	8.6	29.8
I'm not the sporty type	14.5	8.1	19.6
There aren't any suitable facilities nearby	22.9	15.8	28.9
I need to rest and relax in my spare time	34.1	18.9	45.8
I've got young children to look after	18.1	16.7%	19.1
I'm too lazy/not motivated/can't get started	38.3	11.1	60.0
I might get injured or damage my health	28.6	13.2	41.3
I don't enjoy physical activity ( $P=0.03$ )	20.5	10.8	28.3
I haven't got the right clothes or equipment	14.3	5.6	20.8
I'd never keep it up	28.4	11.1	42.2
I'm too overweight	28.2	13.5	39.6
I haven't got the energy	54.8	32.4	72.3

Bolded rows indicate significant differences between active and inactive veterans ( $P$ 's<0.05)

Being overweight (55%), high blood pressure (40%), and high cholesterol (45%). Utilizing Chi-square analyses, relative to active veterans, and inactive veterans were significantly more frequently overweight ( $\chi^2(1) = 5.8, P < 0.05$ ; 67% vs. 42%).

### Benefits and Barriers to Engaging in Physical Activity

Table 2 shows for differences between inactive and active veterans in terms of benefits to engaging in physical activity and barriers to engaging in physical activity. The perceived benefits of physical activity were high and did not significantly differ between the active and inactive veterans. For the full sample, the most highly rated benefits of physical activity included: Feeling physically stronger (95.5%), being physically fit (93.0%), being healthier (92.9%), having more energy (92.1%), and looking better (92%).

The most commonly reported barriers to physical activity across the entire sample included: Not having enough energy (54.8%), having an injury or disability (45.9%), health is not good enough (41.4%), not motivated (38.3%), and needing to use spare time to rest and relax (34.1%). Inactive veterans, relative to active, reported more barriers to physical activity including: Not having anyone to do it with ( $\chi^2(1) = 10.5, P < 0.001$ ), being too old ( $\chi^2(1) = 5.3, P < 0.05$ ), feeling too shy or embarrassed ( $\chi^2(1) = 5.5, P < 0.05$ ), needing to rest and relax in spare time ( $\chi^2(1) = 6.7, P < 0.01$ ), feeling lazy/unmotivated ( $\chi^2(1) = 20.2, P < 0.001$ ), concern about getting injured ( $\chi^2(1) = 8.1, P < 0.01$ ), not having the right clothes or equipment ( $\chi^2(1) = 3.9, P < 0.05$ ), not being able to keep up ( $\chi^2(1) = 9.5, P < 0.01$ ), being too overweight ( $\chi^2(1) = 7.0, P < 0.01$ ), and not having enough energy ( $\chi^2(1) = 13.3, P < 0.001$ ) [Table 2].

### Specific Exercise Program Preferences

Participants also answered questions regarding their specific exercise preferences [Table 3]. In general, relative to active veterans, inactive veterans were most likely to report wanting to exercise with friends ( $\chi^2(1) = 4.9, P < 0.05$ ), at the veteran's hospital ( $\chi^2(1) = 10.7, P < 0.001$ ), in a structured and supervised fashion ( $\chi^2(1) = 5.5, P < 0.05$ ), in single bouts ( $\chi^2(1) = 6.3, P < 0.05$ ), and at a moderate-intensity exercise ( $\chi^2(1) = 6.6, P < 0.05$ ). Participants were also asked to rate the extent to which they would be "interested in an exercise program offered by the VA?" – responses were 66% for Yes, 23% Maybe, and 11% No. In addition, 78% of veterans reported being physically able to participate in such a program. With respect to types of preferred physical activities, there were no differences between the active and inactive veterans. In the full sample, the most frequently expressed preferences were for walking (73.7%), resistance/strength training (53.7%), swimming (43.8%), and going to the gym (37.9%).

## DISCUSSION

Approximately, half of the veterans with PTSD in this sample reported regularly exercising, while one-third of veterans

reported no physical activity minutes per week. While literature generally indicates that veterans are more likely to exercise than non-veterans [58], this study suggests that a substantial number of veterans with PTSD are not sufficiently active. This observation is perhaps not surprising given rates of physical activity are lower among veterans with mental health problems, relative to those without [59]. These low levels of physical activity may contribute to chronic conditions including obesity, Type 2 diabetes, hypertension, and high cholesterol [11] commonly observed in veterans with mental health problems. Therefore, efforts to promote increases in physical activity in veterans with PTSD could have a significant public health impact.

Despite the low rates of physical activity, the majority of veterans with PTSD in this sample were interested in initiating an exercise program. The perceived benefits of physical activity were high and included increased health, physical fitness and strength, as well as having more energy, and better physical appearance. Most veterans also reported decreased depression and stress management as benefits of exercise, although these were not as frequently endorsed relative to alternative benefits (e.g., health-enhancing, weight loss, and appearance goals) [60]. Self-determination theory [61] as applied to physical activity, states that goals that are externally motivated (e.g. exercising to improve physical appearance) are less likely to lead to sustained exercise compared to more internal, meaningful goals (e.g., exercising to improve mental and physical health) [62]. Physical activity interventions for veterans with PTSD should consider highlighting these more internal goals. For example, exercise interventions may consider teaching veterans to self-monitor mood before and after bouts of physical activity [42] to help them learn about the mental health benefits of exercise [30].

Barriers to physical activity were much more commonly reported among inactive veterans with PTSD relative to those who were engaging in a regular exercise program. The most common barriers were low energy, lack of motivation, and a physical injury. These findings are consistent with a prior study among veterans who wanted to lose weight [36], which found that veterans with PTSD reported more physical activity barriers related to physical problems, stress/depression, and feeling tired. It is possible that lack of energy and motivation is due to depressive symptoms often presented in PTSD [63], sleep disturbances [64,65], or fluctuations in blood glucose levels from inconsistent eating [36]. As such, exercise approaches that address these specific barriers are necessary to aid the adoption and maintenance of physical activity in veterans with PTSD. For example, group-based exercise programs may increase veteran's motivation for exercise. In addition, exercise modifications vary widely based on a specific type of physical injury, thus exercise programs should "prescribe" appropriately customized physical activity for veterans presenting with physical injury [66]. Strategies focused on goal setting and changing negative thoughts about exercise [67,68] and may be important components to consider adding in exercise programs for veterans with PTSD. In addition, other therapeutic strategies such as motivational interviewing can be effective in increasing

**Table 3: Exercise preferences**

Exercise preference items	Entire sample (n=97) (%)	Active veterans (n=46) (%)	Inactive veterans (n=51) (%)
How would you prefer to exercise?			
Alone	54.4	58.1	51.1
With family	18.9	14.0	23.4
With friends	18.9	9.3	27.7
With other veterans	31.1	27.9	34.4
Other	5.6	7.0	4.3
Where would you prefer to exercise?			
At home	38.8	34.9	42.6
Outside	30.0	37.2	23.4
At the veteran's hospital	33.3	16.3	48.9
At a community gym or YMCA	36.7	51.2	23.4
Other	3.3	0	6.4
How hard would you prefer to exercise?			
Low intensity (e.g., taking a leisurely stroll)	24.7	16.3	32.6
Moderate intensity (e.g., brisk walk)	60.7	60.5	60.9
High intensity (e.g., running)	14.6	23.3	6.5
Would you prefer to begin an exercise program that is:			
Structured/supervised (i.e., with professional help)	47.0	33.3	59.1
Unsupervised/self-paced (i.e., on your own)	53.0	66.7	40.9
Would you be willing to wear a pedometer to track your daily steps?			
Yes	71.6	65.9	76.6
No	14.8	17.1	12.8
Maybe	13.6	17.1	10.6
Would you want to add strength/resistance training (e.g., lift weights or Nautilus circuit training) into your exercise program?			
Yes	69.7	69.0	70.2
No	23.6	28.6	19.1
Maybe	6.7	2.4	10.6
How would you prefer to exercise?			
In one long bout of exercise (30-60 min)	67.4	73.8	61.7
In short bouts throughout day when you can fit in (10 min/time)	14.6	4.8	23.4
No preference	18.0	21.4	14.9
How would you like to get information about becoming more physically active?			
In-person meetings with a professional	48.8	41.7	54.3
Phone calls with a professional	9.8	2.8	15.2
E-mail or the internet	35.4	36.1	34.8
Handouts in the mail	26.8	25.0	28.3
Would you be interested in an exercise program offered by the VA?			
Yes	53.4	39.0	66.0
No	21.6	34.1	10.6
Maybe	25.0	26.8	23.4
Would you be physically able to participate in exercise?			
Yes	84.0	90	78.0
No	16.0	10	22.0

Bolded rows indicate significant differences between active and inactive veterans ( $P$ 's<0.05)

physical activity among challenging populations, particularly those with chronic health conditions [69].

Notably, inactive veterans preferred exercising with additional support – including exercise with friends, at the VA hospital, and exercise with structured/supervised help. Providing structured exercise programs for inactive veterans may help aid in their adoption of physical activity. In addition, walking was identified as the most preferred exercise activity. Indeed, walking may be the ideal activity for promoting increases in exercise. Walking is associated with numerous advantages over other physical activity approaches. First, brisk walking is done at a low-to-moderate intensity level which, relative to other more vigorous-intensity exercises, is associated with improved exercise adherence [70,71]. Second, walking is

highly accessible to all populations, even those with various medical comorbidities [72]. Specifically, walking is a safe activity with low-risk of injury that can be done at any time during the day. Third, not only can walking be easily integrated into individual's daily routines but it has also been associated with numerous improved health outcomes [73], decreased depressive symptoms, [74] and decreased negative affect [75]. It is worth noting, however, that higher intensity exercise can lead to physiological arousal and distress, which are sensations that are frequently avoided by individuals with PTSD [35,42]. It is plausible that veterans with PTSD may be particularly 'tuned in' to somatic arousal during exercise, and interpret such sensations as trauma-relevant cues (i.e., indicative of danger). This may result in fear and subsequent avoidance of exercise activities that elicit uncomfortable sensations [35,42]. Thus,

among veterans, it may be helpful to include an assessment of the reasons for engaging in a specific type of exercise to ensure self-selection of activity and intensity is not primarily driven by avoidance of feared physiological sensations.

There are several limitations that merit discussion. First, the assessment of physical activity was self-reported, and the previous research has shown that, compared to objective measures of physical activity, individuals are likely to over-report their current activity levels [76]. Similarly, PTSD diagnoses were also self-reported rather than clinically obtained through medical chart review or structured diagnostic assessments. Moreover, specific data regarding the presence of psychiatric diagnoses or current psychological and/or pharmacological treatment is unknown. This is in part due to the program evaluation focus of this project and the anonymous nature of the data collection. Second, the majority of veterans in this study were men. The previous work has identified gender differences with respect to exercise preferences [77], and this should be considered when developing effective exercise interventions for specific patient populations. Third, our assessment of preferred activity included answer choices that were more related to an exercise setting than specific activities (e.g., utilizing exercise equipment at home, going to the gym). Moreover, many answer choices are not mutually exclusive. For instance, “going to the gym” can include many of the other option choices (e.g. resistance/strength training, stretching, walking and/or running). Finally, the majority of participants in this study served during the Vietnam War era. It is possible that veterans serving during the more recent eras who are younger and likely to have fewer chronic health conditions may identify different types of exercise preferences. Our sample characteristics did not permit statistical power to empirically address this question, although it is nevertheless an important consideration for tailoring treatment for all veterans.

The exercise preferences reported in this sample appear to similarly represent those of other subgroups of individuals with psychopathology (e.g., individuals with substance use disorders, depression) [77-79]. Collectively, these data have the potential to inform the tailored development of exercise programs that are accessible and enjoyable to veterans. Exercise programs for veterans could include peer-facilitated walking groups at the VA hospital which is aligned with their exercise preferences. In addition, exercise may be paired with cognitive behavioral exposure-based treatments for PTSD, where bouts of physical activity can serve as interoceptive exposures. In doing so, exercise may be a way to help veterans with PTSD learn that somatic sensations not harmful and can be tolerable. Integrating exercise into traditional CBT approaches for treatment of PTSD could have the added benefit of improving both physical and mental health. Considering exercise preferences and barriers/benefits to exercise are critical “first steps” which will provide a meaningful reference to develop patient-oriented interventions for veterans with PTSD.

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