Frequent Physical Activity and Anxiety in Veterans of the Afghanistan and Iraq Wars

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1) “Physical activity in postdeployment OIF/OEF veteran using Dept. of Veterans Affairs services.” (Buis et al., 2011)
   - Decline in exercise among returning veterans:
     - 11.5% decrease in running
     - 3.6% decrease is exercising with gym equipment
   - 70% of 319 respondents stated exercise helps deal with stress

2) “Post-traumatic stress disorder is associated with poor health behaviors: Findings from the Heart and Soul Study.” (Zen et al., 2012)
   - PTSD linked to physical inactivity and other negative health factors
   - Physical inactivity more prevalent among sufferers of PTSD
3) “Invisible wounds: Mental health and cognitive care needs of America’s returning veterans.” (Rand Center for Military Health Policy Research, 2008)
   - Only 53% recently deployed veterans with PTSD sought care from a provider
   - 45% cite the possible side effects of drugs as a reason for not seeking treatment

4) “Iraq and afghanistan veterans: National findings from VA residential treatment programs” (Cook et al., 2013)
   - Limited time available to commit to residential and long-term treatment
   - Various forms of physical exercise used to regulate intense physical emotion
5) “A multidimensional wellness group therapy program for veterans with comorbid psychiatric and medical conditions” (Perlman et al., 2010)
- Promoting healthy behaviors (exercise, sleep, etc.) significantly improved mental health

6) “Physical fitness influences stress reactions to extreme military training.” (Taylor et al., 2008)
- Physical fitness acts as a buffer against future PTSD-inducing events
- Performance on a physical fitness test inversely related to symptoms of PTSD

7) “Effects of sensory-enhanced yoga on symptoms of combat stress in deployed military personnel” (Stoller, Greuel, Cimini, Fowler, & Koomar, 2012)
- Yoga helps manage combat stress and anxiety
Hypothesis

OEF and OIF veterans who frequently engage in physical activity, defined by exercise lasting longer than 30 minutes at a time, on a weekly basis will experience less severe symptoms of anxiety, as measured with a survey using modified versions of the Modified PTSD Symptom Scale (MPSS-SR) and Beck Anxiety Inventory (BAI).
Participants

34 OEF and OEF veterans
- Active Duty, Reserves, Separated or Retired
- Average age = 26.5, age range = 21 – 43
- 32 males, 1 female, 1 unknown

Average time overseas: 17.8 months

Average number of deployments: 2.0

Average time in military service: 6.1 years
Materials and Procedure

3 Part Questionnaire
1) Demographics
2) Measure of anxiety symptoms (13 questions)
   - Frequency and severity
   - Modified PTSD Symptoms Scale (MPSS-SR) (Falsetti, Resnick, Resick, Kilpatrick, 1993)
   - Beck Anxiety Inventory (BAI) (Beck & Steer, 1993)
3) Average physical activity per week
   - Completed individually and returned electronically or by mail
Results

$r(32) = -.38, p = .03, r^2 = .14$
- Significant negative correlation
- Medium effect size

Average weekly physical activity:

\[ M = 5.85 \hspace{1cm} SD = 3.93 \]

Anxiety score:

\[ M = 27.76 \hspace{1cm} SD = 20.11 \]
Results

Average Times Exercised per Week
vs.
Anxiety Symptom Score
## Results

### Means and Standard Deviations of Individual Symptom Measures

<table>
<thead>
<tr>
<th>Measures</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad dreams and Nightmares</td>
<td>34</td>
<td>1.97</td>
<td>2.02</td>
</tr>
<tr>
<td>Loss of interest</td>
<td>34</td>
<td>1.82</td>
<td>2.17</td>
</tr>
<tr>
<td>Difficulty sleeping</td>
<td>34</td>
<td>3.32</td>
<td>2.27</td>
</tr>
<tr>
<td>Fear of the worst happening</td>
<td>34</td>
<td>1.82</td>
<td>2.30</td>
</tr>
<tr>
<td>Irritability</td>
<td>34</td>
<td>2.85</td>
<td>2.13</td>
</tr>
<tr>
<td>Inability to relax</td>
<td>34</td>
<td>2.29</td>
<td>2.20</td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td>34</td>
<td>2.38</td>
<td>2.23</td>
</tr>
<tr>
<td>Nervousness</td>
<td>34</td>
<td>1.62</td>
<td>2.07</td>
</tr>
<tr>
<td>Overtly alert</td>
<td>34</td>
<td>2.88</td>
<td>2.14</td>
</tr>
<tr>
<td>Unsteadiness</td>
<td>34</td>
<td>1.71</td>
<td>1.73</td>
</tr>
<tr>
<td>Jumpy or easily startled</td>
<td>34</td>
<td>2.29</td>
<td>2.30</td>
</tr>
<tr>
<td>Scared or helpless</td>
<td>34</td>
<td>1.00</td>
<td>1.69</td>
</tr>
<tr>
<td>Intense physical reactions</td>
<td>34</td>
<td>1.79</td>
<td>2.21</td>
</tr>
</tbody>
</table>

*Note. Means > 2.50 are in boldface. N = number of participants, M = mean, SD = standard deviation*
Corresponds with the findings of Taylor et al. (2008) and Stoller et al. (2012)
- Increased physical activity related to lower anxiety levels and less severe symptoms of PTSD

Limitations:
- Accessibility of participants and time
- Nonresponse bias
- Unknown reliability of survey measures

Future Studies:
- Experimental study examining the effects of varying intensities and types of exercise
- Effects of exercise on specific symptoms of PTSD
References


Questions?