CONTROLLED, DESCRIPTIVE STUDY

Bodily symptoms in patients with post traumatic stress disorder: A comparative study of traumatized refugees, Danish war veterans, and healthy controls

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KEYWORDS
PTSD; Bodily symptoms; Assessment

Summary Background: Post traumatic stress disorder (PTSD) is associated with increased general health symptoms and patients suffer from numerous bodily complaints such as increased pain, increased muscular tension, and restricted breathing.

Methods and material: This study applied the Body Awareness Movement Quality and Experience scale (BAS MQ-E) in assessing and comparing bodily symptoms, including movement function, in traumatized refugees (N = 14) and Danish war veterans with PTSD (N = 19) and healthy controls (N = 20).

Results: Patients with PTSD had significantly poorer stability, balance, flexibility and coordination in movement, had more muscular tension, more complaints of pain, more restricted breathing, and more limitation in function of daily life than healthy controls.

Conclusion: The BAS MQ-E was found to be an applicable and useful measure of bodily symptoms in patients with PTSD. Further research may add to the validity of BAS MQ-E and might be considered in future studies evaluating the efficacy of physiotherapy for patients with PTSD. © 2016 Elsevier Ltd. All rights reserved.

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Introduction

Refugees, resettled in Western countries, have a 10 fold higher prevalence of post traumatic stress disorder (PTSD) compared with the general population of the recipient country (Fazel et al., 2005) and PTSD is prevalent in 20–25% of war veterans (Fulton et al., 2015). PTSD is defined by the International Classification of Diseases Tenth Revision (ICD-10) (World Health Organization, 1993) as an anxiety disorder with symptoms divided into three categories: i) re-experiencing, ii) avoidance, and iii) hyperarousal. Re-experiencing comprises intrusive flashbacks, vivid memories or recurring, distressing dreams, psychological distress and physiological reactivity when exposed to reminders. Hyperarousal is the consequence of heightened anxiety and altered arousal, resulting in difficulties in sleeping, problems with concentration, anger management problems, an increased startle response, and hypervigilance. Anxiety is associated with increased muscular tension, impeded, un-free breathing, and changes in psychomotor behavior. A meta-analysis from 2013 revealed that PTSD is associated with greater general health symptoms and greater frequency and severity of pain, and cardio-respiratory and gastrointestinal symptoms (Pacella et al., 2013). In addition, refugees with PTSD often have physical disabilities and chronic pain following specific injuries arising from torture (Buhmann, 2014).

In Denmark patients with PTSD, and in particular refugees with a history of torture, are often referred to physiotherapy for treatment of the physical symptoms of PTSD such as increased pain, increased muscular tension, inability to relax, and a generally poorer physical function. The treatment modality “Basic Body Awareness” is commonly applied in the treatment of movement disorders, pain, and anxiety in patients with severe mental illness, including patients with PTSD (Madsen et al., 2016; Hedlund and Gyllensten, 2010; Gyllensten et al., 2009). In accordance with the theories of Basic Body Awareness Therapy (BBAT) both the Body Awareness Scale (BAS) and the BAS—Health (BAS-H) have been used to assess bodily symptoms and movement functions (Gyllensten, 2003; Gyllensten et al., 2004; Hedlund and Gyllensten, 2010; Nyboe Jacobsen et al., 2006; Roxendal, 1985). Owing to the need for both evidence-based and applicable measures to describe and evaluate bodily symptoms BAS and BAS-H has been further developed in the Body Awareness Movement Quality and Experience (BAS MQ-E) (Gyllensten and Mattsson, 2011). So far, the BAS MQ-E has been found to have adequate validity and inter-rater reliability for patients with prolonged musculoskeletal pain (Sundén et al., 2016; Sundén, 2013) and severe mental illness (Hedlund et al., 2016). Yet, the BAS MQ-E has not previously been applied to patients with PTSD, and it is still unknown whether BAS MQ-E is applicable and useful in describing bodily symptoms in these patients.

Aim

The primary aim of this study was to compare bodily symptoms in traumatized refugees and Danish war veterans with PTSD with healthy controls. Further, we aimed to test the validity and applicability of the BAS MQ-E in differentiating between healthy participants and patients with PTSD.

We hypothesized that both Danish war veterans and traumatized refugees with PTSD would have poorer motor function and more bodily complaints than healthy controls. Furthermore, we hypothesized that the BAS MQ-E would be able to distinguish between patients with PTSD and healthy controls.

Methods and materials

Study design and study population

This was a controlled, descriptive study. Traumatized refugees and Danish war veterans fulfilling the ICD-10 criteria for PTSD were included. Both groups were recruited from the Clinic of Post Traumatic Stress Disorder and Trans-cultural Psychiatry (CPTP), Aarhus University Hospital, Risskov, Denmark, and all patients were referred to physiotherapeutic treatment. As a healthy comparison group physiotherapy students from the Department of Physiotherapy at University College Northern Denmark were included; these participants were not tested for PTSD. All participants were aged between 20 and 40 years. All participants spoke and understood Danish.

Measures

Bodily symptoms in all participants were assessed using the BAS MQ-E (Gyllensten and Mattsson, 2011). The BAS MQ-E includes a structured movement test for assessing motor function and movement quality, a structured questionnaire for assessing subjective bodily complaints, and finally qualitative data on the participant’s experience on movement and movement quality. The movement test (BAS-M) is an observation of movements carried out by a skilled professional and the questionnaire and qualitative data reflect the patient’s own views of their abilities and problems.

The BAS-M movement test is structured in three different domains: i) stability in function, including nine different items; ii) coordination and breathing, including eight items; and iii) relation/awareness, including six items. Every item is scored from 0 to 4, with a higher score indicating more impairment of the specific domain. The individual items in the three domains of the movement test are summed to give a calculated mean for each domain. The total BAS MQ is the sum of the three domains divided by three.

The BAS Questionnaire -Experience (BAS-QE) contain two parts: one questionnaire with seven items that can be calculated as quantitative, and one qualitative part. The questionnaire addresses perceptions of the body, muscular tension, pain, limitations in every day life, view of appearance, breathing difficulties and the ability to be physically active. The qualitative data assessment was not considered in the present paper.

BAS MQ-E data were obtained by five experienced physiotherapists, all of whom are trained and certified in...
applying the BAS MQ-E. To improve inter-rater reliability co-ratings were made before and during the study on patients who were not included in the study.

Ethics

The study was approved by the local ethics committee of Central Region, Denmark. The study was defined as a quality development project that did not require informed consent from the participants.

Statistical analyses

For between-group comparisons the Student’s t-test was applied. For adjusted analyses one-way ancova was applied, with 95% confidence interval and a statistical significance of 0.05. All analyses were performed in SPSS version 22(IBM, Armonk, NY, USA).

Results

In total, 19 Danish war veterans, 14 traumatized refugees and 20 healthy controls were included in the study. The physiotherapy students (healthy controls) were significantly younger (mean age 25.9 years) than the refugees (mean age 31.3 years (P = 0.004)) and the veterans (mean age 30.1 years (P = 0.01)), therefore all further analyses were adjusted for age.

Compared with healthy controls the Danish war veterans and traumatized refugees had significantly higher scores on the total BAS MQ-E, as well as in all sub-scales of the BAS MQ-E (Table 1). Traumatized refugees had significantly higher scores on the movement subscales “stability in function” and “coordination and breathing” compared with the war veterans (Table 2). There were no significant differences in scores on subjective bodily experiences and complaints between the two patient groups (Table 2).

Discussion

This was the first study to use the BAS MQ-E to describe bodily symptoms in patients with PTSD versus healthy controls. We found significant differences both in movement function and quality and bodily complaints between healthy controls and Danish war veterans and traumatized refugees with PTSD. Patients with PTSD had significantly poorer stability, balance, flexibility and coordination in movement, had more muscular tension, more pain complaints, more restricted breathing, and more limitation in activities of daily life compared with healthy controls.

The traumatized refugees had significantly higher scores on the domains “stability in function” and “coordination and breathing” compared with Danish war veterans, thus indicating more severe problems with motor function.

The BAS MQ-E proved to be applicable to patients with PTSD and was able to distinguish between healthy controls and patients. We could also distinguish differences in stability in function and coordination and breathing patterns between the two different patient groups with PTSD, with the traumatized refugees having significantly more impairment in motor function. There were, however, no significant differences in the subjective experiences and bodily complaints between traumatized refugees and Danish war veterans. Both groups experienced serious problems with perceptions of the body, suffered from musculoskeletal pain and muscle tension, and experienced limitations of function in every day life. This is in concordance with previous findings which suggest that PTSD is associated with greater general health symptoms and greater frequency and severity of pain (Pacella et al., 2013). Traumatized refugees often suffer from chronic pain, poor quality of life and low functioning (Buhrman et al., 2014; Teodorescu et al., 2015). Similarly, previous studies have described that pain-related musculoskeletal disorders and chronic pain is highly prevalent in war veterans (Haskell et al., 2012; Kelsall et al., 2014).

Several issues can be considered in interpreting the difference found in motor function but not in the subjective

<table>
<thead>
<tr>
<th>Table 1</th>
<th>BAS MQ-E in patients with post traumatic stress disorder (PTSD) and healthy controls.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Healthy controls</td>
</tr>
<tr>
<td>Age</td>
<td>25.9 ± 3.9</td>
</tr>
<tr>
<td>Sex (male/female),n</td>
<td>9/11</td>
</tr>
<tr>
<td>BAS M total</td>
<td>0.37 ± 0.09</td>
</tr>
<tr>
<td>Stability/balance</td>
<td>0.31 ± 0.11</td>
</tr>
<tr>
<td>Coordination/breathing</td>
<td>0.64 ± 0.42</td>
</tr>
<tr>
<td>Relation/awareness</td>
<td>0.07 ± 0.08</td>
</tr>
<tr>
<td>BAS Q:E:</td>
<td></td>
</tr>
<tr>
<td>Perception</td>
<td>0.14 ± 0.11</td>
</tr>
<tr>
<td>Muscular tension</td>
<td>0.44 ± 0.16</td>
</tr>
<tr>
<td>Pain</td>
<td>0.53 ± 0.16</td>
</tr>
<tr>
<td>Limitation</td>
<td>0.35 ± 0.19</td>
</tr>
<tr>
<td>Physical activity</td>
<td>0.13 ± 0.16</td>
</tr>
<tr>
<td>Appearance</td>
<td>0.02 ± 0.04</td>
</tr>
<tr>
<td>Breathing</td>
<td>0.23 ± 0.16</td>
</tr>
</tbody>
</table>

Data are mean ± SD unless otherwise indicated. CI, confidence interval *Age-adjusted analyses.
experiences and bodily complaints between the two PTSD groups. Firstly, the poorer motor function in traumatized refugees might be owing to the fact that refugees, as opposed to war veterans, often have physical disabilities following specific injuries inflicted by torture practices. Secondly, it is possible that cultural aspects of movement could influence scores on movement function. Finally, it is noteworthy that war veterans disclosed fewer problems on all items of subjective experiences and complaints compared with refugees; the lack of statistical significance may purely be owing to lack of power. Taken everything into consideration, we believe that the BAS MQ-E was able to distinguish between two different groups of patients with PTSD, thus confirming our other hypothesis.

Some limitations should be addressed when interpreting our results. As physiotherapy students represent a highly selected control group it is not surprising that the healthy controls in our study had better outcomes in movement function and bodily complaints. It is possible that a less healthy control group would have shown fewer significant differences compared with patients with PTSD. Although, co-ratings were made prior to and during the study, the fact that several physiotherapists were involved in data collection might have caused small inconsistencies in the scoring of the BAS MQ-E, leading to bias. Furthermore, the study sample was fairly small, which might have impaired the ability to disclose significant differences between the two groups of patients with PTSD.

In conclusion, patients with PTSD have significantly poorer movement function and more bodily complaints compared with physiotherapy students. The BAS MQ-E proved to be an applicable and useful measurement of movement function, bodily complaints and subjective body experiences in patients with PTSD. The BAS MQ-E could be considered in future evaluations of efficacy of physiotherapy for patients with PTSD.

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### References


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