

“After all the traumas my body has been through, I feel good that it is still working.” – Basic Body Awareness Therapy for traumatised refugees

Kajsa Stade, MD*,**, Signe Skammeritz, MD*, Charlotte Hjortkjær, MSc*,
Jessica Carlsson, MD, PhD*,**

Abstract

Basic Body Awareness Therapy (BBAT) is a form of physiotherapy that is often used for psychiatric patients in Scandinavian countries. To our knowledge there has not been any studies investigating BBAT as a treatment for traumatised refugees until now.

Objective: To explore the compliance, acceptability and treatment satisfaction using group BBAT in traumatised refugees. To study changes in psychiatric and somatic symptoms as well as quality of life, level of functioning and quality of movement during treatment with BBAT.

Method: All Arabic speaking patients that previously had received treatment at the Competence Centre for Transcultural Psychiatry in Copenhagen from April 2008 to June 2009 were invited to participate (N=29). Nine persons were included in a male (N=4) and female (N=5) group. All participants were traumatised refugees. The BBAT treatment consisted of 14 sessions over a period of 14 weeks. Before and after treatment the participants were interviewed

using a semi-structured interview guide. The interviews were transcribed and analysed with a thematic approach. The participants also filled out self-administrated questionnaires and two physiotherapists tested the participants' movement harmony using the Body Awareness Rating Scale-Movement Harmony (BARS-MH) test. At the end of the study, the participants filled out anonymous questionnaires about treatment satisfaction.

Results: The results showed that the participants had a high compliance, acceptability and treatment satisfaction with BBAT. The majority of participants showed improvements in symptoms from baseline to post-intervention on the self-administrated questionnaires and in the BARS-MH test.

Conclusions: Further research is needed to expand the scientific knowledge regarding the use of BBAT in traumatised refugees. If future research can confirm our positive findings it will have a considerable impact on future treatment designs and for the individual patient.

Keywords: Refugees, PTSD, physiotherapy, traumatised, basic body awareness therapy

Introduction

Many refugees arrive in their new home countries with a history of multiple traumas.¹

*) Competence Centre for Transcultural Psychiatry, Psychiatric Centre Ballerup, the Mental Health Services of the Capital Region of Denmark

**) Faculty of Health and Medical Sciences, University of Copenhagen

Often the refugees have had experiences of war, torture and persecution for political, religious or other reasons. Furthermore the migration process itself can cause an enormous amount of stress for the individual. Altogether this results in a high risk for bio-psycho-social-spiritual problems.² Since traumatised refugees often have been exposed to multiple traumas over several years and subsequently experienced different migratory and post-migratory stressors, experts have argued that there is a need for a special focus on this group in clinical work as well as in research.³

A recent study at a Danish asylum centre showed that 45% of the asylum seekers had experienced torture before their arrival to Denmark and as many as 63% of the asylum seekers had Post-Traumatic Stress Disorder (PTSD) according to the diagnostic criteria in ICD-10.¹ It is a known fact that there is a high co-morbidity in traumatised refugees with PTSD and especially depression⁴⁻⁶ and anxiety.^{4,5,7} Apart from the severe mental health problems, many traumatised refugees also suffer from chronic pain.^{1,8} Data from the Competence Centre for Transcultural Psychiatry (CTP) in Copenhagen shows that 92% of the patients suffer from pain and in the clinical work at CTP pain is often one of the major complaints.⁹ In many cases it is difficult to distinguish which diagnosis the pain is an element of, because both physical and psychological circumstances will be contributory. In addition, the expression "pain" might be used differently in different cultures, where psychiatric symptoms are taboo or the language lacks words describing other symptoms.^{10,11} Furthermore, recent studies have found a clear relationship between torture and reported pain in traumatised refugees.^{8,12-15}

Physical exercise is recommended in the treatment of patients with depressive symptoms and patients with chronic pain,¹⁶ but there is only limited evidence for the effectiveness of physical activity in patient groups with PTSD.¹⁷⁻¹⁹ To this date, very little is known about the effect of physical exercise and body-oriented therapies on the physical and mental well-being of traumatised refugees.^{13,20,21} Some of the reasons for the lack of evidence on treatment effect could be related to the complex challenges when carrying out effect studies in transcultural settings such as the understanding of culture specific idioms of distress.²² Cultural idioms of distress are ways of expressing distress that are understood within a specific culture when experiencing or talking about personal or social concerns, for example using somatic complaints to articulate psychological distress.^{22,23}

In a Danish Health Technology Assessment Report on PTSD treatment in traumatised refugees, Basic Body Awareness Therapy (BBAT) is the recommended form of physiotherapy.²⁴ BBAT has its roots in a number of different movement systems of Western and Eastern traditions and has been developed within the Swedish physiotherapy by Roxendal, who used Body Awareness Therapy (BAT) in patients affected by schizophrenia.²⁵ The fundamental basis of BAT is the somatic, biological knowledge taught in traditional physiotherapy. It differs from traditional physiotherapy by including other professional domains, such as psychiatry and psychotherapy. The therapy is intended for treatment of diseases where disturbances in body awareness are an important part of the pathology, such as psychotic states and psychosomatic disorders. BAT differs from ordinary physiotherapy by stimulating sensory awareness and concentrating on exercises aimed at total

coordination. It also differs from many other therapeutic methods by focusing on activating healthy resources, rather than on conflicts.²⁵

BBAT focuses on movements related to posture, coordination, free breathing and awareness. In BBAT, the physiotherapist has a more educative attitude compared to BAT, guiding the patients in structured exercises. It is mainly a nonverbal therapeutic process.²⁵ The therapeutic nonverbal interaction between patients and therapist is considered important. In addition to guiding the patients' movement the interaction may strengthen the patients' confidence in their own resources.^{26,27}

BBAT is now widely used in the Nordic countries; mainly in psychiatric physiotherapy,²⁷⁻³³ but also in the rehabilitation of prolonged pain.^{34,35} In studies on psychiatric patients, BAT and BBAT have shown a positive effect on body awareness, self-efficacy, sleep and disease specific symptomatology in patients with schizophrenia,^{25,28} eating disorders²⁹ and other psychiatric diagnoses.^{27,32} To our knowledge no studies have investigated the use of BAT or BBAT in traumatised refugees.

In the mental healthcare system today much of the treatment, both physiotherapy and psychotherapy, is conducted in groups. One of the reasons for this is that group treatment can increase the cost-benefit of the treatment offered. Group therapy can also create collective identity, which can be important for refugees who have been exposed to torture targeting individuals. In addition, traumatised refugees can support each other and learn from one another, which in turn increases group cohesion.³⁶ On the other hand, group therapy in traumatised refugees can diminish the focus on the individual's needs and create issues of trust and confidentiality in the group setting.³⁷

Nevertheless, there is scarce knowledge on the acceptability of group treatments among traumatised refugees.³⁶⁻³⁹

Because of the extensive use of BBAT in traumatised refugees combined with the lack of documented effects of BBAT in this group, we wanted to increase the knowledge of the use of BBAT in traumatised refugees. It should be possible to use the knowledge gained in this study to guide the design of future clinical trials focusing on BBAT and physical activity.

The aim of this study was therefore to investigate the use of group BBAT in a sample of Arabic speaking traumatised refugees and the objectives were:

- To investigate compliance, acceptability and treatment satisfaction using group BBAT in traumatised refugees.
- To study changes in mental and somatic symptoms, quality of life, level of functioning as well as quality of movement during treatment with group BBAT.

Method

Participants

All Arabic speaking patients that had received treatment at CTP from April 2008 to June 2009 were invited to participate in the study (N=27), running from March to June 2012. We chose only to include Arabic speaking refugees because it was convenient; both because Arabic speakers amounted to a large proportion of the original sample and because of a large proportion of the participants needing an interpreter. Having several interpreters present during the group sessions would have required more resources and could also have been a source of distraction for some of the participants.

The standard treatment that had originally been offered to the participants from 2008 to 2009 consisted of 10 consulta-

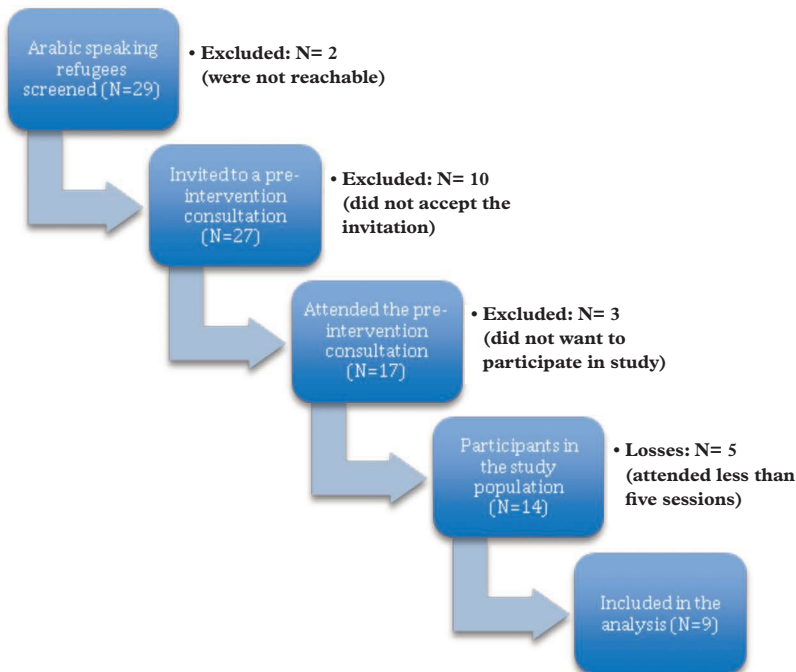
tions with a medical doctor responsible for the psychopharmacological treatment, including psycho-education. In addition, the participants were offered 16 sessions of Cognitive Behavioural Therapy with a clinical psychologist and at least one session with a social worker.⁴⁰

Of the 17 persons who chose to attend a pre-intervention consultation in our study, three persons did not wish to participate in the study. The 14 persons agreeing to participate were assessed before the intervention. We also asked the 13 persons who had declined to participate about their reasons. Lack of money for transport, no interest in group therapy and lack of time were among the reasons for not participating. Figure 1 describes the progression of participants through the study.

The inclusion criteria for being admitted to treatment at CTP from April 2008 to June 2009 were: being ≥ 18 years old, being a refugee (having come to Denmark as either an asylum seeker or as a quota refugee) or having been reunited with a refugee through family reunification and having trauma-related mental health problems. Persons who suffer from a primary psychotic disorder, are in need of psychiatric hospitalisation or who have a present severe abuse of drugs/alcohol are not admitted to treatment at CTP but are offered treatment elsewhere in the mental healthcare. The only specific exclusion criterion for this pilot study was having physical disabilities preventing active participation in BBAT.

Five of the 14 included participants dropped out during the first five weeks of the

Figure 1: *Progression of participants through the study*



intervention, either before the program started (N=1), or after attending one or two sessions (N=4). Based on information obtained from pre-intervention consultations and the initial BBAT sessions, the reasons for dropping out of treatment were other ongoing therapy (N=1), mandatory classes (N=1), severe pain (N=1), lack of motivation in combination with high pain intensity (N=1) and severe depression (N=1). The dropouts did not differ substantially from the completers of the study with respect to gender, age or mental symptoms at baseline.

The 14 participants who continued were all invited to the individual post-intervention consultation, but only ten conducted the final assessments. Among these ten were all those having completed the offered BBAT sessions and one of the dropouts, who stopped early because she was receiving therapy elsewhere.

The study data was based on the nine persons who attended at least five BBAT sessions over 14 weeks and completed both pre- and post-intervention assessments. These persons, four men and five women, had a mean age of 47 years (37-57). Seven of them (77.8%) were from Iraq and the two others were from Saudi Arabia and Lebanon. Even though the participants were all from the Middle East and spoke Arabic, we were aware that they nevertheless could be heterogenic as to psycho-social-spiritual practices. Socio-demographic data is presented in Table 1.

Setting and the Basic Body Awareness Therapy offered

The study took place at CTP, which is a highly specialised outpatient psychiatric treatment and research outpatient clinic for persons with cultural backgrounds other than Danish. The patient group consists mainly of traumatised refugees. Since CTP

was established in 2008, research has been conducted as fully integrated in the clinical work and so far three randomised controlled trials have been finalised at CTP. Approximately 400 patients are referred every year. The staff includes medical doctors (primarily psychiatrists), nurses, psychologists, physiotherapists, social workers, PhD students, secretaries and interpreters.

The BBAT sessions were taught by four physiotherapists trained in BBAT. The participants were offered 14 BBAT group sessions over 14 weeks. The groups were separated by gender to accommodate cultural and religious values. The gender division was based on previous experience with Arabic speaking refugees at CTP and advice from the Arabic speaking interpreters when planning the study. BBAT focuses on relaxation and free movement.²⁵ The clinicians and interpreters stated that some Arabic speaking women would probably feel uncomfortable during the sessions and would also refuse to take any garments off if men were present while exercising. This would have impeded the possibility of free movement.

A BBAT session lasted about 90 minutes and an interpreter was present each time. At the weekly BBAT session the physiotherapists registered each participant's weekly attendance. All 14 sessions followed a manual to ensure that the two groups received the same treatment.

Data collection and procedure

All written information regarding participation in the study had previously been translated to Arabic. During the individual pre-intervention consultations the first author informed each participant about the study and handed out translated information about the study. If a person needed time to

Table 1: Socio-demographic data, trauma and mean attendance rate (N=9)

	N	(%)	Mean (SD)
Sex (male/female)	4/5	44.4/55.6	–
Age	–	–	47.3 (5.85)
Original citizenship Iraqi ^a	7	77.8	–
Experienced war (N=8)	7	87.5	–
Being a soldier	3	33.3	–
Being persecuted	5	55.6	–
Living in a refugee camp (N=8)	1	12.5	–
Imprisonment	5	55.6	–
Torture	2	22.2	–
Years of education in home country (N=8)	–	–	13.2 (3.99)
Present occupation ^b	1	11.1	–
Number of children	–	–	3.6 (0.88)
Married	7	77.8	–
Years in Denmark	–	–	17.2 (4.87)
Number of BBAT sessions out of totally 12/13 ^c (male/female)	–	–	8.0 (2.00) / 8.6 (1.34)

^a One completer was from Saudi Arabia and one was from Lebanon

^b Job/education/Danish classes/job training

^c Male group cancelled twice, female group once

consider their participation, a future appointment was offered. It was stressed in the written and oral information that participation was voluntary. An interpreter was used when needed. The same two interpreters (a male and a female) were used throughout the whole study and were both thoroughly introduced to the research study.

For the participants in the study the first author collected data on socio-demographic status, medical history and mental health status before the intervention. The participants were asked to fill out self-administered questionnaires and the first author carried out a semi-structured interview (described below) at the pre- and post-intervention

consultation. Furthermore, all participants were tested with the Body Awareness Rating Scale-Movement Harmony (BARS-MH) by two of the physiotherapists before and after the intervention. In addition, after the intervention all participants filled out an anonymous questionnaire about treatment satisfaction with the answer alternatives; “yes, very much”, “yes, to some extent”, “no, only to some extent”, “no, not at all” and “don’t know/not relevant”. The question about the participants’ overall impression of BBAT also contained the possible answer “both good and bad”.

The self-administered questionnaires used were the Harvard Trauma Questionnaire

(HTQ),⁴¹ WHO-5,⁴² Hopkins Symptom Check List (HSCL)-25,⁴³ the somatisation items from Symptoms Check List (SCL)-90,⁴⁴ the Sheehan Disability Scale (SDS)⁴⁵ and the Visual Analogue Scale (VAS).⁴⁶

The BARS-MH is an observer-based rating scale developed as a measurement tool for BBAT. The method is developed from BARS (Body Awareness Rating Scale), an observer-based rating scale that evaluates the functionality of various visually observed movement patterns.³³ The methodology is exclusively used by specially trained physical therapists and has had mixed results for inter-examiner reliability.⁴⁷⁻⁵⁰ The attendance was registered and used as a measurement of compliance with BBAT.

To explore the participants' motivation, previous body experiences, barriers to participate, and their satisfaction with and experienced effects of BBAT, the first and third author constructed two semi-structured interview guides (before and after BBAT). We chose a thematic approach to provide a systematic and transparent analysis of our qualitative data. We used a dual deductive-inductive set of themes by asking questions based on preconceived research questions and simultaneously including emerging new concepts.⁵¹

Two interview guides were developed to be able to differentiate the participants' prerequisites with their post-intervention experience. All interview questions were open ended, with follow-up questions depending on the contents of a given answer. The first author asked the interview questions in the same order for all participants, unless the answer to a subject was given in a previous question. Instead of conducting a test interview, the first author continuously modified the interview questions based on achieved experiences from completed interviews. All interviews were audio taped

with the permission of the participants. To minimise the loss of meaning the first author wrote down non-verbal communication right after each completed interview.

We planned to interview all who completed the pre-intervention assessments, but only one of the dropouts chose to attend the post-intervention interview. Therefore we chose only to transcribe the interviews if the participant had completed the intervention (N=9). A total of 18 interviews were transcribed. The transcription took place after all the interviews were completed and the first author transcribed all interviews to avoid discrepancy in the data collection. All interviews were individual, and the interviews were conducted before the participant filled out self-administrated rating scales. This was to avoid any emotions created by the questionnaires influencing the answers. Prior to each pre-intervention consultation the first author registered information about the participant to be aware of medical history, experienced trauma and other factors that could influence the situation.

Data analyses

This study primarily has a qualitative approach. However, qualitative analyses were supplemented by a few quantitative analyses.

Statistical analyses

Changes in the participants' somatic and mental symptoms including pain, quality of life, level of functioning and quality of movement (BARS-MH) were analysed using the software SPSS version 20.0. The differences were investigated by comparing means using sample size paired t-tests.

Qualitative analyses: the semi-structured interviews

After reading and re-reading the entire dataset, the first author traced implicit and

explicit codes with the help of open coding. The third author individually coded four of the interviews and subsequently the two researchers compared their findings. Rather than reporting the percentage of corresponding codes, in this case, where there was an inconsistency the relevant code was more carefully described and operationalised via a discussion between the two researchers. The two researchers compared the codes for variations, similarities and differences and used their findings and written memos to develop a coding frame based on inductive and deductive codes. This process is illustrated in Table 2. The coding frame was subsequently revised to increase its transparency and accuracy. The codes were then condensed into categories and finally into five overarching themes (see Table 3). The first author conducted the analyses based on the themes supplemented with written memos containing analytic notes from the whole research process. The themes were conceptualised and written up to a theoretical understanding.⁵¹

The National Committee on Health Research Ethics approved the study.

Results

Compliance

In total, 14 BBAT sessions were planned. Both the male and female BBAT group session were cancelled once because one of the physiotherapists was ill. In addition, the male group was cancelled one other time because only one participant showed up. The mean attendance rate was 8.6 out of 13 sessions (66.2%) for women and 8.0 out of 12 sessions (66.7%) for men (Table 1).

Self-administrated rating scales

All completers (N=9) filled out the self-administered questionnaires before and after

BBAT, but some of them forgot to answer all the questions. The results from the 12 somatisation items from SCL-90 and the SDS are therefore based on a limited number. Improvement was seen from pre- to post- intervention in all questionnaires used (see Table 4). The improvement was statistically non-significant.

BARS-MH

All completers participated in the individual BARS-MH tests before and after BBAT, but two persons did not complete one or both of the two tests because of severe pain. Table 4 presents mean scores in BARS-MH for the completers fulfilling BARS-MH (N=7) as observed by the physiotherapists at baseline and after BBAT. The change in mean scores was statistically significant.

Questionnaire on treatment satisfaction

The questionnaire had a 100 percent response rate (N=9). When asked anonymously about the satisfaction with BBAT, the majority of the completers (N=5) expressed that they were satisfied and found BBAT acceptable. Seven considered it acceptable receiving treatment in a group and six of them felt satisfied about receiving therapy in a group. Considering the question about their overall impression of BBAT, eight persons found it good and the last person stated both good and bad.

Semi-structured interviews

Five manifest categories (please see Table 3) were generated in the open coding process and will be presented and exemplified by representative citations. To clarify the statement source each citation is marked with P for person and then an individual number given each person to secure anonymity. Four of the categories were identified

Table 2: *Examples from analysis of the text*

Meaning units	Code	Category	Theme
<i>Arabic men - together? No, then I would have stopped (woman)</i>	Issues with men	Gender segregation	Satisfaction with the intervention procedures
<i>We are muslims and we are covered, so it is difficult (woman)</i>	Clothing issues		
<i>I need to be home when the children finish school (woman)</i>	Family obligations	Time perspectives	
<i>Afternoon is better, so I can sleep longer (man)</i>	Sleeping disturbance		

Note: The generation of the theme “Satisfaction with the intervention procedures” is reported as an example of text analysis. The meaning units represent parts of the text. They are coded to index their content. Then the codes are grouped into categories, which later are grouped into themes representing the highest level of abstraction from the text.

Table 3: *Organisation of categories in themes*

Categories	Themes
Symptoms	Reasons for participation
Previous experience	
Doctor’s advice	
Coping	
Physiotherapy	Previous body experiences
Relationship to own body	
Physical activity habits	
Group	Satisfaction with the intervention procedures
Gender segregation	
Interpreter	
Time perspectives	
Exercises	Experienced mind-body effects
Physical	
Mental	
Body awareness	Personal obstacles
Transport	
Family	
Symptoms	
Other appointments	

as important for starting and maintaining the process, these included 1. *Reasons for participation*, 2. *Previous body experience*, 3. *Satisfaction with procedures* and 4. *Experienced mind-body effects*. One further category, 5. *Personal obstacles*, was identified as affecting the process negatively.

1. Reasons for participation

All completers (N=9) were asked why they chose to attend the study, and eight indicated physical symptoms as their main reason. When asked if also hoping for mental improvement, four persons described this as an obvious consequence of any physical recovery. Four completers reported that they were recommended physiotherapy by their general practitioner and others described that they wanted to learn how to live with and understand their pain. Even if several

aspects constituted this category, the most frequently reported reason was attributed to achieving symptom relief.

“Just that I feel a little bit better, no pain. Nothing else, just that my pain gets better. Because it is just getting worse, every day it’s something new.” (P5).

2. Previous body experience

None of the completers reported previous experience with BBAT, nor physiotherapy in a group setting. Seven persons had received individual physiotherapy, and most of them (N=4) reported a transient treatment effect.

“I felt better, psychological and physical, two days after I attended physiotherapy, but then it was the same again.” (P 4).

Table 4: Changes in ratings from baseline to end of BBAT (N=9)

	Mean (SD) at baseline	Mean (SD) after BBAT	P value
<i>HTQ total</i>	2.76 (0.53)	2.63 (0.44)	0.263
<i>HSCL-25 total</i>	2.85 (0.63)	2.63 (0.70)	0.047
<i>HSCL anxiety</i>	2.89 (0.68)	2.69 (0.85)	0.277
<i>HSCL depression</i>	2.82 (0.62)	2.59 (0.62)	0.014
<i>VAS neck & back</i>	8.08 (2.03)	7.13 (2.71)	0.220
<i>VAS arms</i>	7.88 (3.19)	6.34 (3.36)	0.048
<i>VAS legs</i>	6.36 (2.33)	5.82 (3.12)	0.586
<i>VAS head</i>	7.54 (2.63)	6.43 (3.71)	0.257
<i>SCL somatisation^a (N=7)</i>	2.45 (0.86)	2.00 (0.88)	0.056
<i>WHO-5^b</i>	1.33 (1.01)	1.91 (1.29)	0.131
<i>SDS (N=8)</i>	7.50 (2.54)	6.46 (3.60)	0.241
<i>BARS-MH total (N=7)^c</i>	2.59 (0.56)	3.84 (0.84)	0.001

^a The 12 somatisation items from SCL-90

^b Higher score indicates a higher quality of life

^c Higher score indicates a higher level of movement harmony

When asked about the relationship with their own bodies, the question often needed to be rephrased in order to make it understandable. Some (N=3) felt tired of their body, pointing out overweight and pain as substantial factors.

“I am tired of it, tired of my body. Tired of my soul. I can only see that it’s getting more and more sick as time goes by.” (P 5)

Others revealed more positive nuances.

“After all the traumas my body has been through, I feel good that it is still working.” (P 7).

Before the intervention all completers reported being physically active in their daily life, either by practicing physiotherapy exercises, indoor fitness or taking walks. Among motivational factors were losing weight, avoiding sickness/operation and preventing symptom progression. When asked if they wished they were more active in their daily life, three completers confirmed this promptly and mentioned tiredness and pain as interfering factors.

3. *Satisfaction with the intervention procedures*
When the completers were asked to describe their thoughts about receiving group therapy before the intervention, four completers expressed scepticism.

“If I could choose, I would prefer to be alone. It’s just in my nature, I don’t like being around other people. But because it’s therapy, I am thinking it’s not a problem. Therefore, I will come anyway.” (P 4)

The same person was of another opinion after the intervention, telling how the women had helped each other during the therapy. A

total of seven completers, clearly stated being in a group as a positive experience at the post-intervention interview. Having something in common, learning from each other, feeling more relaxed, motivating each other and having fun together were among factors mentioned. Both male (N=4) and female completers (N=3) were satisfied with being in a group.

“In my case, it’s better to be in a group. When we start doing the exercises, I am focusing on how the others are doing them and my attention is there. I don’t think about my pain during that moment. The thought of pain is distracted by their presence, because they are there.” (P 6) (female)

“In the beginning we were wary of each other, because we didn’t know each other. Afterwards, when we got to know each other, it got better. I was scared of receiving therapy in a group, but I think it was a good experience.” (P 9) (male)

When asked about the gender segregation of the groups, the answers were highly dependent on the participant’s sex. None of the men minded having women in their group. On the other side, all women found mixed groups difficult, mentioning the need for covering clothing and inability to concentrate as interfering factors.

“Arabic men - together? No, then I would have stopped.” (P 5) (female)

When asked about their opinion in having an interpreter present during each BBAT session, even the only completer who managed the Danish language within daily life activities emphasised its importance.

“It is important having an interpreter present because we will talk about something physical and probably use some expression not part of our everyday language. It is always comfortable having an interpreter. And it’s important that it is the same interpreter.” (P 9)

Regarding the session duration several completers (N=4) found 1.5 hours suitable, pointing out chronic pain and tiredness as factors speaking against longer lasting sessions. Nevertheless, four completers desired more frequent therapy, indicating two times per week as optimal.

“It’s because on the same day of therapy, you feel that you have much profit, much energy. The next day, a little bit less. And the day after, even less. Therefore, it would have been nice to have more days with this energy in the body.” (P 4)

High compliance with the treatment sessions and home exercises is expected to increase the effect of BBAT. When asked if they had practiced at home, all completers reported having used at least one exercise. Halfway through the intervention one requested a CD with the exercise “The Body Journey” to facilitate home practice. We appreciated their interest and handed out a recorded, translated version to all the participants. Regarding specific types and complexity of the BBAT exercises several completers (N=4) were satisfied. The possibility to personalise or even skip an exercise was considered valuable.

4. Experienced mind-body effects

Due to the complexity of individual symptoms several answers constituted this category. All completers were asked if they had experienced any changes in their

physical symptoms after completing the intervention. Five reported either an actual pain reduction or that they had learned how to cope with pain.

“I have learnt how to concentrate myself away from pain. It starts by lying and thinking about the skin and about something nice. Then everything goes away.” (P 3).

Apparently, when asked about any changes in mental health, the completers had difficulties identifying these. Though some of them (N=3) indicated increased psychological wellbeing secondary to improved physical symptoms. Others (N=2) replied feeling happier when attending the sessions, either because someone took good care of them or because they were meeting other people. When asked about whether they had become more aware of their own body, seven completers identified increased body awareness.

“The physiotherapy that we are used to normally involves you going to a physiotherapist to get a massage. And this is something totally different, that you should learn to know your body and react according to the problems you have.” (P 4).

Overall, all completers had experienced some kind of benefit from the therapy. Even those with difficulties noticing any improvement (N=2), pointed out feeling more relaxed or having learned some useful exercises.

“I have experienced some improvement, no much, but there has been some. (...) Maybe I will notice the effect after some time. And maybe the improvement that you feel the same day will last longer and longer.” (P 7).

5. Personal obstacles

All completers were asked if they could think about any possible barriers related to the upcoming intervention. Six mentioned physical disabilities such as pain, whereas eight reported that it had been a barrier at the post-intervention interview. Four completers worried about being in group therapy, this is presented under "Satisfaction with the intervention procedures". Some (N=2) completers had barriers regarding transport financing, whereas others (N=2) had transport difficulties caused by memory impairment.

"My problem has to do with transport. Even if I stand and wait for a certain bus, if another bus arrives, I'll take that. Then I'll be late. But my main problem, that's memory and concentrating. And it affects me a lot." (P 8).

Discussion

This is, to our knowledge, the first time the use of BBAT in traumatised refugees has been studied in a research setting. We chose a qualitative approach to be able to estimate underlying factors influencing participation in BBAT. An interesting finding was the compliance, which was about 66% when looking at the weekly attendance rates. When exploring the reasons for absence during the post-intervention interview, it was clear that each individual had many barriers making it difficult for them to be compliant. In other words the attendance rates could be interpreted as high when considering what characterises traumatised refugees.

It is worth mentioning that different kinds of pain appeared to be the main reason for reduced compliance in our study. It may reflect the fact that many traumatised refugees suffer from chronic pain.^{1,8} On the

other hand, some completers (N=3) experienced improvement in coping with pain after BBAT. This is consistent with the findings of Liedl et al., who found improved coping strategies and higher rates of clinical improvement in a group of traumatised refugees receiving both physical activity and Cognitive Based Therapy (CBT) compared with the group only receiving CBT and with the control group.⁵²

Our qualitative results indicate an overall satisfaction and acceptability with both the therapy and the intervention procedures, whether reported at the post-intervention interview or in the anonymous questionnaire. Although the number of completers was small (N=9), the results indicated reduction of somatic and psychiatric symptoms and improved quality of life, level of functioning and quality of movement.

When designing the study we were aware that there could be barriers in regards to treatment in groups and performing physical activity. Different cultural aspects could intervene, such as separation of gender because of religious beliefs and cultural perception of illness. Unfamiliarity with group therapy and physical exercise could be reasons for not participating. It has also been shown that a higher level of PTSD is associated with a tendency to isolate from other people.⁵³ Three persons did not want to participate in our study because we offered group therapy. Social anxiety or a bad experience with previous group therapy was mentioned as important factors. Nevertheless, none of the dropouts stated group therapy as a reason for dropping out, which may reflect the unexpected benefit of the social context.

It is also worth mentioning that our findings of a high satisfaction with the BBAT procedures might reflect the fact that BBAT exercises are quite simple to pursue and that

most exercises can be individualised in terms of duration and level of difficulty. We do not know the degree or influence of home practice, but we do know that all participants stated having practiced at home. In addition, the improved mean BARS-MH scores after the intervention may indicate that BBAT is a good choice when offering physical exercise to traumatised refugees.

Another interesting finding was our data about satisfaction with group therapy. Through the qualitative interviews we were able to identify how even some of the persons who were initially being sceptical about group therapy (N=3) actually experienced the group setting as beneficial for their participation. Our findings are in line with a study by Klingberg-Olsson et al. combining BAT and psychotherapy in groups of patients with chronic pain syndrome. They found that group therapy might have positive effects on the therapeutic process and body awareness.⁵⁴ Also Guerin et al. noticed benefits of the social interactions provided in physical activity sessions explored in a study on former refugees from Somalia.⁵⁵ In addition, our findings about high acceptability with group therapy is fairly consistent with previous research in the area on refugees and physical activity.⁵⁶

Strengths and limitations

In terms of strengths, the study may be replicated easily. The BBAT intervention involved simple exercises, and the activity was clearly defined. Two physiotherapists were present at each BARS-MH test, thereby securing the inter-rater reliability of each tested individual.

By asking open-ended interview questions more nuanced information about the participants' experiences could be assessed. Second, the first author conducted all the interviews and transcription of the inter-

views, which resulted in minimal loss of information.⁵⁷ Finally, the thematic analysis enabled us to gain a better understanding of the human factors that are not quantifiable, but undoubtedly influence many facets in the rehabilitation of traumatised refugees.

Some limitations of the current study are noted. First of all, the study employed a small number of participants and therefore the quantitative results indicating improvement should be interpreted with care. The design of the study did not allow us to study if it was specifically the BBAT offered that led to an improvement in symptoms. Another limitation that should be kept in mind regarding the quantitative measures is that the measurements have all been developed in cultures different from the target population. The external validity is limited, and thus one should use caution when generalising these results to the population of refugees suffering from PTSD, depression and anxiety.

Furthermore, the traumatised refugees recruited were not necessarily seeking treatment. The sample was recruited from a previous patient group. When we asked about previous body experience in the interview all completers stated that they were physically active in their daily life. This is in contrast to the clinical impression at CTP, where most patients are isolated at home and inactive. Taking this into account, it is possible that persons who were already physically active and familiar with using their body were also more likely to participate in the study, thereby creating a selection bias.

Additional limitations of our investigation included the varying level of the physiotherapists' education in, and experience with, BBAT as well as the lack of follow-up data.

Implications

Current findings do show BBAT to have potential as a useful adjunct to more

traditional forms of treatment. The participant number has been low, but the participants' socio-demographic status seem to be similar when compared to other studies on traumatised refugees with a larger number of participants.⁵⁸ According to the qualitative analysis, less pain and feeling more relaxed after BBAT were reported by most of the completers (N=7). This indicates that the experienced treatment effects might be rather general and common experiences, shared by many. The quantitative results of the current study are promising in terms of their support for the beneficial effects on symptoms, quality of life and level of functioning as well as quality of movement.

Conclusion

This pilot study showed that compliance, acceptability and treatment satisfaction were high for the persons completing BBAT in groups. Although it was a small sample, a tendency was seen with a decrease in somatic and mental symptoms as well as improved quality of life, level of functioning and quality of movement after BBAT. This primarily qualitative study points to the fact that BBAT is not only well accepted, but also described as positive for almost all of the completers (N=8).

As a consequence of these preliminary positive results, a large randomised controlled trial is presently being carried out at CTP (data inclusion started September 16th, 2013) comparing the effect of BBAT with mixed physical activity and a control group.⁵⁹ The intervention is offered individually to minimise the loss of participants because of group therapy. More research is needed to expand the scientific knowledge regarding the use of BBAT in traumatised refugees.

Acknowledgments

The authors are thankful for the valuable help from the staff at the Competence Centre for Transcultural Psychiatry. The authors gratefully acknowledge the contribution of physiotherapists Anne Grete Friis-Hansen, Hans Stryger, Mette Gulbrandsen, Nane Linnebjerg and of professor Erik Lykke Mortensen. The authors would also like to acknowledge the study participants for their willingness to engage in this study and for sharing their thoughts and experiences with the research team.

The study has been supported by Psychiatric Centre Ballerup, Danish Doctors for Human Rights and the Danish foundation TrygFonden.

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