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# THE EXPERIENCES OF BASIC BODY AWARENESS THERAPY IN PATIENTS WITH SCHIZOPHRENIA

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## ABSTRACT

*Background: Basic Body Awareness Therapy (BBAT) is a physiotherapeutic treatment method that is commonly used in Scandinavian mental health services. However, for patients with schizophrenia, there are few studies that verify the effectiveness of BBAT, or explain which dysfunctions or disabilities that BBAT has an affect on in this group of patients. The aim of the present study was thus describe patients' experiences of BBAT, focusing on perceived main treatment effects. The areas of perceived effects are to be investigated in future research.*

*Method: In a qualitative study, eight patients with schizophrenia were interviewed. The interview transcriptions were analysed with content analysis methodology.*

*Result: Patients with schizophrenia report positive treatment effects of physiotherapy with BBAT. Four main categories were identified; Affect regulation, body awareness and self-esteem, effects described in a social context and effects on the ability to think. These should be targeted in a future randomised and controlled study.*

*Keywords: Physiotherapy, affect regulation, self-esteem, cognitive function, rehabilitation.*

## BACKGROUND

Schizophrenia is a severe mental disease which causes great suffering for the afflicted individual and renders large costs for society. It involves a variety of symptoms, including both negative symptoms (blunted affects, passivity and isolation) and positive symptoms (hallucination) (Mc Gorry 2005) as well as cognitive dysfunctions that include a broad variety of impairments concerning attention, memory, verbal fluency, psychomotor speed and executive functions (Helldin et al 2006). These negatively affect the daily life of the individual (Mc Gorry 2005) and the link between cognitive dysfunction and negative symptoms is well supported (Helldin et al 2006).

Blunted or flattening of affects is a common major symptom in schizophrenia and is associated with difficulties in engaging in social activities (Mc Gorry 2005, Brune 2005). Alexithymia is a term reflecting the difficulties in verbalizing and apprehending your own and others' emotions and mental states and is more common among patients with different kinds of psychoses, especially those with schizophrenia (Maggi & Raballo 2004a).

Another aspect of the disease concerns insecure identity, a lack of self-esteem, depression and anxiety (Van Dongen 1998, Pallanti et al 2004). Furthermore, many patients suffer from symptoms of disembodiment, body image disturbances and deficits in the feeling of being an agent in their own bodies and lives (Priebe & Röhrich 2001, Maggi & Raballo 2004b).

One theoretical 'starting point' for almost all body-mind physiotherapeutic treatments is the psychomotor developmental aspects of movement and cognition, mainly based on Piaget's theory of psychomotor development, focusing on child's activity as a central aspect in development (Gebhart 2008). Lately researchers have focused on unconscious processes and the interplay

between different areas in the brain and the connection between the body and thought processes. From this perspective, our cognition is to a large extent dependent on acting and sensory motor experiences, in relation to environmental and social contexts. Roth and Lawless describe this embodied form of cognition as “basic level schemata” and suggest that these are (a) generally self-explanatory and (b) basic elements of cognitive functioning (Roth & Lawless 2004).

One main physiotherapeutic treatment, in the Scandinavian mental health services, is Basic Body Awareness Therapy (BBAT) with roots in the eastern tradition of body movement, Tai Chi Chuan (Gyllensten et al 2003a). In the treatment process, the basic goals include establishing better contact with the living body, increasing the feeling of “ownership” of the body and increasing the tolerance for different sensory motor and affective sensations. The psychomotor interplay is trained through different body functions; the ability to have a stable and relaxed posture, to be grounded, to be able to coordinate movement with breathing, the ability to be well-defined in movements and interpersonal relations and finally the ability to be mentally present or mindful (Gyllensten et al 2003a). The patients take part in various exercises where they are asked to be mentally present and observe their own activities, reactions and other experiences within or without the body (Gyllensten et al 2003a). For a further description of BBAT, see appendix 2.

BBAT has been shown to be effective and relevant as part of the treatment for several groups of patients with mental illness (Mattsson et al 1997, Grahn et al 1998, Eriksson E et al 2007, Gyllensten et al 2003a), but there are few studies concerning patients with schizophrenia or other severe psychoses. In a controlled prospective study, 17 patients with schizophrenia who were treated with BBAT for 6 months were compared with 9 patients with schizophrenia who only

received treatment as usual. The results revealed that patients, treated with BBAT, significantly improved their quality of movement, body image, gaze, sexual interest and suffered less from anxiety compared with the control group (Roxendal 1985). In a qualitative study, focusing on the perceived and most important aspects of treatment, six patients with schizophrenia reported that they experienced better own control and that this feeling was important for them (Gyllensten et al 2003b). It is thus important to continue to evaluate the effects of BBAT and a relevant first step is to describe the patients' own experiences of the method. The aim of the present study was thus to describe patient experiences of BBAT, focusing on perceived main treatment effects. The areas of perceived effects are to be investigated in future research.

## METHOD

### Participants

Two physiotherapists, who were experts in the BBAT method, nominated 10 physiotherapists who had experience of work with patients with schizophrenia or similar diseases for at least 2 years and had an adequate education in BBAT, at level two or higher.

All the physiotherapists worked at community psychiatric clinics for patients with schizophrenia and other severe mental illnesses. They all agreed to participate in the study, engaging at least one patient, a person who in writing declared that he or she was willing to participate in an interview with one of the researchers. The inclusion criteria for the patients were that they were diagnosed with schizophrenia or similar diseases and had received BBAT for at least 1 year. Twelve patients agreed to participate in the study, one of whom later declined thus resulting in 11 available informants. One patient did not appear for the interview. After eight interviews, no new information

was communicated, with the same information being received. The decision was thus made to end the data collection and consequently two of the 11 patients who had agreed to participate were not called for an interview.

The patients lived in three different towns in Sweden and were diagnosed by their psychiatrists, in accordance with ICD-10, as having schizophrenia (three patients), unspecified schizophrenia (two patients), undifferentiated schizophrenia (two patients) and paranoid schizophrenia (one patient). All of the patients received other treatments, pharmacological and various verbal therapy forms, mostly of a supportive nature, over and above the BBAT. Four of the patients were male and four were female, the ages ranged from 29 to 56, with an average of 45.5 years, median 48.5 years. Their duration of illness ranged from four to 30 years, averaging 16.3 years, median 16 years and had received BBAT for 2 to 7 years, averaging 3.3 years, median 3 years.

All patients were single and lived alone except for one who lived with her parents. One patient had only received BBAT individually, while the others had started individually and then continued in small groups.

#### Interview technique and interview process

The study utilized a qualitative method with interviews as the source of information (Burnard 1991). The first author used an interview guide focusing on the experienced effects of the BBAT treatment. The interview guide consisted of open questions with follow-up questions (see appendix 1.) The interviews were characterized as only allowing short periods of silence and not having the ambition of attaining higher levels of abstraction due to the patients' varying cognitive disabilities and sensitivity to stress.



In seven cases, the interview took place at the patients' ordinary community psychiatric clinic, while one interview was carried out at the patient's home. The interviews were recorded, transcribed and then sent back to the patients for an approval of the content, together with prepared envelopes. None of the patients commented on the transcribed content of the interview, while three patients wrote a letter about their treatment progress after the interview.

#### The process of analysing the transcriptions.

The main interest of the present study was the different experiences of treatment effects. A cross-case analysis was thus performed, based on a manifest content analysis and triangulation in order to increase validity (Burnard 1991, Farmer et al 2006).

The total numbers of transcribed pages of text was 160, written with double line spacing. Manifest content analysis is a qualitative method, which can include a quantitative strategy for organizing the transcribed text. The text is systematically reduced into meaning units in distinction to latent analysis, where the underlying meaning of the text is interpreted and used (Graneheim & Lundman 2003). A meaning unit is an existing word in the text that represents or is central to the meaning of the sentence, e.g. 'I get more strength` after training with BBAT'. The meaningful unit here is "*strength*". These meaning units are then categorized in several stages and organized quantitatively (Burnard 1991). In the present study, four persons-one psychiatrist, one psychiatric nurse, the first author and another physiotherapist-read and identified the meaning units separately. In a comparison, the level of agreement between the four persons was good, except for a few cases that eventually resulted in either disqualification or changes of the meaning unit. The first author and the physiotherapist, who is also trained in BBAT, then continued the process of analysis by

comparing their own separate categorization of transcriptions from three patient interviews. The analysis revealed that the agreement was very good between the two physiotherapists.

Approval was granted by the Regional Ethical Committee in Lund, Sweden, registration number 108/2008.

## RESULT

All informants reported some positive treatment effects, both in the short as well the long term. Their contributions to the result, the number of meaning units, differed greatly, due to their varying capacity to verbalize their experiences in the interviews. For example, one informant contributed 18 meaning units while another informant's transcribed text consisted of 150 units.

Four different main categories were identified; affect regulation, body awareness and self-esteem, effects described in a social context, and effects on the ability to think. Each of the main categories contained a number of subgroups, shown in table 1.

### Affect regulation

All the informants described how the treatment resulted in a change of their emotional state towards more subjectively pleasant feelings (see table 1). The treatment increased the experience of vitality and interest, and also the ability to accept and tolerate more unpleasant experiences, such as discomfort and distress.

They mostly felt stronger or more vigorous, alert and relaxed after the BBAT sessions. An informant who had suffered from a painful tiredness for many years explained:

*'Well, yes, often you feel a sense of well-being afterwards, life feels easier and the well-being increases. Mostly I feel more alert afterwards, in fact, I don't get tired. Often when you feel more*

*relaxed, you may feel tired but that doesn't happen so often to me. I usually get more alert' (8).*

Another informant described how she found her strength when training her strength to protect her body boundaries and integrity:

*'... and when I say NO! Then I get the strength...I have a living soul, I own my body and can say NO! ' (6)*

When unpleasant feelings occurred, the patients were encouraged to deal with them. Five informants had experienced that the difficult moments had become easier and easier when continuing with BBAT and three of them thought that it might be beneficial to specifically train those moments that were difficult to deal with. As one informant said:

*'..and I don't want to escape the difficult moments because one of these moments may give you the greatest benefits. No, it is rather that I suspect that it can be like that, the fact that it hurts a little bit, or is strenuous shows that you are untrained and really need the training' (8).*

The exercises offered the opportunity to get in contact with oneself, which sometimes can be difficult. It addresses one of the main problems with having a false or low sense of self that is common in this group of patients.

*' Ehm, well, the fact that you are left alone with your own way of dealing with time...and there's no other way. You didn't have any tools to use, instead you had to just deal with the time. And the exercises were a little bit . . . prickly for one's psyche, quite simply ' (3).*

Six informants used the exercises in BBAT in order to be able to feel better in their everyday lives, noted in the subgroup as better coping (see table 1). Two of them described that they could deal more successfully with anxiety and were able to prevent it from developing into panic. Another informant described how she now deals with her psychotic anxiety

*‘I become aware of my breathing, my body and stretch in situations where I otherwise would have felt that my body was disconnected’ (5).*

A further four informants said they suffered from generalized anxiety to a lesser extent, and that stress and fears were reduced in the long run. Three of them felt calmer and in greater control by focusing on being mentally present and in contact with their bodies. One informant said that, by using the exercise and focusing on his centre of coordination in the solar plexus region, he was able to prevent himself from being overwhelmed.

#### Body awareness and self-esteem

Seven of eight informants reported improvements in their ability to be mentally present, to be in better contact with their bodies, to have increased awareness of their movement behaviour and changes in body posture, balance and movability (see table 1). Increased ability to be more mentally present and in better contact with their bodies were reported by six informants. They experienced an increased sensory awareness and were in better contact with the surroundings. One informant who used to be preoccupied by her illness said:

*‘I was too focused on my own brain, my head, the voices and my illness, unaware of how I dressed myself, if it was warm or cold... I’ve opened up for a bigger room, with clothes and warmth and everything, And see the nature and trees and birds’ (6).*

The exercise made it possible for the informant to experience a greater sense of being grounded in

the self, and to meet the stillness inside.

*‘Well, I think so, when we do this exercise, lying on the mattress, then I feel my breathing and that I am in my body and I feel this stillness within myself’ (6).*

Six of the informants described an increased activity level, ranging from a minor change to a more thorough change. When talking about BBAT and the standing exercise, one informant said

*‘Well, one change I’ve noticed is that, before, I used to lie down on my sofa, when watching TV. Now I sit instead, in fact. Actually, I don’t know why. It has just become like that’ (1).*

After many years of disliking moving her body, one informant described that she nowadays liked to do it:

*‘Well, yes it is, and then another positive effect it has had is that I’ve started to be more interested in becoming physically active. Actually, I did like to take a walk even before but now I’ve started to train in a gym and practice Yoga and Tai Chi’. I’ve never been interested in that before’ (8).*

The importance of good balance and posture is often connected with increased self-esteem and feelings of security. This is described by five informants. One informant tries to explain what it meant to him, to get a better posture and also raise his head.

*‘Well, symbolically you think of an emperor, a king in China or something, or an old King from the North, without political involvement I mean, and to be elevated, to be more satisfied with life, I think, as in “I’ve got enough, I don’t have to fight for it”. A King doesn’t have to do that. They know that they will get it if they just ask for it...It’s a kind of relaxation’ (3).*

One informant who thought he had a better postural stability, spontaneously reflected on the mental consequences of this,

*‘I think it is that I feel much calmer and more stable. It is as if I’ve got better self-esteem’ (4).*

#### Effects described in a social context

Most of the informants received their treatment in small groups and described several advantages of this. In addition to the effects of the group treatment itself, six informants described effects in a social context that they thought could be attributed to the effects of BBAT. The effects were better “coping”, increased feelings of integrity and ability to be in contact with others. Some informants carried out BBAT exercises before socializing with friends.

One informant, who had struggled with her feelings of shame, described her benefits from the exercise.

*‘I think when you have felt so insecure, and ashamed, it’s very important to get your self-esteem back and if you dare to look people in their eyes, then they look down if you hold your gaze still. Sometimes it’s very hard but I try. And I try to straighten myself up, sometimes I don’t manage, but I try to think about it and not look down, but straight ahead instead’ (6).*

The informants reported that they were more relaxed when socializing with other people, due to better awareness and acceptance of their true selves

*‘Today I allow myself to be quiet. Before I forced myself to be more talkative, I couldn’t accept that I was quiet, I felt like a failure. So it was. So I forced myself to talk in situations where I didn’t want to, which hurts you in the long run’ (8).*

Another aspect of recovery is the need to be and behave like “normal” people. One informant described the importance of the erect posture in a social context

*It's important to me, to be like other people mentally, psychologically and socially, to be like others. That is one of my main goals as a psychiatric patient, so to speak' (3).*

### Effects on the ability to think

Five informants reported an increased ability to concentrate, and an experience of a “calmer activity level” in the brain, clearer thoughts or having the feeling of being mentally awake. When doing sitting BBAT exercises one informant experienced the following:

*'I look down and focus my eyes there and experience a stillness, sometimes there's a lot of babble, but sometimes it stops and becomes quiet and that feels very good, I feel clear in my head' (6).*

Another informant said

*'Well, what shall I say...the possibility of hearing voices decreases when I...when I've been to physiotherapy. I feel clearer in my head...so it feels very good' (5).*

The informant who suffered from her tiredness, said that her thoughts did not become calmer:

*'Instead, when I get more alert it affects how I feel in my head. My thoughts become maybe a little bit more alive, it feels like my level of thinking gets “more vital” or how shall I put it' (8).*

## DISCUSSION

### Discussion of method

This study is a qualitative approach describing the treatment effects of BBAT, as told by patients with schizophrenia. The number of informants was small, only eight patients were interviewed about their experiences. The main purpose was, however, to get patient-based suggestions of variables that could be examined further in a planned randomized controlled study, and in such studies, there are limited possibilities for following up all the effects that were experienced, except for the main ones. The decision to end the data collection after eight interviews was based partly on the fact that the same treatment experiences were reported several times and no new themes were conveyed in the last interviews and partly on the first author's 20 year experience of working with BBAT and patients with schizophrenia providing a certain pre-understanding of treatment effects. However, there may be some bias regarding this decision.

The informants had a positive attitude, showed interest and made efforts to be understood by the interviewer. As a group, patients with schizophrenia are considered to be difficult to motivate to participate in studies, in part due to their negative symptoms. Therefore, patients with less positive experiences of BBAT probably did not participate in this study. Instead, the patients who participated in this study can be considered to be well motivated. This may be due to positive treatment responses or other reasons, for example, a desire to tell their personal story once more. Another possibility could be that a positive therapeutic encounter had been established between them and their physiotherapist. The patients included in the study were offered the opportunity to



participate by their own physiotherapist. This also may have influenced the selection of participants, resulting in a positive sample of patients.

In order to increase the internal validity, three methods for validity check were used (Farmer et al 2006). First the transcriptions were returned to the informants, with pre-stamped envelopes. There were no comments on the transcriptions, but three informants replied with personal comments about their ongoing progress.

Another check of validity was the use of “triangulation by researcher” (Farmer et al 2006). Three other persons were engaged in the sorting of meaning units and two of them had a different professional background. In this comparison, there was a high level of agreement. Then, when categorizing the meaning units to a higher abstraction, a comparison was made between the first author and another qualified physiotherapist. The level of agreement was very high. Finally, the first author used different theoretical frameworks, such as physiotherapeutic, psychological and neurocognitive, when discussing the results. This broadened the discussion and decreased the use of narrow-minded interpretation (Farmer et al 2006).

Most of the informants also met other caregivers at the same time. Many of the described effects are therefore probably a result of the influence of several therapists. Different kinds of psychotherapy and medication can make it possible for other interventions to work and vice versa. However, some effects are described by the informants themselves as a direct result of BBAT, related in time and connected to different exercises. This is true for most of the experienced treatment effects, categorised under “affect regulation, effects on the ability to think, body function

and self-esteem”. When it comes to the effects described in a social context and an increased activity level, these effects are not experienced close to the BBAT session and therefore more likely to be influenced by a number of different factors. After a psychotic episode, there are normally different recovery phases that also influence the remission (Andersen 2003). On the other hand, there are several studies within different areas concerning the effects of BBAT that have shown similar effects, irrespective of diagnosis (Mattsson et al 1997, Grahm et al 1998, Gyllensten et al 2003a). This increases the possibility of these results being related to the effects of BBAT.

### Discussion of results

According to the content analysis, certain experienced effects of the BBAT treatment were reported frequently, by most of the informants. This indicates that the experienced treatment effects might be rather general and common experiences, shared by many. Recovery from schizophrenia is a complex and truly individual process (Sells 2004). Today there is a widening interest in the recovery process, what hinders and what initiates/stimulates recovery (Onken et al 2002).

According to the philosophy of BBAT, little attention is paid to different symptoms and difficulties. Instead the therapist looks at the patients’ own view of their problems, the status of the body functions and individual strengths and resources (Gyllensten et al 2003a). Therefore, in the long run, it is especially interesting to find out if BBAT offers the patients increased recovery potentials by matching their individual needs.

### *Affect regulation*

All of the eight informants reported changes of different affects and emotions from BBAT. They

experienced themselves as vitalized, with increased feelings of interest (five of eight). Those changes must be considered as very important for patients with negative symptoms who struggle with a lack of interest and motivation. Without a basic vitality and feelings of interest, the ability to make changes in life is limited.

Patients with schizophrenia are known to have symptoms such as blunted affects, and difficulties in how to discriminate and communicate them (Mc Gorry 2005, Brune 2005). In this study the patients could describe different affects/emotions. Whether this was also the case from the beginning of the treatment cannot be answered in the present study, but the informants described that their emotional state changed when using BBAT. Some informants had even learned how to use the exercises to regulate their affects/emotions outside the treatment sessions. They noticed that the more stressful feelings decreased with continued BBAT. It gave them a feeling of control and security and helped them to protect their integrity.

Within the research field of affects and emotions, there is an interest in the developmental aspects of affect regulation, as a normal and pathological process. The connection between attachment and affect regulation is described in an article by Mikulincer, Shaver and Pereg (2003). The authors present a theory of the child's normal development of affect regulation, as an intimate process, linked to an emotionally present object. This "object" teaches the child how to regulate its affects, mostly in a subtle, unconscious way. In order for this to be true, certain conditions must prevail; a safe attachment to a successfully affect regulated object, stimulates the child to discover itself, actively deal with displeasure and to make use of the motivating force of pleasure. This leads to an increased ability to solve different emotional problems. The child's self-image expands and the

self-esteem increases due to the incorporation of the parents' successful strategies to regulate affects and their own experiences of successful regulations. The child eventually develops a feeling of control, of being an agent with the capability to deal with emotions (Mikulincer et al 2003). In comparison with this description, BBAT offers several similar components in the treatment process. One ambition is to encourage the patients to be curious about their bodily experiences and reactions. The physiotherapist is to be emotionally present and responsible for the intensity in experiences not overwhelming the patient. The regulation techniques, used in BBAT, arise both from theory and from the physiotherapist's self-experienced knowledge about different ways to physically increase or decrease affective reactions, as well as the importance of verbalizing the experiences and mentally accepting different affects and body reactions. The physiotherapist also involves the patient in the decision-making concerning their own experiences so that the patients themselves learn to deal with their emotions. This is especially important when distressing and painful experiences occur. Low tolerance for stress and stimuli is a common symptom within patients with schizophrenia (Mc Gorry 2005) and in this study all eight informants reported experiences in BBAT that were unpleasant. However, they mostly understood the benefits of being exposed to the unpleasant feelings. Therapeutically, it is important to emphasize the normality in unpleasant experiences, not to be afraid of it but at the same time encourage the patients own integrity and respect the need for avoidance. When given these opportunities, the tolerance often increases naturally and if not, the physiotherapist guides the patients to a more acceptable experience.

### *Body awareness and self-esteem*

Body function, as described within the BBAT, includes the ability to have a stable and relaxed posture, to be grounded, to be able to coordinate movement with integrated breathing, to be well-defined in movements and interpersonal relations and finally, to be mentally present or mindful (Gyllensten et al 2003a, Hofman & Asmundson 2008). These body functions are systematically trained for better functioning. Seven of eight informants reported improvements concerning body functions, as experienced in having better balance and posture, more flexibility in movement and more in contact with their bodies and surroundings. Moreover, the reports of better balance and posture are linked to security and better self-esteem. The intimate connection between self awareness, self-esteem and the ability to feel secure in our bodies is clearly shown by these statements and also described by Dropsy (Dropsy 1999). He postulates that when the person is “rooted” to the ground, with a better balance between the two forces, gravity and the postural reflexes, there is a better ability to relax, feel calm and be mentally present and alert. The increased contact with body functions is often followed by a deeper feeling of existence and a better contact with the true self and agency. Dropsy declares that many people have a threefold contact problem, with the body, with the physical reality (the room, spatial orientation and time) and with other people. If there is a problem with one of the contact domains, it also has an effect on the other domains and vice versa. “Opening up” in one domain leads also to improvement in the other two (Dropsy 1999, Gyllensten 2004). Furthermore, five informants described moments in BBAT that had led them to reflect on their own behaviour. They have ‘*become aware of, observed and noticed*’ different aspects of movement. The ability to reflect is a very fundamental function of the “observing self” that is essential for self-regulation, to take good care of yourself and the ability to

change (Vigemont & Fournieret 2004).

For one informant, his erect posture was important so that he could look like “normal” people do. Patients with schizophrenia often make odd gestures and have restricted body movements and facial expressions, due to both the illness and the side effects of medication, such as tardive dyskinesia (Mc Gorry 2005). This probably contributes to the process of stigma. By normalizing the posture, movements and gestures, you can to some extent protect your integrity and minimize the risk of being exposed to discrimination. The importance of better body control, in this context, is also presented by another qualitative study, also concerning patients with schizophrenia (Gyllensten et al 2003b).

Six informants had increased their level of activity. Passivity is one of the major negative symptoms of schizophrenia and there is a strong association with cognitive dysfunction (Mc Gorry 2005, Helldin 2006). However, there are probably several reasons for passivity. It could be explained as a part of a more depressive symptomatology which often includes lack of vitality, anxiety, feelings of hopelessness, worthlessness and loss of meaningfulness. The informants in the present study described increased alertness and strength, increased interest, decreased anxiety, better self-esteem and a better ability to “think”. Moreover, BBAT contains soft exercises that allow the informant to adapt to physical activity at their own pace and this contributes finally to a change of behaviour. All these effects may explain the increased activity level which must be considered as an important change within the schizophrenia symptomatology.

### *Effects described in a social context*

Patients with schizophrenia are known to have difficulties in social contexts, such as withdrawal and passivity (Brune 2005, Mc Gorry 2005) In addition to the cognitive dysfunctions, a concurrent existence of social anxiety, low tolerance of stress and low self-esteem, with easily aroused feelings of shame, contributes to the need for withdrawal. In this study, six informants described experiences that included increased opportunities for participation in social activities. They talked about shame, integrity, acceptance of the self and the need to be like others. One important aspect of social interaction is the ability to separate yourself from others, to filter the impressions of others and be able to defend your integrity when needed. The exercises of the body function “delimitation of movement” leads to the experience of limits with the need to accept and respect limitations, but also to “be safe” within the limits. This is a “basic level schemata”, generally self-explanatory, and of great importance to later social functioning (Roth & Lawless 2004).

### *Effects on the ability to think*

Five of the eight informants described experiences of a better ability to “think” after treatment sessions. The ability to concentrate increased, thoughts became calmer and the feeling of clarity of the mind increased. Attention difficulties are common in patients with schizophrenia (Helldin et al 2006). The treatment process with BBAT constantly appeals to the awareness of surroundings, the body and bodily sensations and emphasizes the efforts to make voluntary movements that emanate from the body functions and this stimulates attention in a very direct, concrete and personal manner. The feeling of having greater clarity of thought might also be a result of greater alertness. A specific cognitive function is “vigilance”, important for the ability to sustain the attention over

time and is partly regulated by the reticular formation, restraining the “wakefulness” in the central nervous system (Helldin 2006). The exercise with BBAT may have a specific influence on this function, resulting in clearer thoughts as well as increased ability to be mentally present and in better contact with the body etc. As defined in “embodied cognition”, this is one of the “basic elements of cognitive functioning” that is intimately linked to the body and its function (Roth & Lawless 2004). Furthermore, another explanation for “clearer thoughts” might be that BBAT regulates muscular tension and anxiety and thereby decreases the disturbance on the cognitive processes. Consequently, there are at least three different mechanisms that may explain the better “ability to think” which might be stimulated or activated with BBAT.

### Conclusion

This qualitative study focused on possible treatments effects of Basic Body Awareness Therapy, as they were experienced by eight patients with schizophrenia. Four main categories were identified; Affect regulation, body awareness and self-esteem, effects described in a social context and effects on the ability to think. These results should be targeted in future randomized controlled studies.

### Conflict of interest statement

There are no conflicts of interest in this study.

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**Table 1. Main categories and subcategories in the order of how many informants reported a certain effect, with the frequency of the meaning units in the transcribed text and, in parentheses, the number of informants contributing to each category or subcategory (range and medians are also reported).**

<b>Main categories and subcategories, <i>Total number of meaning units in main category (number of informants)</i></b>	<b>Total number of meaning units in each subcategory (number of informants)</b>	<b>Range (median)</b>
<b>Affect regulation</b> 184 (8)		
Increased sense of well-being and a better mood	46 (8)	1-10 (4)
Finding it difficult and disliking some parts of the treatment	28 (8)	1-5 (4)
Calmer	20 (6)	1-9 (3)
Better coping	23 (6)	1-7 (3)
Relaxed and positively tired	21 (6)	1-6 (3)
More alert and strengthened	26 (5)	3-9 (3,5)
Increased interest	13 (5)	1-5 (2)
Decreased anxiety, stress and fear	7 (4)	1-3 (1,5)
<b>Body awareness and self-esteem</b> 201 (7)		
More mentally present and in better contact with the body and body sensations	73 (6)	1-18 (4)
More active	17 (6)	2-4 (2,5)
Better self-esteem	60 (6)	2-20 (8,5)
Increased awareness of their own behavior	18 (5)	1-6 (4)
Better balance and posture	18 (4)	2-6 (5)
Movability	15 (4)	1-6 (2)
<b>Effects described in a social context</b> 36 (6)		
More relaxed and natural in social situations, greater ability to have eye contact with others	17 (5)	1-6 (3)
Greater integrity	12 (3)	2-8 (2)
Less shame	7 (3)	1-4 (2)
<b>Effects on the ability to think</b> 28 (5)		
Better concentration and 'calmer or clearer' thoughts	28 (5)	4-9 (5)

## Appendix 1.

### Interview guide

1. Tell me if and how the treatment with BBAT has helped you in any way?
  - In the short term
  - In your every day life
  - In the long term
2. What feels good about doing the BBAT exercise?
3. Are there exercises that feel bad or are difficult to do?
4. Tell me more about your experiences of working with BBAT.

## **Appendix 2.**

### **DESCRIPTION OF BODY AWARENESS THERAPY**

#### *Therapists' education*

Body Awareness Therapy is a physiotherapeutic treatment, developed in Scandinavia. The education to be a certified Body Awareness therapist requires a five step educational programme. The programme consists of theoretical, practical and clinical training, with considerable emphasis on one's treatment experience and process. The students have homework to do between the four 1week training sessions. The first two levels focus on developing body awareness and an understanding of the process from an inside perspective. The theoretical framework and history of Body Awareness as well as how to verbalize goals and motivational aspects in patients work, are also focused on. In the third level, student work with and write a report on the individual process with a patient going through BBAT. The fourth level focuses on treatment with a group where the student also writes a report on the dynamics in the BBAT group processes and the role of the therapist in BBAT. The student also reads about 2000 pages of relevant literature that are processed and critically evaluated from a clinical perspective. This is done in two literature reports. All reports are evaluated by a teacher who approves and gives feedback. The fifth level consists of a written project paper of clinical interest.

The education in BBAT is offered both as private education at the Institute for Basic Body Awareness Therapy in Sweden or public education e.g. examination in BBAT methodology at the University College of Bergen, Norway (60 EC credits).

After this you are a certified BBAT therapist. The full education is available only for registered physiotherapists. Other professionals are accepted for step one and two.

A typical therapist's training consists of 30 weeks during 4-5 years. Today, there are around 150 certified BBAT therapists in Europe (Sweden, Norway, Denmark, Finland, Island, Switzerland, UK and Spain). In this study, the experts in BBAT were certified BBAT therapists, teachers at the private institute, educating therapists with more than 20 years of clinical practice within psychiatric physiotherapy.

### The methodology of BBAT

#### *History*

BBAT is inspired by Western movement practice, like Feldenkrais, Alexander technique and the European movement tradition (Grindler and Selver), the expressive arts, like dance (Graham and Laban) and theatre (Stanislavski). Body-oriented psychotherapy (Reich and Lowen) also influences BBAT. From the East, Zen meditation and Tai-chi Chuan (Tai Chi), are important sources of inspiration. BBAT was developed to be starting exercises for Tai Chi C and tends to follow the same principles. A French psychotherapist and actor, J Dropsy, synthesized the aforementioned traditions and published two books describing the method (Gyllensten 2004). A Swedish physiotherapist used the method in the treatment of patients with schizophrenia and published the results in a thesis at the medical faculty of Gothenburg University, 1985 (Roxendal 1985). Since then, the methodology has been used within physiotherapy mainly in psychiatric physiotherapy, but also in the rehabilitation of prolonged pain. Today, there are 12 theses using BBAT or the Body Awareness Scales (BAS). Eleven of them have been written by physiotherapists and one by a medical doctor ([www.ibk.nu](http://www.ibk.nu)).

### *Methodology*

In BBAT one uses movement, breathing, massage/hands-on guiding and awareness to try to restore balance, freedom and the unity of body and mind. BBAT is described as resource-oriented which in this case means working with the resources of the body as a whole. Turning attention both to the doing and to what is experienced in the movements is central and stimulates awareness and movement performance. BBAT differs from Tai Chi in the way that movements are quite simple, focused on the experience of stability, ease and intension (Gyllensten 2004). The therapist encourages the patients to move in ways more optimal for postural control, balance, free breathing and co-ordination. The relation to the ground, vertical balance in the centre line, centring of movements and coordination from the trunk and the solar plexus area, breathing, flow and awareness are seen as important aspects of the body-ego, trained in BBAT (Gyllensten 2004). BBAT can be executed both individually and in a group. It is performed lying, sitting, standing, walking and running. BBAT also includes partner work, in structured massage or push-hand exercises from Tai Chi. The treatment takes the starting point in an assessment, the Body Awareness Scale (BAS), where strengths and weakness of functional capacities and activities are assessed. This means that every treatment is individually created and no protocol, common for all patients is used. However, the treatments are alike, using a common number of structured movements, in different starting positions that can be individually applied according to the patients' need. Compared to other body-oriented or mindfulness-oriented treatments, there is a systematic training of the "physical level of the self", originating from the specific body functions above and the intentional and observing self, on a mental level.



The number of BBAT sessions needed depends on both the medical diagnosis and the functional capacities of the individual patient. For example, patients with moderate depression or anxiety demonstrate a significant improvement of symptoms, self-efficacy, attitude to the body and body awareness after about 12 sessions (Gyllensten et al 2003a). Patients with schizophrenia often need considerably more sessions, about 9 months or more (Roxendal 1985).

The equipment needed in BBAT is a rather spacious room without a lot of furniture. For sitting exercises a stool or meditation cushion are needed. For lying exercises a ground sheet can be used. No music is used since the individual's own rhythm is central and the connection between movements and breathing is emphasised.

### *Teamwork*

Physiotherapists working with BBAT for patients with schizophrenia are usually an integrated member of a professional team including psychiatrists, psychologists, social workers, psychiatric nurses and occupational therapists. In order for a patient to receive BBAT there has commonly been a discussion in a team conference, in the presence of the patient's psychiatrist. Usually, if the patient receives BBAT, it has been initiated by either the patient complaining of bodily symptoms or functional deficits related to the body or by the patient's case-manager. Each patient usually receives different interventions from different professionals, e.g. case-management, psychotherapy and BBAT. In some rural regions of Sweden, the physiotherapists are not connected to a team but treat the patients at a private clinic after psychiatrist referral.

Patients who have active delusions or hallucinations can receive treatment with BBAT and the

treatment will then be adjusted to the patient's ability to be mentally present. The BBAT can often decrease hallucinations and delusions by increasing the contact with the body.