



# LUND UNIVERSITY

## The physiotherapists' experience of Basic Body Awareness Therapy in patients with schizophrenia and schizophrenia spectrum disorders.

Hedlund, Lena; Lundvik Gyllensten, Amanda

*Published in:*  
Journal of Bodywork & Movement Therapies

*DOI:*  
[10.1016/j.jbmt.2012.10.008](https://doi.org/10.1016/j.jbmt.2012.10.008)

2013

[Link to publication](#)

*Citation for published version (APA):*  
Hedlund, L., & Lundvik Gyllensten, A. (2013). The physiotherapists' experience of Basic Body Awareness Therapy in patients with schizophrenia and schizophrenia spectrum disorders. *Journal of Bodywork & Movement Therapies*, 17(2), 169-176. <https://doi.org/10.1016/j.jbmt.2012.10.008>

*Total number of authors:*  
2

### General rights

Unless other specific re-use rights are stated the following general rights apply:  
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

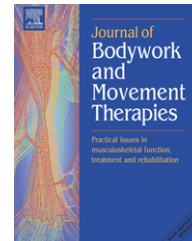
Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

### Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00



## THERAPEUTIC PROCESSES

# The physiotherapists' experience of Basic Body Awareness Therapy in patients with schizophrenia and schizophrenia spectrum disorders

Lena Hedlund, RPT, MSc\*, Amanda Lundvik Gyllensten, RPT, PhD

Department for Physiotherapy, Faculty of Medicine at Lund University, P.O. Box 157, 221 00 Lund, Sweden

Received 10 March 2012; received in revised form 18 September 2012; accepted 1 October 2012

### KEYWORDS

Sensory motor;  
Self-recognition;  
Self-development;  
Meta-cognition;  
Body-mind therapy

**Summary** *Background:* Scandinavian physiotherapists (PT) treat patients with schizophrenia and schizophrenia spectrum disorder, mainly because of the latter's bodily difficulties. One commonly used method is Basic Body Awareness Therapy (BBAT), targeting the difficulties with sensory motor dysfunction and disembodiment. The aim of the study is to describe the physiotherapist's experiences of using BBAT for patients with Schizophrenia.

*Method:* In a qualitative study, eight physiotherapists, who use BBAT when treating patients with schizophrenia were interviewed. The interview transcriptions were analysed according to content analysis.

*Results:* Three stage related themes were created: "encountering" "discovery towards embodiment", and "inner space towards outer world". In "encountering" the PTs described important aspects at the beginning of treatment. "Discovery towards embodiment" revealed how the PTs conceived that the patients' attention is directed toward their own body and their bodily experiences. The theme, "inner space towards outer world" reflects the PTs experience of the changes achieved and how patients turn their attention to the outside world as a more competent self.

© 2012 Elsevier Ltd. All rights reserved.

## Background

Physiotherapists in Sweden often meet patients with schizophrenia because of the latter's disturbed body image

and movement disorders. In these encounters the physiotherapists assess body image, perception and movement quality. They can offer a number of treatment methods, including Basic Body Awareness Therapy (BBAT), which was developed in Scandinavia (Hedlund and Gyllensten, 2010). BBAT is a holistic method that focuses on body awareness as a basic level of self-awareness. The theoretical background includes philosophical theories described by Merleau-Ponty

\* Corresponding author. Tel.: +46 46 222 00 00.  
E-mail address: [lena.hedlund@med.lu.se](mailto:lena.hedlund@med.lu.se) (L. Hedlund).

(1962), developmental theories of sensory motor function as in Piagets' cognitive development (Gerbhardt et al., 2008) and Self-development as in Daniel Sterns description of the infant's stages toward a Self (Stern, 1985). BBAT consists of simple exercises in stillness and movements. The exercises are performed in lying, sitting, standing or walking positions and the emphasis is on the direct experience in the moment-to-moment situation. The movements are focused on the experience of ease, stability and intention. The principles are to work with increasing grounding, postural stability, centered coordination, and awareness of the body, the self and the present moment. When working with BBAT the physiotherapists always address the patient and are interested in how the person perceives his/her body and movement. This bodily-based self-experience is both verbalized by the patient and confirmed by the physiotherapist as a means for reflection (Hedlund and Gyllensten, 2010).

Schizophrenia and schizophrenia spectrum disorders include several symptoms and dysfunctions. The psychopathology of schizophrenia is also elaborated in terms of disturbance of the minimal or basic bodily self, disembodiment, the loss of intentionality, agency and delusion of control (Kaiser and Weisbrod, 2007; Cermolacce et al., 2007; Jeannerod, 2009). There is increasing research today concerning first-rank symptoms, difficulties with self-recognition, self-development and meta-cognition (Schimansky et al., 2010; Lysaker et al., 2007, 2010; Gebhart et al., 2008; Waters and Badcock, 2010). Self-development and self-recognition are assumed to originate from the bodily level (Frith et al., 2000; Kircher and Leube, 2003; Gerbhart et al., 2008). The importance of sensory motor development and function, proprioception and multisensory integration toward a developed and continuously integrated self-experience are described by Tsakiris et al. (2010) and Gerbhart et al. (2008). De Haan and Fuchs (2010) point out the need of further research regarding whether and how body-oriented and movement-oriented therapies might strengthen the embodiment of patients with schizophrenia.

Other studies within psychiatric community care have shown that BBAT can aid the development of a more positive experience of the body and the self (Gyllensten et al., 2003). Studies concerning BBAT in patients with schizophrenia are, however, very few. Roxendal (1985) showed improved movement behaviour and increased gaze and sexual interest within 17 patients with schizophrenia.

The treatment process involves three components; the therapist, the patient and in between them, the method. Clinically, a treatment method usually needs to be adapted by the therapist to the unique patient or group exercising it. In a qualitative study patients described their experience of BBAT and different treatment effects. The result showed changes in four areas; affect regulation, increased body awareness and self-esteem, effects described in a social context and effects on the ability to think. As an example of affect regulation, the patients described how the exercise led to increased feelings of vitality and interest. They felt in better contact with their body experiences and the present moment. They experienced better postures, which for some were associated with a better self-esteem and feelings of integrity. Finally, the patients'

also expressed that exercise resulted in better ability to concentrate and the experience of having "clearer" thoughts (Hedlund and Gyllensten, 2010).

The aim of the present study is to describe the physiotherapists' perspective and experience of their work, in terms of how they describe; a) the treatment with BBAT in patients with schizophrenia and schizophrenia spectrum disorders and b) how they describe their experience of the treatment benefits for the group of patients.

## Method

### Informants

Clinical physiotherapists participated in the study. Inclusion criteria were:

- 1) working mainly with patients diagnosed with schizophrenia for at least 3 years and
- 2) participating in Basic Body Awareness Therapy education, at least step 2 in the method (for more information about the education, see Hedlund and Gyllensten, 2010). They were recruited through a nomination procedure by requesting the assistance of the Institute of Basic Body Awareness Therapy in Sweden. The institute was asked for suggestions for skilled practitioners working with patients with schizophrenia and nominated eight physiotherapists in southern Sweden. All nominated physiotherapists were interviewed. Their characteristics are shown in Table 1. This study complied with stipulations in the Swedish Act, the *Ethical Review of Research Involving Humans* (SFS, 2003), and the principle of informed consent was applied.

### Interview technique and interview process

A semi structured interview guide was used. It consisted of both open questions and more concrete, specific questions (see Table 2). The interviews were tape recorded and transcribed by the first researcher and were then sent back to the physiotherapists for a check of the content. One physiotherapist made some clarifications. Each interview took between one and 2 h to conduct and took place at the physiotherapists' out-patient unit. The interviews were conducted according to Kvale's (1989) criteria for a high qualitative interview.

**Table 1** Characteristics of the informants.

Working place	Gender and age	Work experience as physiotherapists	Work with actual group of patients
Southern and central parts of Sweden, five different cities	All female, between 30 and 67 years 41 years	6–31 years, mean 13 years	3–31 years, mean 11 years

**Table 2** Interview guide with semi-structured questions.

1. Why do you use Body Awareness Therapy when treating patients with schizophrenia and similar diseases?
2. Who determines the goal of the treatment?
3. How do you know that the patient is involved in the treatment?
4. Do the patients have their own favourite exercises?
5. Do patients do daily exercises with Basic Body Awareness?
6. What are the benefits of treatment with Basic Body Awareness?

## The process of analysing the transcriptions

The transcribed text was analysed in accordance with content analysis, with inspiration from both the manifest and latent versions (Malterud, 1998; Graneheim and Lundman, 2004). The stepwise process of analysis and steps to increase the trustworthiness are presented in Table 3. The researcher had initially decided to use manifest content analysis, which entails the text being systematically reduced into meaning units, which is an existing word in the text that represents or is central to the meaning of the sentence. The nature of the material revealed a need to adjust the method, both in terms of making a preliminary classification before selecting meaning units, and further, to also include latent content analysis. When using latent content analysis the underlying meaning of the text is interpreted and used (Graneheim and Lundman, 2004). The final results, with themes and categories are presented in Table 4.

## The pre-understanding of researchers

Both researchers have experience in psychiatric out-patient care. The first author has worked with the actual group of patients for 23 years. The researchers are also well educated in the BBAT method.

## Result

Three main themes were created. They were “**Encountering**”, “**Discovery towards embodiment**” and “**Inner space towards outer world**”. Almost all of the informants’ answers to questions 1–5 (see Table 2) are represented in **Encountering**, question number 6 in **Inner space towards outer world**. The third theme; **Discovery towards embodiment** mostly represent the information about the treatment process and the physiotherapists’ skill in adjusting the method specifically to the needs of the patient.

## Encountering

### Theoretical framework

The physiotherapists mainly use the normal self-development and sensory motor development as a model for understanding what the problems are and what the

**Table 3** Steps in content analysis.

Activity	Result
Reading all interviews several times.	From “chaos” to brief knowledge of content.
Comparing meaning units in a single interview with two other professions; one psychologist and one occupational therapist	Good concordance (over 85 percentage concordance)
Writing down all the informants’ statements exactly on a paper.	Greater feeling for the material, being able to find different statements and the descriptions of the contexts
Cut out all statements with meaning units.	De-contextualisation.
A rough coding of the whole transcribed text in a cross analysis	Six major areas, for example “theory”, “treatment effects” and “process descriptions”
A more precise coding with second author. Back and forward checking process.	37 different codes emerge. The codes that describe the process dominate.
Seeking for categories using manifest content analysis, with second author. Back and forward checking process.	22 categories.
A higher abstraction of categories with second author. Back and forward checking process. Peer review.	Re-contextualisation. Finding 7 categories. Need for further analysis.
Even greater abstraction, latent content analysis. First author selected themes, checked by second author. Back and forward checking process.	Finding 3 themes and 9 categories.
Checking the final results to the context in all interviews	Small adjustments to the categories.
Writing the report, picking out quotations representing the categories.	Article.

resources and strengths are for each individual. The self-concept is used in various ways by physiotherapists, especially when assessing the patient’s need for better contact with their true self, their feelings, needs, limits and body boundaries. In order to be able to feel and recognize feelings is important, especially the experience of vitality. One physiotherapist said;

‘if you are bent double, you will not have access to energy, both the rhythm exercises and flow exercises, the heel rebound will start your vitality and through that vitality you’ll have access to yourself...’

**Table 4** The themes and their respective categories.

Encountering	Discovery towards embodiment	Inner space towards outer world
<ul style="list-style-type: none"> <li>• Theoretical framework</li> <li>• Difficulties and possibilities</li> <li>• Participation and goal setting as a way to strengthen the experience of self</li> <li>• Non-verbal and verbal interaction</li> </ul>	Exercises the process of discovery Guidance for sensing and being present in the body	Finding structure Increased contact with the sensing self Turning attention to the world outside

### Difficulties and possibilities

The physiotherapists stated that they meet a unique person, with a narrative history and a certain personality with inherent or acquired difficulties. They focused on the patient's resources, which included an inherent drive to develop as a person. Different physical, emotional, interpersonal and cognitive difficulties are described by the physiotherapists. They provided a description of the patients as having a high level of fear, lack of vitality, high level of ambivalence and feelings of emptiness. The patients are described as having difficulties with standing up for themselves and having a "false self", in need of defense mechanisms toward genuine feelings and personal needs. Some patients use a kind of intellectualization to avoid contact with feelings. The physiotherapists also provided a description of different sensory motor dysfunctions and lack of sensory connection with the body, lack of anchor and grounding in the body, lack of body boundaries, fragmented perception of body and self as well as hypersensitivity. One informant explained;

'the patients have a fragmented sense of themselves, the experience of themselves as a whole unit is often broken, and a disability to feel their body boundaries. Some of them talk about feeling "skinless", not to know where they begin or end...'

The physiotherapists described that it usually takes a long time before attachment occurs and that the quality of therapeutic alliance varies over time due to crises and progress in the treatment.

### Participation and goal setting as a way to strengthen the experience of self

The physiotherapists talked about the need of the patient's participation in order to establish a goal from the first encounter. The physiotherapists need a goal to find the *genuine* motivation for change within the patients. The patient's own goal is superior in relation to the physiotherapist's assessments although they try to integrate the patient's goal with the physiotherapeutic perspective. The patient's goals often change over time due to a better contact with themselves.

After some initial BBAT exercise led by the physiotherapist, the patients are mainly allowed to choose the BBAT exercises they prefer. The physiotherapists believe the patient's choices arise from an inherent need and allows them to be more involved in themselves. The involvement is shown in several ways: by the patient's reflections, by the choice of exercise or by doing exercises at home as homework or through the body language or just by coming to treatment. One physiotherapist said;

'I see it, in their eyes, they are there, calming down when the integration appears. You can see in the eyes, like a little sigh and then they don't struggle that desperately... and then, the fact that they reflect over the exercise...'

### Non-verbal and verbal interaction

All physiotherapists saw themselves as an important collaborator with the patient. They support the patients to explore themselves when exercising BBAT. The physiotherapists think it is important to convey hope, trust and the possibility of change.

The physiotherapists observe the patient's body language and mental state. They interact on a non-verbal level by using empathy and emotional contagion. One physiotherapist said;

'I put myself in that body position. Then I get different suggestions on what's going on and I can give suggestions to the patient...Is it like this... or like this today? I use empathy or read the body language and I really try to be "here and now" in the treatment...'

Physiotherapists encourage the patients to verbalize and differentiate their experiences. The focus on verbalizing is also a way to stimulate the patient's ability to reflect over their own experiences and thus get a distance to them and understand their personal context. One physiotherapist said;

'The patients start to reflect about what is happening and through reflecting over what goes on in the body in different situations, at home or where ever they are. Then they spontaneously start to reflect....and ask why...'

The physiotherapists are aware that words might hinder a more genuine experience. By continuing the exercise in silence, the patients have an opportunity to experience that every affect decreases after a while by letting it pass and instead hold on to the awareness of the body and the present.

### Discovery towards embodiment

#### Exercise the process of discovery

Most of the physiotherapists declared that it was important to provide exercises that lead to a pleasant experience initially, as a way of motivating the patient. One physiotherapist explained;

'Yes, I think life is hard as it is. Especially for the young I meet. They were about to start out in life and then they suffered from a tough breakdown, leaving them doubtful

and with low self confidence and self-esteem. So I think we have to start with something good. Then, by experience, after managing a few steps, those things that are difficult surface naturally...'

Some physiotherapists talked about the need for inducing curiosity and courage when doing BBAT. The patients need the courage to experience different feelings and sensations.

All major changes are connected to a temporary increased confusion or anxiety. When the patient's attention drifts away the physiotherapist clarifies this. In order to encourage the patients to challenge their anxiety, the physiotherapist can clarify the choice that has to be made, by asking; *what makes you develop most?*

#### **Guidance for sensing and being present in the body**

Catching and maintaining the patient's attention is important according to the physiotherapists. They observe in what mental states the patients perform their exercises, and guide their attention individually towards the body. One physiotherapist explained;

'You test it individually, because they find themselves and their presence in different ways, by focussing differently in the exercises. Some of them work easily from the centre of the body. Others just need the centre line or the grounding so it's very different...'

All the physiotherapists declared that the basis for being attentive and present at the moment in time is the contact with the sensing body. They think that it is important to contextualize the different sensations and to put the body in its spatial context.

The physiotherapists sometimes relate to their own experiences of BBAT. Through their own process with BBAT, the physiotherapists have knowledge about how the different exercises affect the body and how to deal with bodily experiences. They study the patient's body language in order to ensure that the patients are all right. If the patient has a strong bodily defence he/she is met with great caution. The physiotherapist usually also strengthens the body defences initially in order to increase the patient's feeling of security. They think it is important to achieve an anchoring in the body before exposure to different difficulties. One way of coping is described by one of the physiotherapists;

'The main thing is to do the exercise in contact with the centre line, to be in balance and not in your compensated position, to be grounded instead and in balance, anatomically. There you find your strength...'

Most progress comes slowly but sometimes it appears as a sudden "therapeutic moment". One physiotherapist said;

'All these mysterious exercises.... you can make a joke about making sounds and strange movements that you're not used to. But then, suddenly, it's not so silly any more... because... Aha!... then you're motivated and you do not need to say so much. The patient does not say so much but shows up every week. Something has started, which was felt deeply and genuinely inside...'

## **Inner space towards outer world**

### **Finding structure**

The physiotherapists talked about changes when the patients found their postural balance. The patient's self-esteem increase, they look prouder when leaving the treatment, become more active and start to stand up for themselves. The contact with the postural balance also gives the patients something to "hold on to" among other people as one physiotherapist reported;

'The contact with the centre line makes it easier for her to relate to herself, when she is out. She feels more secure and dares to meet other people without being so afraid...'

The physiotherapists experienced that paranoid thoughts and commentary hallucinations can decrease when the patients experience postural balance. Sometimes even voices can decrease, both in strength and frequency. The physiotherapists also described how BBAT strengthens the body as a whole and integrated unit. Patients find their stillness and become calmer and more relaxed, increase their wellbeing and clearness in thoughts. One physiotherapist said;

'Those patients who are fragmented, and have no possibility to pull themselves together, when they find the centre in movement and learn to control their movement so they can choose between moving the body more peripherally or centrally, then the mental ability to focus also appears...'

### **Increased contact with the sensing self**

By working with BBAT the physiotherapists reported that their patients started to sense more. Body movements increase the sensory input which sometimes leads to the feeling of being more alive and vital. When anchored or grounded in the body the patient's ability to differentiate their sensations increases.

'When they move toward their line of balance and stand on their legs and I don't know what, find their centre line, they report more and more different experiences... breathing, movement, different feelings in their bodies...'

The physiotherapists described a complex mechanism including becoming calmer, changes in awareness and body functions that they believe leads to more differentiated sensations. The physiotherapists thus think that the patients have a better chance of feeling what is really there, inside them.

'I think they make connections better, between what happens and how it feels inside. That life affects me somehow, something affects me, what I do, how I think...'

### **Turning attention to the world outside**

The physiotherapists described how their patients turn towards the outer world when they developed a better self-recognition and self-esteem from working with the body. The physiotherapists described an increased engagement,



vitality and courage within the patients, which leads to an increased interest in socializing and taking care of themselves in a better way. The importance of daring to relate to others is described by one physiotherapist;

'They do not have so many contacts. They are very afraid to let others close to themselves and they have enough with all their symptoms...but if you get more secure in yourself then you dare to let people come closer to you. You start to listen more to signals from the body and you can speak up more easily and then you dare to invite others...'

On a perceptual level, the ability to differentiate inner life from outside is exemplified by one physiotherapist;

'I think he has learned to differentiate between fantasy, reality and hallucinations, maybe not the way I do but he understands there is a difference but exactly what that means to him I don't know. But to be part of this world, to stand on your legs and sometimes look other people in the eyes, I definitely believe that it has helped him to be in this world after being so trapped in his own world...'

After psychosis there is also a lot of anxiety connected with the body and the experiences from it. Becoming more active, even spontaneously starting to exercise, is reported by the physiotherapists, due to increased self-engagement and less anxiety towards one's own bodily experiences.

## Discussion

### Method

Eight physiotherapists, who met the inclusion criteria, were nominated and all were interviewed. Eight can be seen as a small sample of informants, these had, however a very specialized experience in order to conform with the inclusion criteria and as a group had worked for a mean of eleven years. The researcher used a semi structured interview method. During the interviews the physiotherapists' also provided descriptions of their work as a complex process with the patients, what they did when they tried to engage and guide their patients toward increased embodiment. This probably demonstrates the complex reality of the physiotherapists' work and their willingness to tell about their experience.

The first researcher's own experience of both the treatment method and type of patients led to a pre-understanding which naturally has had an impact on the research process; from the planning of the study to the written article. In order to increase the trustworthiness the impact of the pre-understanding needed to be minimized or controlled. One way was by using interpretations and verification during the interview thereby checking that the first researcher had correctly understood the physiotherapists' points of view, instead of filling out empty spaces with pre-understanding. The transcribed interviews were also sent back to the informants in order to check the content. Furthermore, the selection of meaning units in one interview was compared with that performed by two other professionals; one psychologist and one occupational therapist, resulting in more than 85% concordance. Finally,

most of the analysis was carried out together with the second researcher. This thus allowed both to question each other's analysis.

## Results

The purpose of the study was to describe the physiotherapists' experiences of their work, in terms of how they describe the treatment with BBAT and how they describe their experience of the treatment benefits for patients with schizophrenia and schizophrenia spectrum disorders. The physiotherapists also gave a rich description of the patients' difficulties and possibilities for recovery, which are linked to exercising BBAT. The given descriptions are very optimistic, both concerning the patients' ability to recover and how they benefit from treatment. The physiotherapists describe both the method and the patients with a great level of engagement. There are of course several possible explanations for their optimistic view. One is that it really reflects important aspects and treatment possibilities for the patients, which also has been shown in other studies, including the patients' own experience of the treatment (Hedlund and Gyllensten, 2010; Gyllensten et al., 2003). Another possibility is, of course, that the physiotherapists overestimate the value of their work. When working closely with patients over a long period of time it is also difficult to have a meta-perspective, to discriminate different treatment benefits from spontaneous recovery or the impact from other treatments.

When analysing the material, three different stages were discovered; **Encountering, Discovery towards embodiment and Inner space towards outer world**. In reality the treatment process is, of course, not that differentiated into stages and neither are the descriptions of treatment benefits clearly separated from the treatment process. It can instead be described as a circulative process with many steps working in parallel. However, making a stage-wise description has the benefit of sorting out the different aspects and thus clarifying the existence of different components, which are important for the professional development of psychiatric physiotherapy. The pragmatic validity of the study will thus finally be assessed by colleagues.

The themes are now discussed separately in the order the physiotherapists described the treatment process.

### Encountering

One theoretical starting point is self-development and a belief in the ability to develop. Piaget's sensory motor development is one basic framework for the work with sensory motor function. As a medical hypothesis, Gerbhart et al. (2008) make a comparison between Piaget's cognitive development and the basic disease mechanism in psychotic disorders. The authors present parallels between the patients' disturbance in perception and a child's normal development. The patients still have, for example, difficulties separating subjectivity and objectivity, when decentralizing their perception of themselves and the world, resulting in difficulties in adjusting to reality. In

relation to this, BBAT provides the opportunity for working with the earliest levels in Piaget's cognitive development.

The physiotherapists think every patient is unique and in order to attain this "uniqueness" the patients participation is needed. Every patient has their own combination of resources, shortcomings and personality. The individualized perspective may, however, also have the benefit of maintaining the physiotherapists' own engagement towards every unique patient. The physiotherapists really need to be attentive in order to be able to carry out the treatment, which is mostly based on non-verbal communication. The importance of their own body awareness for the physiotherapists must not be underestimated. The knowledge is used to support, guide and help complete the patients' lack of words for their different kinds of body experiences, leading to a mutual process of reflection and better affect regulation. This is in line with earlier studies, focussing on the interaction between physiotherapist and patient (Hedlund and Gyllensten, 2010). The ability to reflect upon one's own feelings and thoughts, are defined as one basic component of meta-cognition and mentalization (Lysacker et al., 2007). BBAT includes making reflection over one's own body experiences, which is important for affect regulation, self-knowledge and in mutual relationships but also to prepare patients to benefit from other verbal interventions, such as psychotherapy (Hedlund and Gyllensten, 2010).

### Discovery towards embodiment

The physiotherapists think that pleasurable experiences are a good start for discovering the inner self. Curiosity is used to engage and establish an open mind that decreases or neutralizes the fear of sensing. The physiotherapists describe how they guide the patient to turn the attention to the inner self. The patients often have difficulties with attention and the physiotherapists have developed different strategies to enhance the patients' ability to remain attentive. Attention is needed in BBAT in order to make changes on a bodily level.

When focussing on the bodily experiences it is important to contextualize the different sensations. The physiotherapists do this in several ways, with a focus on integrating body and mind spatially, but also in a narrative way. It is important to know why you have a certain feeling or body sensation, and in what way you are affected by other people or by your earlier life experience. Knowing why may generate a feeling of self-coherence and that you are the protagonist in your own life. This has also been proposed as being an important intervention against psychotic discontinuance (Lysaker et al., 2007).

### Inner space towards outer world

Working with bodily changes seems to be a slow process but contains some important therapeutic moments according to the physiotherapists. The physiotherapists described that patients report feelings of being; "whole and integrated", calmer and with clearer thoughts. Studies within embodied cognition give an interesting explanation to these integrative experiences. Research has examined the role of

multisensory integration towards body-ownership and suggests that multisensory integration together with the internal model of the body (body-scheme) is the major mechanism behind the experience of the body as being one's own (Waters and Badcock, 2010). This is interesting, especially in the light of research claiming that patients with schizophrenia have basic disturbances on this basic level of self (Waters and Badcock, 2010; de Haan and Fuchs, 2010). The physiotherapists try to increase the experience of integration by physical exercise. They thus establish an inner space for the patients. In addition, moving the body works through complex afferent and efferent signals, following the willed intention to move. The intention and its efferent spreading results in a feeling of agency, which is also said to make a major contribution to self-recognition and when disturbed lead to basic symptoms seen in schizophrenia (Tsakiris et al., 2010). These mechanisms: body ownership, body scheme and agency, are all important for basic levels of self-recognition. Furthermore, they seem to be activated or facilitated in BBAT and thus lead to the experience of being whole, alive and with a stronger self, as reported by the physiotherapists.

The connection between emotions and body language is used in a two-way manner by the physiotherapists, both to increase the awareness of the sensing self but also to regulate the different affects, increasing feelings of vitality and decreasing anxiety and other discomforts. The bodily change in postural balance is described as inducing a better self-esteem (Hedlund and Gyllensten, 2010). The physiotherapists in this study also experience that postural balance and movement coordination in contact with the centre of the body, both contributes to mental stability.

### Clinical implications

Qualitative studies provide the opportunity for systematically describing professional experiences of using a method with a specific group of patients. The results from this study include descriptions of mechanisms in the BBAT treatment in patients with schizophrenia and schizophrenia spectrum disorder that later can be followed up and verified in other studies.

### Conflict of interest statement

There are no conflicts of interest in this study.

### Acknowledgements

This study was funded by County Council of Scania, Sweden.

### References

- Cermolacce, M., Naudin, J., Parnas, J., 2007. The minimal self in psychopathology: re-examining the self-disorders in the schizophrenia spectrum. *Consciousness and Cognition* 16, 703–714.
- Frith, C., Blakemore, S.J., Wolpert, D., 2000. Explaining the symptoms of schizophrenia: abnormalities in the awareness of action. *Brain Research Reviews* 31, 357–363.



- Gerbhart, S., Grant, P., von Georgi, R., Huber, M.T., 2008. Aspects of Piagets' cognitive developmental psychology and neurobiology of psychotic disorders – an integrative model. *Medical Hypothesis* 71, 426–433.
- Graneheim, U.H., Lundman, B., 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today* 24, 105–112.
- Gyllensten, A.L., Hansson, L., Ekdahl, C., 2003. Outcome of basic body awareness therapy. A randomized controlled study of patients in psychiatric outpatient care. *Advances in Physiotherapy* 5, 179–190.
- de Haan, Fuchs, T., 2010. The ghost in the machine: disembodiment in schizophrenia-two case studies. *Psychopathology* 43, 327–333.
- Hedlund, L., Gyllensten, A.L., 2010. The experience of basic body awareness therapy in patients with schizophrenia. *Journal of Bodywork and Movement Therapies* 14, 245–254.
- Jeannerod, M., 2009. The sense of agency and its disturbances in schizophrenia. A reappraisal. *Brain Research* 192, 527–532.
- Kaiser, S., Weisbrod, M., 2007. Intentionally as a link between the neuropsychology and the symptoms of schizophrenia. *Psychopathology* 40, 221–228.
- Kircher, T., Leube, D., 2003. Self-consciousness, self-agency and schizophrenia. *Consciousness and Cognition* 12, 656–669.
- Kvale, S., 1989. To Validate Is to Question. *Issues of Validity in Qualitative Research*, pp. 73–92.
- Lysaker, P.H., Buck, K.D., Roe, D., 2007. Psychotherapy and recovery in schizophrenia: a proposal of key elements for an integrative psychotherapy attuned to narrative in schizophrenia. *Psychological Services* 4, 28–37.
- Lysaker, P.H., DiMaggio, G., Carcione, A., Procacci, M., Buck, K., Davis, L., Nicolò, G., 2010. Meta-cognition and schizophrenia: the capacity for self-reflectivity as a predictor for prospective assessments of work performance over six months. *Schizophrenia Research* 122, 124–130.
- Malterud, K., 1998. *Kvalitativa metoder i medicinsk forskning (Qualitative methods in medical science)*. Studentlitteratur, Lund.
- Merleau-Ponty, M., 1962. *The Phenomenology of Perception*. Routledge, London.
- Roxendal G., 1985. *Body Awareness Therapy and the Body Awareness Scale, Treatment and Evaluation in Psychiatric Physiotherapy*. Dissertation, Department of Psychiatry, University of Gothenburg.
- Schimansky, J., David, N., Rössler, W., Haker, H., 2010. Sense of agency and mentalizing: dissociation of subdomains of social cognition in patients with schizophrenia. *Psychiatry Research* 178, 39–45.
- Stern, D., 1985. *The Interpersonal World of the Infant*. Basic Books.
- Swedish Code of Statutes (SFS) 2003:460 Ethical Review of Research Involving Humans.
- Tsakiris, M., Longo, M.R., Haggard, P., 2010. Having a body versus moving your body: Neural signatures of agency and body-ownership. *Neuropsychologia* 48, 2740–2749.
- Waters, F., Badcock, J., 2010. First-rank symptoms in schizophrenia: reexamining mechanism of self-recognition. *Schizophrenia Bulletin* 36, 510–517.