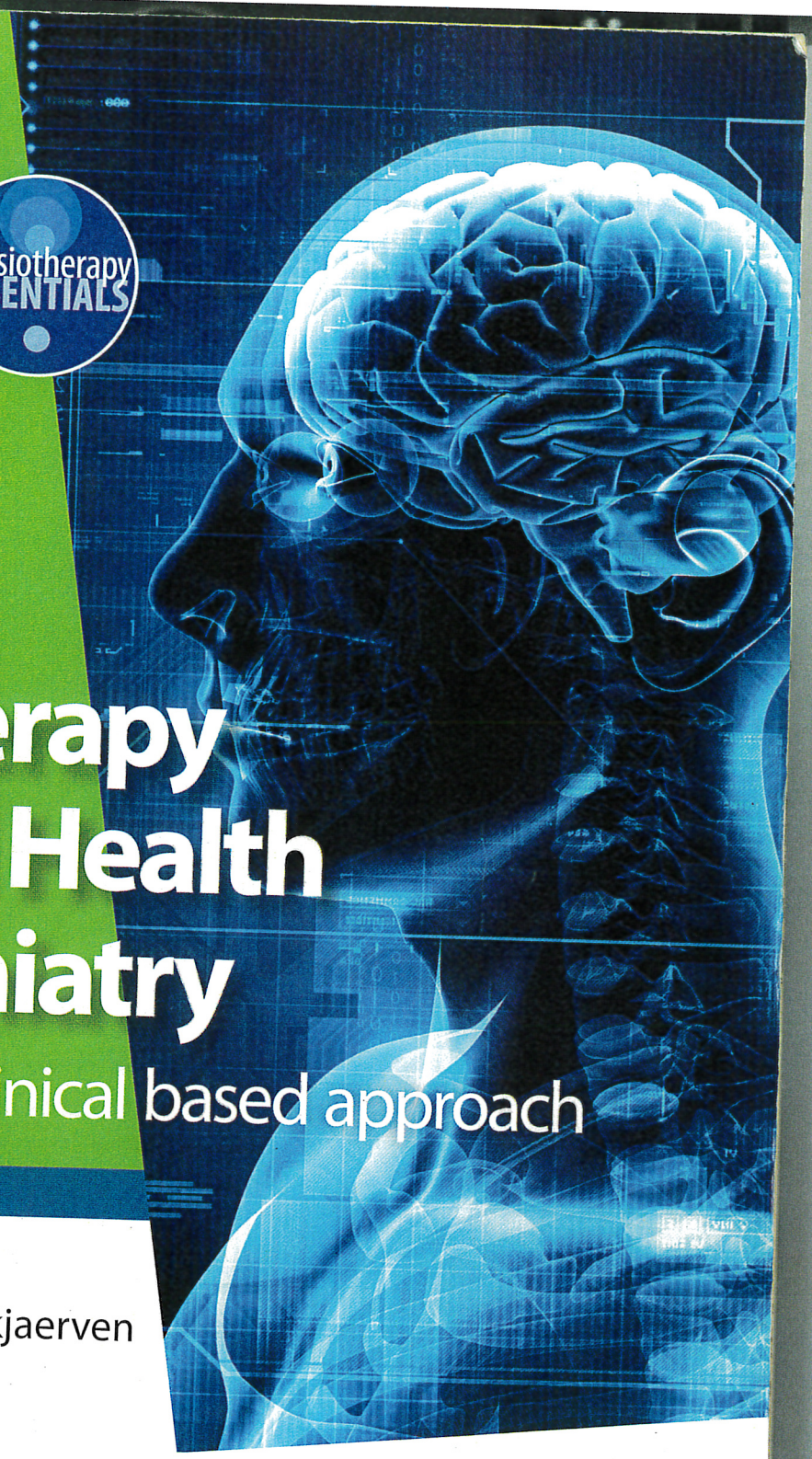
Physiotherapy ESSENTIALS



Physiotherapy in Mental Health and Psychiatry

a scientific and clinical based approach

Edited by
Michel Probst, Liv Helvik Skjaerven

ELSEVIER

and ability to negotiate tasks, emotions connected to tasks, and the nature of the relationships, seemed to facilitate change. The patients' and the physiotherapists' capacity to bear and come through demanding situations created new ways of interaction. Accordingly, demanding situations may generate a potential for the improvement of treatment outcomes. Understanding demanding episodes as open and dynamic, in contrast to defining the patient as demanding, was suggested as a useful perspective for treatment (Øien et al., 2011).

CONCLUSIONS

The studies demonstrated that knowledge about change and communication in patients with chronic muscle pain of the back and/or neck was built on detailed step-by-step processes of perceiving and creating meaning in a growing variety of movements and breathing. These processes emerged in close connection to how the patient and the physiotherapist negotiated details by varying their ways of communication. Based on the knowledge-producing processes, the patients explored new ways of moving and understanding. Concomitantly, learning to apply new knowledge in different contexts outside treatment took place.

REFERENCES

Gergen, K., Kaye, J., 2002. Beyond narrative in the negotiation of therapeutic meaning. In: McNamee, S., Gergen, K. (Eds.), Therapy as Social Construction. Sage Publications, London, pp. 166–185.

Merleau-Ponty, M., 2012. Phenomenology of perception. Routledge, London.

Øien, A.M., 2010. Change and Communication. Long-Term Norwegian PsychoMotor Physiotherapy Treatment for Patients with Chronic Muscle Pain. Doctoral Thesis, University of Bergen, Bergen.

Øien, A.M., Iversen, S., Stensland, P., 2007. Narratives of embodied experiences—Therapy processes in Norwegian psychomotor physiotherapy. Adv Physiother 9, 31–39.

Øien, A.M., Råheim, M., Iversen, S., Steihaug, S., 2009. Self-perception as embodied knowledge—changing processes for patients with chronic pain. Adv Physiother 11 (3), 121–129.

Øien, A.M., Steihaug, S., Iversen, S., Råheim, M., 2011. Communication as negotiation processes in long-term physiotherapy: a qualitative study. Scand. J. Caring Sci. 25 (1), 53–61.

Watzlawick, P., Bavelas, J.B., Jackson, D.D., 1967. Pragmatics of Human Communication. A Study of Interactional Patterns, Pathologies, and Paradoxes. WW Norton, New York.

5.1.4 Best Practice: Basic Body Awareness Therapy—Evidence and Experiences

AMANDA LUNDVIK GYLLENSTEN ■ GUNVOR GARD

SUMMARY

Best practice includes the best available research and the patient's experiences and wishes. Body awareness is an important aspect of rehabilitation in mental health for patients with prolonged pain and psychiatric problems. Basic Body Awareness Therapy (BBAT) is a methodology established in Scandinavia. Research studies (randomized and controlled) support the effectiveness of the method to improve health-related quality of life, self-rated depression and self-efficacy. Indications of less sick listing and reduced use of psychiatric healthcare have been found. Physiotherapists have studied movement function, movement quality and body awareness in some patient groups and certain characteristics have been found. Studies of the patients' experiences revealed feelings of being more connected to their body, stable, calmed, and more alive and vital.

KEY POINTS

Basic Body Awareness Therapy (BBAT) is a physiotherapy method used in health care. Research confirms that there is moderate evidence for the efficacy of BBAT working with patients with depression, anxiety and bodily symptoms.

Key takeaway points:

The patients express that they experience BBAT to:

- Help them to become more aware of how they use the body.
- Learn to listen to and trust the body.
- Use the BBAT movements and the breathing to restore balance.

- Increase their awareness.
- Recognize and regulate their affects and emotions.
- Improve social interactions.

LEARNING OBJECTIVES

- Understand how best practice within the field of mental health physiotherapy is focused and its relation to body-awareness therapies.
- Understand how Basic Body Awareness Therapy contributes to health and well-being for patients with prolonged pain and psychiatric diagnosis, such as depression, anxiety, posttraumatic stress disorders (PTSD) and schizophrenia.

BEST PRACTICE

Best practice is defined as the methodology that thorough research and experience has proven to reliably lead to the desired result in the best way, or a programme, activity or strategy that has the highest degree of proven effectiveness supported by objective and comprehensive research and evaluation (The National Registry of Evidence-Based Programs and Practices [NREPP], 2016). According to Haynes et al. (2002), evidence-based practice includes: research, preferably randomized controlled trials, and knowledge of the individual patient's special situation and context, as well as their experiences and wishes. It is therefore of importance to include the voice of the patient from qualitative research when trying to achieve best practice. Several research articles address the patient's perspective and experiences.

In many countries the experiences and assessments of the professional group of physiotherapists are also considered to be important to identify best practice for different patients within mental health physiotherapy and to evaluate the effects of treatment.

BACKGROUND TO BODY-AWARENESS THERAPIES

Body-awareness therapies as well as other physical activity methods and aerobic exercise are all methods used within mental health physiotherapy practice in Europe. This chapter will focus on body awareness in patients with mental health problems.

The concept of body awareness has been described as a key element, a mechanism of action for therapeutic approaches often categorized as mind-body approaches, such as yoga, tai chi, body-orientated psychotherapy, Basic Body Awareness Therapy (BBAT), mindfulness-based therapies/meditation, Feldenkrais, the Alexander method and breathing therapy (Mehling et al., 2011). Body awareness is also self-awareness, since the awareness and development of the self and one's identity is closely connected to the body. Theories of embodied cognition propose that higher order mental processes are essentially based on perceptual and motor processes. Semantic concepts have to be grounded in sensorimotor experiences in order to have meaning (Fernadino & Iacoboni, 2010).

Incidence of prolonged musculoskeletal pain (often called *chronic pain* or *prolonged pain*) is a frequent health problem in the west. In Sweden, the total amount of sick leave taken for this cause is around 25% and mostly affects women. It impacts negatively on both general health and quality of life for the individual patient (Afrell et al., 2007). Prolonged pain is costly, not only for the individual, but also for society as a whole. Costs of chronic pain include both direct costs related to treatment and provision of healthcare services, and indirect costs, such as those associated with loss of productivity, lost tax revenues and disability payments (Statistics Canada, 2001; Phillips & Schopflocher, 2008; Statistics Sweden, 2015).

Etiology of prolonged musculoskeletal pain without a clear somatic cause is considered to be multifactorial, where physical, psychological and social factors interplay. It can be viewed as a multidimensional problem (Afrell, et al., 2007; Kamper et al., 2015). Research has identified that patients with prolonged benign musculoskeletal pain also have changes in their self-experience and their experience of the world. In connection to chronic illness, the individual often experiences an identity crisis and a biographical rupture, where the known identity no longer seems to be reliable and trustworthy (Chamaz, 1995). The individual may perceive the self as chaotic and the body as no longer comprehensible (Afrell et al., 2007; Lundberg et al., 2007). In the rehabilitation of patients with chronic pain, acceptance of the pain, learning to live with it, strengthening the sense of identity, and body and self-awareness are essential aspects of physiotherapy. To help the patient to increase physical activity without more pain, fear of moving, or fear of more

pain often requires the physiotherapist to work as a member of a multiprofessional/interprofessional team. Chronic pain and the biopsychosocial context is described more in depth in Chapter 5.1.1 in this book.

INCIDENCE OF MENTAL HEALTH PROBLEMS

Mental health problems, such as depression, anxiety, PTSD and chronic stress syndrome are becoming some of the leading causes of sick leave in Europe. These diagnoses are becoming more frequent, and in Sweden are now the most common cause of sick leave for women and the second most common cause for men (Social Insurance Agency, Sweden, 2015). In physiotherapy this group of patients have often been treated using a body awareness-orientated method or physical activity aiming at restoring vitality, mental health and self-efficacy, as well as relief of symptoms of pain, breathing problems and muscular tension (Mattsson et al., 1995; Gyllensten et al., 2009; Danielson et al., 2014). Deteriorating mental health alarmingly also seems to be very common in the younger healthy population; reports have shown that in particular, Swedish schoolgirls between 13 and 18 years of age have very high levels of stress-related symptoms, anxiety and depression in combination with different somatic problems, e.g., stomach ache (Hagquist 2010; Lager et al., 2012; National Board of Health and Welfare, 2013; Strömbäck et al., 2013).

BASIC BODY AWARENESS THERAPY

Evidence for Patients With Prolonged Pain

The evidence base for using BBAT for patients with prolonged pain is not so strong. Systematic high-quality research is still scarce. The frequent use of body-awareness therapies in Scandinavia is mainly based on professional expertise and small studies. The strengthening of body awareness has been found to be a way to relieve musculoskeletal pain, psychological distress and increase quality of life (Gard, 2005; Malmgren Ohlsson, et al., 2001; Mannerkorpi & Iversen, 2003). In patients with fibromyalgia, physical exercise interventions with moderate intensity reveal inconsistent results. In many research studies there seem to be difficulties with adherence to the programme. A metaanalysis concluded that there is limited evidence that aerobic training or strength and flexibility training produces important benefits in people with fibromyalgia in global outcome measures, physical function, and possibly pain and tender points (Busch et al., 2008). Best practice for the group of patients with fibromyalgia should include low-intensity aerobic exercise, such as walking or pool exercises, and strength training at adequate load. High-intensity exercise should be undertaken with caution (Mannerkorpi & Iversen, 2003). Multidisciplinary studies show that BBAT can increase health-related quality of life and be cost effective in comparison to traditional physiotherapy, but more research is needed (Gard, 2005).

Evidence for Patients With Anxiety, Depression and Posttraumatic Stress Disorders

The use of body-awareness therapies for persons with anxiety, depression and posttraumatic or stress-related disorders is well established in physiotherapy clinical practice in most Scandinavian countries. One of the most common physiotherapy treatments is BBAT. The Swedish National Guidelines (2010) lists BBAT as an additional treatment for patients in the diagnostic group of depression and anxiety (National Guidelines for Depression and Anxiety Disorders, 2010).

The evidence base for using BBAT in mental health is moderate as an add-on to usual treatment. Research focusing on patients with anxiety, depression, personality disorders and bodily symptoms in a randomized, and controlled design study in outpatient care revealed that the BBAT group had significantly less use of social services and psychiatric healthcare 1 year after the start of a 3-month intervention with BBAT in comparison to a control group who received psychiatric treatment as usual, but no body-awareness therapy. The treatment group also showed significantly improved self-efficacy, both after treatment and at follow-up at 6 months (Gyllensten et al., 2003a, 2009).

A single-site, three-armed randomized controlled study for patients (18–65 years old) with major depression was carried out. The study had two intervention groups (aerobic exercise and BBAT) and one control group. Results revealed aerobic exercise to significantly improve depression severity. The study also indicated both aerobic exercise and BBAT to have a significant

effect on self-rated depression in comparison to the control group (Danielsson et al., 2014). BBAT has also been assessed in a randomized pilot study for persons with eating disorders in addition to usual treatment. The researchers found significant improvements in the Eating Disorder Inventory in the subscales 'drive to thinness', 'body dissatisfaction' and 'ineffectiveness'. Also in the Body Attitude Test, Eating Attitude Test and the Short Form 36 significant improvements were found. The results should be viewed with caution, however, because the groups were very small (Catalan-Matamoros et al., 2011).

The evidence for BBAT as a treatment for patients with PTSD is still scarce. Presently there are several intervention studies going on, both randomized, controlled trials and submitted longitudinal studies indicating the effectiveness of BBAT on movement, experiences, PTSD symptoms and pain (Blaauweendraat, Levy-Berg & Gyllensten, 2017, submitted March 2016). BBAT has also been evaluated as a treatment for women who have been sexually abused. The researchers found that the effects of BBAT included symptom reduction, and improved self-image and self-love (Mattsson et al., 1998).

WHAT IS BBAT?

BBAT is a body and movement awareness method that has been developed in Scandinavia. BBAT aims at restoring body awareness and movement coordination, integrating physical, physiological, psychosociocultural and existential aspects (Skjaerven et al., 2008; Gyllensten et al., 2015). The aims of BBAT have previously been described as integrating the body into the total experience of the self (Roxendal, 1985; Mattsson, 1998; Gyllensten, 2001; Gyllensten et al., 2010; Skjaerven et al., 2010).

BBAT movements are inspired by everyday life situations, described in recent studies as the ability to use the body in a more stable, relaxed and coordinated way. The movement practice is carried out in different positions, such as lying, sitting, standing, walking and running. BBAT also includes practice with the voice and breathing, relational movements and massage. The movements are simple and the therapy focus is on the integration of both flexibility and stability in movements of daily life, to strengthen self-efficacy and increase the quality of life (Skjaerven, 1999; Skjaerven et al., 2015; Gyllensten et al., 2015). The therapy is also a way to strengthen the relationship with oneself, one's own body and the ability to relate to other persons (Gyllensten et al., 2010).

The Effects of BBAT on the Autonomic Nervous System

A study focusing on the immediate effects on heart rate variability (HRV) was performed in a group of healthy youths. The youths underwent assessments of the autonomic nervous system, both sympathetic and parasympathetic activity, before and after a BBAT session. After a session of BBAT immediate significant effects on HRV activity were found. This suggests that immediately following a session of BBAT there is an improvement of the functioning of autonomic control of both the vagal and sympathetic systems (Mantovani et al., 2016)

CENTRAL CONCEPTS

Body Awareness

Mehling et al. (2011) focused on the conceptualization of body awareness in order to better understand mind-body therapies. Leading practitioners and teachers of several body-awareness approaches and their patients were invited to participate in focus groups. According to the researchers, the practice in all the different body-awareness therapies consisted of basic similarities in their approach. These included (1) the use or role of breathing, (2) training and repetition, (3) noticing body sensations, discerning and differentiating changes in the body, thoughts and/or emotions, and (4) body-mind integration as the therapeutic goal (Mehling et al., 2011).

Breathing was seen as central and connecting the body and the mind. Breathing was connected to different experiences and to the quality of movements. A central skill that patients learn through training and repetition of the movements was the ability to notice sensations, thoughts and feelings as they occur. What is noticed might or might not be verbalized. The point was that the process of noticing, as well as the learning of differentiated noticing, were viewed by the practitioners as a path to integration (Gyllensten et al., 2009; Skjaerven et al., 2010; Mehling et al., 2011).

Movement Quality

The concept of movement quality has been focused on in BBAT. Skjaerven et al. (2008, 2010) have focused on and developed the concept of movement quality after in-depth interviews and focus groups with expert physiotherapists in a couple of phenomenological studies. The results revealed four different themes of movement quality. The first theme has been described as the biomechanical aspect, relating to space. The movement aspects focused on in this theme were related to path and form, e.g., postural stability. The second theme was the physiological aspect, relating to time. The aspects focused on were breathing and centring, visible in the flow, elasticity and rhythm of the movements. In the third theme the psychosocio-cultural aspects relating to energy, awareness and intention of the movements were found. The intention could contain both aspects of emotion and/or socio-cultural phenomena. The fourth and last theme was the existential aspect of movement quality relating to the person, either as self-awareness and/or the present person and unity in movements.

> *Movement quality mirrors a sense of being whole and unified: Through the contact with the body—there is something in the integration between mind and body and the coordination between them. To promote movement quality has much to do with becoming conscious of a whole. To contact and sense the body as a whole is important: then you develop a sense of a unity.*
>
> *(Skjaerven et al., 2008, p. 21)*

How the movement quality can be promoted in a 'learning cycle' has also been studied and described by the research team (Skjaerven et al., 2010).

WHAT CAN THE PHYSIOTHERAPIST SEE WHEN THE PATIENTS MOVE?

Analysis of Movement

The physiotherapist studies how the patient moves and assesses the patient's ability to be stable/balanced, coordinated, relaxed and vital in movements. This, together with the patient's goals and wishes, is used to build the BBAT treatment. There are several ways of assessing movements, posture and body awareness described in Chapter 4.1.7. In this section, however, the focus is not on the specific tests, but on what has been documented concerning motor performance, movement coordination, balance, stability and ability to relate to the body and the physiotherapist in the movement assessments. Everybody is unique, but there are certain common characteristics on a group level that have been documented in different studies of movement assessments.

Movements in Patients With Prolonged Pain

A study of 89 patients with long-standing hip osteoarthritis, consisting of 61 females and 28 males with an average age of 62.5 years (range 40–75 years) revealed that the patients used compensation strategies due to pain, stiffness and range of movement restrictions in daily life movements. This often led to the movements being done with too much effort and energy, and not integrating the breathing in the movements, which then became fatiguing and lacking in relaxation and ease. The stability and balance factors particularly correlated negatively with health-related quality of life measured using Short Form 36, the physical dimension (Sundén et al., 2016).

Steihaug et al. (2001) analysed the movements of women with long-standing pain. The researchers found that the women with fibromyalgia had problems moving freely, and instead carried their bodies very rigidly, especially their necks and backs. Their breathing was also found to be very controlled. The women experienced a lot of pain and also found it very difficult to move at all or to be physically active. Moving required much muscular effort. The researchers started a series of treatment with BBAT and discussions in a group setting. Training was directed at movements and experiences through the body rather than physical fitness and strength. This was very fruitful and the result revealed that the treatment led to less pain and less strenuous movements.

In summary, what does the physiotherapist see in patients with chronic pain?: In patients suffering from chronic pain there seems to be a problem of compensation and using too much energy and effort, tensing up and not integrating the breathing into movements. This can lead to movements being fatiguing, stiff and unbalanced. Physical activity is then not enjoyable and the

patient often does not like to move. Research studies reveal the pattern of the group, and, of course, individual differences are found. More research is needed.

Movements in Patients With Mental Illness

A study of persons suffering from schizophrenia spectrum disorders or bipolar disorders showed that the participants' movement coordination and breathing reached the highest proportion of difficulties. A majority (77%) reached a level of obvious to severe difficulties in the ability to use the trunk, integrated into movements, turning coordination around the central axis and gait coordination especially showed the highest levels of deviation. In balance and stability, 40% of the participants showed obvious to severe difficulties and 27% showed obvious to severe difficulties in the ability to relate both to their own body and to the physiotherapist. About a quarter of the participants had severe difficulties in the ability to be mentally present and aware in the movement test (Hedlund et al., 2016).

A study of persons with different mental health problems, mostly depression, anxiety and personality disorders, enrolled in physiotherapy rehabilitation revealed problems with trunk coordination and breathing restriction, blocking flow and relaxation. There were also significantly more problems in the ability to relate to their own body and to the physiotherapist in a movement test compared with a group of patients with chronic pain and a group of healthy controls (Gyllensten et al., 1999).

In summary what does the physiotherapist see in patients in psychiatry?: In the group of patients with psychiatric problems the physiotherapist can observe significantly more difficulties in the ability to relate to their own body and the physiotherapist, compared to groups of patients with prolonged pain and to groups of healthy controls. There also seem to be great restrictions in trunk coordination and breathing, resulting in disturbances of everyday motor functions. Stiffness and difficulties in relaxing were also found in the majority of patients. The coordination problems seem to be more common than the difficulties in balance and stability, although this was a problem for about half of the group. The research studies revealed the pattern of some patient groups. Of course, individual differences within the groups were found. Research on other groups of patents is presently ongoing.

STUDIES OF PATIENT EXPERIENCES

Several studies address the patient's perspective and experiences of body-awareness therapies.

The Experience of Identity

The meaning of body awareness has also been studied in a grounded theory context by interviewing both patients with mental health problems and healthy adults. The meaning of body awareness could be expressed as becoming more in contact with the body in order to strengthen one's identity and to experience oneself through being aware of the body from within. This awareness of oneself was influenced by the relationships with important others, but also by the larger context one is living within, e.g., society. The participants explained that the experience of body awareness was connected to the experience of one's own balance, how their breathing was and their sense of stability. The experience of the body, balance and stability of the physical self, on the other hand was found to be connected to the concept of well-being and control. To understand one's emotions and needs through the awareness of the body is seen as a base for self-confidence, trust in oneself, and the ability to take care of oneself and one's needs, both physically and mentally (Fig. 1).

Living in relation to others was a seen as a need, including bodily contact with another person/other people. Improved body awareness seemed to lead to being more satisfied and at peace with oneself, and participating more actively in life. Problems with body awareness seemed to be connected to a feeling of not being alive, of missing something important in life. The authors' conclusion was that working with the body in any physiotherapy practice should include an awareness of the body as inseparable from the identity (Fig. 2; Gyllensten et al., 2010).

Patients' Experiences of BBAT With Regard to Prolonged Pain

Patients with prolonged pain often lose their sense of trust and feelings of being at home in their own bodies. Rosberg (2000) takes the starting position in the lived body. Together with the physiotherapist and working in a respectful alliance, the patients are guided to regain the understanding of themselves, the

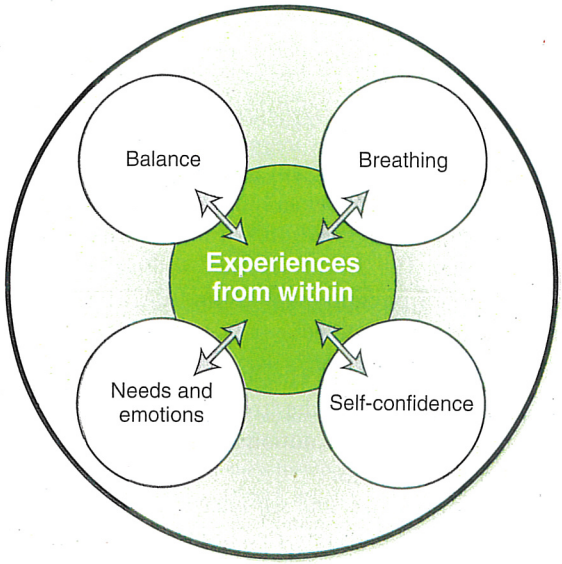


FIGURE 1 Embodied Identity—Living in the Body. *(Revised from Gyllensten et al. (2010) Physiotherapy Theory and Practice 27, 439–446.)*

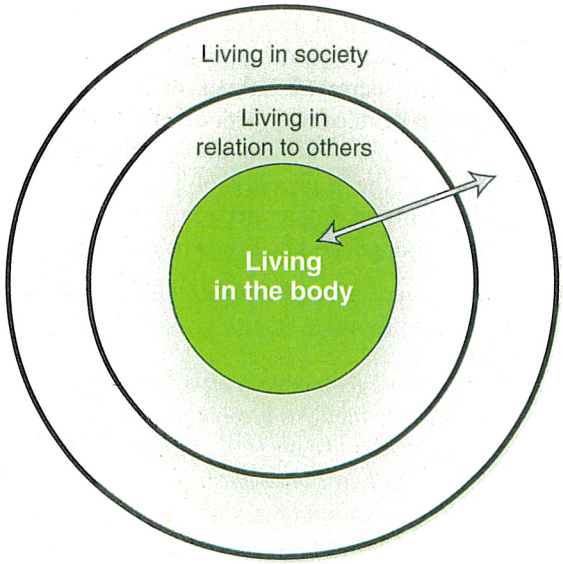


FIGURE 2 Theories of Body Awareness—The Embodied Identity. *(Revised from Gyllensten et al. (2010) Physiotherapy Theory and Practice 27, 439–446.)*

connection between their symptoms and their personal history.

Gustavsson et al. (2004) described the experiences of patients with fibromyalgia and/or long-lasting widespread pain after a multiprofessional rehabilitation programme including body-awareness therapy. Analysing in-depth interviews, they identified four core categories from 'shame' to 'respect'. Three categories described a positive development and one expressed negative factors. 'Developing body awareness/knowledge', was found as a start, followed by 'Setting limits' that led to 'Changing self-image'. The fourth factor contained the negative counterbalancing factors of 'Hopelessness' and 'Frustration over one's employment situation'. The authors claim that, 'with BBAT the informants learned to be aware of how to best use their bodies, as a way to 'check' the body, to find positions and balance, to avoid unnecessary muscle tension and to prevent deterioration'. The BBAT exercises were found to be helpful in relaxing and controlling pain.

> *'It has been very useful to me, just to drive the car, it used to be a horror to me. Like how to stand and walk, thinking about it all the time, letting your shoulders down …'*
>
> *(Gustavsson et al., 2004, p. 99)*

Patients' Experiences of BBAT in Psychiatry

The experiences of patients with different psychiatric diagnoses were studied. The following three core themes emerged after taking part in groups of BBAT for at least 6 months: increased awareness of one's own body and better knowledge of the self, threshold for taking part in time-consuming change, and relationships between oneself and others.

The process of strengthening the experience of the lived body pointed towards feelings of wholeness, and feeling more at home in themselves and in the group. The study indicated that BBAT groups contributed to better health, even though the design of the study limits the possibility to ascertain whether the changes were long-lasting (Johnsen & Råheim, 2010).

The experiences of patients suffering from major depression were studied in connection with a randomized controlled trial. The researchers concluded that the participants' experiences could be seen as a process of 'opening towards life'. The categories found were: 'vitality springing forth', 'grounding oneself', 'recognizing patterns in one's body', 'being acknowledged

and allowed to be oneself', and 'grasping the vagueness', exemplified by this quotation:

> *'It was when we were trying out the standing movements, there was something, I think it was when we rocked a little from side to side and then I came to think about what I did instinctively when I felt really bad. I used to sit rocking my whole body like this [rocks back and forth in the chair with arms crossed]. But that was unconscious, I didn't think about it or analyse it until now, but it, that was really comforting, that's why I did it … and the rocking, I don't know… as a child I used to love being in the swing. So I think that when I move like that, it calms me down, I can do it now [rocks again], just a little movement makes a difference.'*
>
> ***(Danielsson & Rosberg, 2015, p. 8)***

The experiences of BBAT in traumatized refugees have been studied qualitatively in connection with a randomized, controlled trial (not yet published). The authors describe the evolving themes: 'symptoms', 'behavioural change', 'the role of the PT' and 'exercises'. The quote chosen is connected to 'exercises', the category 'making sounds'.

> *'It was an amazing exercise because when you inhaled you would send oxygen to certain muscle groups through the lungs and when you afterwards exhaled with sound it would bring peace to the whole body and the mind. And you would be calm.'*
>
> ***(Madsen et al., 2015, p. 6)***

Patients' experiences of participating in a BBAT group have been studied. In one such study involving two patient groups—one in general psychiatric out-patient care and one in-patient group consisting of patients with schizophrenia—three different themes were found: 'personal involvement and the ability to practise oneself', 'improvement of balance and posture', 'awareness and handling of body signals' and 'body movement control'. The following quotation exemplifies the theme improvements in balance and posture (Gyllensten et al., 2003b).

> *'I felt good. I was standing still and did not lose my balance or anything like that. No, completely still. I was standing still and my arms were in a good place and my legs in a good place, then I will keep my balance.'*
>
> ***(Gyllensten et al., 2003, p. 178)***

The experience of long-term treatment with BBAT for patients with schizophrenia has been further studied. The patients had received BBAT for 2–7 years, averaging 3.3 years. The results revealed positive treatment experiences of physiotherapy using BBAT. Four main categories were identified:

1. *Affect regulation.* This category contained the experience that the treatment resulted in a change of the emotional state towards more positive feelings.
2. *Body awareness and self-esteem.* In this category the participants reported improvements in their ability to be mentally present, be better in contact with their bodies, their movement behaviour, postural balance and experienced improved sensory awareness.
3. *Effects described in a social context.* In this category the participants reported better coping strategies, increased feelings of integrity and ability to be in contact with others.
4. *Effects on the ability to think.* This category contained the experience of increased ability to concentrate, calmer activity in the brain, or clearer thought and ability to be awake.

The following quotation exemplifies the theme 'Effects on the ability to think'.

> *'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.'*
>
> ***(Hedlund & Gyllensten, 2010, p. 249)***

REFERENCES

Afrell, M., Biguet, G., Rudebeck, C.E., 2007. Living with a body in pain—between acceptance and denial. Scand. J. Caring Sci. 21 (3), 291–296.

Blaauwendraat, C., Berg, A., Gyllensten, A.L., in press 2017. One-year follow-up of Basic Body Awareness Therapy in patients with Post Traumatic Stress Disorder. A small intervention study of effects on movement quality, PTSD symptoms and movement experiences. Physiother. Theory Pract.

Busch, A., Schlater, C., Peoso, P., Bombadier, C., 2008. Exercise for fibromyalgia: a systematic review. J. Rheumatol. 35, 1130–1144.

Catalan-Matamoros, D., Skjaerven, L.H., Labajos-Manzanares, M.T., et al., 2011. A pilot study on the effect of basic body awareness therapy in patients with eating disorders: a randomized controlled trial. Clin. Rehabil. 25 (7), 617–626.

Chamaz, K., 1995. The body, identity and self: adapting to impairment. Sociol. Q. 36 (4), 857–880.

Danielsson, L., Papouilas, I., Petersson, E.L., et al., 2014. Exercise or basic body awareness therapy as add-on treatment for major depression: a controlled study. J. Affect. Disord. 168, 98–106.

Danielsson, L., Rosberg, S., 2015. Opening toward life: experiences of basic body awareness therapy in persons with major depression. Int. J. Qual. Stud. Health Well-being 10, 27069.

Fernadino, L., Iacoboni, M., 2010. Are cortical motor maps based on body parts or coordinated actions? Implications for embodied semantics. Brain Lang. 112, 44–53.

Gard, G., 2005. Body awareness therapy for patients with fibromyalgia and chronic pain. Disabil. Rehabil. 27 (12), 725–728.

Gustavsson, M., Ekholm, J., Öhman, A., 2004. From shame to respect: Musculoskeletal pain patients experience of a rehabilitation programme. A qualitative study. J. Rehabil. Med. 36, 97–103.

Gyllensten, A.L., Ekdahl, C., Hansson, L., 1999. Validity of the Body Awareness scale- Health (BAS-H). Scand. J. Caring Sci. 13, 217–226.

Gyllensten, A.L., 2001. Basic Body Awareness Therapy. (Dissertation). Department of Physical Therapy Lund University, Sweden.

Gyllensten, A.L., Ekdahl, C., Hansson, L., 2009. Long-term effectiveness of basic body awareness therapy in psychiatric out-patient care. A randomised controlled study. Adv Physiother 11, 2–12.

Gyllensten, A.L., Hansson, L., Ekdahl, C., 2003a. Outcome of basic body awareness therapy. A randomized controlled study in Psychiatric outpatient care. Adv Physiother 5, 179–190.

Gyllensten, A.L., Hansson, L., Ekdahl, C., 2003b. Patient experiences of basic body awareness therapy and the relationship with the physiotherapist. J. Bodyw. Mov. Ther. 7, 173–183.

Gyllensten, A.L., Skär, L., Miller, M., Gard, G., 2010. Embodied—A deeper understanding of body awareness. Physiother. Theory Pract. 27, 439–446.

Gyllensten, A.L., Skoglund, K., Wulf, I., 2015. Basal Kroppskännedom – Den levda kroppen. (Basic Body Awareness Therapy—The lived body). Studentlitteratur, Lund, Sweden.

Hagquist, C., 2010. Discrepant trends in mental health complaints among younger and older adolescents in Sweden: an analysis of WHO data 1985–2005. J. Adolesc. Health 46, 258–264.

Haynes, R.H., Devereau, P.J., Guyatt, G.H., 2002. Physicians' and patients choices in evidence based practice: evidence does not make decisions, people do. (editorial). Br. Med. J. 324, 1350–1351.

Hedlund, L., Gyllensten, A.L., 2010. The experiences of basic body awareness therapy in patients with schizophrenia. J. Bodyw. Mov. Ther. 14, 245–254.

Hedlund, L., Gyllensten, A.L., Waldegren, T., Hansson, L., 2016. Assessing movement quality in persons with severe mental illness—Reliability and validity of the Body Awareness Scale Movement Quality and Experience. Physiother. Theory Pract. 32, 296–306.

Johnsen, R.W., Råheim, M., 2010. Feeling more in balance and grounded in one's own body and life. Focus group interviews on experiences with basic body awareness therapy in psychiatric health care. Adv Physiother 12, 166–174.

Kamper, S.J., Apeldoorn, A.T., Chiarotto, A., et al., 2015. Multidisciplinary biopsychosocial rehabilitation for chronic low back pain: Cochrane systematic review and meta-analysis. Br. Med. J. 350, h444.

Lager, A., Berlin, M., Heimersson, I., Danielsson, M., 2012. Young people's health in Sweden: The National Public Health Report Chapter 3. Scand. J. Public Health 40 (Suppl. 9), 42–71.

Lundberg, M., Styf, J., Bullington, J., 2007. Experiences of moving with persistent pain—a qualitative study from the patients perspective. Physiother. Theory Pract. 23 (4), 199–209.

Madsen, T.S., Carlsson, J., Nordbrandt, M., Jensen, J.A., 2015. Refugee experiences of individual basic body awareness therapy and the level of transference into daily life. An interview study. J. Bodyw. Mov. Ther. 20, 243–251.

Malmgren Ohlsson, M., Armelius, K., Armelius, B.A., 2001. A comparative outcome study of body awareness therapy, feldenkrais, and conventional physiotherapy for patients with nonspecific musculoskeletal disorders: changes in psychological symptoms, pain, and self-image. Physiother. Theory Pract. 17, 77–95.

Mannerkorpi, K., Iversen, M.D., 2003. Physical exercise in fibromyalgia and related syndromes. Best Pract. Res. Clin. Rheumatol. 17 (4), 629–647.

Mantovani, A.M., Fregonesis, C.E., Lorençoni, R.M., et al., 2016. Immediate effect of basic body awareness therapy on heart rate variability. Complement. Ther. Clin. Pract. 22, 8–11.

Mattsson, M., Egberg, K., Armelius, K., Mattsson, B., 1995. Long-term effects of physiotherapeutic treatment in outpatient psychiatric care. Nord. J. Psychiatry 49 (2), 103–110.

Mattsson, M., 1998. Body Awareness – Applications in Physiotherapy. (Dissertation), Department of Psychiatry and Family Medicine, Umeå, University, Sweden.

Mattsson, M., Wikman, M., Dahlgren, L., et al., 1998. Body awareness therapy with sexually abused women. Part 2: Evaluation of body awareness in a group setting. J. Bodyw. Mov. Ther. 2, 38–45.

Mehling, W., Wrubel, J., Daubenmier, J., et al., 2011. Body Awareness: a phenomenological inquiry into the common ground of mind-body therapies. Philos. Ethics Humanit. Med. 6, 6.

National Board of Health and Welfare, 2010. National Guidelines for Depression and Anxiety- Support for Control and Management (in Swedish). Västerås, Artikelnr, pp. 3–4. ISBN: 978-91-86301-94-1.

National Board of Health and Welfare, 2013. Mental health in the young population. <https://www.socialstyrelsen.se/Lists/Artikelkatalog/.../2013-5-43.pdf>

National Registry of Evidence-Based Programs and Practices (NREPP). <http://nrepp.samhsa.gov>.

Phillips, C.J., Schopflocher, D., 2008. The Economics of Chronic Pain. In: Rashiq, S., Taenzer, P., Schopflocher, D. (Eds.), Health Policy Perspectives on Chronic Pain. Wiley Press, Weinheim.

Rosberg, S., 2000. Body, being and meaning in a physiotherapeutic perspective. (Dissertation). University of Gothenborg, Sweden.

Roxendal, G., 1985. Body awareness therapy and the body awareness scale, treatment and evaluation in psychiatric physiotherapy.

(Dissertation). Department of Psychiatry, University of Gothenburg, Gothenburg, Sweden.
Skjaerven, L.H., 1999. Bevegelseskvalitet—Å vaere seg self-mer fullt og helt. En fältstudie av en bevegelespraksis ved bevegelsepedagog og psykoterapeut Jacques Drposy, Paris. Master thesis. University of Bergen, Bergen, Norway (in Norweigan).
Skjaerven, L.H., Kristoffersen, K., Gard, G., 2008. An eye for movement quality: A phenomenological study of movement quality reflecting a group of physiotherapists' understanding of the phenomenon. Physiother. Theory Pract. 24, 13–27.
Skjaerven, L.H., Kristoffersen, K., Gard, G., 2010. How can movement quality be promoted in clinical practice? A phenomenological study of physical therapist experts. Phys. Ther. 90, 1479–1492.
Social Insurance Agency Sweden, 2015. <http://www.forsakringskassan.se/press/pressmeddelanden/sjukpenningtalet_i_juni_2015.>
Statistics Canada—A profile of disability in Canada. Statistics Canada, 89-577-XIE, 1-24. 2001 retrieved 16/06/04. http://www.statcan.gc.ca/pub/89-577-x/pdf/4228016-eng.pdf.
Statistics Sweden, 2015. <https://www.forsakringskassan.se/!ut/p/a0/LccxEkAwEAXQsyhSJxiNzi1IY3ZkhxBfJtlwfQrVm6etHrUF3X4l8RcofJ-e5ewjyabqdlBmuSAMyaxMTJzzz8nOcSA4hjJ5L0dkwGMVCizzTiiU_NyYutPxGKoXofta8Q!!/.>
Steihaug, S., Ahlsen, B., Malterud, K., 2001. From exercise and education to movement and interaction. Treatment groups in primary care for women with chronic muscular pain. Scand. J. Prim. Health Care 19, 249–254.
Strömbäck, M., Malmgren-Olsson, E.B., Wiklund, M., 2013. 'Girls need to strengthen each other as a group': experiences from a gender-sensitive stress management intervention by youth-friendly Swedish health services – a qualitative study. BMC Public Health 13, 907.
Sundén, A., Ekdahl, C., Horstman, V., Gyllensten, A.L., 2016. Analyzing movements development and evaluation of the body awareness scale movement quality (BAS MQ). Physiother. Res. Int. 21, 70–76.

5.1.5 Physiotherapy for Patients With Nonspecific Chronic Low Back Pain and Comorbid Mental Illnesses

EMANUEL BRUNNER ■ WIM DANKAERTS

SUMMARY

Mental illnesses are highly prevalent in people suffering from nonspecific chronic low back pain (NSCLBP). Complex patients with NSCLBP and comorbid somatization, depression and anxiety disorders are often seen by physiotherapists in outpatient practices. In this clinical setting the support of clinical psychologists and psychiatrists is often limited. Physiotherapists are therefore challenged to integrate psychological principles and strategies into their clinical management. This chapter provides a brief overview of biopsychosocial assessment and treatment strategies relevant for a patient-centred intervention for patients with NSCLBP and comorbid mental illnesses.

KEY POINTS

- The prevalence of comorbid somatization disorders, anxiety and depressive disorders is high in people suffering from nonspecific chronic low back pain (NSCLBP).
- Maladaptive cognitions, negative emotions and dysfunctional pain behaviours are important barriers for the recovery of NSCLBP.
- Cognitive behavioural therapy (CBT)–based strategies are promising for modifying maladaptive cognitions that influence patients' emotions, behaviours and bodily experiences.
- Physical exercise has a large antidepressant effect in patients with mental illnesses.

LEARNING OBJECTIVES

- Review the dominant factors associated with the development and maintenance of chronic pain and disability due to NSCLBP and understand potential interactions between the contributing factors.
- Describe and explain the importance for patients with chronic pain to remain physically active.
- Discuss criteria to consider when integrating aerobic exercises for patients with complex NSCLBP into clinical practice.

BACKGROUND

Psychosocial factors and psychopathologies play an important role in nonspecific chronic low back pain