



Survey

Pain requires processing – How the experience of pain is influenced by Basic Body Awareness Therapy in patients with long-term pain



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ARTICLE INFO

Article history:

Received 29 January 2019

Accepted 2 February 2019

Keywords:

Basic body awareness therapy

Chronic pain

Pain management

Physiotherapy

ABSTRACT

Background and purpose: Long-term pain is common and entails large costs to society. One physiotherapy treatment with documented positive effects for patients with long-term pain is Basic Body Awareness therapy (BBAT). However, studies are lacking about patients' experience of BBAT's influence on their pain. Therefore, the aim of this study was to investigate how patients experience BBAT's influence on their long-term pain.

Methods: For this qualitative interview study, participants were selected from two supervised BBAT groups. To qualify for the study, participants had to meet two inclusion criteria: having pain for at least 6 months, and attending BBAT for at least 6 months. Six females between the ages of 25 and 61 years were included. Pain duration ranged from 9 to 20 years, and duration of practicing BBAT ranged from 8 to 120 months. Semi-structured interviews were conducted and qualitative content analysis was performed.

Results: The analysis revealed four main categories of BBAT experience: *increases motivation, requires processing, increases control over pain and changes attitude to oneself, body and pain.*

Discussion: Patients with long-term pain experienced BBAT as being helpful in processing their pain because they were forced to face the pain instead of trying to ignore it. Participants experienced a decrease in pain through development of an increased sense of control as well as a changed attitude to themselves, their bodies and their pain. It is important for physiotherapists to understand that pain can increase during BBAT and to support the patients in this process during the therapy.

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1. Introduction

Many patients suffer from long-term pain. The prevalence of long-term pain in Sweden is 18% when long-term pain is defined as more than 6 months in duration and higher than 5 on a 10-point Numeric Rating Scale (1 = no pain, 10 = worst pain imaginable) (Breivik et al., 2006). The condition is complex and has been explained from different perspectives. From a physiological perspective, long-term pain is attributable to a decreased pain threshold in the peripheral nervous system and increased sensitivity in the central nervous system (Woolf and Salter, 2000). The biopsychosocial model divides the experience of pain into physiological, cognitive, emotional and behavioural aspects (Engel, 1977), suggesting that thoughts, emotions and behaviour are also important to the experience of pain. The Fear-avoidance model (Vlaeyen

and Linton, 2000) argues that pain can result in a fear of movement that leads to inactivity and more pain. The model further asserts that if fear can instead be avoided and the pain confronted, chances of reducing the pain increase.

In Sweden, multimodal rehabilitation is recommended for patients with long-term pain (SBU, 2006). The pain usually develops over a long period, and therefore rehabilitation also is a long-term process. Physical treatments with active participation bring more pain relief compared with passive treatments (Bronfort et al., 2001; Kankaanpää et al., 1999). For patients with long-term pain, it is common for healthcare providers to find “nothing wrong”. In the physiotherapeutic examination it is possible to identify physical signs of imbalance in these patients in terms of changes in posture, shallow breathing, tense muscles and poor balance (Steihaug 2005). The changes may have a biomechanical origin, but include psychological aspects as well. In Sweden, a common physiotherapeutic method for treating long-term pain is Basic Body Awareness Therapy (BBAT).

According to BBAT theory, humans exhibit four dimensions of

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existence: physical, physiological, psychological and existential. Since the four dimensions affect each other, a disorder or improvement in one dimension affects the others (Dropsy, 1973, 1984). With body awareness, the body and mind are integrated as an inseparable unit. The purpose of BBAT is to develop body awareness and to strengthen its basic functions of grounding, centre line, centring, breathing, flow, mindfulness and related items (Gyllensten et al., 2010; Roxendal, 1985; Roxendal and Nordwall, 1997; Skjaerven et al., 2003).

In a typical BBAT session, basic exercise is performed using everyday movements such as standing, walking, running, jumping, sitting, rising or lying on the floor. The movements are adapted and aim to attract the most optimal, basic and functional way of using the body. During the group session, each person exercises on the basis of their own prerequisites and in the group context, there is also room for reflection and sharing experiences with the other participants. The physiotherapist adjusts the movements according to each individual's needs and guides with both words and hands (Gyllensten et al., 2003a).

The results of a meta-analysis including 29 studies showed that different kinds of body awareness therapies have positive effects on long-term pain (Courtois et al., 2015). For patients suffering from whiplash-associated disorders, BBAT was superior to exercise therapy in terms of pain, social and physical function (Seferiadis et al., 2016). In patients with long-term pain, BBAT produced greater improvement in both physical and mental health compared with traditional physiotherapy treatment (Malmgren-Olsson et al., 2001). BBAT has also shown positive effects for patients with fibromyalgia, psychiatric diagnosis, osteoarthritis, irritable bowel syndrome (IBS) and eating disorders (Bravo et al., 2018; Catalan Matamoros et al., 2011; Eriksson et al., 2002; Gyllensten et al., 2003a; Olsen et al., 2017). In psychiatric care there has been a growing interest in the experience of BBAT. Patients and physiotherapists have described the core of BBAT as increased body awareness, deeper knowledge of physical and mental needs and increased self-confidence (Gyllensten et al., 2003b; Hedlund and Gyllensten, 2010, 2013; Johnsen and Råheim, 2010). In other body awareness therapies, such as yoga and Norwegian psychomotor therapy, the patients' experience of the treatment's influence on pain have been studied (Dragesund and Råheim, 2008; Tul et al., 2011). Participants in these studies have described increased body awareness and a sense that their pain is easier to control and accept. However, knowledge of BBAT's influence on long-term pain seems to be missing. Therefore, the aim of this study was to investigate how patients experience BBAT's influence on their long-term pain.

2. Methods

2.1. Participants

Convenience sampling was used to recruit participants with long-term pain and experience of BBAT. They were recruited from a pool of active participants in two on-going BBAT groups within primary health care in Gothenburg. In the groups, BBAT had been individually adapted for each patient in terms of instructions, posture and movements. The two supervisors of the groups were informed about the study and the protocol for the participants. They provided verbal information for the groups and written information for the individuals that expressed interest in participating. Inclusion criteria were: pain lasting a minimum of 6 months; pain being the initial reason for participation in the BBAT group and at least 6 months of participation in BBAT. The 6-month participation criterion was set to ensure that the participant had sufficient time to experience some effects of BBAT. The single

exclusion criterion was having a severe psychiatric disorder.

A total of 17 persons were presented with verbal and written information. Seven volunteered, but one later declined, leaving six participants. All were women, aged 25 to 61 (median 29) years, with pain durations between 9 and 20 (median 14.5) years and length of practicing BBAT between 8 and 120 (median 21) months. Five participants were still practicing BBAT; one had recently ended her practice.

2.2. Data collection

Data were collected with semi-structured interviews (appendix 1). To avoid possible bias, two interviewers who had no experience supervising BBAT were chosen. All the interviews were introduced by describing the aim of the study and opened with the following question: "Can you tell me about your first BBAT session?" An interview protocol was prepared and each interviewer conducted a pilot interview to assess the relevance of the interview protocol. All interviews lasted 40–60 min. Five participants were interviewed in Swedish and one in English. The interviews were recorded and transcribed verbatim.

2.3. Ethics

Written informed consent was obtained from all participants. The questions posed were not regarded as sensitive in nature. No information about the participants' disorder or personal identity was solicited and no register of the participants was built, thus no application to the Regional Research Ethics Committee was required, according to the standards.

2.4. Data analysis

Qualitative content analysis (Graneheim and Lundman, 2004) was chosen as the method for examining the data. It is an inductive and well-established method in physiotherapy for seeking new knowledge about a treatment from the participants' perspective. To avoid possible bias, data analysis was performed by the two interviewers who had restricted knowledge of BBAT. Data analysis started with reading through the interviews several times to obtain an overview of the material. The text was then divided into meaning units that later were condensed. The condensed meaning units were coded, categorised and subcategorised according to their manifest content. Finally, the underlying meaning (latent content) of the categories was developed into themes through a process of reflection, abstraction and interpretation. In this last stage of analysis the two authors with more experience of BBAT also participated. The analysis process is presented in Table 1.

All communication during interviews involves some degree of interpretation, which in turn involves one's pre-understanding. The interviewers' pre-understanding involved interest in the phenomenon of long-term pain, interest in body awareness therapies, and personal experience of long-term pain. The entire process was supervised by a researcher and a physiotherapist with experience of supervising BBAT groups.

3. Results

The analysis provided four main themes: BBAT (1) *increases motivation*; (2) *requires processing*; (3) *increases control over pain*; and (4) *changes attitude to oneself, body and pain*. The results are presented in Table 2 in terms of subcategories, categories and themes. Some subcategories are clarified with a descriptive quote to give a more expressive picture.

Table 1

Example of the application of qualitative content analysis to interview data.

Meaning unit	Condensed meaning unit	Code	Subcategory	Category	Theme
"It's like the only hour in the week I completely dedicate myself to my pain. I mean, remaining hours in the week I do what I can to handle it, it is still there but you shall ignore it and put it in the pocket ... here at BBAT shall I deal with this bastard"	"BBAT is the only time I dedicate to my body, because of pain. Remaining time I just ignore my pain but at BBAT I have to deal with it."	Face the pain	Stops trying to ignore the pain	Face the pain	Requires processing

Table 2

Themes, categories and subcategories that illustrate the results.

Theme	Category	Subcategory
Increases motivation	New approach to treatment	Treatment without pharmaceuticals Different to other training experiences Training without right and wrong
	Confidence towards the treatment	Develops an understanding of the pain Perceives effect of treatment Experiences intense bodily reactions
	Support from group and leader	Feels confirmed and understood in their pain Seeing others in same situation gives comfort
Requires processing	Mentally present	In contact with the body Being present in the moment
	Face the pain	Stops trying to ignore the pain Practicing BBAT can increase pain
	Commitment towards the treatment	Accepts the long-term treatment Practices regularly
Increases control over pain	Control of boundaries	Increases knowledge of boundaries Starts to set boundaries Acknowledges existing boundaries
	Independent pain management	Prevents the pain before it arises Handles the pain when it arises
	Deeper understanding of the pain	Increases understanding for the cause of the pain Learns which situations aggravate the pain Pain management strategies gives everyday security
	Mindful of the body	Starts listening to bodily signals Notices and adjusts muscular tensions Understands bodily warning signals
Changes attitude to oneself, body and pain	To oneself	Accepts personal flaws Starts being forgiving to oneself Overcomes the shame over the pain
	To the body	Reconnects the body and self Affects the attitude towards the body positively
	To the pain	Accepts that the pain exists Considers the pain as a part of oneself Stops letting pain control life More optimistic about a pain-free future

3.1. Theme 1: Increases motivation

The participants described that practicing BBAT increased their motivation to manage their pain. Factors that contributed to this change were the new approach to treatment, the confidence they felt towards the treatment and the support they got from the group and leader. They also expressed that BBAT was different from all other health care treatments they had tried previously. One aspect of the difference was BBAT's non-pharmaceutical nature.

"I was so excited over the feeling that maybe I actually can improve or decrease my pain without taking medicine. I felt that I had to continue with this and see where it could lead."

Early on, the participants developed confidence in the treatment. They reported that the intense bodily reactions during BBAT contributed to this confidence. Even if they created discomfort, these bodily reactions made participants understand that somehow something repressed in the body was being affected.

"I also realized that this discomfort was a physical reaction to something. It made me think that there is something useful with sitting like this even if it feels really silly. Obviously, something is happening."

Indirect and direct support from the group and leader contributed in several ways to increase motivation for the treatment. One aspect of this support was that it not only validated a participant's pain, but also conveyed understanding of how it is to live with the pain.

"On the one hand I think it's the confirmation that I'm in pain. There is at least one person in health care who doesn't laugh at it or think that I should stop whining."

3.2. Theme 2: Requires processing

The participants described that a central element in BBAT is its requirement to process the pain. Regarding the process, it was deemed beneficial to be mentally present, face the pain and be committed to the treatment. One aspect of being mentally present was to be in contact with one's body.

"You have to be present in your body, mentally. And very often you're not. The rest of the hours in the week, the body is a tool. Which is a shame, because then you often ignore the body. Or at least I often do that."

Many participants thought that it was important to face the pain during BBAT instead of trying to ignore it. In their experience, the pain sometimes increased during the training; some even felt that it needed to be painful.

"I can't say that the pain always goes away; usually it increases instead, because I start to address something that hurts more. But then it's also like I start to straighten out and process something, somehow."

Being committed to the treatment was something that the participants considered important for being able to benefit from the treatment. To accept that the rehabilitation was a long term process helped the patients to stay committed.

"Maybe you must accept that it takes some time. If you have acted in a certain way for a very long period, then it's obvious that you may need several years to get rid of it."

3.3. Theme 3: Increases control over pain

BBAT helped the participants to increase control over their pain. They developed a deeper understanding of their pain and learned how to manage it. It also seemed important to the participants to become more mindful of their bodies and to control personal boundaries. The participants felt that this new knowledge of their boundaries encouraged boundary setting in daily life.

"BBAT has helped me to express my boundaries. I've always done a lot that others want and I've never said what I think or stuff like that."

All participants in the study described how they learned to handle pain in different ways through BBAT. One aspect of handling pain was that they could prevent the pain before it arose.

"When I was in a stressful situation at work, I became tense. One way to be more comfortable is to notice and change the way I sit. Previously, I had become even more tense and uncomfortable and maybe I couldn't change it until the meeting was over. Now, I can tell myself to relax and then I don't have as much pain as I did before."

Another contribution to the participants' experience of increased control was a deeper understanding of why and in which situations the pain occurred. Several participants described the importance of learning to identify factors that increased pain.

"I had no idea about the psychological aspect of pain before I started BBAT. I've always thought that if it hurts somewhere, it's because something is wrong right there. I've never even thought that stress could have anything to do with my pain at all."

The participants explained that BBAT had made them more conscious of their bodies. They developed the ability to notice and adjust small muscular tensions and to understand the warning signals from their bodies. One thing that they experienced from the beginning of treatment was that they had started listening to their bodies.

"I sort of started to listen more to my body. Previously, I just turned it off and kept on moving. I turned everything off. I didn't notice my feelings and tried to ignore everything I felt. It's like a new experience to listen to it."

3.4. Theme 4: Changes attitude to oneself, body and pain

During the interviews the participants described that BBAT had given them a changed attitude to themselves, their bodies and their pain. The changed relationship to themselves was that they looked at themselves more positively. One side of this was that they could accept their flaws more easily.

"BBAT made me dare to talk about things, like that I'm not so damn perfect. It always has been very important for me before to be strong and good."

The changed attitude to themselves also helped participants overcome the shame associated with pain.

"I don't feel ashamed about my pain. I don't think there is something wrong with me, like I did before. I thought that I wasn't like everyone else. The pain caused many thoughts that now have faded away."

Some of the participants had previously seen their bodies as something that did not belong to them. The training challenged their relationship to their bodies and helped them to reconnect the body and self into one unit.

"I haven't connected my body to my strong ego, neither as much or as well before. I work on that part, to see that I am ... Everything is me ... But there is a long way to go."

The training also changed their attitude to their pain. Participants reported that it was possible to influence how much their pain was allowed to affect everyday life. It was important to stop letting their pain control life.

"Firstly, I feel that pain in general has decreased. And secondly, my experience has changed in a way that I don't think about the pain as incapacitating, it doesn't stop me. Altogether, I may have even more pain, but I can still do more things than I could before."

4. Discussion

4.1. The appearance of bodily reactions

The self-determination theory suggests that an individual can feel either an outer or an inner motivation (Deci and Ryan, 1985). Outer motivation is about acting to attain results, while inner motivation is about acting according to our own interests and is regarded as the most self-determined. The present study indicates that it is not unusual to initially be skeptical towards BBAT and to participate mainly because of outer motivation factors, i.e. to manage pain. Since BBAT is a demanding treatment, outer motivation alone is likely to be insufficient. The participants described how they developed a model for understanding their pain, perceived effects of the treatment and experienced intense bodily reactions. These factors are important for developing an inner motivation and could be regarded as essential to continue practicing.

Participants expressed how bodily reactions, such as intense crying or great discomfort, often appeared during BBAT. After these types of reactions, the participants felt at ease, as if they subconsciously had processed something that was hard to describe. A somatization disorder theory explains how severe psychosocial pressure can create symptoms in the body to unburden the brain and gain a mental balance (Kapfhammer, 2001). When pain is

faced during BBAT, referred pain in the body may become conscious in the mind again. This increased mental pressure creates a mental imbalance that manifests as the strong bodily reactions such as those that the participants experienced. It is only when the mental issues are processed that the bodily symptoms can disappear. This process seems to happen subconsciously; only bodily reactions were experienced consciously.

4.2. Requires conscious and subconscious processing

The idea that BBAT requires conscious and subconscious processing of pain has not been discussed in earlier studies, but may be an important part of the treatment. For such processing to occur, the participants had to face the pain, be mentally present in both the moment and the body and also show commitment by practicing regularly and accepting the long-term nature of the treatment. In the “Fear-avoidance” model (Vlaeyen and Linton, 2000) confrontation is an important step towards recovery. This model supports the present study's findings that a central part of BBAT's influence on pain is that participants stopped trying to ignore their pain and started facing it.

Our findings are in line with a previous study in psychiatric care, where physiotherapists using BBAT noted that it could produce anxiety, and that courage was required to face those feelings (Hedlund and Gyllensten, 2013). Early in the BBAT treatment, the physiotherapists believed that patients' motivation would be increased if the experience of practicing was comfortable. This is contrary to the sentiments expressed by the participants in the present study; painful reactions actually increased their motivation. However, the experience of increased anxiety and pain during BBAT can also frighten away patients (Hedlund and Gyllensten, 2013). To prevent frightening away patients, therapists could inform patients that facing pain often brings increased discomfort or pain, but appears necessary for changing one's way of looking at pain and for increasing control over it.

4.3. Managing pain contributes to control in life

From the interviews, it appeared that practicing BBAT increased the participants' feeling of control over pain, which also contributed to more control over their lives in general. They became more comfortable setting boundaries in different contexts of life. Stress-related problems often originate from excessive workloads, insufficient recovery and overstepping of one's personal boundaries (Ursin, 1995). If these boundaries are not respected, the body can respond with physical symptoms such as tense muscles and shallow breathing. This may explain why boundary setting appeared to be important for the participants. BBAT seems to be a process wherein patients first learn how their boundaries work and then become capable of setting and accepting those boundaries.

BBAT is an active treatment that helps independent pain management. The interviews revealed that not having a method for managing pain caused a lot of stress; this is in line with earlier findings (Tul et al., 2011). During BBAT the participants developed tools, in the form of simple movements, which helped them handle pain in everyday situations.

4.4. Understanding the connection between the body and mind

BBAT affected the participants' attitude to themselves, their bodies and their pain. They started to understand the connection between the body and mind; i.e. that psychological processes such as stress might cause physical effects in the form of tension and pain. This non-dualistic approach has previously been described in

philosophy (Merleau-Ponty, 1962) and body awareness therapies (Dropsy, 1973; Roxendal, 1985). Several of the participants in our study have distanced themselves from their bodies and pain. For some of them, this decoupling had reached the point where they saw the pain as another being, external to themselves. Similar findings show that it is difficult for patients with long-term pain to integrate with their aching bodies (Afrell et al., 2007). The participants in our study experienced BBAT as helpful for seeing the body and pain as parts of themselves and not as external entities.

Another aspect of the attitude to the body was that the participants developed a positive image of their body and pain, which is in line with a study of Norwegian Psychomotor Physiotherapy (Dragesund and Råheim, 2008). It is possible that this is a two-step process, where the first step is to connect and create a relationship to the body and pain, and the second step is to improve this relationship. This may be necessary for accepting pain and not allowing it to control one's life.

4.5. Strengths and limitations

Since the aim of the study was to investigate how patients with long-term pain experienced BBAT's influence on pain, a qualitative approach was deemed adequate. The convenience sampling aimed to obtain homogeneity in terms of the shared experience of participating in BBAT because of pain, and heterogeneity in terms of the cause of pain. This brought variations in perspectives and experiences, which was intended to strengthen the credibility of the results (Graneheim and Lundman, 2004). To achieve consistency in the data collection, pilot interviews were conducted, a semi-structured interview protocol was used and the same question initiated all interviews. To strengthen the credibility of the data, analyses were completed in close interaction with a researcher and a physiotherapist with experience of supervising BBAT, both of whom contributed guidance and knowledge.

A limitation of this qualitative approach is the difficulty in generalizing results to other populations (Graneheim and Lundman, 2004). The present study involved six participants. This can be regarded as a small sample, but it enabled deep probes of a narrow set of questions to produce rich responses. All study participants were women between 25 and 61 years old. It is possible that other findings might appear in a study population with a different background or setting. We believe that the themes in our results can contribute to deeper understanding of the process during BBAT. However, the extent to which these themes generalize to other populations must be judged by the reader. The participants in this study had deep experience of BBAT and its positive effects on long-term pain and several were still active with the treatment. This can possibly limit the study since their view of this therapy might differ from those who stopped practicing. On the other hand, it is likely that without this depth of knowledge among our participants, the aim of the study would not have been achievable.

5. Conclusion

Patients with long-term pain, having participated in supervised BBAT for at least 6 months, experienced that the treatment helped them to process their pain, as they were forced to face it instead of trying to ignore it. Experience of pain intensity seemed to decrease through the development of increased control over the pain and a changed relationship to themselves, their bodies and the pain.

5.1. Implications for physiotherapy practice

Knowledge from the study can be used to explain how participation in individually adapted BBAT influences pain, and how to

motivate patients to continue with the therapy. It is important for physiotherapists supervising BBAT to understand that pain may increase, and to support this process during the therapy.

Author contributions

The authors of this study have contributed as follows: AL, AR and ABS participated in study conception, study design, acquisition, data analysis, interpretation of data and manuscript writing; KM participated in study conception, study design, data analysis, interpretation of data and manuscript writing. AL and AR drafted the first version of the article, while ABS and KM contributed by revising it critically for important intellectual content. All the authors approved the final version of the article. No declarations of interest.

Conflicts of interest

No declarations of interest.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Appendix 1

Questionnaire: Semi-structured. Opening question.

- Can you tell me about your first BBAT session?
- How did it feel for you?

Questions about pain

- How do you experience that BBAT has influenced your pain?
- Is there anything you have learned or experienced through BBAT that has influenced your pain?
 - Physical?
 - Psychological?
 - Social?
- Why do you think BBAT helps against your pain?
- Would you recommend BBAT to others with (long term) pain? Why?
- Has your pain ever limited you in your life? Do you experience that BBAT has had an impact on your limitations?

During or after training.

- Has your pain changed during, or close to a BBAT training session? How?
- In what way do you experience that your pain has been influenced in the long-term?

Approach to body and pain.

- How does the body feel when practicing BBAT?
- Has BBAT changed your approach to your body in any way?
- Has BBAT changed the way you used to think about what's hurting in your body?

Other.

- Can you tell us about a memory from BBAT?
- What is your view of BBAT?

- Have you thought about anything else before this interview?

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