Western Norway University of Applied Sciences

MASTER'S THESIS

"How we move influence how we feel"

Movement awareness in physiotherapy movement interventions addressing musculoskeletal pain: A systematic review of qualitative studies on patients' experiences

"Våre bevegelsesvaner påvirker hvordan vi har det"

Bevegelsesnærvær i fysioterapi i behandling av muskel-skjelettsmerter. En systematisk oversikt av kvalitative studier basert på pasientens erfaringer.

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Submisjon date: May 14th 2018

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Submisjon date: May 14th 2018

Number of pages: 13 659

Preface

«Not everything that can be counted counts,
and not everything that counts can be counted. »
(Cameron, 1963)

After working over 20 years as a physiotherapist both in the somatic and psychiatric fields I have had the privilege to meet a lot of fantastic patients and colleagues that has challenged me and motivated me to search for more knowledge and clinical skills. This also led me into writing this master in Evidence Based Practice. I have gained a lot of knowledge about research and how to implement research in our clinical work. The school warned me that systematic reviews on qualitative research is challenging, but I am happy for my choise and for taking this challenge. Unfortunately, I had to take a one-year break and now I am extremely happy that I managed to get back into the project and that it now is completed.

I have a lot of people to thank for their support in this project. My supervisors Lillebeth Larun and Liv Helvik Skjærven who has willingly shared of their exceptional knowledge, giving me advice and supported me the whole way.

I also want to thank my colleagues at Telemark Hospital for their support, and specially my leader, Caroline Torskog, for being so supportive and positive, always searching for solutions. Also, thanks to all my BBAT colleagues for their interest and discussions, and for all their professional contribution to physiotherapy, including Anne Parker, who helped with the language.

The staff at HVL, including librarian Gunhild Autrheim, has been inspiring and helpful, and I thank you all for your support. And of course, all my fellow students at MAKP 2013, for sharing and motivating from the start, I am thankful for all of you.

A special thanks to Signe Haugen who dived into the qualitative research together with me; for all our discussions and your help with selection of studies. Your enthusiasm was of great value to me when the project seemed heavy.

Finally, I want to thank my loving family for their support and patience; Dag for believing in me, listening to all my worries and taking care of everybody, and mom for all her good meals. I made it!

Anne Marie Böhme Hetlevik Porsgrunn 12.05.2018

ABSTRACT

Background: Musculoskeletal pain is one of the main contributors to sick leave and reduced daily-life functioning. The primary role of the physiotherapist is to promote functional movement. Physiotherapy interventions focusing on movement awareness are used to address musculoskeletal pain.

Objective: To synthesize the existing knowledge and provide insight into how patients with musculoskeletal pain experience physiotherapy movement interventions that focused on movement awareness.

Method: A systematic review of qualitative studies was conducted. Six electronic databases were searched for empirical qualitative studies investigating experiences from patients with musculoskeletal pain on physiotherapy movement interventions focusing on movement awareness. Two researchers independently assessed the identified studies for inclusion. Methodological quality of the included studies was assessed. Meta-ethnography was used to synthesizing the data across the studies and for a second-order interpretation of the original findings. Finally, a lines-of-argument synthesis was conducted.

Findings: 1484 unique studies were identified. Eight studies were included, all assessed to have high methodological quality. The studies included a total of 87 participants from both psychiatric and somatic settings. From the movement awareness training, patients experienced new possibilities for their movements and body, and more functional movement habits were integrated in daily life. The new movement strategy led to relief of tension, reduced pain and more vitality. A clearer sense of "the self "was experienced to strengthen them in relating to others. Improved self-efficacy opened for finding more balanced strategies for taking care of both themselves and others. A model was developed illustrating the process of change during treatment.

Conclusion: Patients experienced movement awareness training beneficial for improvement on pain and function in daily life. The process of change reflected a salutogenic perspective, involving the whole person in promoting own health and well-being and activating own resources for more functional movement quality.

Key words: Movement awareness, physiotherapy, musculoskeletal pain, meta-ethnography

Number of words: 300

Sammendrag

Bakgrunn: Muskel-skjelettplager er en av de viktigste bidragsyterne til sykefravær og redusert funksjon i dagliglivet. Fysioterapeutens primære rolle er å fremme funksjonelle bevegelser. Tiltak der utviklingen av bevegelsesnærværet er sentralt brukes til å behandle muskel-skjelett smerter.

Hensikt: Å oppsummere den eksisterende kunnskapen og gi innsikt i hvordan pasienter med muskel-skjelettplager opplever fysioterapi der oppmerksomt nærvær i bevegelsene er i sentrum.

Metode: En systematisk oversikt over kvalitative studier ble utført. Søk ble utført i seks elektroniske databaser etter empiriske kvalitative studier som undersøkte pasienter med muskel-skjelettplager sine erfaringer med fysioterapi med fokus på oppmerksomt nærvær i bevegelsene. To forskere vurderte uavhengig av hverandre de identifiserte studiene for inkludering. Metodisk kvalitet av de inkluderte studiene ble vurdert. Meta-etnografi ble brukt til å syntetisere dataene fra studiene og til en andreordens fortolkning av de opprinnelige funnene. Til slutt ble det utført en tredje ordens analyse.

Funn: 1484 unike studier ble identifisert. Åtte studier ble inkludert, alle vurderte å ha høy metodisk kvalitet. Studiene inkluderte totalt 87 pasienter fra både psykiatriske og somatiske settinger. Resultatene viste at pasientene gjennom trening av bevegelsesnærvær erfarte og fikk innsikt i egne bevegelsespotensialer og kroppslige ressurser, og mer funksjonelle bevegelsesvaner ble integrert i bevegelser i hverdagen. De opplevde forandringen som en prosess som førte til redusert smerte og økt vitalitet. Gjennom økt kontakt med seg selv som en helhet opplevde de seg styrket i relasjoner og de erfarte å ha utviklet mestringsstrategier hvor de bedre kunne ivareta både seg selv og andre. En modell ble utviklet for å illustrere forandringsprosessen under behandlingen.

Konklusjon: Pasientene erfarte at fysioterapi med fokus på bevegelsesnærvær førte til redusert smerte og bedret funksjon i dagliglivet. Forandringsprosessen hadde et salutogent perspektiv som involverte hele personen i å fremme egen helse og utvikle egen bevegelseskvalitet med mer funksjonelle bevegelsesvaner.

Nøkkelord: Bevegelsesnærvær, fysioterapi, muskel-skjelettplager, meta-etnografi

Antall ord: 299

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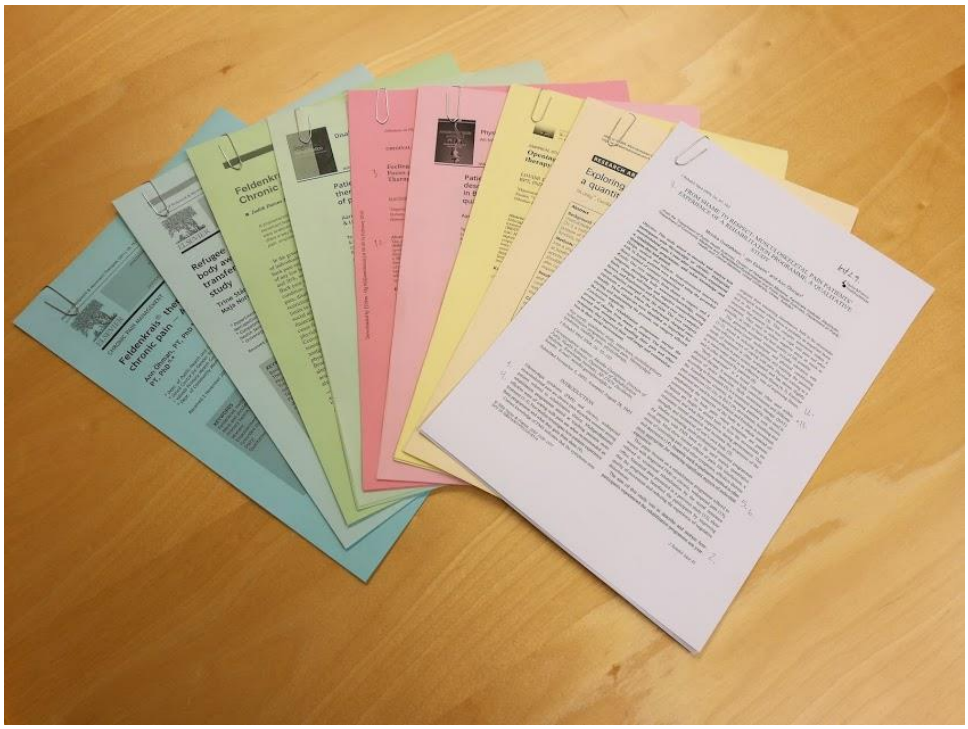

1. BACKGROUND

Musculoskeletal pain is one of the main contributors to reduced function in daily life and sick leave. It is estimated that around 20 percent of the population worldwide suffer from musculoskeletal pain that have persisted for more than 3 months (Butler and Moseley, 2003, p. 11). Chronic pain is often associated with mental disorders and emotional suffering (Gatchel, 2007, p. 581) and the biopsychosocial model is now a widely accepted model for understanding pain (Mikkelsen, 2016). According to this model, a physically experienced pain can be caused by an interaction between biological and psychosocial factors.

The primary role of the physiotherapist is to promote functional movement, and the assessment of movement dysfunction through observation and guiding the patients' movement is a core aspect (Skjaerven et al., 2008). In their policy statement for physiotherapy, the World Confederation for Physical Therapy (WCPT) state that human movement depends upon "*the integrated, coordinated function of the human body at a number of levels, and is an essential element of health and wellbeing*" (WCPT, 2011). Physical, psychological, social and environmental factors influence the individual's capacity to change, and the individuals' views of themselves enable them to develop an awareness of their own movement needs and goals. I am particularly interested in the awareness of own movements and how this can affect the challenges we as physiotherapist have in dealing with musculoskeletal pain.

1.1. Prevalence and cost

Economically, musculoskeletal disorders represent major costs to our society. Results from an American survey show that 40 percent of all adults, more than 50 million Americans, reported to suffer from constant pain (Gatchel, 2007, p. 581). The costs in health care services and lost work productivity is estimated to 70 billion dollars yearly. In Norway the numbers from the 4th quarter of 2017 show that musculoskeletal disorders were the cause of 37,9 percent of sick leave days prescribed by doctors, while 20,6 percent were caused by mental disorders (NAV, 2018).The HUNT 3 study conducted in Norway found that the prevalence of chronic pain was 36% among women and 25 % among men, and that chronic pain was strongly associated with work incapacity (Landmark et al., 2013). The authors conclude that chronic pain is a major challenge for authorities and health care providers both on a national, regional and local level.

1.2. Musculoskeletal pain

Musculoskeletal pain is described in literature and research with various terms such as chronic pain, chronic widespread pain, musculoskeletal disorders and others. These terms also have various definitions which challenges a common understanding of the phenomenon. In a fact sheet on chronic pain prevalence in Norway, chronic pain is defined as pain lasting six months or more (Nielsen et al., 2011). Another source claims that chronic widespread pain (CWP) is defined as pain with chronicity for more than 3 months, and widespread distribution, both sides of the body including the axial skeleton (Cimmino et al., 2011). International Association for the Study of Pain is defining pain as "*an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage*". (International Association for the Study of Pain, 1994). Musculoskeletal pain is also often named according to the affected region of the body, such as low back pain or shoulder pain.

1.2.1. From a biomedical to a biopsychosocial perspective

The biomedical perspective on pain was dominant in medical philosophy from the Renaissance until the last part of the 20th century (Gatchel, 2007, p. 582). Within this tradition, the degree of pain was regarded to be directly proportional to the degree of tissue damage. In this dualistic and reductionist perspective, mind and body was considered to function separately and independently. This view is now replaced by a biopsychosocial perspective, which includes considering an interrelationship between a person's biological changes, psychological status and sociocultural context when explaining the person's perception and response to pain and illness.

The current understanding of pain is differentiating between *nociceptive* and *idiopathic* pain. The nociceptive pain perspective follows the biomedical model of disease, relating the pain to potential or real tissue damage (Gatchel, 2007, p. 582). In contrast, idiopathic pain concerns pain for which there is no observable or confirmable physical pathology (Bendelow, 2013). A meta-analysis of 77 qualitative studies on persons with chronic musculoskeletal pain and fibromyalgia state that these patients are suffering not only because of their pain, but also because of experiences of not being taken seriously by health care services (Mikkelsen, 2016).

1.2.2. Mechanisms of pain

It can be difficult to see the purpose of persistent pain, and for many it feels as if the pain is ruining their life (Butler and Moseley, 2003, p. 11). Somehow the pain is a sign that the brain is warning you that you are threatened and in danger. Many and varied signals may relate to the pain experience, but it is decided in the brain whether you experience pain. The context you are in is important, and from war or extreme sport we know that severe damage can occur without the person involved feeling any pain. On the other hand, experiments have been done where people are told that they are given damaging stimuli, and they have reported pain even if no harm was done (Butler and Moseley, 2003, p. 21). This proves that the amount of tissue damage you suffer does not necessarily relate to the amount of pain you experience (Butler and Moseley, 2003, p. 12).

All over the body we have danger sensors, and these neurons will send messages to the spinal cord when they are activated. As a result of this information the brain may conclude that you are in danger, and it will produce pain (Butler and Moseley, 2003, p. 44). We have several systems that can be activated to get us out of this danger; the sympathetic nervous system, the motor system, the endocrine system, the pain production system and also the immune system and parasympathetic system. When the pain persists, the danger alarm system becomes more sensitive and the brain adapts to become better at "producing" pain. (Butler and Moseley, 2003, p. 92). We can say that all pain is produced in the brain and all pain is real (Butler and Moseley, 2003, p. 70).

1.2.3. Pain and emotion

Thoughts, ideas, fears and emotions are seen as nerve impulses which have electrochemical consequences in the brain, just like inputs from damaged tissues, and are part of the pain experience (Butler and Moseley, 2003, p. 96). Behind the development and maintenance of chronic pain it is seen that fear is a powerful force. Fear affects how we move, behave and experience pain. The fear can be obvious or hidden and can be connected to various sources in life.

There is extensive evidence that emotional conditions interact with the sensory experience of pain (Gatchel, 2007, p. 599). The connection between mental disorders such as depression and anxiety and pain are repeatedly documented in research. Research suggests that 40-50 percent of chronic pain patients suffer from depressive disorders. In a large-scale, multicentre study of

fibromyalgia patients, between 44 -51 percent acknowledged that they were anxious. What comes first and second is not always clear. Research support both that pain can cause depression and that depression can cause pain. Gatchel et al states that once a person has a chronic pain diagnose together with a mental disorder, both need to be treated, no matter what the cause is, and what is the consequence.

1.2.4. Coping with pain

Coping with life and pain is a challenge for all people having chronic musculoskeletal pain. Coping is the ability to identify, manage and overcome the issues which stress us all (Butler and Moseley, 2003, p. 102). All threats to coping involve physical and psychological processes, in both the mind and the body. Examples of active coping strategies are learning about the problem, exploring ways to move, exploring and nudging the edges of pain, staying positive and making plans. Combining pain physiology education with movement approaches will for many increase physical capacity, reduce pain and improve quality of life.

1.3. Movement Awareness

Movement awareness can be defined as "*A sensitivity to movement nuances, becoming aware of own movements, in relation to space, time and energy, and to identify subtle movement reactions to internal and environmental conditions*" (Skjaerven, 2015). A part of movement awareness is also being attentive to movement nuances along the continuum between healthy and pathological movement aspects (Skjaerven, 2015, p. 3). Definitions related to movement awareness are presented in table 1. One phenomenon can have several definitions. This relates to the perspective and vocabulary used in the specific context the phenomenon is in.

Table 1. Definitions related to movement awareness

Movement awareness	To be attentive to a multi-perspective span of movement nuances along the continuum between healthy and pathological movement aspects. (Skjaerven, 2015, p. 3)
Body awareness	A conscious perception and understanding of one's body, in alignment with the somatic and internal sensations which one feels. It is an important component of discovering the self and building self-image (Nugent, 2013)
Awareness	The background "radar" of consciousness, continually monitoring the inner and outer environment. One may be aware of stimuli without them being at the centre of attention. (Brown and Ryan, 2003)

Awareness	To be attentive and calmly aware of the immediate experience of the present. (Varela, 1994)
Presence	A state of being attentive and calmly aware of the experience of the present situation. (Grotowski (1996) (Skjaerven and Gard, 2017, p. 24))
Embodied presence	A bodily felt sense, a form of personal knowing that evokes understanding and fosters meaning. (Todres (2007) in (Skjaerven and Gard, 2017, p. 24))

Although the concept of movement is described as one of the corner stones of clinical practice it is little explored within physiotherapy (Danielsson, 2015, p. 7). Physiotherapist Liv Helvik Skjærven has investigated and published several articles on the phenomenon of movement quality (Skjaerven, 2003b, Skjaerven, 2004b, Skjaerven et al., 2015, Skjaerven et al., 2008, Skjaerven et al., 2010). The Movement Quality Model (MQM) presents movement quality as a general and unifying phenomenon where four perspectives are equally considered; physical, physiological, psycho-social and existential (Skjaerven et al., 2008). In this model, mental awareness, directed towards how the movements are preformed and experienced, is seen as a precondition for movement quality (figure 1).

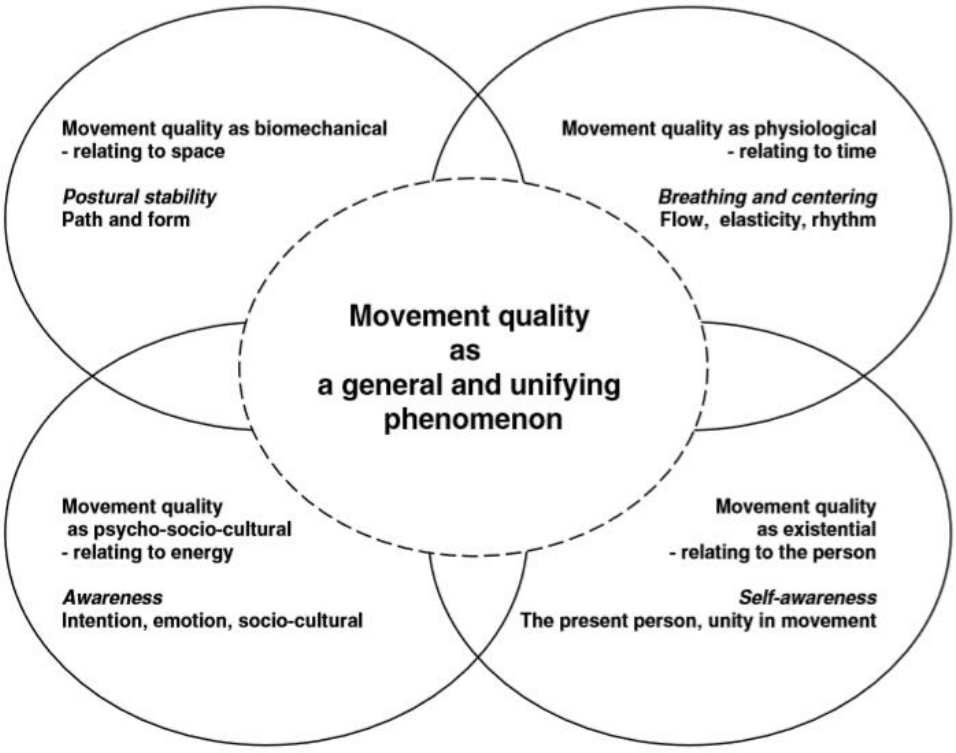

Figure 1. The Movement Quality Model (MQM) (Skjaerven et al., 2008).

The Movement Awareness Learning Cycle is presenting seven steps in the process to foster more functional movement quality and habits; to take contact with, explore, experience, integrate, create meaning, master and conceptualize/reflect (Skjaerven et al., 2010). The physiotherapists own movement awareness is essential, and seen as a precondition, to be able to promote movement quality for the patients. To increase the movement awareness, one need to be in the movements, repeating and focusing over a certain time. The physiotherapist need to be able to observe the patients lack of contact with the body and movements and determine when it is necessary to act by using internal and external movement references.

Alon suggests that human beings have a particular deep attachment to his *movement habits* since he created them himself (Alon, 1990, p. 72). We all have a personal way of moving. We are able to recognize people we know from a distance because we recognize the way they move. The movements in our body takes place in the context of consistent coordinated function. Some parts are activated while others are inhibited, and by repetitively confirming its relationships throughout the entire network our movements are automated (Alon, 1996, p. 30). Dropsy describes what he calls *compensatory tensions* as "learned experiences" that have taken over from "free function" (Skatteboe, 2005, p. 12). These compensatory tensions can cause musculoskeletal pain.

1.4. Physiotherapy approaches

I will here present some of the approaches used in physiotherapy that particularly focuses on movements, and where movement awareness is emphasized.

1.4.1. Basic Body Awareness Therapy

Basic Body Awareness Therapy (BBAT) is a physiotherapeutic approach aimed at establishing new movement habits and ways of being (Skjaerven and Sundal, 2016). BBAT focuses on self-exploration and self-experience in movements, on the interplay between a conscious *being, doing and relating* (Skjaerven, 2003a). By the use of simple, slow, soft and safe movements followed by a conceptualization and reflection on body and movement experiences, the movement-based method addresses the interaction of the whole self, aiming at enhanced movement quality and awareness (Danielsson, 2015, p. 6). The treatment process is described as "a reorganization and harmonization of movements and existence of the human being" (Skatteboe, 2005, p. 15). BBAT is a health oriented, person-centred and

process-oriented approach. It offers structured assessment tools and treatment programs as a frame for individual and group treatment (Skjaerven, 2013, p. 1). BBAT and its principals can be implemented into health promotion and preventive care as well as clinical practice, and is used to meet several health challenges, including treatment of chronic pain (Gyllensten, 2001, p. 9).

The movements used in BBAT are based on everyday-movements in lying, sitting, standing and walking and include relational movements and massage. Postural stability, free breathing and mental awareness are key elements that promote more functional movement quality, wellbeing and health when they are integrated into movements (Skjaerven and Sundal, 2016). The movement coordinations, situations and approaches included are designed to personally involve the patient during the period of treatment.

The three-fold contact problem is central in BBAT, a hypothesis of the person's lack of contact with and awareness of own body concerning physical, internal psychological and mental processes, and with the external environment, including relational factors (Dropsy, 1987, p. 25). This may lead to dysfunctional movements and result in pain and reduced function.

1.4.2. Norwegian Psychomotor Physiotherapy

In Norway the method Norwegian Psychomotor Physiotherapy (NPMP) is widely used as approach to treat musculoskeletal pain. The theory of NPMP claims that posture, respiration, and muscle tension are closely related to emotional conflicts and psychological problems (Ekerholt, 2011). Bodily phenomena such as restrictions of movement, muscular tension and autonomous (dys)function and regulation and restriction of emotions conceptualizes a reciprocal relationship. The overall aim for the therapeutic process in NPMP is *"the development of perception and contact with signals and reactions in the body, and thereby experiencing and understanding the connection between body and emotions, experiencing oneself as an embodied identity*" (Ekerholt and Gretland, 2017, p. 51). The NPMP therapeutic approach can consist of both stabilizing and relaxing elements, combining massage, exercises and movements. The whole body is taken into account and looked upon as one functional unit (Dragesund and Råheim, 2008). Addressing body awareness is considered to be essential for improving function. The method includes both individual treatment and movement groups.

1.4.3. The Mensendieck system

The Mensendieck system of functional exercises was created by Bess Mensendieck in the early 1900s and is a system of pedagogically designed functional movements (Aspegren Kendall et al., 2000). It is based on an analysis of human anatomy, physiology and biomechanics. Clinical experience indicate that Mensendieck therapy has the potential of being a therapeutic instrument in the treatment of patients with psychosomatic disorders, and especially for patients with somatoform pain states (Haugstad et al., 2006, p. 190). Mensendieck therapists are trained to assess motor function in terms of global quality of movement and function of every muscle group in the body. In practice the training starts with imagining the movement to be practiced, which is seen as an ideomotor preparation shown to enhance motor learning. The physiotherapist has the role of a teacher and the patients has the role of a pupil. A part of the treatment is assigned graded tasks to be practiced several times each day during everyday life activities. The Mensendieck physiotherapists are taught to be aware of own bodily experiences to develop a high level of body awareness themselves to be able to transfer the awareness to the patients.

1.4.4. Additional influences used in physiotherapy

Physiotherapists also use aspects form the somatic education technique Feldenkrais method although this is not a physiotherapeutic method. The Feldenkrais method is designed to establish a heightened awareness of movement (Jain et al., 2004). It is suggested that Feldenkrais training works by improving one's awareness of the body and attending to one's kinesthetic sense of movement (Kolt and McConville, 2000). The desired outcome is to become more functional and aware of one's movements. Movement awareness taught by a practitioner helps the person to move more fluently and as a result may aid in pain, muscular imbalance, performance difficulties, movement disorders and more. The awareness is here connected to functional movements in daily life and to replace habitual movement patterns with new movement options.

Elements form Tai chi are also used by physiotherapists as movement training. Tai chi can be described as a traditional Chinese form of exercises derived from martial arts (Verhagen A.P., 2004). The movements are preformed slowly with flow, with small to large expressions of motion, unilateral to bilateral shifts of body weight, and rotation of the trunk, head and extremities. Tai chi has three purposes; health promotion, meditation and self-defence (Gyllensten, 2001, p. 12). The theory is that slow and concentrated movements are enough to

keep your body healthy, and the movements activate the total musculoskeletal system and the autonomous system as well. Breathing should be coordinated with the movements and will develop to become an intrinsic part of the movements. Balance is enhanced and trained together with the optimal use of the antigravity muscles. The meditative purpose includes imagining your opponent in the "shadow-boxing" or dance as you let the movements flow, both being and doing at the same time. Every movement has its direct function as a self-defence action, which give a sharp, precise quality. Tai chi is a mind and body discipline that applies the principles in a progressive, organized manner (Liao, 1990, p. 8).

1.5. Objective

The number of people with reduced function and quality of life due to musculoskeletal pain is high and this is strongly associated with work capacity. Musculoskeletal pain is causing both a personal, economic and social challenge in our society. The need for finding effective treatment to change these numbers should be of great interest both on a personal and national level. I find the combination of movement and awareness interesting and believe that these are aspects that needs to be investigated more in connection to musculoskeletal pain. To inform this, I find great interest in how the patients experience using methods that makes them active in their own treatment, and aware of their own use of their body and movements.

The objective of this qualitative systematic review is to synthesize the existing body of knowledge and provide insight in how patients with muscular skeletal pain experience physiotherapy where movements, with a special focus on developing movement awareness, are used as intervention. The research question is:

How do patients with musculoskeletal pain experience physiotherapy treatment where movements, with a special focus on movement awareness, are used as intervention?

The result of this review can give important information to physiotherapists, health workers, policy makers and patients. This can be a contribution to:

- physiotherapists and health workers so they can make better decisions in the meeting with patients with musculoskeletal pain and thus provide better health care.

- policy makers in their action and priorities to reduce the prevalence of musculoskeletal pain.
- patients' motivation for active participation in treatment in order to reduce musculoskeletal pain and improve own health and function.

Searches were done but no systematic reviews on this topic were found.

2. METHOD

2.1. Own pre-understanding

In my work as a physiotherapist I have always had an interest for the therapeutic process, and how I can involve my patients in their own process of change. My education prior to physiotherapy was within sports, and movement has fascinated me. In sports I admire how movements can change from being heavy and mechanic to being easy and harmonious, as they become a natural part of you, just by practice and making small changes. When I in 2001 did my first course in Basic Body Awareness Therapy (BBAT) I found a physiotherapeutic method that was combining these interests for the active therapeutic process and my interest in movement. I have since then deepened my knowledge in BBAT and since 2009 I have been a part of the International Association for Teachers in BBAT, where there is a lot of activity within research and evidence-based practice. This motivated me to step into the field of research. As in my clinical practice, here as a researcher I have a salutogenic orientation where I search for factors promoting the patients to move towards the healthy end of their health continuum (Antonovsky, 1988, p. 6).

The background for choosing this project is my experience from more than 20 years of clinical work as a physiotherapist, working mainly with various forms of rehabilitation in primary and secondary care, in both somatic and psychiatric apartments. To help the patients gain a better everyday life and function I see that their movement awareness is central in their process of change. Studies where this is documented are published, but more knowledge is needed. My idea is to summarize the knowledge at this point, and hopefully this can reveal new knowledge and point a direction for further studies.

In this review I have aimed to bracket my former knowledge, which means taking a conscious distance to my pre-understanding (Malterud, 2011, p. 97). It is not possible to be totally

objective as a researcher. To be aware of the reflexivity is important. Reflexivity starts by identifying preconceptions brought into the project by the researcher, representing previous personal and professional experiences, pre-study beliefs, motivation and qualifications for exploring the field (Malterud, 2001).

2.2 Research design: Systematic review

My research design in this study is systematic review of qualitative studies. The aim of qualitative research is to provide an in-depth understanding into human behaviour, emotions, attitude and experiences (Tong et al., 2012). My interest is to get deeper into the research done on the experiences of patients that have worked with movement awareness as part of their treatment intervention and how this was experienced in relation to their musculoskeletal pain. To provide the answer a qualitative method is suitable.

In addition to quantitative research that inform about effects of treatments, qualitative systematic reviews can offer insights into the "how" and "why" of potential effects (Berg and Munthe-Kaas, 2013). To explore the person's perceptions and experiences in connection with their health and with the use of healthcare services, qualitative researchers typically rely on interviews, documents or observations (Ames et al., 2015). In the process of synthesizing the data from primary studies, data across different context are being pulled together to generate new theoretical or conceptual models. It also identifies gaps and provide evidence for the development, implementation and evaluation of health interventions (Tong et al., 2012). In her metaphors, Malterud suggests that we waste research if we do not use what already exists in a sensible manner, and that systematic reviews are a way of *recycling* research (Malterud, 2017, p. 18).

Systematic synthesis of qualitative research is "a process and product of scientific inquiry aimed at systematically reviewing and formally integrating the findings in reports of completed qualitative studies" (Sandelowski and Barosso, 2007, p. 17). To perform the review, I will search for the evidence that until now is published in primary studies. In order to draw conclusions from this material the evidence needs to be gathered, evaluated and synthesized (Polit and Beck, 2012, p. 30). The process needs to be systematic, transparent and reproducible (Polit and Beck, 2012, p. 96). One of the goals of qualitative research is ideographic, or case-bound, generalization. The systematic review summarizes the best evidence at the time the review is written. In addition to this a review should strive to be more

than “the sum of its parts”, by generating new insight (Tong et al., 2012). To synthesis the qualitative research findings in this study I have used Meta-Ethnography, a method presented by Noblit and Hare (Noblit and Hare, 1988, p. 10).

2.3 Selection criteria

To make a valid research synthesis we depend on the comprehensive retrieval of all research reports relevant to a domain of study (Sandelowski and Barosso, 2007, p. 35). The primary studies we include in a systematic review need to be result of a systematic and transparent process of search for literature (Malterud, 2017, p. 47). We want to make a search that identifies all relevant data. This includes the wish to prevent bias in the selection of studies, and not only find research that supports or confirms our own ideas of what is important.

The Cochrane Collaboration is recommending using the acronym PICOS (Population, Intervention, Comparison, Outcome and Study design) as a help to form the basis of the pre-specified criteria for inclusion in quantitative research (O’Connor et al., 2011). Even if this acronym is best suited to quantitative research, we are able to use PICOS to clarify the research question also in a qualitative setting (Malterud, 2017, p. 49). In qualitative research another possibility is to use only two components: Population (P) and situation (S) (Polit and Beck, 2012, p. 36).

For my research question I choose to use an adapted version of PS where the study design (S) is added. The criteria for inclusion in PSS is presented in table 2.

Table 2. Inclusion criteria

Population (P)	Patients with musculoskeletal pain, adults over 18 years old.
Situation (S)	Physiotherapy treatment that use movement as intervention and addresses movement awareness.
Study design (S)	Empirical studies using qualitative methods for data collection and analysis.

Studies written in English and Scandinavian languages was included, and there has been no date or geographic restrictions. Studies of low methodological quality and studies that were using therapies that did not include movement as main intervention were excluded.

2.4 Literature search

To perform a systematic review an exhaustive search must be done. There are several ways to search for research evidence. To search for references in bibliographic databases is the most important source for systematic literature search (Malterud, 2017, p. 52). Different databases specialize in different research, and we need to decide on the most relevant databases for our search. It is recommended to search more than one database. The aim is to confirm a search that is wide enough to find all relevant studies but at the same time avoid irrelevant material. The search we perform should have a high *recall* as well as high *precision* (Sandelowski and Barosso, 2007, p. 35). Recall is the number of relevant documents retrieved in the database, and precision is the number of documents retrieved that are relevant for our review.

Not all relevant research is found in bibliographic databases. Books, PhDs, conference papers or articles published in journals that are not indexed in any databases are called *grey literature*. Malterud claims that searching for grey literature is time consuming and usually gives limited results (Malterud, 2017, p. 53). Others find that grey literature can broaden the scope to more relevant studies, and provide a more complete view of the evidence available (Mahood et al., 2014). Bates introduced the metaphor "berry-picking" in relation to search for grey literature, and listed six strategies; footnote chasing, citation searching, journal runs, hand searching, area scanning and author searching (Sandelowski and Barosso, 2007, p. 41). As the metaphor berry-picking is suggesting, these strategies are less systematic, transparent and reproducible.

2.4.1 Search strategy

Most major bibliographic databases have their own standardized topic specific subject headings, or tesauri (Kilvik and Lamøy, 2007, p. 29). The terms used in MEDLINE are called MeSH, abbreviation for Medical Subject Headings. These topic specific subject headings are standardized words that describe the content of articles, books or other publications (Nortvedt et al., 2012, p. 58). When we use topic specific subject headings, synonyms and both singular and plural words are already included in the search. The searches become more precise in this

way as the search includes all synonyms that fall within the MeSH term. In addition to topic specific subject headings, relevant text words are used in the search. Text words are words found in the title, summary or full text of the article. Searches with text words are also called free text search (Nortvedt et al., 2012, p. 58).

The search strategy I used was compiled on the basis of the acronym PSS. I included both topic specific subject headings and text words in the search. In the process of finding the best search for literature, I did several test searches. I tested different words, different combinations of words and how leaving words out affected the result. With supervision from academic librarian at Western Norway University of Applied Sciences (HVL) Gunhild Austrheim, I decided to settle for finding words that were representative for the population (P) and only "movement awareness" from the situation (S). My suggestion for the final search was peer reviewed by research librarian Lena Nordheim by using the procedure Peer Review of Electronic Search Strategy (PRESS) (McGowan et al., 2016). Adjustments were done as a result of her advice.

I could have used a filter for study design to aim the search more towards qualitative studies. I choose not to use filter, because this gives a risk of losing relevant studies.

The word musculoskeletal pain is a collective term, and is not always present in relevant studies, so I needed to find more words to describe the population (P). In the background I am stating how musculoskeletal pain often is present both in somatic and psychiatric cases. This resulted in my decision to search for studies on three common somatic and three common psychiatric diagnoses where musculoskeletal pain is a central symptom (Gatchel, 2007, p. 581). These were *back pain, fibromyalgia, rheumatic disease, depression, anxiety* and *Post Traumatic Stress Syndrome.* Movement awareness is also a term, and what I was searching for might be present with synonym words. Here the words *movement, body* or *bodies* were combined with *awareness, experience, consciousness* or *understanding*. The search history is presented in appendix I.

2.4.2 Search in databases

Six different databases were searched; Ovid EMBASE, Ovid Amed, Ovid MEDLINE, Ovid PsycInfo, Ebsco CINAHL and SveMed+ from inception to November 20th 2017 (appendix I). The databases have different main focuses, and since my search is aiming to find studies both in the somatic and psychiatric field I found it relevant to search all six. The same search strategy was adjusted to each database. Words describing the population (P) were combined

with the Boolean operator OR, and the same were words describing the situation (S). The population and the situation were then combined with the Boolean operator AND, which gave the search result. All databases used had the possibility to use tesauri. PEDro, a database for physiotherapy research, does not include qualitative studies, and is therefore not included.

2.4.3. Search for grey literature

In addition to the database searches I contacted three experts in the field as a way of searching for grey literature. The references in the included studies were also investigated.

2.5 Selection of studies

Search results from the databases were exported to EndNote, a software tool for managing bibliographies, citations and references (Thomson Reuters, 2016). The duplicates were removed before the studies were exported to Covidence, a screening and data extraction tool (Veritas Health Innovation, 2018). In the selection process we were two reviewers, a fellow student and I, who independently assessed the title and abstract of the identified studies. In Covidence, we classified the studies in terms of fulfilling the inclusion criteria as "no", "maybe" and "yes". Studies that were classified "no" were at this point discarded. The studies that were classified as "maybe" and "yes" were moved further to full text screening. A group of studies ended up as "conflicts", and here we worked together to come to an agreement. There was no need to involve a third party to reach an agreement. I also had no need to contact the authors for further information to come to a conclusion at this point.

We received full text of all studies that were likely to be relevant. The studies were now either included or excluded, and the cause of exclusion were recognized.

2.6 Quality assessment

An important part of doing a review is to evaluate the risk of bias in each study included (Reinar and Jamtvedt, 2010). This is done by assessing the methodical quality of the studies. Some claim that quality assessment of qualitative studies is not necessary, while others claim that it is hard to find good criteria to use (Malterud, 2017, p. 58). It has been hard to agree on one standardized checklist, and Berg refers to the identification of 100 different proposals for quality assessment of qualitative studies (Berg and Munthe-Kaas, 2013). In the appraisal of

my included studies I used “Guidelines for authors and reviewers of qualitative studies” presented by Malterud (Malterud, 2001). The guidelines are presented as a checklist, and because of its detailed questions it is useful if you want to train your skills in evaluating methodical quality (Malterud, 2017, p. 58). The checklist is covering aim of the study, reflexivity, methods and design, data collection and sampling, theoretical framework, methods of analysis, results, discussion as well as presentation. Through the quality assessment, we are able to judge the contribution of each study as part of the assessment of how much confidence we have in each finding. There are different opinions on whether studies of low quality should be excluded (Berg and Munthe-Kaas, 2013). In a study of whether exclusion had an impact on the result, the conclusion was that exclusion of low quality studies did not affect the outcome. Instead, the process was time-saving and increased the internal quality of the findings.

2.7 Datacollection and dataanalysis

As mentioned earlier, my data-analysis is based on meta-ethnography. Meta-ethnography is an inductive method that belongs in the interpretative paradigm (Malterud, 2017, p. 76). It was originally developed for combining the findings of ethnographic research in the field of education (Atkins et al., 2008).

A meta-ethnography seeks to go beyond single accounts to reveal the analogies between the accounts (Noblit and Hare, 1988, p. 12). Meta-ethnography is seen as a useful method for synthesizing qualitative research, and for developing models that interpret findings across multiple studies (Atkins et al., 2008). Interpretive studies may be reduced, compared, and translated as a way of synthesizing the studies. The process of synthesizing is aiming at more than making a summery and recount of the studies (Malterud, 2017, p. 71).

Noblit and Hare have presented a series of seven phases that overlap and repeat as the synthesis proceeds (Noblit and Hare, 1988, p. 26). The seven phases are presented in box 1.

Box 1. Seven phases of synthesizing qualitative studies by meta-ethnography (Noblit and Hare, 1988)

Phase 1: *Getting started*. Identifying an intellectual interest that qualitative research may inform.
Phase 2: *Deciding what is relevant to the initial interest*. Deciding what studies or accounts are relevant, and knowing who the audience for the synthesis is.
Phase 3: *Reading the studies*: Repeated reading of the accounts and the noting of interpretive metaphors.
Phase 4: *Determining how the studies are related*: Here the studies are "put together" and at the end of this phase an initial assumption about the relationship between studies can be made.
Phase 5: *Translating the studies into one another*: Translations are especially unique synthesis, because they protect the particular, respect holism, and enable comparison.
Phase 6: *Synthesizing translations*: Synthesis refers to making a whole into something more than the parts alone imply.
Phase 7.: *Expressing the synthesis*: Depending on the audience choose a way to present the synthesis: written, video, play, art or music.

Phase one to three concerns deciding on the topic and forming the research question, finding the material that is relevant for the synthesis, and getting to know the studies by repeatedly reading them (Noblit and Hare, 1988, p. 26).

The process of analysing the data starts by determining how the studies are related (phase four). Noblit and Hare suggests creating a list of the key metaphors, phrases, ideas and/or concepts to juxtapose them. How I did this in practice was inspired by Malterud's method for systematic text condensation and phenomenological analysis, based on Giorgi's four steps phenomenological analysis (Malterud, 2011, p. 96). Malterud is using a metaphor to describe this process as sorting the laundry into an unbuild dresser with drawers (Malterud, 2011, p.98). We do not know the number of drawers or how to sort the clothing, before starting this process.

The result sections of the primary studies were my "raw data", and I considered this my first order construct. These were second order analysis material from the primary studies, since these results are processed by the authors of the studies (Malterud, 2017, p.73). I printed the eight studies in different coloured paper and cut out the result sections. These colours made me able to trace back to the original studies later in the process if needed. The headlines of the results were categorized in a table, before I also cut them out together with the citations and put them to the side. Now only the descriptions of the results functioned as my "feedstock" without the categorization that already was made by the authors. This enabled me to get a new view of the results as I went on to synthesize the data.

The next step was to translate the studies into each other, phase 5. The translation is unique while it protects the particular, respect holism and enable comparison (Noblit and Hare, 1988, p. 28). I conducted a reciprocal translation since my studies dealt with the same themes (Noblit and Hare, 1988, p. 38). The translation was to be idiomatic, meaning that it focused on the meaning of the content (Malterud, 2017, p. 77). I first found all the meaning units and searched for a way to categorize them without any predefined headlines. The meaning units in the results from one article were cut out and categorized according to the content. The next study was translated into this one, by finding units that dealt with the same theme. After translating five studies into each other, I made suggestions for headlines that represented the content of each category. The last three studies were added, and new headlines adjusted. The results of this work were then put in a matrix where I simplified the units but searched to keep the meaning of each unit. An excerpt of a matrix of meaning units and translation is presented in appendix II.

In the sixth phase the translations are synthesized, and we search to find something that implies more than the parts alone. This can be done as a lines-of-argument synthesis (LOA) (Malterud, 2017, p. 78). LOA addresses the question about what we can say of the whole, based on the selective studies of the parts (Noblit and Hare, 1988, p. 62). The groups of meaning units were now used in a process together with a college, where we searched for the essence of the material in front of us. The whole analytic process included several levels of interpretations, searching for clarification and consensus. The meaning units were written on a big black board and was moved back and forth trying out different views and connections. Along the day, I documented with taking pictures of the board. The process culminated in finding new main themes and later these were the base for a new model, a third order construct.

The last step in the meta-ethnography is expressing the synthesis, phase 7. How you express the synthesis is depending on the audience (Noblit and Hare, 1988, p. 29). The written form is the most usual way of presenting. A striking headline and a good abstract can be decisive for whether others will read your article (Malterud, 2017, p. 93). The systematic review is aiming for a broad audience. In addition to reaching researchers, we often have ambitions of reaching decision takers, health management and clinicians, so that our findings can be implemented in clinical practice. My review will be presented in an article that is planned to be published in the Journal of Bodywork and Movement therapies (Journal of Bodywork and Movement Therapies, 2018). The author guidelines for Journal of Bodywork and Movement therapies are

presented in appendix III, as well as communication with Elsevier concerning limitation on number of words for the article (appendix IV). I also plan to present the review at the next International Conference of Physiotherapy in Psychiatry and Mental Health (ICPPMH) in Helsinki in 2020.

2.8 Confidence in findings

In systematic reviews of quantitative research the use of Grading of Recommendations Assessment Development and Evaluation (GRADE) is used to assess how much confidence to place in findings (Lewin et al., 2015). The Confidence in the Evidence from Reviews of Qualitative research (CERQual) approach is an assessment that is still under development for qualitative evidence synthesis. The use of CERQual may facilitate the use of qualitative evidence to inform decisions and shape policies.

CERQual is based on four components: the methodological limitation of the qualitative studies contributing to a review finding, the relevance to the review question, the coherence of the review finding and the adequacy of data supporting a review finding. These four components are first graded for each review finding on a four-level scale; No or very minor concerns, minor concerns, moderate concerns or serious concerns (Munthe-Kaas et al., 2018). On the base of these concerns the total confidence in each review finding are graded as either high, moderate, low or very low confidence. I have assessed this review by using CERQual.

3. RESULTS

3.1. Selection of studies

In the selection process 2282 records were identified. 798 duplicates were removed, and 1484 records were screened by title and abstract. Of these 34 full text articles were assessed for eligibility. 26 were excluded due to wrong patient population, intervention, outcome or study design. 8 studies fulfilled the inclusion criteria and were included in this review. The selection process is presented in a flow diagram (Liberati et al., 2009). The flow diagram based on PRISMA flow diagram is presented in figure 2.

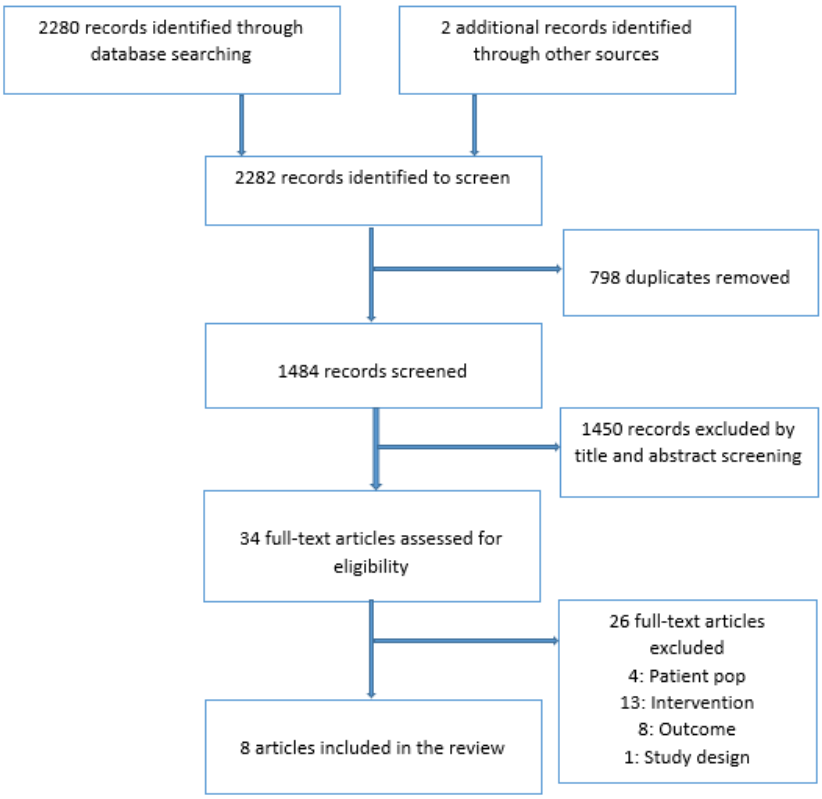

Figure 2. Flow diagram (based on PRISMA 2009 Flow diagram) (Liberati et al., 2009)

3.2. Studies included

Eight primary studies fulfilled the inclusion criteria and are included in the review.

1. *From shame to respect: Musculoskeletal pain patients' experience of a rehabilitation programme, a qualitative study* (Gustafsson et al., 2004). This study was aimed at describing how participants with fibromyalgia or chronic, widespread, musculoskeletal pain experienced a rehabilitation programme; and what knowledge and strategies they had gained. One year after completion, semi-structured interviews with 16 female patients were analysed using the grounded theory method of constant comparison.

2. *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 healthcare* (Johnsen and Råheim, 2010). The aim of this study was to explore patients' experiences as participants in Basic Body Awareness Treatment (BBAT) groups, in order to deepen the understanding of patients' perspectives on this movement practice. 18 participants with psychiatric disorders, age ranging from 27 to 70 years, participated in the study. All participants had attended

BBAT groups for at least 6 months. Three focus group interviews were performed and analysed.

3. *Exploring Tai Chi in rheumatoid arthritis: a quantitative and qualitative study* (Uhlig et al., 2010). The purpose of the study was to investigate the impact of Tai Chi group exercise on disease activity, physical function, health status and experience in rheumatoid arthritis patients, applying quantitative and qualitative methods. 15 patients with RA participated in Tai Chi groups twice a week over 12 weeks. Qualitative data were obtained from a focus group interview conducted after completed intervention.

4. *Feldenkrais therapy as a group intervention for chronic pain – A qualitative evaluation* (Öhman et al., 2011). The aim of the study was to describe the experiences and self-reported effects of 14 women with non-specific neck and shoulder pain who participated in a group treatment design using the Feldenkrais Awareness Through Movement method. Data was collected through diary notes directly after the sessions and thematic interviews 4-6 months after the intervention.

5. *Opening toward life: Experiences of basic body awareness therapy in persons with major depression* (Danielsson and Rosberg, 2015). This study aimed to explore the experiences from Basic Body Awareness Therapy in 15 persons diagnosed with major depression who participated in a randomized clinical trial. Hermeneutic phenomenological methodology inspired the approach to interviews and data analysis. Semi structured interviews were conducted.

6. *Refugee experiences of individual basic body awareness therapy and the level of transference into daily life. An interview study* (Madsen et al., 2016). The aim of the study was to investigate refugee experiences from individual Basic Body Awareness Therapy (BBAT) and how they transferred their experience into daily life. The participants were three traumatised refugees diagnosed with Post Traumatic Stress Disorder, who had completed 14-20 individual BBAT sessions. Semi structured interviews were performed to collect data.

7. *Patients suffering from rheumatic disease describing own experiences from participating in Basic Body Awareness Group Therapy: A qualitative pilot study* (Olsen and Skjaerven, 2016). The purpose of this study was to describe patients' experiences from participating in Basic Body Awareness Group Therapy for inpatients with rheumatic diseases. A phenomenological design was used for data collection in two focus groups interviews with seven patients.

8. *Patient education and basic body awareness therapy in hip osteoarthritis – a qualitative study of patients' movement learning experiences* (Olsen et al., 2017). The aim of the study was to explore how patients described their experiences and outcome from participating in patient education (PE) and Basic Body Awareness Therapy (BBAT). Five patients participated in one session of PE followed by 12 weekly sessions of BBAT in groups. Individual semi structured interviews were performed after four and ten months of intervention.

3.2.1. Characteristics of the studies included

The primary studies were all undertaken in Scandinavian countries between 2004 and 2017. All together 87 informants were included, varying from 3 to 18 in the studies. Semi structured interviews were used for data collection in four of the studies, while focus group interviews were conducted in three studies. In one study, diary notes and thematic interviews were used. Three studies were from the psychiatric field and five form the somatic. One of the studies (Uhlig et al., 2010) presented both quantitative and qualitative results. I have only included the qualitative results in my meta-analysis. Study characteristics is presented in table 3.

Table 3. Study characteristics of the included studies

Studies	Informants: number and gender	Origin of study	Data collection	Data analysis	Intervention	Duration of program	Time of interview	Diagnose of informants	Number of researchers	Place published
Gustafsson et al (2004)	16 (16 female)	Umeå, Sweden	Semistructured interviews	Grounded theory: constant comparison	Patient education, BBAT and warm water pool training		1 year follow up after intervention	Fibromyalgia	3	Journal of Rehabilitation Medicine
Johnsen &Råheim (2010)	18 (17 female and 1 male)	Norway	Focus group interview	Malterud inspired by Giorgi	Basic Body Awareness Therapy (BBAT)	Weekly training	While in treatment, but after 6 months of attendance	Diverse psychiatric diagnoses	2	Advances in Physiotherapy (European Journal of Physiotherapy)
Uhlig et al (2010)	9 (8 female and 1 male)	Oslo, Norway	Focus group interview	Kvale: step by step process	Tai Chi	2x/week, 12 weeks	End of intervention	Rheumatoid Arthritis	3	BMC Musculoskeletal Disorders
Öhman et al (2011)	14 (14 female)	Sweden	Diary notes and thematic interviews	Grounded theory	Feldenkrais	10 meetings in 7 weeks	Direct after and 4-6 months after end of intervention	Chronic pain	3	Bodywork and Movement Therapies
Danielsson & Rosberg (2015)	15 (10 female and 5 male)	Sweden	Semistructured interviews	Hermeneutic phenomenological methodology	Basic Body Awareness Therapy, group and individual	2 individual and 16 group sessions		Major depression	2	International Journal of Qualitative Studies on Health and Well-being
Madsen et al (2016)	3 (2 female and 1 male)	Denmark	Semistructured interviews	Malterud inspired by Giorgi	Basic Body Awareness Therapy (BBAT)	14-16 sessions	1 month after ended intervention	Post-Traumatic Stress Disorder	4	Bodywork and Movement Therapies
Olsen & Skjærven (2016)	7 (5 female and 2 male)	Bergen, Norway	Focus group interview	Giorgis 4 step phenomenologic analysis	Basic Body Awareness Therapy (BBAT)	2x/week (3-7 sessions)	1-2 weeks after last informant ended intervention	Rheumatoid Arthritis	2	Physiotherapy Theory and Practice - An International Journal of Physiotherapy
Olsen et al (2016)	5 (2 female and 3 male)	Bergen, Norway	Semistructured interviews	Giorgis 4 step phenomenologic analysis	Patient education and Basic Body Awareness Therapy (BBAT)	2 hours patient education and BBAT weekly for 12 weeks	End of intervention and 6 months after end of intervention	Hip osteoarthritis	4	Disability and Rehabilitation

3.2.2. Methodologic quality of the studies included

All studies were assessed as described in chapter 2. They were all found to have high methodological quality and are equally included in the meta-analysis. The results of the quality assessment of the studies are presented in table 4.

Table 4. Results of methodological quality assessment by "Guidelines for authors and reviewers of qualitative studies" (Malterud 2001)

Studies	Aim	Reflexivity	Method and design	Data collection and sampling	Theoretical framework	Analysis	Findings	Discussion	Presentation	References
Gustafsson et al (2004)	all	some	all	4 + missing reason for choise	all	all (1 weak)	all	all	all	all
Johnsen &Råheim (2010)	all	some	all	4 + missing reason for choise	all	3 + missing validation of results	all	all	all	all
Uhlig et al (2010)	all	some	all	3 + missing reason for choise and consequences	all	all	all	some strong and some weak	all	all
Öhman et al (2011)	all	some	all	3 + missing reason for choise and consequences	all	all	all	some strong and some weak	all	all
Danielsson & Rosberg (2015)	all	all	all	all	all	all	all	all (one weak)	all	all
Madsen et al (2016)	all	some	all	all	all	all	all	all	all	all
Olsen & Skjærven (2016)	all	some	all	4 + missing reason for choise	all	all	all	most strong some weak	all	all
Olsen et al (2017)	all	some	all	3 + missing reason for choise and consequences	all	all	all	all	all	all

3.3. Conducting data analysis

I re-read the full text of all included studies as a first step to becoming familiar with their content. The process of quality assessment had also provided insight into each of the studies, and reading the studies again gave a possibility to get to know the context of the studies and to look closer at the presentation of results and discussion. The studies held a lot of information and it was important for me to keep the focus of this review. In the whole process of analysing the data I kept reminding myself of my research question and of my aim.

The process of the data analysis is presented under 2.7 *Data collection and data analysis.*

3.4. Results of data analysis

The second order analysis of the data identified four themes: 1) A new experience of their moving body, 2) Reduced pain and more vitality, 3) Transference to daily life habits, and 4) Being oneself in the world of others.

3.4.1. A new experience of the moving body

In all studies participants stated that the movement training had given them new experiences of their body and how they used their body in different movements. This way of training gave them more awareness of their movements, and they were able to identify more healthy and functional ways to move. The informants described how coming more in contact with, and thus becoming aware of, their line of gravity and functional balance helped them to move in a more functional way. The use of space, rhythm, free breathing and adjustment of energy were experienced as tools for responding adequately to body signals when moving. Taking contact with and integrating a freer breathing when moving, the informants described experiences of changed movement quality that allowed them to move with more ease. They reported that they could sense how little energy they actually needed to perform movements according to the need of the task. The relationship between free breathing and the use of energy in movements is mentioned several times and in different ways. Informants reported that they learned how to slow down, or adjust, their energy and to use it more functionally based on experiencing beneficial effects from small and simple movements. Descriptions like well-being, a lovely feeling in the body, being closer to own body and feeling lighter- "*as if weight were lifted from the body*", are presented. The participants relationship to and contact with the ground was associated with a "*landing platform of certainty and stability".* They described experiences of gravity and being supported by the ground, which they related to a sense of firmness and reliability, as earthly, immediate proving a sense of "evidence" of one's existence and being. What they present can be understood as movement awareness learning.

The informants expressed that developing movement awareness, they were more able to deal with the pain and learn more healthy movement strategies. They described becoming more able to "check" themselves in situations and search for more economic and softer ways to move. They described gaining more clarity of the body and movements that earlier had felt "blurred". Some described "*finding unexpected possibilities*". Through a more developed mental awareness and increased contact with their body, they described learning to be

consciously attentive to what was happening in the body and movements, which brought the possibility for developing more functional movement habits.

Having sufficient time to stay "in" the movements was seen as important by the participants. Being in the movement coordination over time allowed integration of more natural and free breathing and gave the possibility of becoming aware of sensations while moving. Some described how it took time before they were consciously aware of their body reactions and became more present "here and now". Being present was perceived as helpful by the informants, who described it as feeling more at home in themselves.

3.4.2. Reduced pain and more vitality

In the studies the informants described changes in both their function and symptoms. As a result of the treatment the participants claimed to experience less pain from their body, and less pain also during movement. Some described that it took time and patience for them to sense and recognize this change, and for some of them the pain got worse before decreasing to a lower level than before the treatment. They stated that their fear of moving was reduced, and a feeling of security and hope was developed. Regarding the changes in the experience of pain, some informants mentioned that an exploratory process had started in them. It involved a change in posture, balance, movement coordination and stability. They associated this with experiences of vital responses such as improved circulation and digestion, and the experience of more coordinated and efficient movements that required less effort. Some said that they had started to use movements as coping strategies in daily life, and that working on taking contact with how they moved and developing their movement awareness was an ongoing process. They experienced recognising the movement patterns that they associated with tension and anxiety and being able to make a change towards more healthy patterns. In one study the informants use the words "*reclaimed moving ability and freedom".* Some rediscovered concealed movement patterns from younger days, associated with a sense of wellbeing, when moving spontaneously between guided movements. Some described this as *"a connection with vitality from within"*. The focus changed from illness towards health.

In the informants' statements, a recurring theme is how to recognize and acknowledge boundaries and set limits both for themselves and in relation to others. From the movement awareness learning, the informants experienced that their limits became clearer, and found strategies for handling them. Some said that setting limits was something they had never done

before. Being in the movements and becoming aware was a support for finding limits and respecting them.

In the data material, the informants frequently described relaxation as a central and desirable aspect of health. They used the word relaxation synonymously with releasing their muscular tension or giving in to gravity. The ability to release tension was described as a comfortable tiredness and calmness which many had longed for. Many informants reported having had sleeping problems, and the ability to allow themselves to be in this calmness had led to better sleep for several of them. Some associated relaxation with experiences of more physical and mental energy and more happiness. They described experiencing a stronger presence in the moment to affect their thoughts and emotions in a calming way, providing a feeling of peace in their mind. They experienced opening for recognition of the close relationship between their physical and psychological distress.

Some of the informants described a sense of being able to "stand on my own" associated with the realization of "I can". Some described that after being in this process of learning they could give themselves help to self-help, and they felt less dependent on formal health care. They described that a process of change had started and that they thereby asked themselves questions and reflected upon their life situation and actions, with possibilities for choosing new strategies.

The informants described having experienced personal and relational development. Through becoming more aware of the body, they experienced coming in contact with and thus "listen" to body reactions. Consequently, they experienced being more able to conceptualize what they found, and to describe their perceptions and thoughts for both themselves and others. This was expressed as the sense of shame started to change towards respect for themselves. When taking more care of themselves, they experienced a sense of growing self-confidence. They could adjust their self-demands in a new way, respecting own needs and acknowledging that they could not deal with everything. Some expressed having experienced feelings of sadness and distress when exploring their movement awareness and being able to reflect upon the emotions and process them, consequently obtaining new personal insight. A close link between ability and vulnerability became evident.

The process of learning to accept the body and finding new ways to move was experienced by the informants as liberating and empowering. They reported recognizing own intentions and will and experienced being valuable individuals. In one study, this was illustrated by the quote

"*grasping the experience of vagueness by actually doing something rather than just floating around indifferently*", which exemplifies the experience of participating in one's own life. The informants reported developing a new attitude towards their own selves that included self-consideration where they were more careful with themselves and felt self-empowered. Feeling strengthened as a person, some of them experienced a growing sense of stability when meeting others. They described becoming aware of that "*the reins of your life are in your own hands*" and that it was "*as moving from chaotic to predictable*". Feeling more united, more present in their body and their lives in general was associated to the movement awareness training.

3.4.3. Transference to daily life habits

In all the studies included, the informants experience that the movement awareness training influenced their daily life habits. Their own actions became meaningful in a new way, and they considered self-reflection and alternative thinking important for the ability to live a better life in their current situation. Examples of new strategies in daily life were to change priorities, ask for help, make plans, reduce demands on themselves, and to have time for themselves.

The informants described how they had implemented self-training in different ways, either as home practice or as part of their daily living when standing, walking, sitting or lying. The self-training was aimed at both maintaining and further improving and their choice of movements varied, based on individual needs. They reported that the movements gave them stress reduction, and that they could use movements both at home and at work as stress mastering. The improved body- and movement awareness was experienced by the informants as a tool to interpret their action strategies in a better way. They described realizing a connection between what they did and how they felt, and that they could positively influence their pain by consciously searching towards healthy movement functions.

Self-awareness was also bound to the will and having the courage to express it. Since their self-confidence had changed positively, some felt tougher, and described how it was easier to have an opinion. Some reported becoming milder and open towards their family, changing from being isolated and suspicious to being more sociable and open to others.

In two studies the informants participated in patient education about their diagnoses as part of their intervention. They describe that the theoretical knowledge of the body and the way to

move, together with the practical knowledge obtained through bodily exercise, became a starting point for a new approach to themselves and their pain.

3.4.4. Being oneself in the world of others

In seven of the eight studies included, the movement awareness training was offered as group intervention, while one of them offered individual therapy only. Informants' experiences from the two therapy models are similar. One difference however is that the informants who only received individual treatment and the informants from the Feldenkrais group expressed feeling more dependent on their physiotherapist (PT).

The participants described the atmosphere created by the PT as one of acceptance and tolerance, where they were seen and cared for, and the PT had sufficient time for them. They appreciated the reflection after being in movements, where everybody was present, but it was voluntary to speak. They described a predictable and consistent structure, not vague and not mechanic, where the guidance gave direction and purpose. The calm and safe atmosphere in the room was seen as important for being able to truly explore meaning in the movements in a "here and now" perspective. The participants described that the physiotherapist provided a safe place where the participants quietly could connect and reconnect with their bodies, being able to sense and achieve changes without having to perform.

The informants used the words supportive, inclusive and respectful to describe the group, and they sensed a belonging to the group. In one of the studies, the informants expressed "*to be a member in the group meant feeling that one was worth something*". Several participants described experiences of how the relationship to themselves and others had changed in a positive direction. They felt that they had been allowed to be themselves with their difficulties and peculiarities, and that they had been seen for who they were. They got in touch with their own relational boundaries, seeing own habits when relating to important others in a new light, which sometimes was experienced as a demanding realization. However, the new understanding was experienced as helpful for finding a more balanced strategy for taking care of others and themselves simultaneously. From their learning experiences, the informants defined their present and future situation less intimidating than before.

In a group therapy setting, the informants experienced learning from others with similar complaints and functional problems how they had found ways to handle daily life challenges. This inspired them to a positive attitude and to share own experiences. It was described as a

mutual communication, respectful towards each participant's personal process. They experienced caring about one another, to be inspired and challenged by others, and to receive support from others. They described being able to recognize themselves in other participants.

3.5. Process of change – a third order analysis

In order to make a third order analysis I needed to take a step back and see if all the knowledge I had gained from the studies included had given new insight. I now looked at the results as a whole and searched for connections that would give me more answers to my question on how therapy that includes movement awareness was experienced to affect musculoskeletal pain. The themes found in the second order analysis appeared to be dependent on each other, and they formed a continuous process for the persons involved. The process was dependent on the true involvement in the movements and the development of stronger movement awareness. This resulted in a new model called "Movement awareness – a process of change based on movement experiences". It is here presented as figure 3.

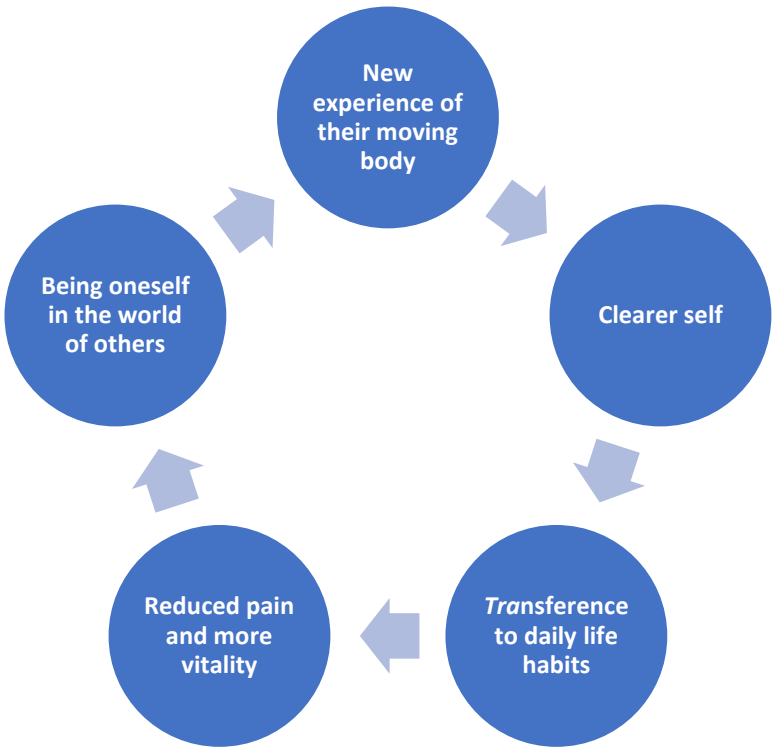

Figure 3. "Movement awareness – a process of change based on movement experiences".

The model is based on the results of the data analysis. It illustrates how new experiences of own body and movement can start a process of change for the individual participant. The new

experiences of own body and movements are developed through the movement awareness training and leading to a clearer experience of oneself in a here-and-now perspective. A transfer of this new insight into function and daily life habits starts to happen both consciously and unconsciously, initiating a change in movement strategies as well as a change in attitude towards oneself. Through this, their pain and energy can be affected positively, with experiences of reduced symptoms and more vitality. The recognition of own actions and habits enables the individual to take a healthier approach to life, taking better care of oneself and thereby also function better in relation to others.

The five steps in the model can be seen as interrelated steps in a learning process with impact on individuals every-day functions and relationships, based on movement awareness in person-centred, health-oriented and experience-based physiotherapy. I see this not as a single line, but as a process that will continue as the individuals continue their work with the movement awareness as a preconception for their changed function.

4. DISCUSSION

The objective of this review was to synthesise the existing knowledge at this point and provide insight in how patients with musculoskeletal pain experience physiotherapy treatment where movements, with a special focus on developing movement awareness, were used as intervention. The findings indicate that the movement training gave the patients new experiences of their movements and body, and more functional movement habits were integrated in daily life. The changes were experienced as a process leading to reduced pain and increased vitality. A clearer sense of "the self "was experienced to strengthen their ability to relate to others. A model was created on the basis of the findings, illustrating the process of change during treatment.

4.1 Discussion of findings

4.1.1. Movement awareness and movement quality

What the informants described is a development of their movement sensitivity to their movement nuances as they became aware of their movements in relation to space, time and energy (as discussed in chapter 4.1.1) and they also identified their reactions to internal and

external conditions in life. One definition of movement awareness is "*sensitivity to movement nuances, becoming aware of own movements, in relation to space, time and energy, and to identify subtle movement reactions to internal and environmental conditions"* (Skjaerven, 2015). The analysis of the data from the eight included studies revealed that the participants have truly developed a stronger movement awareness, and this was crucial for the changes to take place.

The informants are sharing how they developed a new experience of their moving body and a change in movement habits were taking place. The new experience was relating to space such as relating to the line of gravity and the contact with the ground. It was relating to time, in the experience of freer breathing, and the rhythm and flow in the movements as well as relating to energy in learning to slow down and adjust the energy and sensed how little energy was needed to perform a task. Being present in oneself was experienced in for example how the gravity and contact to the ground proved a stronger sense of one's existence and being. The MQM presents four perspectives in movement quality that are equally considered; physical, physiological, psycho-social-cultural and existential (Skjaerven et al., 2008). The physical perspective is referring to biomechanical elements or space while the physiological perspective is relating to time. The psycho-social-cultural perspective of movement quality is relating to energy and the existential perspective is relating to the person as the "I am". The review find that the informants have been in contact with all perspectives in their movement training and this resulted in development of more functional movement habits.

4.1.2. Coping with pain

The movement awareness is described by the informants as a precondition for being able to notice sensations within the movements, and also described in the changes that are occurring during and after movements. The results indicate that the movement awareness in itself was needed to be learned and were developed and deepened during the training. In the theory on coping with pain (Butler and Moseley, 2003, p. 102) , *exploring ways to move* is mentioned as an active coping strategy. Not only performing movements but *exploring* ways to move – in which they clearly connect the movement awareness to the movement. This is in line with the Movement Awareness Learning Cycle and the practice and theory of Basic Body Awareness Therapy (Lewin et al., 2015, Skjaerven et al., 2010).

The informants reported to experience breathing freer and having vital responses as improved circulation and digestion. They described how they were allowed to be themselves with their difficulties and peculiarities, seen for who they were, which influenced the relation to themselves and others in a positive direction. They also revealed that fear of moving was reduced, and an experience of a clearer self was evident. According to the biopsychosocial perspective on pain, an interrelationship between a person's biological changes, psychological status and sociocultural context is considered when explaining the person's perception and response to pain and illness (Gatchel, 2007, p. 582). Behind the development and maintenance of chronic pain it is seen that fear affects how we move, behave and experience pain (Butler and Moseley, 2003, p. 100). The findings suggest that the informants have experienced changes in all areas of the biopsychosocial perspective on pain, and that their reduction in fear may have had an impact on their decrease in symptoms.

4.1.3. Contact with oneself and salutogenesis

Working on the contact with the physical body in the movements, informants described their experience of how this affected the contact with different sides of themselves mentally and in relational factors. The three-fold contact problem is central in BBAT, a hypothesis of the person's lack of contact with and awareness of the body concerning physical, mental and relational factors (Dropsy, 1987, p. 25). When the informants came in contact with and got insight into needs and possibilities to set borders for themselves this improved the ability to set limits both for themselves and others. The hypothesis of the three-fold contact problem is suggesting that by improving the awareness and contact with own body, the mental and relational factors will be affected. The findings in this review indicate that this has taken place.

The informants described that the movement awareness training influenced their daily life habits and how their own action became meaningful. When identifying own resources through developing more functional movement habits, self-reflection and new thinking, they experienced becoming able to live a better life. They recognized a relationship between what they did and how they felt, and the improved body- and movement awareness was experienced as a tool to assess their action strategies and develop more healthy movement functions. What they describe is a shift in focus from pathology to health, similar to what has been described in theories about the salutogenic health perspective (Antonovsky, 1988, p. 6). Salutogenesis refers to a focus on the origins of health and assets for health in contrast to the

origins of disease and risk factors (Mittelmark et al., 2017, p. 7). The sense of coherence is central in the salutogenesis and has relevance for an individual's ability to engage resources in order to cope with stressors. What the informants are sharing show how they formed a sense of coherence during their treatment. They described both self-reflection and the observing self in this process, and a phase of self-development searching towards health.

4.1.4. Therapeutic factors

The informants describe that they felt more secure and instilling of hope developed. Instilling and maintaining hope are decisive in all therapy (Yalom, 2005, p. 4). Hope motivates the patient for further treatment and believe in itself can have a therapeutic effect. Yalom refers to therapeutic factors as *an enormously complex process that occurs through an intricate interplay of human experiences* (Yalom, 2005, p. 1). Skatteboe is presenting seven therapeutic group factors that are most applicable to clinical work; instilling and maintaining hope, universality, altruism, interpersonal learning, group cohesion, existential factors and catharsis (Skatteboe, 1990, p. 66, Skjaerven et al., 2017, p. 93). Universality is described by the informants, as how being with others with similar complaints and functional problems made them able to recognize themselves in others. It inspired them to learn from each other and gave a feeling of group connectedness. Altruism is connected to not feeling alone in the world and to have something of value to offer others (Yalom, 2005, p. 13). The participants are describing how their relationship to themselves and others had changes in a positive direction and how they felt "worth something". Part of the interpersonal learning is how the group can be seen as a small microcosm, or society, and how working "here and now" in the situation is giving an increased consciousness of an experience of this moment in time (Skjaerven, 2004a, p. 7, Yalom, 2005, p. 19). The transference to daily life is described by the participants and here the movement awareness can be associated with the experience in the situation, and how this makes the transference to other situations in daily life possible. The findings in this review indicate that therapeutic group factors have influenced the process and experience for the participants in the movement groups.

4.1.5. Self-efficacy

The third order analysis resulted in the creation of a new model, "Movement awareness – a process of change based on experiences". The model is based on the themes that emerged

from the findings, the connection between the changes that the informants described and how they formed a continuous process for the persons involved illustrated in five steps. Bandura is suggesting that unless people believe that they can produce desired effects by their actions, they have little incentive to act or to persevere in the face of difficulties (Bandura, 2000, p. 179). He states that one's self-efficacy is the most pervading mechanism of self-influence. By intentionally influencing own functioning and life conditions, people are contributors to their life circumstances not just products of them. The movement awareness training seems to have impacted on the self-efficacy in a positive direction, and this has made facing the difficulties possible in a new way. Through own action the patients have experienced that they do have an impact on how they are doing, and that change is possible. The model "Movement awareness – a process of change based on experiences" can be a support for understanding the therapeutic process for patients receiving physiotherapy treatment where movements with a special focus on developing the movement awareness are used as intervention.

4.2. Strength and limitations

4.2.1. Selection of studies

The selection of studies can either be saturated, where new studies are added until no new evidence is found, or it can be comprehensive, where we search to find all evidence available at the time (Larun and Malterud, 2007). In this review a comprehensive search strategy was chosen knowing that research on the subject was limited and it was an aim to include as many relevant studies as possible. The systematic search in six acknowledged databases is transparent and reproducible, which strengthens the validity of the study. However, no search strategy can guarantee full coverage of the potentially eligible studies, and it is possible that important studies were not found.

The choice to include studies that also used methods that are not specifically physiotherapeutic as long as they were used by a physiotherapist can be questioned, and it can be argued for other choices. My argument for including these studies is that the movement training was done as part of a physiotherapy treatment, movement awareness was addressed and the research in the included studies were aimed at the experience of the treatment.

4.2.2. Methodological quality assessment

Some argue for and some against doing a methodological quality assessment of qualitative data for a meta-synthesis (Malterud, 2017, p. 58, Dixon-Woods et al., 2005). I agree with Malterud that the empiric data we use in our analysis should originate from a process that demonstrates that basic requirements for scientific quality have been met. Malterud claims that methodological quality is a must for inclusion. In this review low quality was decided to be an exclusion criterion, but there was no need to exclude articles due to low quality.

The included studies were assessed by Malteruds guide, formed as a checklist (Malterud, 2001). The argument for this choice is that the checklist was recommended for unexperienced researchers and the 34 detailed sub-questions made the checklist easy to use. A weakness was that the assessment was done by only one person, the author.

4.2.3. Meta-ethnography and analysis

Meta-ethnography was used in the analysis and synthesis of the findings. One weakness of the meta-ethnography is that it does not give advice on the selection of studies or the methodological quality assessment of the studies (Berg and Munthe-Kaas, 2013). Both selection of studies and methodological quality assessment have been discussed and are in this review performed in a systematic and transparent way.

Strengths are that the meta-ethnography is systematic and maintains the individual characteristics of the primary studies. It is detailed and transparent and it has the ability to generate a comprehensive and generalizing theory (Larun and Malterud, 2007). When the meaning units, or key metaphors, were identified it was natural to do a Reciprocal Translation Analysis (RTA) where these were translated into each other (Dixon-Woods et al., 2005). I did not identify enough contradictions that made a refutational synthesis possible. A lines-of-argument synthesis (LOA) was made in order to build a general interpretation of the findings. The distinction between hermeneutic and dialectic aspects of the synthesis can be connected to these. The RTA can be said to be the hermeneutic aspect and refer to the need to portray the findings of the original studies accurately. The dialectic aspect refers to generating new interpretations by comparing and contrasting these findings as in the LOA. In order to make a LOA we need to decide on whether the empiric findings are solid enough to do so (Malterud, 2017, p. 78). The criteria for this judgement is not clear. I base my decision to make a LOA

on the number of studies found, that all of them were assessed to have a good methodologic quality and that my material made this possible.

The analysis of the data material in my project was conducted three times; alone, together with a supervisor, and after 10 months again alone. The reason for this were external circumstances, that made me put away my whole project for almost a year. When I look at the process now, I see that this has strengthened the analysis by making me work through the material several times, with the opportunity to review and reorganize. I also had to redo my literature searches, but no new articles were found.

4.2.4. Reflexivity

Scientific knowledge should be a result of systematic critical reflection as opposed to random impressions or self-confirming claims (Malterud, 2011, p. 17). It is not a question if our preconception as researchers influence the research, but to what extent. My situation as I started this study was as a clinical working physiotherapist educated in BBAT. I realize that this has had an impact on my research question for this study, the inclusion criteria, how I have read the included studies, the analysis and the findings. It has also had an impact on the theory I have presented and my discussion. Through the whole process my aim was to broaden my view and get new insight, and I have searched to be both critical and open to my former knowledge, new knowledge and the findings I have done. My first supervisor is a physiotherapist without education in BBAT, which has helped me to take a meta position, which means looking at the work from a distance and asking myself questions about preconceptions and biases (Malterud, 2011, p. 153). One strength that my former knowledge in BBAT has given is having a vocabulary of describing movements, movement quality and movement awareness.

4.2.5. Other influences and choices made

Other methodologic influences that I find are affecting the study results are the choice of language. A drawback is that it is harder for me to understand and express myself in a second language, and misunderstandings may have occurred. To avoid this, I have had a British colleague read through the whole work giving me feedback on my language. The choice to write in English was made in order to reduce the bias of translating the material from the included studies, all written in English, into Norwegian language. I also wanted to publish the

article in English and writing in English gave me an opportunity of sharing the work with colleagues word wide.

The fact that I am an unexperienced researcher can be a weakness. To strengthen this, I have used my supervisors and also co-students that have worked with similar projects.

A choice was made not to have references in the text when presenting the results. The choice was made because this is an interpretative analysis across eight studies where all studies are represented in the findings.

4.3 Implications

4.3.1 Implication for clinicians

The findings in this review indicate that physiotherapists can create learning situations to improve movement quality and health through a movement awareness learning program where the whole person, all four perspectives, are involved. The results are promising with regard to lowering the musculoskeletal pain experience and increasing function in everyday life, and thereby improve health. Physiotherapy treatment where movements, with a special focus on developing movement awareness, can be a valuable tool for physiotherapists in the treatment of musculoskeletal pain.

The studies included are all undertaken in Scandinavian countries. Danielson point out that within physiotherapy little has been explored when it comes to the concept of movement (Danielsson, 2015, p. 7). Probably the number of included studies is indicating that physiotherapy in most of the world has not yet produced research on this topic. However, the findings done in this study does not have geographic limitations when it comes to implementation, even if the results do originate from a limited area.

In the studies included in this systematic review, six of the studies are using the physiotherapeutic approach Basic Body Awareness Therapy (BBAT). This is an approach that in its theory and practice addresses movement awareness specifically. Additionally, two articles were identified where aspects from the Feldenkrais method and Tai Chi were used as interventions in physiotherapy treatment. Historically BBAT draws on many influences from both eastern and western movement traditions, and both Feldenkrais and Tai Chi are among the many traditions that have influenced BBAT from the outset (Gyllensten, 2001, p. 10). The

results from the different approaches were easy to combine in the review. A difference when it comes to clinical use is that BBAT, as a physiotherapy approach has reliable and valid assessment tools such as Body Awareness Rating Scale – Movement Quality and Experience (BARS MQE) (Skjaerven et al., 2015) and Body Awareness Scale Movement Quality and Experience (BAS MQ-E) (Hedlund et al., 2016). These are the basis for planning and evaluating therapy as well as documenting results of treatment.

No studies where the physiotherapy approaches Norwegian Psychomotor Physiotherapy (NPMP) or Mensendieck therapy were used met the inclusion criteria. The theory on these approaches states that body awareness and movement are a central part of their physiotherapy. The reason why research on this is not found may for example be that research within physiotherapy is still limited and especially qualitative research, which I searched for, or that the research done is aimed at other subjects. If these or other approaches are focusing on movement awareness in their interventions there seems to be a lack of studies published on the topic.

4.3.2. Implications for decision makers

Chronic pain is a major challenge for authorities and health care providers both on a national, regional and local level (Landmark et al., 2013). This is a major cost to our society. The findings in this review indicate that after being in the process of movement awareness learning and training patients are able to give themselves help to self-help. This make them less dependent on formal health care. This is supported by findings in a RCT by Gyllensten where patients receiving BBAT in addition to treatment as usual used fewer psychiatric healthcare services after 12 months (Gyllensten et al., 2009). Less meetings with formal health care will lead to a cost reduction for the person involved and society. A cost reduction that does not cause patients to feel excluded or downgraded, on the contrary it is taking place because patients feel empowered.

In seven of the eight studies included, the movement intervention was done as group therapy. The results indicate that group therapy, as described in this review, can be a good alternative in the treatment of musculoskeletal pain. Group therapy is often cost beneficial for society compared to individual therapy, as only one therapist is needed to treat a group of people. It is however important that the physiotherapist in charge has the knowledge needed to lead movement awareness groups. The theory of the Movement Awareness Learning cycle states

that the physiotherapists own movement awareness is a preconception (Skjaerven et al., 2010).

The research on this kind of treatment is dependent on available resources. This review proposes implications for decision makers to found further research in this area.

The numbers of reviews on qualitative research are still limited. The value of qualitative research within physiotherapy and health should be realized by all decision makers, and important in making this happen are editors in their choice to publish qualitative research.

4.4. Further study

This review identifies a gap in research on movement awareness originated from other physiotherapy approaches than Basic Body Awareness Therapy. This raises a question on how physiotherapists that use other methods view and relate to movement awareness as part of their treatment. Further research can clarify this.

The findings in this review might inform and motivate for further research on movement awareness in physiotherapy. The qualitative knowledge synthesized can be a help in planning and aiming new research projects such as effect studies or other qualitative studies.

4.5 Confidence in findings

I have assessed findings in this review and the CERQual evidence profile is presented in table 6. The result is showing a moderate confidence in the findings. The reason for downgrading the confidence is that the included studies originate only from Scandinavian countries and that only one physiotherapy approach is represented in the studies. However, the studies present 78 informants and a rich material.

Table 5. CERQual evidence profile

CERQual Qualitative Evidence profile

Review finding	Studies contributing to the review finding	Assessment of methodological limitations	Assessment of relevance	Assessment of coherence	Assessment of adequacy	Overall CERQual assessment of confidence	Explanation of judgement
A new experience of the moving body: More contact with their body and how they moved, using less energy, more present "here and now" and more at home in themselves. Improved movement awareness	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Minor concerns[2]	Moderate	Rich material with minor concerns to relevance and adequacy and no or very minor concerns to coherence and methodological limitations.
Less pain and more vitality: Own action became meaningful, vitality in the movements, set limits, ability to release tension, fear of moving was reduced.	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Minor concerns[2]	Moderate	Rich material with minor concerns to relevance and adequacy and no or very minor concerns to coherence and methodological limitations.
Transference to daily life habits: Knowing one's will and having the courage to express it, coping with stress and permitting oneself rest. Transferring movement awareness to daily life activity and self-training.	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Minor concerns[2]	Moderate	Rich material with minor concerns to relevance and adequacy and no or very minor concerns to coherence and methodological limitations.
Being oneself in the world of others: Experienced to be respected and seen for who they were, more balanced in taking care of themselves and others, being able to share own experiences and learn from others.	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Moderate concerns[3]	Moderate	Moderate concerns to adequacy, minor concerns to relevance and no or very minor concerns to coherence and methodological limitations.

Footnotes: The trust is downgraded because of

[1]) All studies conducted in Scandinavia

[2]) The results are mainly from studies on BBAT, other physiotherapy approaches are not represented in the findings. However, the studies present 78 informants and a rich material.

[3]) The results are mainly from studies on BBAT, other physiotherapy approaches are not represented in the findings. The material from some studies are rich and some more scarce.

5. CONCLUSION

The findings in this systematic review indicate that physiotherapy for patients with musculoskeletal pain where movements, with a special focus on movement awareness, was experienced to initiate a process of change. This process was described to include a new experience of the moving body with improved body awareness and integration of more functional movement habits in daily life. The new movement strategy was experienced to dissolve tension, reduce pain and lead to more vitality. They experienced a development towards a clearer self, and a sense of being strengthened as a human being. The improved self-efficacy influenced their ability to relate to others and finding more balanced strategies for taking care of others and themselves simultaneously. According to the findings, the learning process was similar for patients with somatic and mental health issues. Some experienced the movement awareness training as time consuming and demanding. However, from their movement awareness learning experiences, the patients defined their present and future situation less intimidating than before. The process of change described by the patients reflected a salutogenic perspective, described to involve the whole person promoting own health and well-being and activating own resources for more functional movement quality.

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Appendix I. Search history databases November 27th 2017 (six pages)

Database: AMED (Allied and Complementary Medicine) <1985 to November 2017>
Search Strategy:
---

1 Musculoskeletal Pain/ (152)
2 musculoskeletal pain*.tw. (615)
3 musculo-skeletal pain*.tw. (12)
4 Musculoskeletal disease/ (2177)
5 musculoskeletal disease*.tw. (2224)
6 musculo-skeletal disease*.tw. (3)
7 musculoskeletal disorder*.tw. (703)
8 musculo-skeletal disorder*.tw. (15)
9 musculoskeletal problem*.tw. (137)
10 musculo-skeletal problem*.tw. (8)
11 myalg*.tw. (241)
12 bod* pain*.tw. (296)
13 locomotor pain*.tw. (0)
14 (pain* adj1 movement*).tw. (97)
15 Fibromyalgia/ (1642)
16 fibromyalg*.tw. (1831)
17 backache/ or low back pain/ (6097)
18 back pain*.tw. (6421)
19 backache.tw. (1826)
20 Rheumatic disease/ (547)
21 rheumatic disease*.tw. (633)
22 Arthritis rheumatoid/ (1654)
23 rheumatoid arthritis.tw. (1658)
24 Arthritis/ (1075)
25 arthritis.tw. (3896)
26 Stress disorders post traumatic/ (648)
27 post traumatic stress disorder*.tw. (236)
28 posttraumatic stress disorder*.tw. (319)
29 ptsd.tw. (412)
30 Anxiety/ (1044)
31 anxiety.tw. (4541)
32 Depression/ (1284)
33 depressive disorder/ (1374)
34 depress*.tw. (7332)
35 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 (25680)
36 ((movement or body or bodies) adj3 awareness).tw. (179)
37 ((movement or body or bodies) adj3 experience*).tw. (188)
38 ((movement or body or bodies) adj3 consciousness).tw. (20)
39 ((movement or body or bodies) adj3 understanding).tw. (96)
40 36 or 37 or 38 or 39 (453)

41 35 and 40 (89)

Database: Embase <1980 to 2017 Week 47>
Search Strategy:
---
1 musculoskeletal pain/ (8609)
2 musculoskeletal pain*.tw. (6779)
3 musculo-skeletal pain*.tw. (127)
4 musculoskeletal disease/ (24505)
5 musculoskeletal disease*.tw. (2515)
6 musculo-skeletal disease*.tw. (78)
7 musculoskeletal disorder*.tw. (7315)
8 musculo-skeletal disorder*.tw. (209)
9 musculoskeletal problem*.tw. (1547)
10 musculo-skeletal problem*.tw. (54)
11 myalgia/ (44079)
12 myalg*.tw. (12391)
13 bod* pain*.tw. (5473)
14 fibromyalgia/ (17384)
15 fibromyalg*.tw. (14000)
16 low back pain/ (47833)
17 back pain*.tw. (54490)
18 backache/ (45383)
19 backache.tw. (2480)
20 rheumatic disease/ (40163)
21 rheumatic disease*.tw. (19580)
22 rheumatoid arthritis/ (158530)
23 arthritis/ (65059)
24 arthritis.tw. (210569)
25 depression/ (309025)
26 depress*.tw. (497336)
27 anxiety/ (164147)
28 anxiety.tw. (212646)
29 posttraumatic stress disorder/ (48539)
30 posttraumatic stress disorder*.tw. (17500)
31 post traumatic stress disorder*.tw. (11457)
32 ptsd.tw. (24424)
33 locomotor pain*.tw. (5)
34 (pain* adj1 movement*).tw. (572)
35 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 (1213951)
36 ((movement or body or bodies) adj3 awareness).tw. (1161)
37 ((movement or body or bodies) adj3 experience*).tw. (2967)
38 ((movement or body or bodies) adj3 understanding).tw. (1167)
39 ((movement or body or bodies) adj3 consciousness).tw. (358)
40 36 or 37 or 38 or 39 (5533)
41 35 and 40 (767)

Database: Ovid MEDLINE(R) <1946 to November Week 2 2017>
Search Strategy:
---
1 Musculoskeletal Pain/ (2417)
2 musculoskeletal pain*.tw. (4307)
3 musculo-skeletal pain*.tw. (73)
4 Musculoskeletal disease/ (11750)
5 musculoskeletal disease*.tw. (1638)
6 musculo-skeletal disease*.tw. (61)
7 musculoskeletal disorder*.tw. (5277)
8 musculo-skeletal disorder*.tw. (135)
9 musculoskeletal problem*.tw. (1022)
10 musculo-skeletal problem*.tw. (34)
11 myalg*.tw. (8178)
12 bod* pain*.tw. (3349)
13 locomotor pain*.tw. (4)
14 (pain* adj1 movement*).tw. (379)
15 Fibromyalgia/ (8417)
16 fibromyalg*.tw. (8640)
17 backache/ or low back pain/ (36545)
18 back pain*.tw. (35629)
19 backache.tw. (2158)
20 Rheumatic disease/ (23192)
21 rheumatic disease*.tw. (14467)
22 Arthritis rheumatoid/ (100572)
23 Arthritis/ (36256)
24 arthritis.tw. (153604)
25 depressive disorder/ (71611)
26 Depression/ (106107)
27 depress*.tw. (379095)
28 Stress Disorders, Post-Traumatic/ (28990)
29 posttraumatic stress disorder*.tw. (13578)
30 post-traumatic stress disorder*.tw. (7587)
31 ptsd.tw. (16707)
32 Anxiety/ (73098)
33 anxiety.tw. (142476)
34 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 (816360)
35 ((movement or body or bodies) adj3 awareness).tw. (743)
36 ((movement or body or bodies) adj3 experience*).tw. (2064)
37 ((movement or body or bodies) adj3 understanding).tw. (880)
38 ((movement or body or bodies) adj3 consciousness).tw. (218)
39 35 or 36 or 37 or 38 (3835)
40 34 and 39 (451)

Database: PsycINFO <1967 to November Week 2 2017>
Search Strategy:
---
1 Musculoskeletal Disorders/ (2543)
2 musculoskeletal disorder*.tw. (1320)
3 musculo-skeletal disorder*.tw. (21)
4 musculoskeletal pain*.tw. (1348)
5 musculo-skeletal pain*.tw. (22)
6 musculoskeletal disease.tw. (46)
7 musculo-skeletal disease*.tw. (4)
8 musculoskeletal problem*.tw. (178)
9 musculo-skeletal problem*.tw. (4)
10 myalg*.tw. (553)
11 bod* pain*.tw. (885)
12 (pain* adj1 movement*).tw. (86)
13 locomotor pain*.tw. (2)
14 FIBROMYALGIA/ (1723)
15 fibromyalg*.tw. (2906)
16 Back Pain/ (3484)
17 back pain*.tw. (4989)
18 backache.tw. (120)
19 rheumatoid arthritis/ (1771)
20 ARTHRITIS/ (2084)
21 arthritis.tw. (4844)
22 rheumatic disease*.tw. (352)
23 major depression/ (107481)
24 depress*.tw. (265601)
25 anxiety/ (53230)
26 anxiety.tw. (166382)
27 Posttraumatic Stress Disorder/ (28274)
28 posttraumatic stress disorder*.tw. (25388)
29 post traumatic stress disorder*.tw. (8902)
30 ptsd.tw. (28174)
31 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 (405766)
32 ((movement or body or bodies) adj3 awareness).tw. (1201)
33 ((movement or body or bodies) adj3 experience*).tw. (2988)
34 ((movement or body or bodies) adj3 consciousness).tw. (533)
35 ((movement or body or bodies) adj3 understanding).tw. (771)
36 32 or 33 or 34 or 35 (5264)
37 31 and 36 (600)

Sökhistorik från SveMed+ 20.11.2017

Nr	Sökträng	Antal träffar
1	exp:"Musculoskeletal Pain"	57
2	Musculoskeletal Pain*	317
3	exp:"Musculoskeletal Diseases"	6344
4	Musculoskeletal Disease*	632
5	musculoskeletal disorder*	185
6	musculoskeletal problem*	35
7	exp:"Myalgia"	4
8	Myalgi*	43
9	exp:"Low Back Pain"	341
10	exp:"Back Pain"	794
11	Back Pain*	807
12	Backache*	41
13	exp:"Fibromyalgia"	259
14	Fibromyalg*	262
15	exp:"Rheumatic Diseases"	1678
16	Rheumatic Diseas*	251
17	exp:"Arthritis, Rheumatoid"	644
18	exp:"Arthritis"	1451
19	Arthrit*	843
20	exp:"Depression"	1251
21	exp:"Depressive Disorder"	864
22	exp:"Depressive Disorder, Major"	127
23	Depress*	1818
24	exp:"Anxiety"	604
25	exp:"Anxiety Disorders"	499
26	Anxiety	1008
27	exp:"Stress Disorders, Post-Traumatic"	470
28	Post-Traumatic Stress Disorder*	470
29	Posttraumatic Stress Disorder*	470
30	Post Traumatic Stress Disorder*	470
31	ptsd	471
32	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31	10091
33	movement OR body OR bodies	5134
34	exp:"Awareness"	251
35	Awareness	328
36	exp:"Consciousness"	76
37	Consciousness	174
38	understanding	442
39	experience*	2643
40	#34 OR #35 OR #36 OR #37 OR #38 OR #39	3511
41	#33 AND #40	207
42	#32 AND #41	40

Search history CINAHL 20.11.2017

S42	S36 AND S41 (333)
S41	S37 OR S38 OR S39 OR S40 (1898)
S40	TX (movement OR body OR bodies) N3 consciousness (99)
S39	TX (movement OR body OR bodies) N3 understanding (395)
S38	TX (movement OR body OR bodies) N3 experience* (1000)
S37	TX (movement OR body OR bodies) N3 awareness (473)
S36	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 (198819)
S35	TX ptsd (5544)
S34	TX post-traumatic stress disorder* (11571)
S33	TX post traumatic stress disorder* (11572)
S32	TX posttraumatic stress disorder* (3890)
S31	(MH "Stress Disorders, Post-Traumatic") (10694)
S30	TX anxiet* (50087)
S29	(MH "Anxiety") (19964)
S28	TX depression* (90114)
S27	(MH "Depression") (53090)
S26	TX Arthritis (38343)
S25	(MH "Arthritis") (6117)
S24	(MH "Arthritis, Rheumatoid") (11038)
S23	TX Rheumatic Disease* (4262)
S22	(MH "Rheumatic Diseases") (1470)
S21	TX back ache* (62)
S20	TX backache* (220)
S19	TX Back Pain* (22803)
S18	(MH "Back Pain") (6621)
S17	(MH "Low Back Pain") (11405)
S16	TX fibromyalgia (4220)
S15	(MH "Fibromyalgia") (3423)
S14	TX locomotor pain* (29)
S13	TX bod* pain* (2362)
S12	TX myalg* (1336)
S11	TX Muscle Pain* (4314)
S10	(MH "Muscle Pain") (1483)
S9	TX musculo-skeletal problem* (21)
S8	TX musculoskeletal problem* (737)
S7	TX musculo-skeletal disorder* (29)
S6	TX musculoskeletal disorder* (2849)
S5	TX Musculo-skeletal pain* (39)
S4	TX Musculoskeletal pain* (3505)
S3	TX Musculo-skeletal Disease* (17)
S2	TX Musculoskeletal Disease* (6689)
S1	(MH "Musculoskeletal Diseases") (5001)

Appendix II. Excerpt of matrix of meaning units and translation

Gustafsson et al (2004)	Uhling et al (2010)	Johnsen &Råheim (2010)	Öhman et al (2011)	Madsen et al (2016)	Danielsson & Rosberg (2015)	Olsen & Skjærven (2016)	Olsen et al (2017)	Translation
"Self-confidence changed positively. They felt tougher and described how it became easier to have an opinion."		"Self-awareness was also bound to knowing one's own will and having the courage to express it."	"Reduce dependence on formal health care in the long run. If it would be possible to retain what they had learned from the training, it would be a help to self-help, they felt."	"She had noticed how she had learned to listen to her own body and respect what it was telling her. She cared more about her health and prioritised working out, taking a yoga class or doing a BBAT session instead of previously daily compulsive vacuum cleaning and shopping for clothes or shoes."	"Some participants started to use parts of the movements sessions, modified in their own personal ways, as coping strategies in daily life."	"The informants described being in a process of learning to accept their bodies and finding new ways to move. They perceived such experience to be liberation and empowering."	"Involving the toes and adjusting the step length when walking was experienced to give better balance and more power in order to move forwards."	Self-awareness: knowing one's own will and having the courage to express it. Self-confidence changed positively, reduced dependence; help to self-help, to be more careful with themselves; ask for help, take breaks, rest more.
"Using relaxation strategies frequently improved body control, energy and concentration and it gave pain relief, reduce stress and prevented deterioration."	"Some used Tai Chi as stress reduction both at home and work."	"Awareness of respiration also helped participants with stress management and made it easier to fall asleep."	"More careful with themselves and do not force themselves to do more than they can handle. They ask for help and allow themselves to take breaks and rest more."	"All participants had learned to focus on their breathing as a way to cope with stressful situations and emotional outburst."	"Opening for a recognition of the close relationship between their physical and psychological distress. They described noticing how they were moving- posture, tension and breathing – and they linked these patterns to how they felt emotionally."		"They reported to use movement aspects such as rhythm, free breathing and adjustment of energy as tools for responding adequately to body signals while moving."	Stress reduction, stress management and cope with stressful situations. Reduce one's own demands. New routines; taking care of oneself instead of being trapped in stressful behaviour. The close connection between physical and psychological distress.

Appendix III

Author guidelines: Journal of Bodywork and movement therapies (Printed 12.04.2018)

The Journal of Bodywork and Movement Therapies brings you the latest therapeutic techniques and current professional debate. Publishing highly illustrated articles on a wide range of subjects this journal is immediately relevant to everyday clinical practice in private, community and primary health care settings.

Presentation of typescripts

Your article should be typed on one side of the paper, double spaced with a margin of at least 3cm. Rejected articles, and disks, will not be returned to the author unless an SAE is enclosed.

Papers should be set out as follows, with each section beginning on a separate sheet: **title page, abstract, text, acknowledgements, references, tables,** and **captions to illustrations.**

You should give a maximum of four **degrees/qualifications** for each author and the current relevant appointment.

The abstract should be **250-300 words** in length.

Text

Headings should be appropriate to the nature of the paper. The use of headings enhances readability. Three categories of headings should be used:
•major ones should be typed in capital letters in the centre of the page and underlined
•secondary ones should be typed in lower case (with an initial capital letter) in the left hand margin and underlined
•minor ones typed in lower case and italicised

Do not use 'he', 'his', etc. where the sex of the person is unknown; say 'the patient', etc. Avoid inelegant alternatives such as 'he/she'. Avoid sexist language.

Avoid the use of first person ('I' statements) and second person ('you' statements). Third person, objective reporting is appropriate. In the case of reporting an opinion statement or one that cannot be referenced, the rare use of 'In the author's opinion?' or 'In the author's experience?.' might be appropriate. If in doubt, ask the editor or associate editor for assistance.

Acronyms used within the text are spelled out at the first location of usage and used as the acronym thereafter. For example, 'The location of a central trigger point (CTrP) is central to a taut fiber. The CTrP is palpated by.....'

Single quotation are used to express a quote marks (Matthews (1989) suggests, 'The best type of?') while double quotation marks are used for a quote within a quote or to emphasise a word within a quote.

Promotion of self, seminars or products is inappropriate. Reference to a particular product as it applies to the discussion, particularly where valid research of the product or comparison of products is concerned, can be included as long as a non-promotional manner is used.

Illustrations

The journal is fully illustrated throughout. Please give consideration at an early stage of writing your paper to the illustrations which will enhance and develop the text. It is the author's reponsibility to provide all the illustrations for the paper. However, following discussion with the Editor, Journal of Bodywork & Movement Therapies may undertake (at no expense to the author) redrawing from supplied references figures. Additionally Journal of Bodywork & Movement Therapies has access, at no cost to the author, to illustrations appearing elsewhere in Elsevier imprint books and journals. Full source files should be supplied at submission. Label each figure with a figure number corresponding to

the order it appears within the article (i.e., Figure 1, Figure 2). Ensure that each illustration is cited within the text ('see Figure 1') and that a caption is provided.

Reference style

The accuracy of references is the responsibility of the author. This includes not only the correct contextual use of the material, but also the citation itself. In the text your reference should state the author's surname and the year of publication (Smith 1989); if there are two authors you should give both surnames (Smith & Black 1989). When a source has more than two authors, give the name of the first author followed by 'et al'. (Smith et al 1989). No commas are used between the name and date. It is important to verify the correct and full title, the full authorship, and all other reference details with the original source (book, journal, etc.,) or through a service, such as Medline or ScienceDirect.

A list of all references in your manuscript should be typed in alphabetical order, double spaced on a separate sheet of paper. Each reference to a paper needs to include the **author's surname** and **initials, year of publication, full title of the paper, full name of the journal, volume number** and **first and last page numbers.** The names of multiple authors are separated by a comma with each appearing as surname followed by initials. The date is placed after the author's name(s), not at the end of the citation.

Here are examples:
Cleary C, Fox JP 1994 Menopausal symptoms: an osteopathic investigation. Complementary Therapies in Medicine 2: 181-156

References to books should be in a slightly different form:
Chaitow L 1996 Muscle Energy Techniques. Churchill Livingstone, Edinburgh
Hicks CM 1995 Research for Physiotherapists. Churchill Livingstone, Edinburgh
When citing a paper that has a digital object identifier (doi) please use the following style:
Liebenson C 2000 Sensory motor training. Journal of Bodywork and Movement Therapies 4: 21-27. doi: 10.1054/jbmt.2000.0206

References to Datasets: [dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. http://dx.doi.org/10.17632/xwj98nb39r.1.

Appendix IV.

Copy of the communication with ELSEVIER on word limitations in articles for Journal of Bodywork and Movement Therapies.

Dear Dr Marie,

Thank you for contacting us via Chat; a copy of our conversation is below for your reference.

Should you have any further questions, please visit our Support Center for FAQs and ways to contact us.
Kind regards

John Keh Lu Wenceslao
Researcher Support
ELSEVIER

By promoting gender parity, we empower science and people to go beyond the limits. Find out how we support women in science through our programs and awards, and a dedicated resource center.

For assistance, please visit our Customer Support site where you can search for solutions on a range of topics and find answers to frequently asked questions.

From: John Keh Lu Wenceslao
Date: 20/04/2018 09.04 AM

Hi, my name is John Keh Lu Wenceslao. How may I help you?
Anne Marie Hetlevik: Hi! I want to publish a qualitative systematic review in Journal of Bodywork and Movement Therapies. I do not find any limitations on words in the guidelines. Do you have a limitation?
John Keh Lu Wenceslao: Thank you for your inquiry Dr Hetlevik.
John Keh Lu Wenceslao: Please wait for me to check this for you.
John Keh Lu Wenceslao: Thank you for patiently waiting Dr Hetlevik.
John Keh Lu Wenceslao: From checking in the guide for authors, there is no specifi instruction regarding word limit.
John Keh Lu Wenceslao: Since this is the case, you can submit your paper as is.
Anne Marie Hetlevik: Thank you. Then I will work on.
Anne Marie Hetlevik: Have a Nice day!
John Keh Lu Wenceslao: You're most welcome.
'Anne Marie Hetlevik' disconnected ('Concluded by End-user').

Movement awareness in physiotherapy addressing musculoskeletal pain: A systematic review of qualitative studies on patients' experiences

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Master's Program: Master in Evidence-Based Practice for Health and Social Sciences

Faculty: Faculty of Health and Social Sciences

Institution: Western Norway University of Applied Sciences

Intended journal: Journal of Bodywork and Movement Therapies

Number of words: 5107

ABSTRACT

Objective: To synthesize the existing knowledge and provide insight into how patients with musculoskeletal pain experience physiotherapy movement interventions that focus on movement awareness.

Method: A systematic review of qualitative studies was conducted. Ovid EMBASE, Ovid Amed, Ovid MEDLINE, Ovid PsycInfo, Ebsco CINAHL and SveMed+ were searched for empirical qualitative studies investigating experiences from patients with musculoskeletal pain on physiotherapy movement interventions focusing on movement awareness. Two researchers independently assessed the identified studies for inclusion and methodological quality of the included studies were assessed. Meta-ethnography was used to synthesize the data across the studies and for a second-order interpretation of the original findings. Finally, a lines-of-argument synthesis was conducted.

Findings: 1484 unique studies were identified. Eight studies were included, all assessed to have high methodological quality. The studies included a total of 87 participants from both psychiatric and somatic settings. The findings reveal that the movement awareness training was starting a process of change, activating a new experience of the moving body with improved body awareness and integration of more functional movement habits in daily life. The new movement strategy was experienced to dissolve tension, reduce pain and lead to more vitality. They experienced a development towards a clearer self, and a sense of being strengthened as a human being. The improved self-efficacy influenced their ability to relate to others and finding more balanced strategies for taking care of others and themselves simultaneously. A model was developed to illustrate the process of change during treatment.

Conclusion: Patients experienced movement awareness training beneficial for improvement on pain and function in daily life. Their process of change reflected a salutogenic perspective, described to involve the whole person promoting own health and well-being and activating own resources for more functional movement quality.

Key words: Movement awareness, physiotherapy, musculoskeletal pain, meta-ethnography

Number of words: 297

INTRODUCTION

Musculoskeletal pain is one of the main contributors to reduced function in daily life and sick leave. An estimated 20 percent of the population worldwide suffer from musculoskeletal pain that have persisted for more than 3 months (Butler and Moseley, 2003). The prevalence of chronic pain was 36 percent among women and 25 percent among men in Norway in 2013, and chronic pain was strongly associated with work capacity (Landmark et al., 2013). Chronic pain is a challenge for authorities and health care providers at national, regional and local levels.

Pain is a warning sign from the brain about threats or danger (Butler and Moseley, 2003). Thoughts, ideas, fears and emotions are seen as nerve impulses which have electrochemical consequences for the brain, just like inputs from damaged tissues, and are part of the pain experience. Active coping strategies for handling pain are for example learning about the problem, exploring and nudging the limits of pain, staying positive, making plans and exploring ways to move (Butler and Moseley, 2003).

The World Confederation for Physical Therapy (WCPT) state that human movement depends upon 'the integrated, coordinated function of the human body at a number of levels, and is an essential element of health and wellbeing' (WCPT, 2011). Physical, psychological, social and environmental factors influence the individual's capacity to change, and the individuals' views of themselves enable them to develop an awareness of their own movement needs and goals. Although the concept of movement is described as one of the corner stones of clinical practice for physiotherapists, it is little explored (Danielsson, 2015). Movement awareness can be defined as 'a sensitivity to movement nuances, becoming aware of own movements, in relation to space, time and

energy, and to identify subtle movement reactions to internal and environmental conditions' (Skjaerven, 2015).

Basic Body Awareness Therapy (BBAT) is a health oriented, person-centered and process-oriented physiotherapeutic approach, and aims to support the patient to become aware of, discover and keep, the ability to develop and obtain more functional balance and movement co-ordinations (Skjaerven, 2015). By the use of simple, slow movements followed by a conceptualization and reflection on body and movement experiences, the movement-based method addresses the interaction of the whole person, aiming at enhanced awareness and movement quality (Danielsson, 2015). Movement quality includes four perspectives; the physical, physiological, psycho-sosio-cultural and existential perspective (Skjaerven et al., 2008). Postural stability, free breathing and mental awareness are key elements that promote more functional movement quality, wellbeing and health when they are integrated into movements (Skjaerven and Sundal, 2016). The Movement Awareness Learning Cycle presents a seven step process to foster more functional movement quality and habits; to take contact with, explore, experience, integrate, create meaning, master and conceptualize/reflect (Skjaerven et al., 2010).

BBAT and its principals can be implemented into health promotion and preventive health care as well as clinical practice and rehabilitation, and is used to meet several health challenges including treatment of chronic pain (Gyllensten, 2001). Physiotherapists also implement aspects from other movement traditions such as the Feldenkrais method (Jain et al., 2004) and Tai Chi (Verhagen A.P., 2004) in their movement awareness training.

OBJECTIVE

The objective of this systematic review is to synthesize the existing knowledge at this point and provide insight in how patients with muscular skeletal pain experience physiotherapy where movements, with a special focus on developing movement awareness, are used as intervention. The research question is:

How does patients with musculoskeletal pain experience physiotherapy treatment where movements, with a special focus on movement awareness, are used as intervention?

METHOD

The study is a systematic review of qualitative studies using meta-ethnography to synthesis the data (Noblit and Hare, 1988). The meta-ethnography includes seven phases that overlap and repeat as the synthesis proceeds, presented in Box 1.

Please insert Box 1 here.

Search and selection of studies

Ovid EMBASE, Ovid Amed, Ovid MEDLINE, Ovid PsycInfo, Ebsco CINAHL and SveMed+ were systematically searched from inception up to November 20th 2017. The search strategy used both topic specific subject headings and text words based on the inclusion criteria (search strategy web appendix 1). The search strategy was peer reviewed by a research librarian using the procedure Peer Review of Electronic Search

Strategy (PRESS) (McGowan et al., 2016). The reference lists of the included studies were screened and experts in the field contacted. The inclusion criteria were

- Population: Patients with musculoskeletal pain, adults over 18 years old.
- Situation: Physiotherapy treatment that use movement as intervention and addresses movement awareness.
- Study design: Empirical studies using qualitative methods for data collection and analysis.

Studies in English and Scandinavian language were included and there were no date or geographic restrictions.

Two reviewers independently screened titles and abstracts. Potentially relevant references were retrieved in full text and screened in the same way. Disagreements were discussed and resolved by consensus. The methodical quality of the included studies was assessed using 'Guidelines for authors and reviewers of qualitative studies' by Malterud (Malterud, 2001). The checklist consists of 34 detailed sub-questions covering aim of the study, reflexivity, methods and design, data collection and sampling, theoretical framework, methods of analysis, results, discussion as well as presentation.

Analysis

The process of analyzing the data started by determining how the studies were related. A reciprocal translation was conducted as the included studies dealt with the same themes (Noblit and Hare, 1988). The translation is unique while it protects the particular, respect holism and enable comparison. The translation was to be idiomatic, meaning that it focused on the meaning of the content (Malterud, 2017). First, all

meaning units of one study were found, and categorized according to content without any predefined headlines. The next study was translated into this one, by finding units that dealt with the same themes. The results of this work were put in a matrix where the units were simplified, and headlines adjusted. The findings formed a second order analysis, and finally this was used in a lines of argument synthesis.

RESULTS

The search identified 1484 unique studies which were screened by title and abstract. 34 articles were assessed in full text for eligibility, and 26 were excluded due to patient population, intervention, outcome or study design. Eight studies fulfilled the inclusion criteria and were included in this review. The selection process is presented in a flow diagram (Moher et al., 2009), figure 1.

Please insert figure 1 here.

Characteristics of the studies included

All the included studies were undertaken in Scandinavian countries between 2004 and 2017 (Gustafsson et al., 2004, Johnsen and Råheim, 2010, Uhlig et al., 2010, Öhman et al., 2011, Danielsson and Rosberg, 2015, Madsen et al., 2016, Olsen and Skjaerven, 2016, Olsen et al., 2017). Altogether 87 informants were included, varying from 3 to 18 participants in the studies. In seven of the eight studies included, the movement awareness training was offered as group intervention, while one used individual therapy. Semi-structured interviews were used for data collection in four of the studies,

while focus group interviews were conducted in three studies. In one study, diary notes and thematic interviews were used. Three studies were from the psychiatric field and five form the somatic. All included studies were rated to have high methodological quality (appendix A). Characteristics of the studies are presented in table 1.

Please insert table 1 here.

Findings

The findings indicate that the movement training made the patients gain a new experience of their movements and themselves, and new movement habits were integrated in daily life. The changes were described as a process, which led to reduced pain and more vitality. A clearer sense of 'the self 'was experienced to strengthen their ability to relate to others. A model was created based on the findings, illustrating the process of change during treatment.

A new experience of their moving body

A range of views on how the movement awareness training had given the informants new experiences of their body and movements were presented. Coming more in contact with, and thus becoming aware of, the line of gravity and functional balance helped the informants to move in a more healthy and functional way. The informants reported that they could better sense how little energy they actually needed to perform movements according to the need of the task. Descriptions like 'being closer to own body' and 'a sense of being lighter – as if a weight was lifted from the body', are presented. The relation to and contact with the ground was associated with 'a landing platform of certainty and stability'. Experiences of gravity and being supported by the ground were

related to a sense of firmness and reliability, as earthy, immediate proving a sense of ‘evidence’ for one’s existence and being. What this presents can be understood as movement awareness learning.

The informants expressed that as a result of developing movement awareness, they were more able to deal with the pain and learn more healthy movement strategies which brought the possibility of change and improvement. They described gaining more clarity of the body and their ways of moving that earlier had felt ‘blurred’ and ‘finding unexpected possibilities’. Some described that the movements had a therapeutic quality that engaged the whole self and provided a release of tension and a sense of stillness. The data also revealed the experience of opening for recognition of the close relationship between their physical and psychological distress.

Being *in* the movement coordination focusing on movement awareness over time allowed integration of more natural and free breathing and provided the possibility of becoming aware of sensations while moving. It took time before they became consciously aware of their body reactions and more present ‘here and now’, described as a sense of being more at home in themselves.

Reduced pain and more vitality

Experience of reduced pain in the body, and reduced pain also during being in movement were described. For some the pain got worse before decreasing to a lower level than before the treatment. Their fear of moving was reduced, and a feeling of security and hope was developed. They experienced recognizing the movement patterns that they associated with tension and anxiety and being able to make a change towards more healthy movement habits. They described using movements as coping strategies in

daily life. An exploratory process had started which involved a change in posture, balance, movement coordination and stability. They associated this with vital responses such as experiences of improved circulation and digestion. The focus changed from illness towards health.

In the informants' statements, a recurring theme was how to recognize and acknowledge boundaries and set limits both for themselves and in relation to others. Being in the movements and becoming aware was a support to find their limits and respect them, and strategies for handling them were developed.

In the data material the ability to relax was described as a comfortable tiredness and calmness which many had longed for as a desirable aspect of health. The informants used the word relaxation synonymously with releasing their muscular tension or giving in to gravity. The ability to allow themselves to be in this calmness had for several led to better sleep. Some associated relaxation with experiences of more physical and mental energy and increased happiness. They described experiencing a stronger presence in the moments affecting their thoughts and emotions in a calming way.

Some of the informants described a sense of being able to 'stand on my own' associated with the realization of 'I can'. Some described that after being in this process of learning they could give themselves help to self-help, and they felt less dependent on formal health care. They described that a process of change had started and that they thereby asked themselves questions and reflected upon their life situation and actions, with possibilities for choosing new strategies.

The informants described having experienced personal and relational development. Through becoming more aware of the body, they experienced the possibility of coming

in contact with and thus ‘listen’ to body reactions. Consequently, they experienced improved ability to conceptualize what they found, and to describe their perceptions and thoughts both to themselves and to others. This was expressed as the sense of shame started to change towards respect for themselves. When taking more care of themselves, they experienced a sense of growing self-confidence, adjusting self-demands and respecting own needs. Some expressed having met feelings of sadness and distress when exploring their movement awareness but found themselves able to reflect upon the emotions and process them, consequently obtaining new personal insight. A close link between ability and vulnerability came forward.

The process of learning to accept their body and finding new ways to move was experienced by the informants as liberating and empowering. They reported recognizing own intentions and will and experienced themselves as being valuable individuals expressed as ‘the reins of your life are in your own hands’ and that it was ‘as if moving from chaotic to predictable’. Feeling strengthened as a person, some of them experienced a growing sense of stability when meeting others. Feeling more united, more present in their bodies and their lives in general was associated with the movement awareness training.

Transference to daily life habits

In all the included studies, the informants experience that the movement awareness training influenced their daily life habits. Their own actions became meaningful in a new way, and they considered self-reflection and alternative thinking important for the ability to live a better life with their current situation. Examples of new strategies in

daily life were changing priorities, ask for help, make plans, reduce demands on themselves, and to have time for themselves.

The informants described how they had implemented self-training in different ways, aimed to both maintain and further improve. They reported that they could use movements both at home and at work as stress mastering. From their descriptions their choice of movements varied, based on individual needs. The improved body- and movement awareness was experienced by the informants as a tool to interpret their action strategies in a better way. They described realizing a connection between what they did and how they felt, and that they could influence their pain positively by consciously searching for healthy movement functions.

Being oneself in the world of others

Informants' experiences from group intervention and individual therapy were similar. However, one difference was that the informants who only received individual treatment and the informants from the Feldenkrais group expressed feeling more dependent on their physiotherapist (PT).

The participants described the atmosphere created by the PT as one of acceptance and tolerance, that they were seen and cared for, and the PT had sufficient time for them. They described a predictable and consistent structure, where the guidance gave direction and purpose. The calm and safe atmosphere in the room was seen as important for being able to truly explore meaning in the movements from a 'here and now' perspective. The participants described that the PT provided a safe place for the participants to quietly connect with their body, being able to sense and achieve changes without having to perform.

The informants used the words supportive, inclusive and respectful to describe the group, and they experienced a sense of belonging to the group. In one of the studies, the informants expressed ‘to be a member of the group meant feeling that one was worth something’. Several participants described experiences of how the relation to themselves and others had changed in a positive direction. They felt that they had been allowed to be themselves with their difficulties and peculiarities, and they were seen for who they were. They got in touch with their own relational boundaries, seeing own habits when relating to important others in a new light, which sometimes was experienced as a demanding realization. Some reported becoming more mild and open towards their family, changing from being isolated and suspicious to be more social and open to others. The new understanding was experienced as helpful for finding a more balanced strategy for taking care of others and themselves simultaneously. From their learning experiences, the informants defined their present and future situation less intimidating than before.

Third-order analysis

A third-order analysis was made by seeing the results as a whole and searching for connections that would give answers to the question on how therapy that includes movement awareness was experienced to affect musculoskeletal pain. The themes found in the second order analysis appeared to be dependent on each other, and they formed a continuous process for the persons involved. The process was dependent on true involvement in the movements and the development of greater movement awareness.

This resulted in creating a model, ‘Movement awareness – a process of change based on experiences’, presented in figure 2.

Please insert figure 2 here.

The figure is based on the results of the data analysis. It illustrates how new experiences of own body and movement can start a process of change for the individual participant. The new experiences of own body and movement are developed through the movement awareness training and they lead to a clearer experience of oneself in a here-and-now perspective. A transfer of this new insight into function and daily life habits starts to happen both consciously and unconsciously, initiating a change in movement strategies as well as a change in attitude towards oneself. Through this, the pain and energy may be influenced positively, with experiences of reduced pain and more vitality. The recognition of own actions and habits enables the individual to take a healthier approach to life, taking better care of oneself and thereby also functioning better in relation to others.

The five steps in the model (figure 2) can be seen as interrelated steps of a learning process with impact on an individual’s every-day functions and relationships, based on movement awareness in person-centered, health-oriented and experience-based physiotherapy. This is seen as a process that will continue as the individual continues their work with movement awareness, a precondition for their changed function.

DISCUSSION

Discussion on findings

The objective of this review was to synthesize the existing knowledge and provide insight into how patients with musculoskeletal pain experience physiotherapy treatment where movements, with a special focus on developing movement awareness, were used as intervention. The findings indicate that the movement training gave the patients new experiences of their movements and body, and more functional movement habits was integrated in daily life. The changes were experienced as a process leading to reduced pain and increased vitality. A clearer sense of 'the self 'was experienced to strengthen their ability to relate to others.

The results indicate that the movement awareness was developed and deepened during the training. In the theory on coping with pain (Butler and Moseley, 2003) , 'exploring ways to move' is mentioned as an active coping strategy. Here they clearly connect the movement awareness to the movement. This is also in line with the Movement Awareness Learning Cycle (Skjaerven et al., 2010).

The informants reported breathing more freely and vital responses such as improved circulation and digestion. They described how they were allowed to be themselves with their difficulties and peculiarities, and seen for who they were, which influenced the relation to themselves and others in a positive direction. According to the biopsychosocial perspective on pain, an interrelationship between a person's biological changes, psychological status and sociocultural context is considered when explaining the person's perception and response to pain and illness (Gatchel, 2007). The findings

suggest that the informants experienced changes in all areas of the biopsychosocial perspective on pain.

The findings also revealed that fear of moving was reduced, and an experience of a clearer self was evident. Behind the development and maintenance of chronic pain it is seen that fear affect how we move, behave and experience pain (Butler and Moseley, 2003). The reduction in fear may have had an impact on their decrease in symptoms.

Working on the contact with the physical body in the movements, informants described their experience of how this affected the contact with different aspects of themselves mentally and in relational factors. The three-fold contact problem is central in BBAT, a hypothesis of the person's lack of contact with and awareness of own body concerning physical, internal psychological and mental processes, and with the external environment, including relational factors (Dropsy, 1987). When the informants came in contact with and got insight into needs and possibilities to set borders this improved the ability to set limits both for themselves and others. The hypothesis of the three-fold contact problem is suggesting that by improving the awareness and contact with own body, the mental and relational factors will be affected. The findings in this review indicate that this has taken place.

The informants described that the movement awareness training influenced their daily life habits and how their own action became meaningful. When identifying own resources through self-reflection and new thinking, they experienced being able to live a better life. They recognized a relationship between what they did and how they felt, and the improved body- and movement awareness was experienced as a tool to assess their action strategies and develop more healthy movement habits. What they describe is a

shift in focus from pathology to health, similar to what has been described in theories about the salutogenic health perspective (Antonovsky, 1988). Salutogenesis refers to a focus on the origins of health and assets for health in contrast to the origins of disease and risk factors (Mittelmark et al., 2017). The sense of coherence is central in the salutogenesis and has relevance for an individual's ability to engage resources in order to cope with stressors. What the informants are sharing show how they formed a sense of coherence during their treatment.

The third order analysis resulted in the creation of a model named 'Movement awareness – a process of change based on experiences'. The model presents a continuous process for the persons involved and is illustrated in five steps. Bandera is suggesting that unless people believe that they can produce a desired effect by their actions, they have little incentive to act or to persevere in the face of difficulties (Bandura 2000). He states that one's self-efficacy is the most pervading mechanism of self-influence. By intentionally influencing own functioning and life conditions, people are contributors to their life circumstances not just products of them. The movement awareness training seems to have impacted on the self-efficacy in a positive direction, and this has made facing the difficulties possible in a new way. Through own action the patients have experienced that they do have an impact on how they are doing, and that change is possible.

Strengths and limitations

The selection of studies can either be saturated, where new studies are added until no new evidence is found, or it can be comprehensive, where we search to find all evidence

available at the time (Larun and Malterud, 2007). In this review a comprehensive search strategy was chosen knowing that research on the subject was limited and it was an aim to include as many relevant studies as possible. The systematic search conducted is transparent and reproducible, which strengthens the validity of the study. However, no search strategy can guarantee full coverage of the potentially eligible studies, and it is possible that important studies were not found.

Some argue for and some against doing a methodological quality assessment of qualitative data for a meta-synthesis (Malterud, 2017, Dixon-Woods et al., 2005). An argument for doing a methodological quality assessment is that the empiric data we use in our analysis should originate from a process that demonstrates that basic requirements for scientific quality have been met. This was the motivation for performing the analysis.

The included studies were assessed by Malteruds guide, in the form of a checklist (Malterud, 2001). The argument for this choice is that the checklist was recommended for unexperienced researchers and the 34 detailed sub-questions made the checklist easy to use. A weakness was that only one person, the author, did the assessment.

Meta-ethnography was used in the analysis and synthesis of the findings. One weakness of the meta-ethnography is that it does not give advice on the selection of studies or the methodological quality assessment of the studies (Berg and Munthe-Kaas, 2013). Strengths are that the meta-ethnography is systematic and maintains the individual characteristics of the primary studies. It is detailed and transparent and it has the ability to generate a comprehensive and generalizing theory (Larun and Malterud, 2007).

Scientific knowledge should be a result of systematic critical reflection as opposed to random impressions or self-confirming claims (Malterud, 2011). In this research I have searched to bracket former knowledge, which means taking a conscious distance to own pre-understanding (Malterud, 2011). Still it is not a question if our preconception as researchers influence the research, but to what extent. My stand point when I started this study was as a clinical physiotherapist educated in BBAT. To secure the validity I have used my first supervisor who is a physiotherapist without education in BBAT, which has helped me to take a meta position, which means looking at the work from a distance and asking questions about preconceptions and biases (Malterud, 2011). One strength that my former knowledge in BBAT has given is having a vocabulary for describing movements, movement quality and movement awareness. As previously mentioned there is little work done on this particular subject anywhere else in physiotherapy.

Implications for practice

The findings indicate that physiotherapists can create learning situations to improve movement quality and health through a movement awareness learning program where the whole person is involved. The results are promising in lowering the muscular skeletal pain experience and increasing function in everyday life, and thereby improve health. Physiotherapy treatment where movements, with a special focus on developing movement awareness, can be a valuable tool for physiotherapists in the treatment of musculoskeletal pain. One approach where this is emphasized is Basic Body Awareness Therapy which is developed over 40 years where movement awareness is part of the theory and practice.

In the studies included in this systematic review, six of the studies are using the physiotherapeutic approach Basic Body Awareness Therapy (BBAT). The two other studies are using aspects from the Feldenkrais method and Tai Chi as interventions in physiotherapy treatment. A difference when it comes to clinical use is that BBAT, as a physiotherapy approach, has reliable and validated assessment tools to evaluate outcome of treatment such as Body Awareness Rating Scale – Movement Quality and Experience (BARS MQE)(Skjaerven et al., 2015) and Body Awareness Scale Movement Quality and Experience (BAS MQ-E) (Hedlund et al., 2016). These are the basis for planning and evaluating therapy as well as documenting results of treatment.

The studies included are all undertaken in Scandinavian countries. Danielson points out that within physiotherapy little is explored regarding the concept of movement (Danielsson, 2015). Probably the number of studies included in this review is indicating that physiotherapy in most of the world has not yet produced research on this topic. However, the findings of this study have no geographic limitations when it comes to implementation, even if the results originate from a limited area.

Implications for decision makers

Chronic pain is a major challenge for authorities and health care providers both on a national, regional and local level (Landmark et al., 2013). This is a major cost in our society. The findings in this review indicate that after being in the process of movement awareness learning and training the participants were able to provide their own self-help. This makes them less dependent on formal health care. This is supported by findings in an RCT by Gyllensten where patients receiving BBAT in addition to

treatment as usual used fewer psychiatric healthcare services after 12 months (Gyllensten et al., 2009). The treatment can lead to a cost reduction for the person involved and for society. A cost reduction that do not cause patients to feel excluded or downgraded, on the contrary it is taking place because patients feel empowered.

The research into this type of treatment depends on available resources. This review provides implications for decision makers to found further research in this area.

The numbers of reviews on qualitative research are still limited. The value of qualitative research within physiotherapy and health should be recognized by all decision makers, and editors are important in making this happen in their choice of publishing qualitative research.

Further study

This review identifies a gap in research on movement awareness originated from other physiotherapy approaches than Basic Body Awareness Therapy. This raises a question on how physiotherapists that use other methods view and relate to movement awareness as part of their treatment. Further research can clarify this.

The findings in this review might inform and motivate for further research on movement awareness in physiotherapy. The qualitative knowledge synthesized can be a help in planning and aiming new research projects such as effect studies or other qualitative studies.

Confidence in findings

To assess how much confidence to place in the findings of this review the Confidence in the Evidence from Reviews of Qualitative research (CERQual) assessment has been conducted (Lewin et al., 2015). The result is showing a moderate confidence in the findings (appendix B).

CONCLUSION

The findings in this systematic review indicate that physiotherapy for patients with musculoskeletal pain where movements, with a special focus on movement awareness, was experienced to initiate a process of change. This process was described to include a new experience of the moving body with improved body awareness and integration of more functional movement habits in daily life. The new movement strategy was experienced to dissolve tension, reduce pain and lead to more vitality. They experienced a development towards a clearer self, and a sense of being strengthened as a human being. The improved self-efficacy influenced their ability to relate to others and finding more balanced strategies for taking care of others and themselves simultaneously. According to the findings, the learning process was similar for patients with somatic and mental health issues. Some experienced the movement awareness training as time consuming and demanding. From their movement awareness learning experiences, the patients defined their present and future situation less intimidating than before. The process of change described by the patients reflected a salutogenic perspective, described to involve the whole person promoting own health and well-being and activating own resources for more functional movement quality.

ACKNOWLEDGEMENTS

The author would like to thank the supervisors Lillebeth Larun and Liv Helvik Skjaerven for their valuable comments and suggestions, and academic librarian Gunhild Austrheim and research librarian Lena Nordheim at Western Norway University of Applied Sciences for their advice on literature search. Thank you also to fellow-student Signe Haugen for help with selection of studies.

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Box 1. Seven phases in meta-ethnography by Noblit &Hare

Box 1. Seven phases in meta-ethnography by Noblit &Hare (Noblit and Hare, 1988)

Phase 1: *Getting started*. Identifying an intellectual interest that qualitative research may inform.
Phase 2: *Deciding what is relevant to the initial interest*. Deciding what studies or accounts are relevant, and knowing who the audience for the synthesis is.
Phase 3: *Reading the studies*: Repeated reading of the accounts and the noting of interpretive metaphors.
Phase 4: *Determining how the studies are related*: Here the studies are "put together" and at the end of this phase an initial assumption about the relationship between studies can be made.
Phase 5: *Translating the studies into one another*: Translations are especially unique synthesis, because they protect the particular, respect holism, and enable comparison.
Phase 6: *Synthesizing translations*: Synthesis refers to making a whole into something more than the parts alone imply.
Phase 7.: *Expressing the synthesis*: Depending on the audience choose a way to present the synthesis: written, video, play, art or music.

Figure 1.

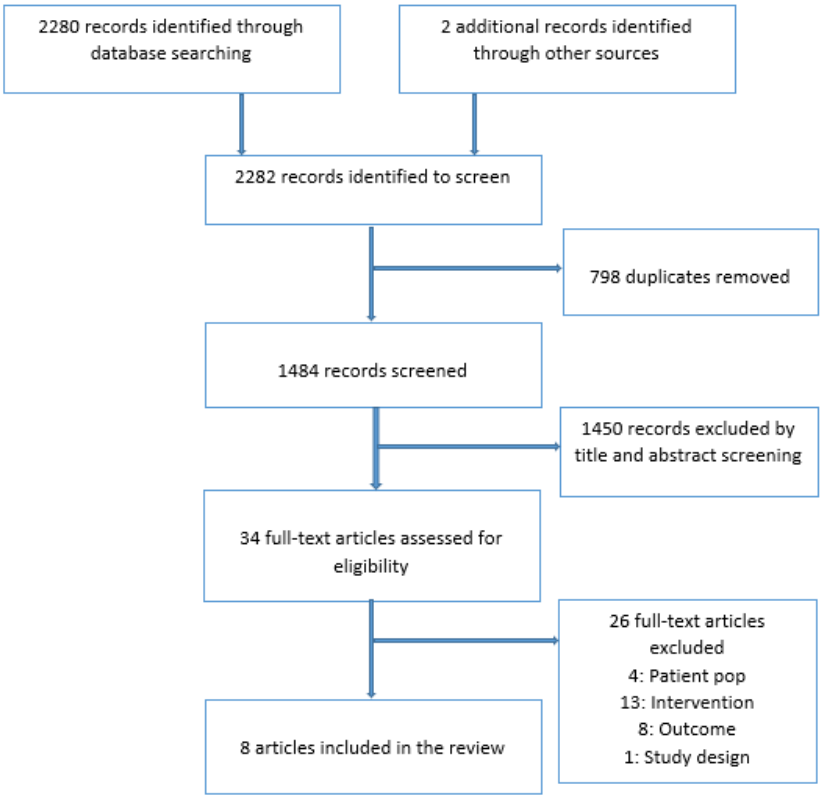

Figure 1. Flow diagram (based on PRISMA 2009 Flow diagram)

Table 1.

Table 1. Study characteristics of the included studies

Studies	Informants: number and gender	Origin of study	Data collection	Data analysis	Intervention	Duration of program	Time of interview	Diagnose of informants	Number of researchers	Place published
Gustafsson et al (2004)	16 (16 female)	Umeå, Sweden	Semistructured interviews	Grounded theory: constant comparison	Patient education, BBAT and warm water pool training		1 year follow up after intervention	Fibromyalgia	3	Journal of Rehabilitation Medicine
Johnsen &Råheim (2010)	18 (17 female and 1 male)	Norway	Focus group interview	Malterud inspired by Giorgi	Basic Body Awareness Therapy (BBAT)	Weekly training	While in treatment, but after 6 months of attendance	Diverse psychiatric diagnoses	2	Advances in Physiotherapy (European Journal of Physiotherapy)
Uhlig et al (2010)	9 (8 female and 1 male)	Oslo, Norway	Focus group interview	Kvale: step by step process	Tai Chi	2x/week, 12 weeks	End of intervention	Rheumatoid Arthritis	3	BMC Musculoskeletal Disorders
Öhman et al (2011)	14 (14 female)	Sweden	Diary notes and thematic interviews	Grounded theory	Feldenkrais	10 meetings in 7 weeks	Direct after and 4-6 months after end of intervention	Chronic pain	3	Bodywork and Movement Therapies
Danielsson & Rosberg (2015)	15 (10 female and 5 male)	Sweden	Semistructured interviews	Hermeneutic phenomenological methodology	Basic Body Awareness Therapy, group and individual	2 individual and 16 group sessions		Major depression	2	International Journal of Qualitative Studies on Health and Well-being
Madsen et al (2016)	3 (2 female and 1 male)	Denmark	Semistructured interviews	Malterud inspired by Giorgi	Basic Body Awareness Therapy (BBAT)	14-16 sessions	1 month after ended intervention	Post-Traumatic Stress Disorder	4	Bodywork and Movement Therapies
Olsen & Skjærven (2016)	7 (5 female and 2 male)	Bergen, Norway	Focus group interview	Giorgis 4 step phenomenologic analysis	Basic Body Awareness Therapy (BBAT)	2x/week (3-7 sessions)	1-2 weeks after last informant ended intervention	Rheumatoid Arthritis	2	Physiotherapy Theory and Practice - An International Journal of Physiotherapy
Olsen et al (2016)	5 (2 female and 3 male)	Bergen, Norway	Semistructured interviews	Giorgis 4 step phenomenologic analysis	Patient education and Basic Body Awareness Therapy (BBAT)	2 hours patient education and BBAT weekly for 12 weeks	End of intervention and 6 months after end of intervention	Hip osteoarthritis	4	Disability and Rehabilitation

Figure 2.

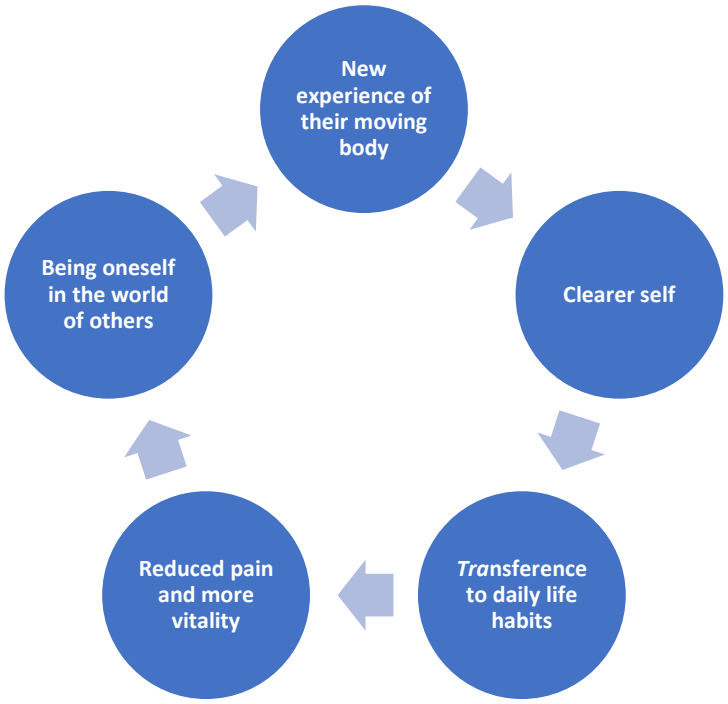

Figure 2. ‘Movement awareness – a process of change based on experiences’

Appendix A. Search strategy Ovid MEDLINE

Database: Ovid MEDLINE(R) <1946 to November Week 2 2017>
Search Strategy:
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1 Musculoskeletal Pain/ (2417)
2 musculoskeletal pain*.tw. (4307)
3 musculo-skeletal pain*.tw. (73)
4 Musculoskeletal disease/ (11750)
5 musculoskeletal disease*.tw. (1638)
6 musculo-skeletal disease*.tw. (61)
7 musculoskeletal disorder*.tw. (5277)
8 musculo-skeletal disorder*.tw. (135)
9 musculoskeletal problem*.tw. (1022)
10 musculo-skeletal problem*.tw. (34)
11 myalg*.tw. (8178)
12 bod* pain*.tw. (3349)
13 locomotor pain*.tw. (4)
14 (pain* adj1 movement*).tw. (379)
15 Fibromyalgia/ (8417)
16 fibromyalg*.tw. (8640)
17 backache/ or low back pain/ (36545)
18 back pain*.tw. (35629)
19 backache.tw. (2158)
20 Rheumatic disease/ (23192)
21 rheumatic disease*.tw. (14467)
22 Arthritis rheumatoid/ (100572)
23 Arthritis/ (36256)
24 arthritis.tw. (153604)
25 depressive disorder/ (71611)
26 Depression/ (106107)
27 depress*.tw. (379095)
28 Stress Disorders, Post-Traumatic/ (28990)
29 posttraumatic stress disorder*.tw. (13578)
30 post-traumatic stress disorder*.tw. (7587)
31 ptsd.tw. (16707)
32 Anxiety/ (73098)
33 anxiety.tw. (142476)
34 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 (816360)
35 ((movement or body or bodies) adj3 awareness).tw. (743)
36 ((movement or body or bodies) adj3 experience*).tw. (2064)
37 ((movement or body or bodies) adj3 understanding).tw. (880)
38 ((movement or body or bodies) adj3 consciousness).tw. (218)
39 35 or 36 or 37 or 38 (3835)
40 34 and 39 (451)

CERQual Qualitative Evidence profile

Review finding	Studies contributing to the review finding	Assessment of methodological limitations	Assessment of relevance	Assessment of coherence	Assessment of adequacy	Overall CERQual assessment of confidence	Explanation of judgement
A new experience of the moving body: More contact with their body and how they moved, using less energy, more present "here and now" and more at home in themselves. Improved movement awareness	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Minor concerns[2]	Moderate	Rich material with minor concerns to relevance and adequacy and no or very minor concerns to coherence and methodological limitations.
Less pain and more vitality: Own action became meaningful, vitality in the movements, set limits, ability to release tension, fear of moving was reduced.	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Minor concerns[2]	Moderate	Rich material with minor concerns to relevance and adequacy and no or very minor concerns to coherence and methodological limitations.
Transference to daily life habits: Knowing one's will and having the courage to express it, coping with stress and permitting oneself rest. Transferring movement awareness to daily life activity and self-training.	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Minor concerns[2]	Moderate	Rich material with minor concerns to relevance and adequacy and no or very minor concerns to coherence and methodological limitations.
Being oneself in the world of others: Experienced to be respected and seen for who they were, more balanced in taking care of themselves and others, being able to share own experiences and learn from others.	1, 2, 3, 4, 5, 6, 7, 8	No or very minor concerns	Minor concerns[1]	No or very minor concerns	Moderate concerns[3]	Moderate	Moderate concerns to adequacy, minor concerns to relevance and no or very minor concerns to coherence and methodological limitations.

Footnotes: The trust is downgraded because of

[1]) All studies conducted in Scandinavia

[2]) The results are mainly from studies on BBAT, other physiotherapy approaches are not represented in the findings. However, the studies present 78 informants and a rich material.

[3]) The results are mainly from studies on BBAT, other physiotherapy approaches are not represented in the findings. The material from some studies are rich and some more scarce.