

Department of Neurobiology, Care Sciences and Society
Division of Occupational Therapy and Division of Physiotherapy
Karolinska Institutet, Stockholm, Sweden

PARTICIPATION IN DANCE, RHYTHM AND MUSIC ACTIVITIES

- Experiences of healthy elderly and persons with stroke

Kerstin Thornberg



**Karolinska
Institutet**

Stockholm 2013

All previously published papers were reproduced with permission from the publisher.
Published by Karolinska Institutet.

Printed by Larserics Digital Print AB
Illustration on front page by Efva Lilja
© Kerstin Thornberg, 2013
ISBN 978-91-7549-085-4

Klangen säger att friheten finns
Tomas Tranströmer

In memory of my beloved sister Anita

ABSTRACT

Participation in meaningful creative activities such as dance and rhythm/music has been found beneficial for older adults and for persons with stroke, as it might increase awareness, improve emotional and physical status, and thus be salutogenic.

The aim of this study was to explore and understand participation in dance, rhythm and music activities for healthy elderly persons and for persons who have had a stroke.

The specific aim of Study 1 was to develop knowledge of elderly persons' experiences of participating in an improvisational dance workshop. Data was collected by interviewing 13 persons. To capture participants' experiences, open-ended questions were used to make it possible for participants to bring up issues of relevance for themselves. A narrative method was used to analyze data. Findings show that participation led to "a surprising awareness about the connection between body and mind" and that "participation led to personal growth".

Further results showed how participation in a physical activity such as creative improvisational dance opened possibilities to interpret the lives the informants had lived, which in turn made it possible for them to come to terms with the past, leading to increased perceived quality of life.

The aim of Study 2 was to investigate how stroke patients understand participation in Ronnie Gardiner Rhythm and Music (RGRM) therapy. Data was collected by interviewing 18 persons with stroke. The analytic procedure was carried out with a phenomenographic approach. Results showed that body awareness was experienced as increased due the training. Furthermore a feeling of change in competence occurred when participants were able to carry out tasks simultaneously, which had previously not been possible for them to do. The findings of this paper suggest that participation in an activity that is challenging and demanding was valued.

Findings suggest that participation in movement activities such as improvisational dance and rhythm/music therapy seems to have promoted health in the group of healthy elderly and facilitated a return to a meaningful life in the group of persons with stroke. Offering participation in dance, rhythm and music can add to the tools used by physiotherapists.

Keywords: body awareness, dance, elderly, learning, narrative, phenomenography, rhythm/music, stroke

LIST OF PUBLICATIONS

- I. Thornberg K., Lindquist I. & Josephsson S. (2012) Experiences of healthy elderly participating in a dance workshop. *Advances in Physiotherapy 14*: 71-77 – 77
- II. Thornberg K., Josephsson S. & Lindquist I. Understanding participation in rhythm and movement therapy after stroke. Submitted

CONTENTS

1. Introduction.....	1
1.1 Understanding of the body.....	1
1.2 The body subject to change	3
1.2.1 The aging body.....	3
1.2.2 The body changed due to stroke	4
1.3 Learning.....	4
1.4 Health.....	5
1.5 Meaningful creative activities.....	6
1.6 Music	7
1.7 Dance	8
2. Aim.....	10
3. Methods.....	11
3.1 Narrative theory.....	11
3.2 Phenomenography.....	12
3.3 Data collection.....	12
3.4 Data analysis.....	14
3.5 Ethics	15
4. Findings.....	16
4.1 Study 1	16
4.2 Study 2.....	16
5. Discussion	18
5.1 Concretely experiencing the body-mind connection	18
5.2 Body awareness.....	19
5.3 Enacted stories – personal development.....	19
5.4 Learning.....	20
5.5 Dance, rhythm and music	23
5.6 Methodological considerations	24
5.7 Further research.....	25
6. Conclusion.....	26
7. Acknowledgements.....	27
8. References	29

1. Introduction

This licentiate thesis is about movements in the form of dance, performed by a group of healthy, elderly amateurs and about movement training accompanied by rhythm and music, performed by persons with stroke.

Physiotherapy concerns to a large extent development and maintenance of people's abilities to move and function throughout their lives. Hence understanding of how the body moves and what keeps it moving is a field of interest for physiotherapists in their work to promote health, mobility and independence. The Swedish Association of Registered Physiotherapists (LSR) suggests that physiotherapy is about "understanding human movement and bodily functions as critical elements of health, based on an assumption that individuals have resources to restore health. This understanding includes the individual's ability to change, learn and develop. The human being's interaction with the environment is included in the area of knowledge (Broberg & Tynni-Lenné (LSR) 2009). Thus understanding of the body and its movements is central in physiotherapy. The first section of this thesis will be about how the body can be understood, and the concepts learning, health, meaningful creative activities, music and dance will be discussed. Thereafter follow aims, methods, findings and discussion.

1.1 Understanding of the body

The traditional dualistic view of the body has been questioned during recent decades by physiotherapists as it has been found that the distinction between the physical body and the experienced body makes it difficult to understand the meanings individuals ascribe to bodily experiences (Bullington, 1999; Epstein, Quill, & McWhinney, 1999; Malterud, 1999; Thornquist, 2001). Viewing the body in biomedical terms and function in measurable quantities versus seeing a subject as being in the world as body give us two different perspectives. In the latter perspective the body is seen as a person's anchor in the world; to be a subject is to exist in the world in and through the body, and the lived body is the starting point from which people grasp their lifeworlds (Guidetti, Asaba & Tham, 2007, Rosberg, 2000). However Merleau-Ponty (1992) also acknowledges the body object with its biology and the fact that we live in this ambiguity of being in the world as body subjects and body objects. But human

experience can only be lived in and through the body. To be a subject is identical to being in the world as body.

According to the French philosopher Merleau-Ponty (1992) a subject is in the world as body; the body is always present as one's perspective of the world and it is through the body that we interact with and understand the world (Kitzmüller, Haggström & Asplund, 2012). By using the body, concepts like size, weight and texture of an object are given a meaning as well as the understanding of what is up and down, backward and forward. The body is seen as having embedded knowledge. Movements are carried out by using appropriate muscles and nerve connections, but there is always intentionality in the movements. When we reach for a cup the body knows how to shape the hand and what force to employ, but the intention is to drink out of the cup (Merleau-Ponty, 1992). Drinking out of a cup is often done without giving it much thought. But carrying out movements can also be done on a conscious level, as in the case of dancing. In dancing movement is the medium and is carried out only for the sake of the dancing movements (Horton Fraleigh, 1987). With the movements our inner beliefs and feelings can be expressed and stories can be narrated. For instance, embodied memories can be interpreted into dance; something personally joyful or tragic can be expressed in purposeful movements.

The phenomenological understanding of the body can be understood as described by Merleau-Ponty in his writing that "*My body is the meaningful core which behaves like a general function, and which, nevertheless, exists and is susceptible to disease*" (Merleau-Ponty p. 46). Or it can be expressed as by Horton-Fraleigh (1987) in her writing that: "*The body-object can be known in the sense that the body itself can become the object of attention, but the subject body can only be lived*" (Horton-Fraleigh, 1987 p 13).

In physiotherapy the body and bodily movements are in focus and there is a need to further discuss how we understand the body. How patients are treated is influenced by the way the body is understood; from a dualistic view, identifying the body and mind as separate entities, or from a phenomenological perspective in which the body is seen as lived and by which we can understand the world and express our inner feelings in a creative way (Descartes, 1641; Merleau-Ponty, 1992).

1.2 The body subject to change

The body is subject to change not only when affected by a condition like stroke, but also by getting older. In the following, aspects of the aging body and the body changed due to stroke will be addressed.

1.2.1 The aging body

When addressing aspects of growing old there is a need to recognise the body's object-aspect and its biology and the personal experiences of living in an aging body.

The experience of living in an aging body can be described from a phenomenological perspective as having to face a changed lifeworld; an aging body brings about a changed life situation with experiences of loss of function. Life is no longer as it has been; finding ways to feel at home in this changed body might need reorientation in terms of priorities, to battle the aging body or to feel at one with the body. One needs perhaps to make peace with being an old person (Bullington, 2005).

Biological aspects of aging include increased body fat percentage and decreased muscle mass, resulting in less strength and endurance (Koegh, Kilding, Pidgeon, Ashley & Gillis, 2009). Deficits in attention control have also been reported (Coubard, Duretz, Lefebvre, Lapalus & Ferrufino, 2011). Due to these bodily changes old persons are at risk of developing physical symptoms such as increased risk of falling and reduced aerobic capacity as well as emotional symptoms such as depression (Blazer, 2003; Latham, Bennet, Stretton & Anderson, 2004; Lindwall, Larsman & Hagger, 2011; Marques, Mota & Carvalho, 2011; Rantander, Avlind, Suominen, Schroll, Frändin & Pertti, 2002; Schmidt, Egli, Brian & Bauer, 2009). As the number of persons older than 65 years of age is increasing worldwide it can be considered important to find ways of counteracting these risk factors and to find ways of supporting aging to increase quality of life and to reduce health-care costs for society. (Rowe & Kahn, 1987; Share project). In Sweden, for instance, the official retirement age is 65 while life expectancy is 83 years for women and 79 for men (retrieved from www.scb.se (Statistics Sweden), 2013), thus a long period of life is spent as a retiree. To be engaged in physical activities as well as in enjoyable, interesting and challenging activities have been identified as being salutogenic (Bygren, Konlaan & Johansson, 1996; Flood & Phillips, 2007; Jonsson H 2011).

1.2.2 The body changed due to stroke

After having had a stroke changes in the biological object body can vary depending on site and size of the lesion, as does recovery (Langhorne, Bernhardt & Kwakkel, 2011). The experience of the changes are tied to the body, which becomes alien and the relationship to the body becomes radically altered, resulting in a loss of embodied ability and not feeling at home in one's own body (Kvigne & Kirkevold, 2003; Svenaeus, 2000). The taken-for-granted body is assaulted and a feeling of split between self and body results in loss of confidence in the body (Ellis-Hill, Payne & Ward 2000; Kaufman 2011). The sudden onset of the changes causes feelings of chaos and uncertainty leading to alterations of one's lifeworld, as what was taken for granted has changed and identity is challenged. To live in this "new" body leads to a feeling of the body being foreign and separate from the self (Ellis-Hill, Payne & Ward, 2000; Kaufmann, 2011). Motor functions, loss of sensations, visual impairments and difficulties in chewing and swallowing are examples of changes in the object body which differs from the body before stroke onset. Due to the after-effects the individual has to deal with a changed body, which before stroke had integrated knowledge, gained through experiences from interaction with the world. This knowledge becomes disintegrated after stroke. A feeling of split or separation between body and mind is reported to be a major concern (Ellis-Hill, Payne & Ward, 2000; Kitzmüller, 2012). Resuming habits and self-care are major challenges for the individual, which demand (re-)learning former capabilities (Cott, Wiles & Devitt, 2007; Guidetti, Asaba & Tham, 2007; Kitzmüller, Häggström & Asplund, 2012).

1.3 Learning

Physiotherapy and rehabilitation are to a large extent concerned with learning (Martin, 2004). It can be about learning to cope with the changed lifeworld that meets us when growing old or learning to cope with an entirely new life situation, such as that encountered after having had a stroke. Learning in the qualitative tradition is seen as an aspect of all human activities and as a process going on between people in a purposeful context (Lave & Wenger, 1991). When getting older, people have to learn how to handle certain changes which are inevitable. This learning concerns to a certain extent handling of the bodily changes, as they may result in diminished levels of functional ability (Flood & Phillips 2007; Koegh, Kilding, Pidgeon, Ashley & Gillis, 2009). One way of gaining new knowledge on how to use the body can be to participate in

challenging activities which include difficult movement sequences, together with others.

For persons with stroke it is when coming home from hospital that all the demands of the complex world of everyday life must be met. Being able to participate in activities which have meaning and are valued by the individual is considered to have a positive effect on health and well-being (Bergström, Guidetti, Tistad, Tham, von Koch & Eriksson, 2012). As mentioned above, the stroke patient needs to (re-)learn former abilities. When studying effects of stroke rehabilitation the point of departure has traditionally been theories on motor learning. However it is unclear what actually changes when the patient improves functional skills (Kwakkel, 2006; Robison et al., 2009). To further understand in what way (re-)learning is accomplished there is also a reason to focus on principles of educational theories. Existing learning theories argue that learning is rooted in the learner's embodied participation in social practices and that the context as well as the socially and culturally constructed details of a situation have bearing on what is learnt (Lave & Wenger, 1991; Martin 2009).

1.4 Health

The definition of health has been a subject of discussion for many years. The WHO (1948) definition, that health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, has been criticized for being too biomedical and for not taking demographic changes into consideration. With a growing population of aging people more and more have to cope with chronic illnesses, and perhaps health could be defined as the ability to adapt and to self-manage one's health. Humans have a capacity to adapt to a chronic condition and an ability to develop successful strategies for coping, thus being able to live with an unchanged perception of quality of life, which can be seen as a paradox (Huber et al., 2011). In a humanistic tradition it has been suggested that health has to do with a person's ability to reach vital goals, or having the repertoire necessary for his/her adaptation, which is in line with the suggestion from Huber et al. who, in a recently published article in the British Medical Journal, suggested that health be formulated as having to do with the ability to adapt and self-manage. (Huber et al., 2011; Nordenfelt 1991; Pörn, 2000). Furthermore health can be understood as being connected to the body and has been suggested that it is experienced as "being at home" in the body. In this tradition illness can be understood as a sense of "unhomelikeness" (Svenaeus, 2000).

The Israeli sociologist Antonovsky (1987) coined the concept of sense of coherence (SOC) as he studied factors of importance for maintaining good health. People who have a SOC have developed a confidence that the environment is structured, predictable and explicable. Comprehensibility (a belief that you can understand events in your life), manageability (a belief that you have the ability to take care of things) and meaningfulness (a belief that things in life are interesting) are important for feeling SOC (Antonovsky, 1987).

1.5 Meaningful creative activities

Participation in creative activities is reported to be experienced as meaningful and leading to a deepened understanding of self as well as a strengthened sense of a self that is competent, efficacious and capable of doing (Fisher & Specht, 1999). The concept of creativity is not easily defined, although two suggestions are “the process of forming ideas or hypotheses, testing them and communicating results” (Torrance, 2002) or “to have the capacity to bring something new into existence” (Creek, 2008). Creativity in everyday life includes an ability to seek new and effective ways of doing things or to find new solutions to a problem.

Involvement in creative activities has been identified as an aid in giving meaning to life in healthy people as well as people living with chronic or even life-threatening conditions (la Cour, Josephsson & Luborsky, 2005; Flood & Phillips, 2007; Josephsson, Asaba, Jonsson & Alsaker, 2006). Creative activities has also been identified as a group of activities related to artistic expression such as for example music activities, dancing or craft such as for example pottery (la Cour, Josephsson & Luborsky, 2005).

In literature the meaning concept has been discussed from social and cultural perspectives as well as from the perspective of consciousness and experiences of the individual (Ville & Khlal, 2007). The meaning of a specific event is dependent on the context in which it takes place and in what value system we live (Polkinghorne, 1988). Ricoeur argues that we create meaning by linking together the number of events and experiences that meet us every day into emerging plots, and an activity can be perceived as meaningful if it leads to understanding of important events in life. By storytelling it is possible to create order from disorder and structure the situations in which we find ourselves (Kristensson Ugglå, 1994; Polkinghorne, 1988). Telling a

story either in words or in actions performed by the body enables us to structure events, motives and hopes into meaningful configurations or plots. Storytelling is in itself a meaningful and creative activity as it can give a better understanding of why life has turned out the way it has (Mattingly, 1998; Ricoeur, 1988; Ville & Khlat, 2007).

In the tradition of Merleau-Ponty meaning is connected to the body or to how we view the world through our bodies, as he states that it is through the body that we interact with and understand the world. The body carries memories and sends messages about lived experiences, thus creating meaning and an understanding of the world and ourselves (Merleau-Ponty, 1992).

1.6 Music

As music is highly motivational it can be considered a useful tool both in maintaining good health as well as in restoring health in the rehabilitation process. Furthermore, music is central in many movement and dance activities. A number of studies have reported that participating in creative activities such as music and dance is beneficial for older adults as it might increase awareness, improve emotional states and physical healing and even survival (Beck, 2005; Glass, de Leon, Marotolli & Berkman, 1999; Lennartsson & Silverstein, 2001).

When it comes to rehabilitation it has been shown that participation in rhythm and/or music therapy functions such as balance, gait, range of motion and general benefits to everyday life can be improved in people with neurological conditions such as stroke, Parkinson's and different forms of dementia (Altenmüller, Marco-Pallares, Münte, Schneider, 2009; de Dreu, van der Wilk, Poppe, Kwakkel & van Wegen, 2012; Myskja & Lindbaek, 2000; Hayden, Clair & Johnson, 2009; Jeong & Kim, 2007; Schauer & Mauritz, 2003). When motor planning abilities are disrupted as in stroke patients, the rhythmic predictability could be useful by serving as a guide to motor acts (Madison, Gouyon, Ullén, Hörnström, 2011; Molinari, Leggio, deMartin, Cerasa & Thaut, 2003; Thaut, Kenyon, Schauer, McIntosh, 1999).

In a radio programme the film director Ingmar Bergman once asked, "Where does music come from?" The question has not been answered, but it has been speculated that music is part of human nature – a part of our species – as music occurs in all cultures and as it has a predominant role in the most important events in life (Dissanayake, 2001). During recent years there has been an increasing interest in what impact music can have on humans in both the disciplines of neuroscience and

psychology (Altenmuller et al., 2009). Alf Gabrielsson (2008), professor of music psychology, has collected narratives on how individuals experience music, and the narratives are about profound emotional response to music (Gabrielsson, 2008). Neuroimaging studies have shown effects on the activity of limbic and paralimbic systems of the brain when listening to music, i.e. brain structures involved in modulation of emotions, indicating an underlying neurophysiological reaction to the emotional responses (Koelsch, 2009). Elements such as melody, harmony, rhythm and metre in music influence bodily reactions; our bodies move spontaneously in response to both beat and melody when we listen to music; we feel impulses to tap our feet or dance (Brown, Martinez & Parsons, 2006). Music also consists of depth, timbre pitch, linearity, harmonies and movement; hence music is multidimensional in its creation of connections to existential and emotional dimensions as well as bodily responses. To offer persons with stroke participation in movement activities accompanied by rhythm and music could give them activities which are perceived as fun, and which promote the process of coming to terms with complex everyday life.

1.7 Dance

To make it possible for elderly people to participate in activities such as creative dancing could be one way of offering health-promoting activities perceived as meaningful.

Dance is about human movements; we cannot think of dance being performed without more or less complex bodily movements. Even if variations in complexity are considerable, a common trait is that dance movements have to be learnt as they are not part of our innate movement as are walking or running (Rösblad, 2002, Hedberg, 2002).

Dancing is reported to have positive physical and psychological effects on elderly (Keogh, Kilding, Pidgeon, Ashley & Gillis, 2009). Dance encourages fun and promotes social interaction, elevates mood and increases self-esteem. The physical benefits of dancing are about improved aerobic power, balance, muscle endurance, strength and flexibility (Hui, Chui & Woo, 2009). Improved cognitive flexibility has also been seen in a group of elderly participating in contemporary dance with focus on improvisation (Coubard, Duretz, Lefebvre, Lapalus & Ferrufino, 2011).

Dance also includes essential elements of being in the world as bodies. In dance physical environment such as space, time and gravity are incorporated with senses like kinetics, vision, touch, sound and rhythm. Dance as a bodily way of being is connected

to meaning in some way or other (Block & Kissell, 2001). This concept is expressed by Horton-Fraleigh (1987, p 13) as she writes that:

The body-subject can be sensed in dance and through the dancer when she is unified in action; that is, when she is not reflecting on her self in action but living the present - centred moment in her dance as a unity of self and body in action.

In artistic dancing the choreographer and the dancers use their bodily movements to interpret and communicate what perhaps is not possible to say in words or as formulated by professor of choreography Efva Lilja, in an International Dance Conference in Helsinki (2004. p 94):

In dance there is space for dreams and desires, for recognition and questioning, for the construction of identity and affirmation of the self. Time dissolves in the moment that is danced. Dance takes shape in the space between what was and what will be. It is there, in the space in between that everything takes place and new insights are created. This is why we should insist on the place of dance as a fundamental aspect of our own everyday world and that of others.

As can be seen in the review above there are numerous papers on participation in meaningful creative activities such as dance and rhythm/music being beneficial for older adults and for persons with stroke, as it might increase awareness, improve emotional and physical status, and thus be salutogenic. To our knowledge there are so far no reports on participation in dance, rhythm and music activities from the participants' perspective and not from the perspective of a health-promoting physiotherapy context.

2. Aim

The overall aim of this thesis was to explore and understand participation in dance, rhythm and music activities for healthy elderly and for persons who have had a stroke.

Specific aims

- The aim of Study 1 was to develop knowledge of elderly persons' experiences of participating in an improvisational dance workshop. (Study 1)
- The aim of Study 2 was to investigate how stroke patients understand participation in rhythm and music therapy. (Study 2)

3. Methods

This licentiate thesis includes two papers aimed at exploring knowledge of personal experiences of participation in two different movement activities. Qualitative research aims at exploring and understanding human and social phenomena and is preferred when interest is on capturing experiences or descriptions of meanings of phenomena. As Study 1 is about how people experience participation in a movement activity, a narrative approach was used. In Study 2 a phenomenographic approach was used as it is about different ways of understanding a movement activity. (See Table 1.)

Table 1. Aims, participants, data collection and data analysis in the licentiate thesis studies.

Study	Aim	Participants	Data collection	Data analysis
Study 1	To develop knowledge of elderly persons' experiences of participating in a dance workshop.	13 persons aged 61-89	open interviews	Narrative
Study 2	To investigate how stroke patients understand participation in rhythm and music therapy.	17 persons aged 38-78	Semi- structured interviews	Phenomenography

3.1 Narrative theory

In Study 1 a narrative approach was chosen. Narrative theory has its origin in philosophy, literature and theatre. It has to do with how people understand and make sense of circumstances by linking events and happenings together into organised wholes. According to Ricoeur (1985) significant experiences have a narrative form and it is by telling stories that experiences can be explored and interpreted, thus giving them meaning. By linking the myriad of events we encounter together into a meaningful whole, a plot, humans can create understanding of these events. As a research method,

narrative aims to identify and understand how meaning is made of events and situations (Josephsson, Asaba, Jonsson & Alsaker, 2006).

3.2 Phenomenography

In Study 2 a phenomenographic approach was chosen, as the aim was to understand the different ways persons with stroke understood participation in rhythm and music therapy. Phenomenography aims at describing the different ways people in a group sharing the same experience understand a phenomenon. Phenomenography has its roots in pedagogic research with a focus on description of conceptions of the surrounding world (Marton, Dahlgren, Svensson & Säljö, 1977; Svensson, 1997). It has been found useful in health-care research as it can contribute to understanding of how different patients experience their states and needs, which can mean that health-care professionals are more prepared to take different measures to fulfil the needs of different patients (Sjöström & Dahlgren, 2002). In phenomenography the focus is not directed on the phenomenon as such but on how people interpret, experience, perceive and understand a phenomenon in the world around us. The underlying assumption is that there is a qualitatively limited number of variations between people (Larsson & Holmström, 2007; Sjöström & Dahlgren 2002).

As the aim in Study 2 was to investigate the different ways persons with stroke understood participation in rhythm and music activities, a phenomenographic approach was used.

3.3 Data collection

Data were collected by audio-taped interviews carried out by the researcher.

In study 1 a letter of introduction was developed to probe how contact with the dance company was established. An interview guide was also developed trying to cover the experiences of the workshops. The workshops were carried out as part of an artistic research project which aimed at investigating “Movements as memories of the body” run by a professor of choreography, Evfa Lilja (2006). In the workshops the participants were to perform memories embedded in their bodies. As an end product the choreographer created an artistic dance performance in which four professional dancers, two opera singers, musicians and the amateurs participated. The performance was given before audiences on several occasions. In this stage of the process the participants were to carry out the movement sequences as decided by the choreographer.

As the purpose of data gathering was to capture participants' stories about the experiences, open-ended questions were used to make it possible for participants to bring up issues of relevance for each individual (Kvale, 1996). Follow-up questions were used to make sure that what the participants considered essential was captured. In addition to the interview DVD recordings from the dance workshops were used. The recordings were made by the dance company during the workshops, showing the process from the first meeting until the end product. Discussions between members were also recorded. This material added to richness of data as what was captured in interviews could be compared with what was seen taking place during workshops and what was said in the following discussions.

Also in study 2 data were collected by audio-taped interviews carried out by the researcher. In this study persons with stroke, who participated in Ronnie Gardner Rhythm and Music (RGRM) therapy participated. The therapy was organised by Strokeföreningen in Stockholms län (The Stroke Association of Stockholm County) and the participants participated out of their own initiative without referral from any health care professionals. The group members meet once a week during ten consecutive weeks each semester under the lead of a professional music therapist. The therapy consists of elements of music, rhythm and movements. The participants may sit on a chair or stand on the feet depending on functional abilities. A unique note system has been developed and it is combined with using red colour as symbol for the left side of the body and blue colour for the right side of the body. The specific movements and how they are named are to be performed simultaneously following the rhythm in the music. Movements with upper and lower extremities are performed alternatively; sometimes movements are to be performed on one side of the body and sometimes it is necessary to cross over to the other side of the body. An interview guide was developed and the interviews were semi-structured all starting with the same question "Please tell me about an occasion when you felt you learned something in the RGRM therapy." (Kvale, 1996) The focus was on the experiences of the RGRM therapy aiming at capturing the variations in which the participants understood the learning in the RGRM therapy.

3.4 Data analysis

Interviews in both studies were transcribed verbatim by the researcher.

In Study 1 a thematic narrative interpretative method based on guidelines for paradigmatic narrative inquiry was used (Polkinghorne, 1988; Riessman, 2008), supplemented by guidelines in Asaba (2006), a set of common attributes were identified in narrative data. Specifically the following steps were used: The first step was to carefully read the verbal data several times to get the gist of the narratives in parallel with watching the DVD recordings. Particular statements such as “surprise” or “this was a new feeling for me” or “how much the body remembers” appeared and reappeared. They stood out as significant and were identified by highlighting and coding them. A richer understanding of the verbal data was captured in watching the DVD recordings. In the next step of the analytic procedure plots which gave meaning to data were identified. In line with the narrative method used, plots were defined as structures through which people understand the relationships among events and circumstances. One example of a plot identified in this step was: “bodily actions gave rise to emotional responses”. These plots identified in the verbal data were repeatedly challenged with what could be seen and heard in the DVD recordings, thus enhancing trustworthiness. At this stage of the procedure six plots were identified. By looking for connections between the plots the meaning of each plot was captured, and understandings of themes in the plots were identified. Eventually two overarching themes were agreed upon.

In Study 2 a phenomenographic method was used. Phenomenography is about finding differences or variations in the ways a phenomenon is understood or conceived. To find the different meanings the participants ascribed to participation in RGRM, the transcripts were read several times (familiarisation). The most significant statements were marked and selected and a condensed version of the dialogue (condensation) was created. After having compared the significant statements within and across interviews (comparison), distinct categories were grouped together (grouping). An attempt was made to describe the essence of each group (articulating) and each group was assigned a title (labelling). In the following step the groups were compared with regard to similarities and differences (contrasting). The analytic procedure was carried out in joint discussions between the researchers until a negotiated consensus was achieved (Wahlström, Dahlgren, Thomson, Vinod & Beerman, 1997).

3.5 Ethics

In Study 1 ethical principles as described by the Declaration of Helsinki were followed. The participants were informed before start of the study in a letter, which was sent to them. They were informed that the interviews would only be used in the study. They all had sufficient competence to understand what the consent was about and that it was optional. They were also informed that they could terminate participation at any point. Participants' identities were protected by using letters to denote each. Prerequisites for considering information being consented to are formulated by the Swedish Research Council.

Study 2 was approved by the Regional Ethical Review Board in Stockholm (Dnr:2010/5.5).

4. Findings

4.1 Study 1

In reading the material, plots emerged about emotional responses, memories getting a new meaning and the memory being challenged. These plots were about body-mind relationships and gave rise to a theme labelled “a surprising awareness about the connection between body and mind”. Plots about personal development, being strengthened as a human being and awakening something one did not expect were also identified. These plots were about personal development and gave rise to a theme labelled “participation led to personal growth”.

It was in the improvisational dance that the connection between body and mind became tangible; a new and often surprising experience for the participants as they had never thought of the possibility that performing with the body could act as a bridge to emotions. The participants talked about how memories stored in the bodies became vivid, giving rise to emotions from experiences that happened decades ago.

When it came to being able to remember what the body should do, i.e. the different movements which were to be performed in the end product, the mind could act as facilitator. By making up stories, which per se had nothing to do with the performance, it became easier to remember how to perform the different steps.

For all the participants personal development was an unexpected but important achievement. By participating in this kind of activity never done before a deeper consciousness about oneself occurred. By organising events in life they became easier to grasp and it became easier to prioritise. Even if experiences were not always positive the outcome was, as the knowledge about oneself led to personal growth.

4.2 Study 2

In Study 2 the focus was on how stroke patients understood participation in rhythm and music therapy. Aspects which came forth in this study were how to be aware of the “changed body” and how to learn new movements. The participants highlighted the complexity of the therapy as promoting coming to terms with the “changed body” and learning new movements. As the therapy was experienced as challenging, increased body awareness was achieved. In this process the music, the leader and other group members served as facilitators.

The tasks were combined so that it was necessary to be concentrated, as they were organised so that the participants would change suddenly in the middle of a sequence,

having to switch suddenly from one side of the body to the other or having to find alternative ways of performing tasks. To understand the body as a coherent whole a feeling of the different body parts and their location in space is essential. The RGRM therapy helped the participants to gain a feeling for their bodies. Finally it was when having to keep track of the different body parts and to handle arms, legs, head and trunk that body awareness arose.

A change of competence was felt as the participants learned new movements by having to perform the tasks simultaneously. It was described as difficult to have to do tasks including doing a movement, saying the right expression and reading the note system at the same time, but it was also described as promoting learning as it was necessary to be active and concentrated all the time.

5. Discussion

The overall aim of this thesis was to explore and understand the impact of participating in dance, rhythm and music activities for healthy elderly and for individuals who have had a stroke. The findings in Study 1 show that participants concretely experienced body-mind connection and that participation lead to personal growth. In Study 2 experiences of rhythm and music activities led to enhanced body awareness and to facilitate learning of new movements.

In both studies the participants physically experienced that the activities performed with the body led to a change of perception of the meaning of body-mind connection (Study 1) and body awareness (Study 2). Furthermore the results in Study 1 show that the participants experienced personal development by performing their personal memories in bodily movements. In Study 2 participation in therapy sessions was experienced as facilitating learning of new movements due to the complex and demanding organisation of the sessions. In both studies the music, the group and the leader were important facilitators. The auditory stimulation seemed to help the participants associate the music with the movements and to contribute to remembering the movements. The music was also reported to elicit positive emotional responses. The other group members were seen as a source of learning as they could serve as models of how to perform a movement. They could support each other in positive ways and give tips on how to manage in difficult situations. When they saw how the others solved the problems they could learn from them.

The personal characteristics of the leaders were considered important. In both studies they were described as joyful, as good communicators and good teachers. They were also described as being able to give concrete advice on how to find strategies for performing the movements.

5.1 Concretely experiencing the body-mind connection

For the participants in Study 1 the concrete experience of the body and mind as being connected was both surprising and rewarding. The narratives were about how strongly the memories, which up until now not had been thought about, were anchored in the body. One can perhaps say that by performing memories in bodily actions a new understanding about themselves and the world was gained. The selves were experienced as embodied, and by creating movements and acting out experiences

through the body a capacity to create new meaning was established (Merleau-Ponty, 1992). All the participants in the study had retired from working life, some recently and some quite a while ago. The oldest member of the group was 89 years and had thus been a retiree for more than 20 years. One reflection about the participants in this study is that they were all actively looking for new experiences and meaningful activities, grasping at an opportunity to participate in something new and unknown to them in search of ways of giving meaning to life. The body can in this context be seen as carrier of memories and meaning, as having knowledge in itself. When the participants acted their lived experiences through their bodies, they concretely experienced the messages carried in the bodies, and their lifeworlds changed (Merleau-Ponty, 1992). Perhaps it can be assumed that these persons were feeling at home in the life situation that aging brings about (Bullington, 2005).

5.2 Body awareness

In Study 2 the body was also in focus. The participants in this study all had to deal with the challenge of living with a body which suddenly had changed due to onset of stroke, leaving them with a body they could not trust and a feeling of homelessness in the body (Svенеaus, 2000). The biological body could no longer be controlled as before and the previously taken for granted being in the world was disrupted leaving them with a feeling of a split between themselves and their bodies (Ellis-Hill, Payne & Ward, 2000). In short their lifeworlds were altered with altered bodies that felt different and foreign; the world appeared as new and foreign.

The RGRM therapy was organised so that it was necessary to be aware of which part(s) of the body should move and which should not; furthermore the body parts had to move in certain combinations and keep the rhythm in the music. To be able to perform all these difficult combinations in correct rhythm, the different parts of the body had to be activated consciously, thus placing focus on the body. One could hypothesize that performing the tasks in the RGRM therapy diminished the feeling of living in an alienated body, helped to regain familiarity with the body, and increased confidence in the body. In general, increased body awareness was gained.

5.3 Enacted stories – personal development

The finding in Study 1, that “Participation leading to personal growth”, indicates that participation in the dance workshops promoted personal development in this group of elderly persons. This finding can be considered very interesting as it raises thoughts

about personal development as going on throughout one's entire life. Considering that the participants were to perform an autobiographic memory by using the body movements, it is not surprising that events from different points in the life cycle were recalled, contributing to linking past events with the present. It became possible to understand life and accept the life cycle by integrating the memories into a meaningful whole. Recalling past events in doing movements awakened emotions leading to a deeper understanding of the self and to personal growth. It was as though it became possible to find new and useful strategies to cope with present situations. By identifying problem-solving strategies it was even reported that "*it became easier to live*". Not only did reminiscences contribute to personal development, but also experiences from what happened during the workshops could lead to insights about oneself and one's reactions, which in turn resulted in personal growth and in becoming more contented with life. It is interesting to compare these findings with suggestions from Flood & Phillips (2007), who have reported positive outcome from offering reminiscence groups for older adults, as new ideas can be generated, insights and new perspectives can be gained and members can be motivated to try new ways of thinking.

5.4 Learning

In both studies learning about the body and about the self were highlighted by the participants. Learning about the body concerned awareness of the body per se and about the connection between body and mind; learning about self was about personal development. The learning took place together with others through participating in activities carried out with the body.

In Study 1 the participants' perception of the connection between body and mind became apparent in the process of staging memories contained in the body. The perception of the body changed from being "an absent presence" to "a present presence" (Stenström, 2006), as participation in artistic, improvisational dancing opened doors to the past and memories embedded in the body became accessible, conscious and vivid. A new understanding of "the body as lived not known" (Sartre, 1969) occurred.

In Study 2 learning was about body awareness. Due to stroke the previously taken-for-granted body had changed into something new and unknown, and a sudden split between self and body was experienced. In the RGRM therapy tasks were about knowing which parts of the body should move and which should be kept still, having to change in the middle of a sequence and having to switch from one side of the body to

the other. It was also about being aware of the relative position of the different parts of the body during movement, and their relationship to the environment. Even if the actual split between self and body was not overcome, it was still experienced as rewarding when a capability to carry out the different activities was achieved. The perception of a bodily “I cannot” was changed into a perception of a bodily “I can”.

In both studies learning new movements were in focus even though prerequisites regarding functional abilities were different. Participants in Study 1 had to learn specific movements as part of an artistic dance. The challenge for these participants was to learn the correct movements performed in accurate order with their aged but healthy bodies. To facilitate learning they made up stories for themselves. Participants in Study 2 claimed that learning new movements came with the complex way in which the therapy was organised. It was about having to perform the movements, say the expressions and follow the music all at the same time. It seemed that the challenging demands promoted learning.

These findings about learning are of particular interest for physiotherapists, as physiotherapy to a large extent is concerned with teaching, be it in health-promoting activities for elderly or in stroke rehabilitation. Participation in creative, active, challenging and learning activities seems to have been experienced as beneficial for participants in both studies. It is interesting to compare these findings with those of Fillit et al. (2002), who presented in a review that participating in learning, mental and physical exercises promotes cognitive vitality. It is also interesting to consider practice structure. Motor learning is described as being dependent on variable practice structure, as variable practice enhances long-term retention of a motor skill (Kantak, Sullivan, Fisher, Knowlton & Winstein, 2010). The participants in both studies in this thesis reported that it was hard to learn the movements. This allows speculation that due to the challenging complexity, problem solving was necessary and higher-order motor areas were activated.

It has been argued that not only practice structure but also learning together with others facilitates the process. In both studies it was highlighted that the group influenced the learning process. There is reason to discuss what influence the group had on learning, both in neurophysiological terms and in terms of social learning theories. From research in neurophysiology it has been found that mirror neurons are involved in learning as they are supposed to play a role in understanding motor acts performed by

others. Mirror neurons seem to build up an internal representation of a motor act performed by somebody else and also encode the aim of the observed action (Cattaneo&Rizzolatti, 2009; Iacobani & Dapretto, 2006). Learning by imitating what others do is reported explicitly by participants in Study 2, but is also present in Study 1, where it is more implicit. It was in the “doings with others” that the motor acts were understood and possible to perform.

The “doings with others” is also interesting to discuss from a socio-cultural perspective of learning. In this paradigm learning is seen as something constructed with others in specific situations (Lave& Wenger, 1991). Clearly the participants in both studies gained changed perspectives of themselves by performing or carrying out specific tasks in a context together with others. Here a coherent sense of self emerged as an understanding of themselves grew by enacting stories or by challenging a body which had changed due to stroke. By performing actions with the body in a social context, a deepened understanding of the experience of growing old or of living in a body changed due to stroke could be constructed, maybe even resulting in a changed understanding of everyday life. The self and the body were sensed as connected with feeling at home in a changed life situation (Bullington, 2005).

Learning was experienced as being facilitated by mutual sharing, role modelling and feedback from peers, a finding which gives cause for discussion of work by researchers such as Vygotsky (1978), Bandura (2001) and Rogoff (2003). Vygotsky (1978) suggests in his works that the guidance of more capable peers can change performance in a task from initially impossible to perform alone into being able to perform without assistance. In this context it could be said that the group served as scaffolding in the learning process. Rogoff (2003) and Bandura (2001) have also emphasised that learning is promoted by observing others and by performing together with others. In this tradition the human mind is seen as generative, creative and proactive with a desire to make things happen (Bandura, 2001).

In both studies in this thesis the leader was appreciated because of her personal characteristics. She was recognised as being positive and very encouraging, with an eye for the individual and an ability to give feedback. In Study 1 the role of the leader was not explicitly reported in the results, but she did have a significant role in motivating the participants to move on and take steps they thought they were not able to manage. In Study 1 the context was artistic with the choreographer creating a performance based on her subjective interpretation of what she perceived the of dancers’ previous

experiences and memories (Lilja, 2006). Her role in this context was to be a guide heading towards artistic goals she set up as choreographer.

In Study 2 each individual had his/her personal goals. In this context the guidance became more on the person-to-person basis. It was very much appreciated when the leader verbally or with “hands on” guidance gave careful feedback to the individual or suggested alternative ways of performing the tasks. It can be said that the leader to a certain, perhaps greater, extent played the same role as the other group members in scaffolding the learning process (Vygotsky, 1978).

5.5 Dance, rhythm and music

Experiences of participation in dance, rhythm and music activities are foci of interest in this thesis. As mentioned above, dance includes essential elements of being in the world as bodies. Participants in Study 1 reported a feeling of connection to consciousness and to the surrounding environment when memories and emotions embedded in the body were expressed in movements. Participants in Study 2 argued that being accompanied by rhythm and music facilitated performing the movements. Both studies concern the human being and how understanding of the body and the self is constructed. To remember lived events and experiences is essential in order to understand the world and oneself. It has to do with shaping an identity, although whether the memory is situated in the brain or in the body still is a matter of discussion (Gärdenfors, 2005). The question is: does the brain belong to the body?

The participants in Study 1 reported that by dancing the memories a new understanding of themselves in the world emerged. Knowledge embedded in the body was investigated and expressed through movements, resulting in a sense of coherence and an understanding of oneself and one’s life. This study does not look for effects of dance workshops but an increased sense of coherence might have a salutogenic effect on participants.

While participants in Study 1 performed movements with aged, but healthy bodies, participants in Study 2 had to struggle with bodies changed due to stroke. Changes in the biology of the object body caused changed perception of the lived body in the sense that the previously taken-for-granted body had changed, with a feeling of a sudden separation of self and body (Ellis-Hill, Payne & Ward, 2000; Kaufmann, 2011). The body came into conflict with the self and the sense of control over the environment was influenced negatively (Kaufman, 2011). For participants in this study it seemed that

participating in the rhythm and music therapy resulted in a feeling for the body and what it can perform as well as an increased body awareness, which to some extent helped them come to terms with the changed conditions. The rhythm and the music served as guides to what was to be done, thus facilitating the performance. Learning new movements was also facilitated by the rhythm and music as beat and sound guided what should be performed.

5.6 Methodological considerations

The two studies included in this thesis are carried out with two different approaches, namely a narrative approach in Study 1 and a phenomenographic one in Study 2. Study 1 was about telling stories by enacting them; for this reason an analysis from a narrative perspective was a preferred choice. In Study 2 the aim was to find out how persons with stroke understood participation in rhythm and music therapy. To capture the different ways of understanding the therapy a phenomenographic approach was chosen, as phenomenography aims at describing how a phenomenon appears and makes sense to different people (Sjöström & Dahlgren, 2002).

Participants in Study 1 came from a group of persons who had been selected to participate through an audition procedure. They had all actively signed up to be able to participate and they were selected from a group of 145 persons who had applied to be part of dance workshops. Being chosen can possibly influence reactions and reflections on experiences, which needs to be taken into consideration as sampling strategy is an aspect asserting which conclusions can be drawn (Malterud, 2001). Nevertheless their experiences can add knowledge to how telling life stories can influence the way people understand their lives.

Participants in Study 2 were involved in a therapy organised by Strokeföreningen in Stockholms län; they were not referred by any health-care professional to join the therapy but voluntarily chose to join the therapy group. This also gave rise to reflections in this study on what influence the selection of participants had had on the material (Malterud, 2001). To ensure diversity in the group, the participants were chosen strategically regarding age, sex, location of stroke incidence, time elapsed since incidence and time attending the therapy (Dahlgren & Fallsberg, 1991). The sample size was considered sufficient as no new information appeared in the last three interviews, thus saturation was considered to have been attained.

To establish scientific rigour in qualitative studies, trustworthiness and confirmability need to be addressed. The researcher is the tool in the research process, and in order to

get to know the material well the word-by-word transcription of the interviews was done by the researcher (Kvale, 1996; Sandelowski, 1995).

Trustworthiness in the two studies was established through discussing the material between the three authors in regular meetings, in research seminars and in the multiprofessional narrative network that meets twice a year. In Study 1 data from the interviews could be compared with what was seen and heard in the DVD recordings. The interviews were the main source of data but the DVD recordings from the workshops were also used. Using a variety of sources is seen as strengthening trustworthiness (Mays & Pope, 2000).

In Study 2 the descriptions of the categories arose from a process in which all three authors were involved to reach consensus. The interpretation of the text was validated through a circular movement between the parts and the whole. Alternative themes and interpretations were discussed until consensus was reached on the most valid one.

To achieve credibility excerpts from the interviews were provided to illustrate and support the finding, thus making it possible for the reader to consider the relevance of the categories (Sandelowski & Barroso, 2002; Sjöström & Dahlgren, 2002).

In both studies participants had joined the activities on their own initiative, which limits transferability of the studies but still adds knowledge of how elderly persons can understand their own lives by telling life stories through physical activity. It also adds to knowledge of what stroke patients value as important, namely being challenged and learning new movements in a stimulating environment.

5.7 Further research

To make possible for the growing population of older adults to live meaningful lives it is needed to understand more fully the constituents of what is perceived as adding to quality of life. Further research on how participation in artistic, creative activities in a broad sense can contribute to health needs to be carried out.

Research on which activities persons with stroke perceive as meaningful is important. To find activities that persons with stroke value can supposedly enhance continuous participation in movement activities which promote development of useful abilities. More research is needed to find out what significance different types of activities might have on stroke patients.

6. Conclusion

Physiotherapy is to a large extent about contributing to keeping and restoring health in the population. Movement is considered central in physiotherapy. By being able to move we can act and we reach goals in life. To offer participation in dance, rhythm and music can add to the tools used by physiotherapists.

Participation in a physical activity such as creative improvisational dance opened possibilities to interpret the lives the informants had lived. To offer physical activities such as dance for elderly persons can be one physiotherapy intervention for promoting good health in the elderly.

Participation in RGRM seems to have helped the persons come to terms with their changed bodies, abilities and self-images, facilitating their return to a meaningful life.

7. Acknowledgements

To set out on a research project resembles in many respects setting out on an adventurous journey. It is exciting and full of joy with many unexpected events waiting for you around the corner. Certainly all the uphill climbs can be very exhausting, but when you reach the summit you are richly rewarded. The process gives reason to think of the quote “Never measure the height of a mountain until you have reached the top. Then you will see how low it was” in *Markings* by Dag Hammarskjöld. For those who joined me on my journey I wish to express my sincere thanks.

First of all to all the participants who generously shared their experiences with me. Without them there had not been a licentiate thesis.

Staffan Josephsson, my main supervisor. You invited me to this wonderful world of discovery by inviting me to be your doctoral student. I am deeply grateful for that. You have shared your deep scientific knowledge carefully guiding me through the process. All along you have shown confidence in me and made me grow.

Ingrid Lindquist, my co-supervisor, colleague and friend since many years. Also in scientific work we could cooperate well. Your sharp analyses were invaluable and you carefully guided me so that I could discover how pieces fitted together. You never failed to support me, gave me courage and made me grow.

Efva Lilja, professor of choreography. You generously invited me to your dance company E.L.D. and let me share some of the works and the meetings held within the framework of your own piece of research “Movements as memories of the body” You also helped me come into contact with the participants of study 1.

Itte Nyström, music therapist and leader of the Ronnie Gardiner Rhythm and Music therapy. Thank you for letting me participate in your therapy sessions. It really helped realize how complicated it is. And thank you for helping me come into contact with the participants of study 2.

Louise Nygårdh, OT, professor and scientific leader of Kreativa Kontdatoriet. It has been wonderful to be part of the group. You have been the skilled leader of inspiring, scientific discussions. Thank you for inviting me.

Karin Harms-Ringdahl, PT, professor and former head of the Division of Physiotherapy and *Lena Nilsson-Wikmar*, PT, assistant professor, assistant head of the Division of Physiotherapy. You actively encouraged me to take the first steps of this journey. It was important.

Lena Borell, head of the Division of Occupational Therapy, and *Anette Heine* head of the Division of Physiotherapy and *Cecilia Fridén* assistant head of the Division of Physiotherapy. You have allowed me to be a doctoral student. Thank you so much.

Mandana Fallahpour, Gerd Andersson Svidén, Eric Asaba and Erica Johansson, you took the effort to scrutinize my work and gave many constructive suggestions. Thank you.

Christina Norlén, speech and language pathologist and music therapist. Your life has to a large extent been lived with music. Thank you for sharing some of your deep knowledge and experience of it with me. It gave some valuable contributions to this thesis. Music brought us together into a long-lasting friendship.

The narrative research group, *Eric Asaba, Sissel Alsaker, Karen laCour, Gunilla Isaksson, Ann-Britt Ivarsson, Hans Jonsson, Staffan Josphehsson* och *Maria Yilmaz*. You have been a true source of inspiration during our meeting throughout the years. There has been a possibility to discuss questions and thoughts on analytic methods in a warm and generous atmosphere. Narrative method is not easy to understand.

The qualitative interest group at the Division of Physiotherapy, my “home division”. We have had so many inspiring discussions during many years. They have contributed to my own learning and growth.

The light blue research group, with professor *Eva Mattsson* as the leader. Many inspiring and interesting discussions have helped along the road. Thank you for letting me be part of the group.

To my wonderful family. You give true meaning to my life. *Anders*, my husband, you don't know how much you mean to me. It is wonderful to share life with you. Your support during this process has been invaluable. My sons *David* and *Jonas*, and my daughter in law *Lovisa*, thank you for being the wonderful persons you are. And my grandson *Vide* has brought new perspectives, happiness and joy into my life. He makes the future look bright.

7. REFERENCES

- Altenmüller E., Marco-Pallares J., Münte T.F., & Schneider S. (2009). Neural reorganization underlies improvement in stroke-induced motor dysfunction by music-supported therapy, *The Neurosciences and Music - Disorders and Plasticity: Annals of the New York Academy of Sciences* 1169:395-405
- Antonovsky A. (1987). *Unravelling the mysteries of health*. San Francisco: Jossey-Bass Publishers.
- Asaba E. (2006). Presentation in the narrative research group seminar, Grythyttan.
- Bandura A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology* 52:1-26.
- Beck C. (2005). Creative elderhood. What's art got to do with it? Retrieved from: <http://www.imagineaging.com/generic>
- Bergström A.L., Guidetti S., Tistad M., Tham K., von Koch L., & Eriksson G. (2012). Perceived occupational gaps one year after stroke: An explorative study. *Journal of Rehabilitation Medicine*, 44:36–42
- Blazer D.G. (2003). Depression in late life: review and commentary. *Journal of Gerontology: Series A, Biological Sciences and Medical Sciences*, 58(3),249-265.
- Block B. & Kissell J. (2001). The dance: Essence of embodiment. *Theoretical Medicine and Bioethics*, 22(1), 5-15.
- Broberg C & Tynni Lenné R (2009) *Sjukgymnastik som Vetenskap och Profession*. [Physiotherapy as science and profession]. Swedish Association of Registered Physiotherapists. (Legitimerade Sjukgymnasters Riksförbund, LSR) (2009)
- Brown S., Martinez M.J. & Parsons L.M. (2006). The neural basis of human dance. *Cerebral Cortex*, 16(8), 1157-1167.
- Bullington J. (2006). Body and self: A phenomenological study of the ageing body and identity. *Journal of Medical Ethics; Medical Humanities* 32:25-31
- Bygren L.O., Konlaan B.B. & Johansson S.E. (1996). Attendance at cultural events, reading books or periodicals, and making music or singing in a choir as determinants for survival: Swedish interview survey of living conditions. *British Medical Journal*, 313(7072), 1577-1580.

- Caselli R.J. (2009). Creativity: an organizational schema. *Cognitive and Behavioural Neurology*, 22(3):143-54.
- Cattaneo L. & Rizzolatti G. (2009). The mirror neuron system. *Archives of Neurology* 66(5), 557-560
- Cour la K. , Josephsson S. & Luborsky M. (2005). Creating connections to life during life-threatening illness: Creative activity experienced by elderly people and occupational therapists. *Scandinavian Journal of Occupational Therapy*, 12: 98-109.
- Cott C.A., Wiles R. & Devitt R. (2007). Continuity, transition and participation: Preparing clients for life in the community post-stroke. *Disability and Rehabilitation*, 29(20-21): 1566-1574.
- Coubard O.A., Duret S., Lefebvre V., Lapalus P. & Ferrufino L. (2011). Practice of contemporary dance improves cognitive flexibility in aging. *Frontiers in Aging Neuroscience* 3(13)
- Creek J. (2008). Creative leisure opportunities. *NeuroRehabilitation* 23(4),299-304.
- de Dreu M.J., van der Wilk A.S.D, Poppe E., Kwakkel G. & van Wegen E.E.H. (2012). Rehabilitation, exercise therapy and music in patients with Parkinson's disease: A meta-analysis of the effects of music-based movement therapy on walking ability, balance and quality of life. *Parkinsonism and Related Disorders*(18):114-119.
- Descartes R. (1641). Sjätte betraktelsen, Om materiella tings existens och om den verkliga skillnaden mellan kropp och själ. [Sixth meditation: Concerning the existence of material things, and the real distinction between mind and body]. In *Descartes R. Meditationes de Prima Philosophia*,
- Dissanayake E. (2001). An ethological view of music and its relevance to music therapy. *Nordic Journal of Music Therapy*, 10(2) pp 159-175.
- Ellis-Hill CS., Payne S. & Ward C. (2000). Self-body split: Issues of identity in physical recovery following a stroke. *Disability and Rehabilitation* 22(16):725-733.
- Erikson E., Erikson J. (1997). *The life cycle completed: Extended version*. New York: WW Norton & Company.
- Fillit H.M., Butler R.N., O'Connell A.W., Albert M.S., Birren J.E., Cotman C.W., et al. (2002). Achieving and maintaining cognitive vitality with aging. *Mayo Clinic Proceedings* 77(7):681-696

- Fisher, B., & Specht, D. (1999). Successful aging and creativity later in life. *Journal of Aging Studies*, 13(4), 457-472.
- Flood M & Phillips K. (2007). Creativity in older adults: A plethora of possibilities. *Issues in Mental Health Nursing* 28(4):389-411.
- Gabrielsson Alf. (2008). *Starka musikupplevelser: musik är mycket mer än bara musik*. [Powerful musical experiences: Music is much more than just music]. Hedemora: Gidlunds förlag.
- Glass T., De Leon C., Marottoli R. & Berkman L. (1999). Population-based study of social and productive activities as predictors of survival among elderly Americans. *British Medical Association Journal*, 319, 478-482.
- Guidetti S., Asaba E. & Tham K. (2007). The lived experience of recapturing self-care. *The American Journal of Occupational Therapy* 61(3):303-310.
- Gärdenfors P. (2005) *Tankens vindlar: Om språk minne och berättande*. [The meanderings of thought: About language memory and narration.] Nora: Nya Doxa.
- Hayden R., Clair A.A. & Johnson G. (2009). The effect of rhythmic auditory stimulation on physical therapy outcomes for patients in gait training following stroke: A feasibility study. *The International Journal of Neuroscience* 119(12):2183-2195,
- Hedberg Å. (2002) Motoriskt lärande. [Motor learning]. In Beckung E., Brogren E. & Rösblad B. *Sjukgymnastik för Barn och Ungdom* [Physical therapy for children and young people]. Lund: Studentlitteratur.
- Horton Fraleigh S. (1987). *Dance and the lived body*. Pittsburgh: University of Pittsburgh Press.
- Huber M, Knotterus J.A., Green L., van der Holst H., Jadad A.R., Kromhult D., et al. (2011). How should we define health? *British Medical Journal*, 343:d4163
- Hui E., Chui B. & Woo J. (2009). Effects of dance on physical and psychological well-being in older persons. *Archives of Gerontology and Geriatrics*, 49(1): e45-50.
- Iacobani M. & Dapretto M. (2006). The mirror neuron system and the consequences of its dysfunction. *Nature Reviews, Neuroscience*, 7(12):942-51.

- Jeong S. & Kim M.T. (2007). Effects of a theory-driven music and movement program for stroke survivors in a community setting. *Applied Nursing Research* 20(3):125-131.
- Jonsson H. (2011). The first steps into the third age: The retirement process from a Swedish perspective. *Occupational Therapy International*, 18:32-28
- Josephsson S., Asaba E., Jonsson H. & Alsaker S. (2006). Creativity and order in communication: Implications from philosophy to narrative research concerning human occupations. *Scandinavian Journal of Occupational Therapy*, 13: 86-93.
- Kantak S.S, Sullivan K.J., Fisher B.E., Knowlton B.J. & Winstein C.J. (2010). Neural substrates of motor memory consolidation depend on practice structure. *Nature Neuroscience*, 13(8):923-5.
- Kaufman S.R. (2011). Toward a phenomenology of boundaries in medicine: Chronic illness experience in the case of stroke. *Top Stroke Rehabilitation*, 18(1):6-17
- Keogh J.W., Kilding A., Pidgeon P., Ashley L. & Gillis D. (2009). Physical benefits of dancing for healthy older adults: A review. *Journal of Aging and Physical Activity*, 17(4),479-500.
- Kitzmüller G., Häggström T. & Asplund K. (2012). Living an unfamiliar body; the significance of the long-term influence of bodily changes on the perception of self after stroke. *Medicine, Health Care and Philosophy*, E-pub ahead of print
- Koelsch S. A. (2009). Neuroscientific perspective on music therapy. The neurosciences and music. III - Disorders and plasticity. *Annals of the New York Academy of Sciences* 1169:374.384
- Kristensson Uggla B. (1994). *Kommunikation på bristningsgränsen*. [Communication at the breaking point]. Stockholm; Brutus Östling bokförlag.
- Kvale S. (1996). *Interviews. An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage; 1996.
- Kwakkel G. (2006). Impact of intensity of practice after stroke: Issues for consideration. *Disability and Rehabilitation* 28(13-14)823-830.
- Kvigne K. & Kirkevold M. (2003). Living with bodily strangeness: Women's experiences of their changing and unpredictable body following a stroke. *Qualitative Health Research* 13(9), 1291-1310.

- Langhorne P., Bernhardt J. & Kwakkel G. (2011). Stroke rehabilitation. *Lancet*, 14;377(9778):1693-1702.
- Latham N.K., Bennet D.A., Stretton C.M & Anderson C.S. (2004). Systematic review of progressive resistance strength training in older adults. *Journals of Gerontology, Series A Biological Sciences and Medical Sciences* 59(1),48-61.
- Lave J. & Wenger E. (1991). *Situated learning. Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Lennartsson C. & Silverstein J. (2001). Does engagement with life enhance survival of elderly people in Sweden? The role of social and leisure activities. *Journal of Gerontology: Psychological Sciences and Social Sciences, series B* 56(6), 335-342.
- Lilja, E. (2004) Proceedings in International Dance Conference, Theatre Academy, Helsinki. p 94
- Lindwall M., Larsman P. & Hagger MS. (2011). The reciprocal relationship between physical activity and depression in older European adults: A prospective cross-lagged panel design using SHARE data. *Health Psychology*, 30(4):453-62.
- Luborsky M. (1993). The romance with personal meaning in gerontology: Cultural aspects of life themes. *Gerontologist* 33(4):445-52
- Merleau-Ponty M. (1992). *Phenomenology of perception*. London: Routledge.
- Molinari M., Leggio M.G., De Martin M., Cerasa A. & Thaut M. (2003). Neurobiology of rhythmic motor entrainment. *Annals of the New York Academy of Sciences*, 999:313-321.
- Myskja A. & Lindbaek M. (2000). Examples of the use of music in clinical medicine. *Tidsskrift for den Norske Laegeforening* 10:1186-1190.
- Nordenfelt L. (1991). *Livskvalitet och hälsa, teori och kritik*. [Quality of life and health, theory and criticism]. Stockholm: Almqvist och Wiksell förlag AB.
- Polkinghorne D.E. (1988). *Narrative knowing and the human sciences*. Albany: State University of New York Press.
- Pörn I. Vad är hälsa? [What is health?] in Klockars, K., Österman, B. (2000) *Begrepp om hälsa: Filosofiska och etiska perspektiv på livskvalitet, hälsa och vård*. [Concepts of health: Philosophical and ethical perspectives on quality of life, health, and care.] Falköping: Elanders.

- Rantander T., Avlund K., Suominen H., Schroll M., Frändin K. & Pertti E. (2002). Muscle strength as a predictor of onset of ADL dependence in people aged 75 years. *Aging Clinical and Experimental Research*, 14(3 Suppl):10-5.
- Ricoeur P. (1985). *Time and narrative*. Vol II. Chicago: The University of Chicago Press.
- Robison J., Wilew R., Ellis-Hill C., McPherson K., Hyndman D. & Ashburn A. (2009). Resuming previously valued activities post-stroke: Who or what helps? *Disability and Rehabilitation*, 31: 1555-1566.
- Rosberg S. (2000). Kropp, varande och mening i ett sjukgymnastiskt perspektiv. [Body, being, and meaning from a physiotherapy perspective.] Doctoral dissertation, University of Gothenburg, Department of Social Work
- Rowe J.W. & Kahn R.L. (1987). Human aging: Usual and successful. *Science* 10:237:143 – 9.
- Rösblad B. (2002). *Barnets rörelseutveckling*. [The child's motor development] In Beckung E., Brogren E. & Rösblad B. *Sjukgymnastik för barn och ungdom*. [Physical therapy for children and young people]. Lund: Studentlitteratur.
- Sandelowski M. (1994). The use of quotes in qualitative research. *Research in Nursing and Health* 17(6):479-482.
- Sandelowski M. & Barroso J. (2004). Finding the findings in qualitative studies. *Journal of Nursing Scholarship*, 34(3);213-219
- Sartre J.P. (1969). *Being and nothingness*. London: Methum & Ltd.
- Schauer M. & Mauritz K.H. (2003). Musical motor feedback in walking hemiparetic stroke patients: Randomized trials of gait improvement. *Clinical Rehabilitation*, 17:713-722.
- Scmidt M., Egli K., Brian M. & Bauer G. (2009). Health promotion in primary care: Evaluation of systematic procedure and stage specific information for physical activity counselling. *Swiss Medical Weekly*;139(45-46):665-671.
- Sjöström B. & Dahlgren L.O. (2002). Applying phenomenography in nursing research. *Journal of Advanced Nursing*, 40(3), 339-345.
- Statistiska Centralbyrån (2013) Livslängden I Sverige 2001-2010 (Statistics Sweden, Life expectancy, Sweden 2001-2010) downloaded 13 12 10

- Stenström E. (2006). Learning about embodied life from dance. In Lilja E. *Movement as memory of the body*, pp141-143 ISSN 1652-3776 2006:2
- Svenaesus F. (2000) The body uncanny – Further steps towards a phenomenology of illness. *Medicine Health Care and Philosophy* 3 (2) 125-137.
- Svensson L. (1997) Theoretical foundations of phenomenography. *Higher Education Research & Development*, 16:2,159-171
- Thaut M.H., Kenyon G.P., Schauer M.L., McIntosh G.C. (1999). The connection between rhythmicity and brain function. *Engineering in Medicine and Biology Magazine*, 18(2) 101-108.
- Thornquist E. (2001). Diagnostics in physiotherapy – Processes, patterns and perspectives. Part I: *Advances in Physiotherapy* 2001; 3:140–150
- Torrence E.P. (2002). *The manifesto: A guide to developing a creative career*. Westport, Connecticut: Ablex Publishing.
- Ville I. & Khlat M. (2007) Meaning and coherence of self and health: An approach based on narratives of life events. *Social Science and Medicine*, 64(4), 1001-1014.
- Vygotsky L.S. (1978). *Mind in society. The development of higher psychological processes*. Cambridge, MA. Harvard University Press
- Wahlström R, Dahlgren L.O., Thomson G., Vinod D. & Beerman B. (1997). Changing primary care doctors' conceptions – A qualitative approach to evaluating an intervention. *Advances in Health Sciences Education* 2:221-236.