OCCUPATIONAL ENGAGEMENT AMONG OLDER PEOPLE

Evaluation, Repertoire and Relation to Life satisfaction

Ingeborg Nilsson
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Abstract

Occupational engagement among older people is important to investigate as older people are the fastest growing segment in our society, and because occupational engagement is viewed within occupational therapy as one of the basic premises for health. Three perspectives of engagement are highlighted in this thesis: evaluation of occupational engagement, the repertoire of occupational engagement, and finally, the relation between occupational engagement and life satisfaction. The overall aim of this thesis was to study aspects of occupational engagement among older people, with a special focus on evaluation of the experiences of an occupation-based group programme, evaluation of leisure, the leisure repertoire, and the relation between occupational engagement and life satisfaction.

The thesis is comprised of four studies which all contribute in different ways to an increasing understanding of occupational engagement among older people. In the first study (Study I), three older persons participated in a group activity programme and were interviewed about their experiences of occupational engagement. The qualitative interviews were done with each participant after each group session, in total 15 interviews. The other three studies (Studies II-IV) were based on a subgroup of a population studied in a cross-sectional population-based study, the Umeå 85+ study. Very old people with an MMSE score of 20 or more were included in Studies II, III, and IV (n=156). During home visits, they were interviewed about their occupational engagement (ADL and leisure) and their life satisfaction.

The qualitative interviews analysed using a Grounded theory approach, revealed two different dimensions of experiences while engaged in a group programme. The participants described experiences of activation, with a creative force and a place for learning, but also experiences of transformation with reflection, adaptation, and finally, a personal synthesis. Evaluation of occupational engagement through measurement using the modified NPS Interest Checklist (MNPS) was made possible using Rasch analysis. The results revealed preliminary evidence for internal scale validity and person response validity. Scale and person reliability were Rasch equivalents of Cronbach alpha of .98 for items and .66 to .75 for persons, respectively. In their leisure repertoire, very old people were more likely to endorse Social and Cultural activities and least likely to endorse Ballgames and Equipment sport. Traditional gender differences and some differences between older persons in rural versus urban
areas and between persons with different cognitive levels were also found. Finally, significant correlations were found between life satisfaction and both engagement in ADL ($r = .31$) and engagement in leisure ($r = .34$) among very old people. A forced entry regression revealed that both variables together explained slightly more (12.4%) than leisure alone (11.2%).

As a conclusion and in relation to evaluation of occupational engagement during therapy, the experiences of engagement are described by the respondents from both a perspective of action and a perspective of inner reflection, and together they might support the developmental process among older people. Through using Rasch analysis, it was possible to convert ordinal data into linear measures and also to organize leisure occupations into a hierarchical repertoire of engagement. This repertoire gives further understanding for specific tasks and about the general relation between leisure dimensions. Finally, the contribution of occupational engagement to life satisfaction is likely essential, but explains only about 12% of total life satisfaction among very old people.

Key words: Activities of daily living, Leisure activities, Hobbies, Aged: 80 and over; Aged, Occupational therapy, Rehabilitation, Health promotion, Rasch measurement
<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ADL</td>
<td>Activities of daily living</td>
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<tr>
<td>AOTA</td>
<td>American Occupational Therapy Association</td>
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<td>Bn</td>
<td>Person ability measure</td>
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<tr>
<td>CMOP</td>
<td>Canadian Model of Occupational Performance</td>
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<td>Di</td>
<td>Item difficulty calibration</td>
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<td>DIF</td>
<td>Differential item functioning</td>
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<td>IADL</td>
<td>Instrumental activities of daily living (e.g., home maintenance, financial management)</td>
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<tr>
<td>ICF</td>
<td>International Classification of Functioning, Disability and Health</td>
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<td>LiSat 9</td>
<td>Life Satisfaction questionnaire (nine item version)</td>
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<td>M</td>
<td>Mean</td>
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<td>MOHO</td>
<td>Model of Human Occupation</td>
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<td>MNPS</td>
<td>Modified Norling Pettersson Selander Interest Checklist (about leisure activities)</td>
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<td>MnSq</td>
<td>Mean square</td>
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<td>OA</td>
<td>Occupational Adaptation</td>
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<tr>
<td>NPS</td>
<td>Norling Pettersson Selander Interest Checklist (about leisure activities)</td>
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<td>OT</td>
<td>Occupational therapy</td>
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<td>PADL</td>
<td>Personal activities of daily living (e.g., dressing, bathing, eating)</td>
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<td>PEO</td>
<td>Person Environment Occupation model</td>
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<td>SE</td>
<td>Standard error</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Original papers

The present thesis is based on the following papers, which will be referred to by their Roman numerals:


The original articles have been reprinted with the kind permission of the publishers.
Introduction

As an occupational therapist working with older people in the community, I often struggled with questions about the role and meaning of occupation in older people’s lives. Through qualitative interviews, I had a chance to learn about older people’s own experiences of occupations that were embedded in an occupational therapy (OT) programme in a group context. The stories the respondents told me, about their engagement in occupation, made me even more curious. My wish became to gain further understanding of occupational engagement and the relation between engagement and health benefits, including life satisfaction. In a population-based study, the Umeå 85+ study, I had an opportunity to obtain this broader view of very old people’s occupational lives and to explore the relation between occupational engagement and life satisfaction. My research questions related to what very old people’s repertoire of occupational engagement looked like and if any relation between this repertoire and life satisfaction could be found.

During my work with data analysis, I found it impossible to analyze my raw data in a way that would enable me to identify a repertoire that could be compared between people. Clearly, there was a need to somehow further develop the instruments I had used. By using Rasch analysis methods, it became possible for me to not only develop and evaluate the psychometric properties of the instruments, but also generate linear measures from the ordinal data that were collected. These measures gave me a unique opportunity to study the repertoire of occupational engagement and more closely examine the relation between this repertoire of engagement and life satisfaction in very old people.

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1 In the Introduction, I have used the first person (I, my) as this thesis originated from my clinical experience. Since my research was always implemented in collaboration with my co-authors, I will use first person plural (we, our) in the other sections of this thesis.
The result was this thesis. Hopefully it will illuminate and broaden our views of occupational engagement in older people, and catch your interest about the complexity of occupation in everyday life.
The rationale for this thesis is based on three main premises. Firstly, evaluation of occupational engagement is critical as occupational engagement is considered important for healthy aging. Evaluation is important to provide evidence concerning the value and effect of occupation for a person. One way to evaluate is by examining the subjective experience of occupational engagement and exploring the therapeutic mechanism of occupation in older people. Qualitative interviews have the advantage of providing insight into the experiences of the person, and are perhaps the only way to grasp an in-depth view of that perspective. Qualitative research emphasizes the uniqueness of a particular human experience and can therefore describe the variation in the experience.

Another way of looking at occupational engagement is by using an instrument designed to evaluate this concept. As most prior research designed to compare different groups has been based on frequencies or time spent in a particular task or by grouping different tasks based on objective meanings, there is a need to develop a true linear measure of magnitude of occupational engagement.

Secondly, older people’s repertoire of occupational engagement is vital to investigate, as men and women now live longer and are more likely to be healthier than previous generations. As a result, an increasing number of older people are choosing to participate in a more diverse range of activities. Much emphasis in OT research has been on activities of daily living (ADL). Now it is necessary to broaden our perspective and discover people’s occupational repertoires. How older people’s occupational engagement is orchestrated is largely unknown, especially for very old people. Yet, knowledge of this repertoire of occupational engagement could give us a unique possibility to more deeply understand how occupation is organized in the oldest ages.

Finally, we need to know more about the benefits of occupational engagement for older people. As noted above, the ability to evaluate
magnitude of occupational engagement also makes it possible to examine and describe the relation between occupational engagement among older people and the benefits for health.

In this thesis, we will use Pörn’s (1993) view of health — not as freedom from pathology, but as wholeness, including achievement of vital goals through engagement in daily activities. By using skills to achieve one’s vital goals, everybody has the potential to be healthy. Achievement of goals, in turn, results in a person who is happy and who experiences “healthiness”. Michalos (1980) described dissatisfaction as a gap between the aspirations of an individual and the achievement of his or her goals. According to Michalos, a person is satisfied if the aspirations and the achievements coincide. Therefore, life satisfaction as defined by Michalos can be in agreement with Pörn’s view of health. Consequently, life satisfaction is in this thesis used as an indicator of health. This view was also chosen as Pörn’s focus on engagement in activities is in accordance with one of the key constructs in OT.
Background

The concept of occupation

Occupation is described as actions or series of actions in which one is engaged (Oxford English dictionary, 1989). The term has been used in OT to frame and describe our area of concern for practice, theory development, and research. The word occupation has its origin in the Latin words *occupare* or *occupario*, which mean taking possession or occupying space or time (Yerxa et al., 1989) and refers to the “doing” process of a person (Emerson, 1998).

Although there is a general recognition that occupation is complex and relates to doing, there is no consensus regarding the definition of occupation and its relationship to activity or task (Henderson, 1996; Laliberte Rudman, Valiant Cook, & Polatajko, 1997). Occupation has often been used as a synonym for activity and task (Henderson, 1996). Others, particularly more recently, suggested that occupation is an overall term that contains subset terms (Hagedorn, 2001; Polatajko, Mandich, & Martini, 2000; Trombly, 1995; Trombly, 2002). While the structure varies among authors, they suggested a hierarchical order in use of the terms occupation, activity, and task. Pierce (2001), instead of proposing a hierarchical order, suggested that occupation and activity are two distinct concepts.

Despite these differences of opinion, a common idea in all definitions of occupation is participation in different daily living areas, for example self-care, productivity, and leisure (Law, Steinwender, & Leclair, 1998). Another common idea is related to the importance of focusing on meaningfulness and purposefulness (Fisher, 1998), instead of prioritizing occupation hierarchically according to societal values (Hammell, 2004). More specifically, meaningfulness and purposefulness, together with a balance among occupations (Christiansen, 1996; Meyer, 1922), are considered important components of occupation. The daily life tasks
that a person needs or wants to do, which incorporate meaningfulness and purposefulness, are considered critical as they can promote health (American Occupational Therapy Association, 2002; Reed & Sanderson, 1999; Wilcock, 2001; Yerxa, 1998).

For the purpose of this thesis, the term occupation is used to refer to doing that has meaning and purpose to the doer. Activity is used as a description of doing but with no emphasis on meaning or purpose, while task is used to refer to what is or was done. Furthermore, this reasoning leads to the idea that the doing of a task (task performance) that has meaning and/or purpose is synonymous with occupation (Fisher, 2006).

**Occupational engagement**

Another concept closely related to occupation is engagement. Active engagement in occupation includes (a) an act of will, and (b) an experience of engagement (Yerxa, 1980; Yerxa et al., 1989). Hence, engagement must be self-initiated (Yerxa, 1998), which means that the person is motivated for doing. The word engagement pertains to interest in, commitment to, and involvement in something (Oxford English dictionary, 1989). Kielhofner (2002) also implicitly described engagement as involvement in the sense of being involved in the performance of a task. He also stated that engagement is important for well-being. Furthermore, his description of engagement linked engagement to the motivation to perform. Finally he stressed engagement from both a performance perspective and a subjective experience (where he cites Yerxa, 1980).

In this thesis, engagement was viewed as involvement in occupation. Engagement comprises interrelated variables, including performance, motivation, interest, and well-being. Engagement is something that can be experienced by the person, self-reported by the person, and/or observed from an outside perspective. This thesis focused on the former two.

**Health and life satisfaction**

Considering the fact that benefits for health are often stated as an outcome of occupation, an overview of health-related concepts is
needed. The uniqueness of OT lies in its focus on occupation. One keystone within this focus, which drives and justifies both OT theory and practice, is the belief that there is a relationship between occupation and health (Law, 2002; Wilcock, 2001; Yerxa, 1998). Therefore, this section and the next will discuss concepts and perspectives on health and life satisfaction, and occupation and health.

Many different opinions exist about health and what type of phenomenon that might be, and a consensus might never be reached. During history, health has been viewed in terms of survival, freedom from disease, and ability to perform daily activities, or described using themes like happiness, well-being etc. (McDowell & Newell, 1996). Happiness (Veenhoven, 1984) and well-being (Diener, Suh, Lucas, & Smith, 1999), in turn, together with quality of life (Campbell, Converse, & Rodgers, 1976) have been correlated with life satisfaction and the content of the different concepts overlaps considerably (Hillerås, 2000).

A literature review revealed a confusion among concepts in the area of health and well-being (Stanley & Cheek, 2003). Concepts like well-being, happiness, and life satisfaction are used interchangeably, and Stanley and Cheek suggested a need to aim for a consensus. Until then, each author needs to clearly define how they view the concepts used. As described in the Rationale, the view in this thesis is based on Pörn’s (1993) description of health and Michalos’ (1980) view of life satisfaction.

In the conceptual framework of International Classification of Functioning, Disability and Health (ICF) (World Health Organization, 2006 [WHO]), the WHO described health-relevant components. The relationship described was in harmony with OT language, and highlighted the relationship between people’s occupations (functioning and disability) and the environment (conceptual factors) as important for health. Even though the ICF has increased interest in health care, measuring aspects like health have not yet been developed (Darzins, Fone, & Darzins, 2006).

Occupation and health

Engagement in occupation has long been considered as an important ingredient in the recipe for achieving a healthy life, and even the early
OT literature focused on this idea (Meyer, 1922; Reilly, 1962). OT’s philosophical base relates to the knowledge that good health comes through engagement in occupation and our traditional belief that health can be enhanced by occupation (Wilcock, 2001). While the relation between occupation and health is widely accepted, our professional base has not been deeply examined from this perspective (Law, Steinwender, & Leclair, 1998). Just recently has research in OT focused more prominently on this basic belief (Townsend, 1997; Wilcock, 1998).

Therefore, evidence for this belief, one of the fundamental premises in OT, is limited. Iwarsson et al., (1998) did support this belief when they revealed differences in survival (as an indicator for health) between less versus more active older females. Based on a review of the literature, Law, Steinwender, and Leclair (1998) concluded that there is a moderate to strong evidence that occupation has an important influence on health and well-being. They did not, however, clarify their definition of “important influence”. Another systematic literature review in a nearby discipline focused on behavioural determinants for healthy aging (Peel, McClure, & Bartlett, 2005). The major findings from that study did not include occupation at all as a determinant variable for healthy aging, but they found a relation between healthy aging and being physically active (which did include task performances such as gardening and walking). Perhaps the most thorough definition of health from an occupational perspective comes from Wilcock (1998). She defined health as absence of illness (but not necessarily disability), balance in occupation, enhancement of capacities, community opportunities, and social integration and support. She also stated that underlying factors can be influenced by occupational engagement and subsequently influence health in a positive way.

According to Yerxa (1998), the connection between engagement in occupation and health is still a crucial question, and Laliberte Rudman et al. (1997) stated that the contribution of occupation to health for older people is not well understood. This idea that the relation between health and occupation lacks clarity is also reflected in OT models of practice. That is, while many authors refer the importance of occupation for promoting and maintaining health, there is limited information about this relationship between occupation and health, and few definitions of health from OT theorists or OT models of practice. This will be discussed in the next section.
Occupational therapy models of practice

In OT, different frameworks or models of practice have been developed to describe important components within human beings and how these parts interact during occupational performance. The models are potentially important for understanding occupation throughout the life span. A short review of some of the most used models will be given here to introduce the key features of the models, and how they view aging and health.

**Person Environment Occupation model (PEO)**

Law et al. (1996) developed the PEO to provide a theoretical idea how personal, environmental, and occupational factors influence occupational performance. The major idea is that if there is change in any part, person, environment, or occupation, changes will be seen in the outcome, occupational performance. Occupational performance also changes across the lifespan as a consequence of variations in the person, the environment, and occupation. The PEO especially describes temporal aspects as important for understanding occupational performance. During the lifespan, the components may change and thereby occupational performance. The person is also seen as having a variety of roles simultaneously which are constantly changing as one ages.

According to Law et al. (1998), the effect of occupation on health might be dependent on the relationship between person, environment, and occupation, and the individualized balance in self-care, productivity, and leisure. No further information is given about occupations of older people or the relation between occupation and health.

**Canadian Model of Occupational Performance (CMOP)**

This model is a client-centred practice model and focuses on the occupational needs of the person (Townsend, 1997). Like the PEO, the CMOP also views occupational performance as the outcome of an interaction between the person, the environment, and occupation. The relationship between person, environment, and occupation changes over a lifespan in response to the opportunities and challenges that shape each person’s occupational life course. The person’s spirituality is one of the unique points of this model. Spirituality highlights a person’s inner drive and represents a sense of meaning from the person’s view.
Within the person, changes occur as one ages. Even if the number and diversity of occupations diminishes with age or other circumstances, people expand their repertoire of occupational experiences by developing some occupations and leaving others during the life span.

CMOP describe health as more than absence of disease and as being influenced by choice and control. Health has both a personal dimension (looking after the self and enjoying life) and a social dimension (contributing to society in social and economic ways). According to Townsend (1997), occupation is an important determinant of health, but no further details are given.

**Model of Human Occupation (MOHO)**

This model is a conceptual practice model (Kielhofner, 2002) that aims to define phenomena of concern for the profession. The focus of MOHO is how occupation is motivated, patterned, and performed. Within MOHO, a person is conceptualized as being made up of three interrelated parts: volition, habituation, and performance capacity. Volition refers to a person’s motivation, habituation refers to the person’s occupational patterning, and performance capacity includes physical and mental capacities as well as the lived experience. The person is interacting during occupational performance with the environment. Thus, the three interrelated parts of the human and the environment all interact to produce occupational performance.

Aging involves a natural decline in performance capacity and is associated with a high frequency of health conditions that may affect capacity. Values, which are seen as a part of the volition, typically undergo some transformation which, in turn, influences occupational choices in old age. Due to relative freedom from obligation, old age presents opportunities to pursue a variety of interests more fully than before. Yet, constrained capacity and resources in later life could prevent some persons from pursuing their interests. Any further information about health or relation between occupation and health is not given in MOHO.

**Occupational Adaptation (OA)**

The unique aspect of this model is the occupational adaptation process — the adaptive response mechanism — and the integration of the construction of occupation and adaptation into one single construct (Schkade & McClung, 2001; Schkade & Schultz, 1992; Schkade &
Background

Schultz, 2003; Schultz & Schkade, 1992). The adaptive response mechanism is used when a person is responding to an occupational challenge. Occupational adaptation is a normative process, internal to the person, through which occupational functioning develops.

No explicit information is given about older people in OA, but the model claims that the desire and press for mastery exist and continue over a lifetime. OA does not discuss health or health-related concepts.

Summary of occupational therapy models of practice

OT models of practice agree that occupation is a multidimensional phenomenon that develops and changes during the life span, but further information about life-span-specific changes are not discussed. In general, the most commonly used models are generally quite similar. They highlight the person, the environment, and occupation as important determinants of occupational performance (Kielhofner, 2002; Law et al., 1996; Schkade & McClung, 2001; Schkade & Schultz, 1992; Townsend, 1997). They also describe adaptation as critical for occupational performance even if they describe it in different ways (Kielhofner, 2002; Schkade & McClung, 2001). There are also many differences. OA (Schkade & McClung, 2001; Schkade & Schultz, 1992; Schkade & Schultz, 2003) is a model that uses quite different language or terminology in relation to the other models. It is also the most distinguished, by its focus on adaptation through occupational performance. The PEO model (Law et al., 1996) highlights the non-linear but dynamic relationship between the components, and if any component changes, changes will be seen in occupational performance. The CMOP (Townsend, 1997) can be seen as a further development of PEO. This model also highlights spirituality within the person that can be seen as the core of a person’s inner drive. The unique part within MOHO (Kielhofner, 2002) is the deep knowledge this model offers about the person’s volition and habituation.

How occupation develops and progresses during life span and specific occupational levels or key points in a person’s occupational life are not covered by the models within OT. In fact, occupational changes across the life span are rarely studied (Hayase et al., 2004).

Even though one of the basic assumptions of OT is “occupation for health”, no OT model can guide us to show how, when, or why occupations give us healthy aging. An OT “health and wellness model” is, therefore, in great demand (Wilcock et al., 1998).
Older people in society

It is well known that the older population in Sweden, as in most western countries, is increasing. Older persons are defined as those 60 years or older (United Nations, 2006). In Sweden, a person usually is seen as an aged person beginning at age 65 years (retirement age). People 80 years or older were earlier called the oldest old, but WHO changed the term recently to very old (World Health Organization, 2006). This, therefore, is also the term used in this thesis. Those over 80 years of age are increasing at a faster rate than those over 65 years of age. Today, about 17% of the total population in Sweden is 65 years old or older (Carpenter, 2005). In another 45 years (in 2050), the United Nations expects 1.5 billion people world-wide to be 65 years old or older (Statistics-Sweden, 2005). With anticipated longer life expectancies, both greater demands on health care resources and awareness, and considerations of older people’s quality of life will increase. In all health care professions, there is a need to be prepared to meet the demands of an increasingly older population (Tate, Lah, & Cuddy, 2003). Therefore, knowledge of how to support people to enjoy healthy and successful aging is crucial. From an OT perspective, understanding of occupation among older people and the relation between occupational engagement and life satisfaction are important to investigate.

Theories about successful aging

The idea of successful aging has historical roots, and many theories have been developed with a focus on a healthy or successful aging. There are some theories that especially focus on activity as an important feature. In gerontology, there are at least three classical theories that concern activity and aging: activity theory (Havighurst & Albrecht, 1953; Lemon, Bengtson, & Peterson, 1972), disengagement theory (Cumming & Henry, 1961), and continuity theory (Atchley, 1999). Those three theories were developed based on practical, empirical findings and are intended to try to explain their common findings. From these three theories, other people have developed assumptions and related theories such as the theory of gero-transcendence (Tornstam, 1989) and congruence theory (Seleen, 1982).
Activity theory

This theory was first described by Havighurst and Albrecht (1953) and then further used and developed by others (Lemon, Bengtson, & Peterson, 1972). In this theory, successful aging is described as an individual having a sense of well-being in later years. The basic assumption in this theory is that activity in general, and interpersonal activity in particular, is important for successful aging. Activity is defined as any regularized or patterned action or pursuit which is regarded as beyond routine physical or personal maintenance. Often, three types of activities are described: (a) informal activities like social interaction; (b) formal activities like social participation in voluntary organizations; and finally, (c) solitary activities like watching television, reading, or hobbies of a solitary nature.

Role supports, in turn, are necessary for the maintenance of a positive self-concept which is associated with a strong feeling of well-being. Activities can contribute more or less to support a person’s roles, and informal activities have been determined to be the most important type of activity. Another important issue is the frequency of performing, where the assumption is the greater the frequency of activity, the greater the feeling of well-being. In other words, a person that frequently participates in social activities will also have a high sense of well-being when compared with a person with low participation in the same types of activities.

Disengagement theory

Disengagement theory was developed and described during studies undertaken by Cumming and Henry (1961). The central hypothesis of disengagement theory is that there is a mutual, inevitable act of withdrawal between the older person and society (Cumming & Henry, 1961). The withdrawal from society can be both from a social perspective (e.g., interaction) but also from a psychological perspective (e.g., decreased interest and motivation). The process of withdrawal can be initiated either by the individuals themselves or by society, and the disengagement process is necessary to bring about a balance between the individual and society. Disengagement theory is intended to apply to all aging people in all societies even though the actual process may vary between cultures.
Continuity theory

Continuity theory (Atchley, 1999) proposes that many older people tend to maintain patterns of participation across the retirement transition and also carry their role identity with them into retirement. A key is that continuity is the persistence of general patterns within the individual rather than a sameness in the details contained in those patterns. Conceptually, two types of patterns indicate continuity: absolute stability or lack of change, and overall maintenance of general patterns with minor fluctuations within those patterns. Continuity theory is not a theory about successful aging; rather it predicts that most people will try to maintain continuity as their first adaptive strategy even though the theory does not assume that the results of continuity are necessarily positive.

Successful aging

In gerontology and geriatrics there is an evolving emphasis on the potential for and likelihood of a healthy and engaged old age. A recent theory of successful aging, evolving from activity theory, was proposed by Rowe and Kahn (1987; , 1998). Their definition of people that aged in a successful way was individuals with a low level of disease or disability, high cognitive functioning or capacity, and active engagement in life. These three components have a hierarchical order; if one avoids disease it is easier to maintain high cognitive functioning, and, in turn, be engaged in life.

There have not been any standards as to how to measure successful aging based on this theory (Tate, Lah, & Cuddy, 2003). Yet, this view on aging has had an impact on the discipline of gerontology and has influenced the research agenda on aging (Holstein & Minkler, 2003). This model of successful aging has also been criticized because of its strong focus on the individual’s rather than society’s role. That is, the model is built, in part, on the idea that you can choose the way to age yourself, so it very much is dependent on extrinsic factors (if you exercise, eat a proper diet, etc.)(Holstein & Minkler, 2003).
Summary of theoretical understandings of aging

Gerontological theories try to predict how older people will act or behave as they age while the OT models focus on an understanding of why persons do specific things. OT models focus more at the individual level and highlight each person’s unique way of performance; gerontological theories, on the other hand, have a more general view of older people.

The guiding theories in gerontology have been criticized for simplifying a complicated process in order to find general parameters (Calasanti, 1996; Grigsby, 1996; Hendricks, 1996; Light, Grigsby, & Bligh, 1996). Also, other researchers have concluded that gerontological theories are too reductionistic and therefore cannot cover the multifaceted nature of aging (Mein, Higgs, Ferrie, & Stansfeld, 1998).

All the OT models described earlier are vague about what will actually happen in old age. OT models also do not explicitly tell us about what kind of or why occupational performance is important for human beings. Further research, therefore, is needed in order to explore the role of occupation in older people.

Methodological perspectives when studying occupation

Generally, there are three major methods used to evaluate occupation-related variables in clinical practice and research: observations, self-reports or questionnaires, and in-depth interviews (Avlund, 1997). Each of these methods has their general and specific benefits and limitations. Observations are the most time-consuming, but can capture complex situations (Erlandsson & Eklund, 2001). Self-reports or questionnaires involve more subjectivity and can therefore be less reliable, but they are practical and can be used for screening (Fricke, 1993). The in-depth inner perspective of occupation (experiences, inner drive, and “feeling” of occupation) can only be explored by the experts, those who experience occupation (Yerxa et al., 1989). The common way of doing this is by use of qualitative interviews even though the experiences, also in part, can be expressed by doing (Nygård, 2006). Self-reports or questionnaires could be seen as searching for the inner perspective, but the collected material will have very different characteristics than will material collected using qualitative interviews.
Evaluating occupational engagement

Evaluation is essential for knowing how to develop and enrich OT services for the future (Unsworth, 2000). One important area to evaluate is occupational engagement. Engagement can be seen both as involvement in performance, but also the deeper subjective experience (Yerxa, 1980). The two dimensions are complementary.

Experiences of occupation

The subjective experience of involvement in performance is not simply an artefact of performing, but a fundamental source of knowledge of how and why we perform (Kielhofner, 2002). Few studies have focused on older people’s experiences of doing or of being occupied. Those that could be found described how doing is absorbing and gives pleasure (Andersson Svidén & Borell, 1998); and contributes to well-being, organizes time, and serves as a social agent (Laliberte Rudman, Valiant Cook, & Polatajko, 1997). The studies showed that the value of an occupation is both the product it brings about as well as the process itself, of doing the particular task. Some of these process values are shared between people and provide for shared ways of doing (Hannam, 1997).

An important part of fully understanding occupation, therefore, is the personal assessment of engagement in occupation (Clark et al., 1991). By doing that, we can understand the value that is embedded in it, and that is why it is necessary to comprehend the experience of engagement. After all, it is the individual, those who perceive the demands and their abilities, the meaningfulness or lack of it, that can explain engagement (Yerxa et al., 1989). Therefore, there is a need for more knowledge about people as agents engaged in daily occupations (Yerxa, 1998).

Measurement of occupational engagement

Another way of evaluating engagement in occupation is to measure. Measuring is a critical step in the research process. There are many frequently used tests of occupational performance; for overviews see Law et al. (2005) and McDowell and Newell (1996). Many tests are available for evaluation of ADL ability, even though many of them only include personal activities of daily living (PADL) (Hayase et al., 2004). Perhaps ADL has been so much in focus because it has been used to demonstrate the effectiveness of rehabilitation medicine (Fricke, 1993).
Poor scale construction and other psychometric problems have been obstacles to progress in OT research (Unsworth, 2000). For example, in some areas of occupation, researchers have been struggling with how to measure, and often the so-called time-budget perspective has been used (Christiansen, 1996). A major concern arises as time is not a sensitive and valid descriptor for what, how, and/or why people are occupied in different task performances. Another problem highlighted by Christensen (1996) is the fact that almost every study has its own way of testing and its own classification of tasks, which makes comparisons between studies difficult. This is also true for leisure research.

So far, studies of leisure activities have been based primarily on non-standardized tools designed for specific research projects and most often designed to generate frequencies of involvement or types of leisure activities (Lefrançois, Leclerc, Dubé, Hamel, & Gaulin, 2001; Menec, 2003; Strain, Grabusic, Searle, & Dunn, 2002; Wang, Karp, Winblad, & Fratiglioni, 2002).

Even though there is a far-reaching interest in leisure among the older people (Strain, Grabusic, Searle, & Dunn, 2002), there is a lack of valid tools for evaluating leisure (Thibodaux & Bundy, 2000). Only a few standardized tools have been developed. Among these are the Activity Card Sort (Baum & Edwards, 2001) and the Interest Checklist (Matsutsuyu, 1969). Both are confounded by the inclusion of activities that do not pertain to leisure and both have also very limited evidence of validity or reliability (Katz, Karpin, Lak, Furman, & Harman-Maeir, 2003; Klyczek, Bauer-Yox, & Fielder, 1997; Rogers, Weinstein, & Figone, 1978). Several authors have, therefore, stressed the need to develop a valid tool that can be used in leisure research (Havitz & Dimanche, 1997; Hersch, 1990; Thibodaux & Bundy, 2000).

Only the Nottingham Leisure Profile (Drummond & Walker, 1994) was developed as an evaluation of leisure. This tool, however, has limited applicability as it was designed to be used with persons who have had strokes. Moreover, the developers have cautioned potential users that it may not be valid for use in different countries or within cultural groups or other age-groups than those studied (Drummond, Parker, & Logan, 2001). There remains a need, therefore, for a tool with psychometrically sound properties that has been designed specifically to evaluate dimensions of leisure engagement among older people in Scandinavia.

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3 Frequencies are based on counting how many times a person performs a task, and are also called counts.
Rasch measurement and related statistics

The structural limitations of ordinal data are widely known. For example, some applications of functional assessment scales produce false results, especially when ratings are summed and subjected to mathematical operations that need interval data (Merbitz, Morris, & Grip, 1989; Silverstein, Fisher, Kilgore, Harley, & Harvey, 1992; Wright & Linacre, 1989). All ordinal data are expressions of qualities. If we want data that can be added, subtracted, divided, and so on, yet retain their original numerical meaning, they need to be converted into a linear measure. The family of Rasch models, first developed by Georg Rasch in the 1950s, make it possible to convert ordinal counts into linear measures using a mathematical model based on the logarithm of the odds (probability) of passing (or agreeing with) an item (Wright & Linacre, 1989).

An unique aspect of Rasch analyses is that ordinal data are converted to equal interval measures. Therefore, instead of just being able to determine rank ordering, as indicated by summed ordinal data, the item calibration values reflect interval level values of extent or magnitude (W. P. Fisher, 1993). More specifically, the calibrated item locations along the linear scales indicate the extent to which the participants were more or less likely to pass or respond positively to an item. More about Rasch models can be read in Bond and Fox (2001) and how to use them in practice (A. G. Fisher, 1993). Some of the commonly used statistics in the Rasch rating scale analysis will be introduced here.

\( Bn \), the person ability measure, is estimated by converting the raw score percentage into odds of success, which conceptually is estimated by calculating the ratio of each person’s percentage correct (\( p \)) over the percentage incorrect (\( 1-p \)). The natural log of these odds then becomes the person ability estimate (Bond & Fox, 2001).

The item difficulty measure, \( d \), is estimated in exactly the same way as for person ability. The calculation is conceptually done by dividing the percentage of people who answered the item correctly by the percentage of people who answered the item incorrectly, and taking the natural log of that value.

Aspects of validity

The mean square goodness-of-fit (\( MnSq \)) and standardized residual (\( z \)) statistics can be used when evaluating validity of the instrument. \( MnSq \) is conceptually the mean of the squared difference between what is
observed and what is expected. The estimation of fit begins with the
calculation of a response residual for each person on each item, that is,
how far does the actual response deviate from Rasch model expectations
(Bond & Fox, 2001). The standardized residuals (\( \xi \)) are interchangeable
with standard deviations (SD) of the residuals, and often the level for \( \xi \) is
set at \( \pm 2 \) which means that you do not allow variations more than plus
or minus 2 standard deviations from expected fit to the model. Two
different sets of fit statistics are usually examined for both each person
and each item. *Infit statistics* are the weighted standardized residual in
which relatively more emphasis is given to unexpected responses close to
a person’s or item’s measure. The *outfit statistics* are unweighted, which
makes them more sensitive to unexpected responses far from a person’s
or item’s measure. Generally, more emphasis is placed on infit values
than outfit (Wright & Stone, 1979).

The expected value for infit and outfit \( MnSq \) is 1.0. There are no preset
criteria for acceptable \( MnSq \) values, but \( MnSq=1.5 \) is generally

*Internal scale validity* can be evaluated by item goodness-of-fit (\( MnSq \) and
\( \xi \)). *Personal response validity* can be evaluated by person goodness-of-fit
(\( MnSq \) and \( \xi \)).

*Aspects of reliability*

*Separation index* can be used when looking at reliability of the scale. This
index gives you a measure of how well persons can separate a group of
items into different levels of difficulty and how well items can separate a
group of people into different levels of ability (Linacre, 1991-2003).

\( SE \), the standard error, is calculated unique for each item and each
person included in the data. The size of the \( SE \) is influenced by how well
the data fit the model assertions, as well as how well targeted the
difficulty of the items are to the abilities of the people. The size of the
\( SE \) will also be dependent on the amount of data available. If the person
is assessed on many items, the \( SE \) will often be relatively smaller than if
the person is assessed on only a few items. The \( SE \) can also be used as a
measure of reliability and to determine confidence intervals when
comparing estimates.
Occupational engagement repertoire

Time spent in productivity reduces in older people in favour of time spent in self care and leisure (Parker, 1996; Schweitzer, Mann, Nochajski, & Tomita, 1999). Therefore, these latter two major occupational areas need to be further investigated.

**ADL in older people**

According to earlier findings from population-based studies in Scandinavia (Avlund, Kreiner, & Schultz-Larsen, 1993; Avlund & Schultz-Larsen, 1991), it seems that almost all PADL activities are performed by almost all older people at 70 years of age. This was not the case in instrumental activities of daily living (IADL); no IADL task was performed by everyone (Avlund & Schultz-Larsen, 1991). In population-based studies including only very old people, about 20% are independent in both PADL and IADL and every other person is independent in PADL (von Heideken Wågert et al., 2006). Reduced ADL ability is also reported in other studies among very old people (Parker, Thorslund, & Lundberg, 1994).

There seems to also be gender differences in performance of IADL tasks, that is not to be found in performance of PADL tasks (Avlund & Schultz-Larsen, 1991), even though Sonn et al. (1996) found gender differences both in PADL and IADL activities in a longitudinal study of 76-year-old persons. Avlund and Schultz-Larsen concluded that perhaps IADL are more influenced by culture, interest, and gender and that all IADL tasks are relevant to all persons. In contrast, when Merritt and Fisher (2003) studied gender differences in quality of performance of familiar, relevant PADL and IADL tasks, they found no gender differences.

Exploring the developmental process of ADL activities, Hayase et al. (2004) found that the healthy, independent very old people were well above the cut off level for efficiency in ADL ability (how the person selects/uses tools and material but also adapts during performance). On the other hand, the very old people were below the cut off level for increased effort in ADL ability (how the person moves oneself or the objects used during performance) despite their overall continued independance.
Leisure in older people

Leisure is the other major life domain in older people, especially after retirement and withdrawal from work (Hersch, 1990). It is known that older people tend to participate in fewer leisure activities (Iso-Ahola, Jackson, & Dunn, 1994; Li, Zinn, Barro, & Manfredo, 2003), and that they are less likely to add new activities to their repertoires (Strain, Grabusic, Searle, & Dunn, 2002). This commonly recognized phenomenon may be due to more intensive involvement in fewer activities (Heuser, 2005). There are also studies that describe differences between gender in the leisure repertoire (Avlund & Legarth, 1994; Häggblom-Kronlöf & Sonn, in press).

The leisure repertoire has been defined as a library of leisure activities that a person finds meaningful and engages in (Mobily, Lemke, & Gisin, 1991). While there is limited research on the leisure repertoire, it is hypothesised that when one ages, it becomes more and more important to have a broad repertoire. The result is a reserve of activities to choose from that can provide the foundation for replacing lost activities with others. A more extensive repertoire may also improve quality of life (Mobily, Lemke, & Gisin, 1991; Mobily et al., 1993).

Some earlier studies have shown that much can be gained from leisure such as greater happiness (Menec, 2003), better physical health (Everard, Lach, Fisher, & Baum, 2000), decreased risk for dementia (Wang, Karp, Winblad, & Fratiglioni, 2002), and lower risk of mortality (Glass, de Leon, Marottoli, & Berkman, 1999). Therefore, leisure is an area that may be particularly important to support in rehabilitation among older people. While leisure activities have been shown to be important for older people, there remains a need to develop a deeper understanding of the role of participation in leisure activities among the older people, especially the very old people.

Relation between occupational engagement and benefits for health

While one of the basic premises of OT is to improve health and life satisfaction through occupation (Law, 2002; Wilcock, 2001), there remains no consensus as to how these concepts are interrelated and what characteristics of occupation that are important (Laliberte Rudman, Valiant Cook, & Polatajko, 1997). Research in the area of how to remain healthy when aging is extensive, and many different variables and
combinations of variables have been studied. Comparisons between studies are not easy to make due to different designs, outcomes, and statistics that have been used. Many studies include task performance along with other variables, but not many report the impact of the task performance separately.

Overall, among older adults, level of task performance appears to have some impact on life satisfaction (Riddick, 1985; Warr, Butcher, & Robertson, 2004), but there is no real agreement as to which types of tasks that are most important. Some studies support tasks within family and social areas as important for life satisfaction in older adults (Hillerås, Jorm, Herlitz, & Winblad, 2001; Warr, Butcher, & Robertson, 2004), while others support tasks that include physical components (Hillerås, Jorm, Herlitz, & Winblad, 1999; Menec, 2003) or are leisure-related (McGuinn & Mosher-Ashley, 2000). In contrast, some researchers have suggested a lack of association or only a weak association between performance of tasks and life satisfaction (Bowling & Farquhar, 1996; Stanley, 1995).

One reason that there is no real consensus may be due to researchers’ tendencies to sort tasks into groups, depending on their features (Menec, 2003). This means that tasks are grouped together because they have similar “objective” features, even though this might not always be the case from the subjective view of the individual. That is to say, different people may have different opinions about the key features of the same task. Moreover, a person’s subjective view of a task may change between contexts, from time to time, and during one’s life span (Avlund & Legarth, 1994; Stanley, 1995). For example, to take a walk to the bus can on one occasion be viewed as a relaxing time, breathing fresh air, and strolling. Another time the same walk can be viewed as stressful and being in a hurry trying to catch the last bus home. As a result, researchers have called for new ways and methodologies when studying relations between task performance and well-being or life satisfaction (Diener, Suh, Lucas, & Smith, 1999; Hillerås, Jorm, Herlitz, & Winblad, 2001; Warr, Butcher, & Robertson, 2004).

A review of the literature about the relation between life satisfaction and occupation reveals that there is a lack of studies that separate task performance from other variables in the relation to life satisfaction, but also a lack of studies only including very old people. Another problem identified when conducting the review was that different statistics are reported; some only reported beta values while others reported $r$ or $R^2$. 

background
values. The review disclosed that the relation between task performance and life satisfaction varied from an $r$ value around .05 (Hillerås, Jorm, Herlitz, & Winblad, 1999; Steinkamp & Kelly, 1985) to around .35 (Hillerås, Jorm, Herlitz, & Winblad, 2001; McCamish-Svensson, Samuelsson, Hagberg, Svensson, & Dehlin, 1999). Only two studies were found reporting considerably higher values, $R^2 = .25$ ($r = .50$) (Everard, Lach, Fisher, & Baum, 2000) and $r = .68$ (Steinkamp & Kelly, 1985) for a single activity studied. In turn, this means that there is a large variation among the reported results.

There remains a need, therefore, for further investigation, as no consensus has been reached regarding which task performances it is important to engage in, which therapeutic elements that are embedded in occupation (Fortmeier, 1998), or how to measure occupational engagement. Bundy (1993), for example, stated that we do not know how many, or what kind of leisure tasks are most beneficial for a person. Rather than what tasks, or how many they are, it is possible that the level or magnitude of occupational engagement is important for life satisfaction.
Aims of this thesis

The overall aim of this thesis was to study aspects of occupational engagement in older people, with a special focus on the experiences of an occupation based group programme, evaluation of leisure, the leisure repertoire, and the relation between occupational engagement and life satisfaction. The specific research aims were:

- To describe how older people, temporarily living in a pre-discharge community rehabilitation centre, experience participation in an in-patient OT programme built around group activities (Study I).

- To determine if the modified NPS Interest Checklist (MNPS) can be developed as a tool with linear measures of four dimensions of leisure: interest, performance, motivation, and well-being (Study II).

- To elucidate very old people’s leisure repertoire and how this repertoire varies due to gender, where they live, and cognitive status (Study III).

- To illuminate and enhance the understanding of life satisfaction and its relation to occupational engagement among very old people in northern Sweden (Study IV).
The design of this thesis emerged during the research process and data analysis. The first study (Study I) derived from clinical curiosity about older peoples’ experiences when engaged in occupations during an OT intervention programme. The results from that study provided a background to more deeply illuminate the relation between occupational engagement and life satisfaction in older people (Study IV). In order to do so, the repertoire of occupational engagement in older people first needed to be discovered. The leisure elements of occupational engagement then became Study III. During the analysis for Study III, we struggled with finding a way to look at the repertoire of occupational engagement. We realized that there was a need to develop and evaluate the instruments we had used, which in turn resulted in Study II, where we demonstrated how we developed and evaluated one of the instrument used. An overview of the interrelation between the studies is given in Table 1 and a summary of the informants and methods used is given in Table 2.
<table>
<thead>
<tr>
<th>Study</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas of occupational engagement</td>
<td>IADL, leisure, social participation</td>
<td>Leisure</td>
<td>Leisure</td>
<td>PADL, IADL, leisure</td>
</tr>
<tr>
<td>Context</td>
<td>Therapeutic group activity</td>
<td>Community living</td>
<td>Community living</td>
<td>Community living</td>
</tr>
<tr>
<td>Group of older people (years)</td>
<td>65-85</td>
<td>85-98</td>
<td>85-98</td>
<td>85-98</td>
</tr>
<tr>
<td>Focus in relation to occupational engagement</td>
<td>Quality of the experience of being engaged in occupations</td>
<td>Measurement of engagement-related variables</td>
<td>Hierarchical repertoire of engagement-related variables</td>
<td>Relation to life satisfaction</td>
</tr>
<tr>
<td>Perspective of collected data</td>
<td>Inside perspective, in-depth interviews</td>
<td>Subjective, self-reported, inside perspective</td>
<td>Subjective, self-reported, inside perspective</td>
<td>Subjective, self-reported, inside perspective</td>
</tr>
</tbody>
</table>
Table 2. Overview of informants and methods for data collection and analysis among the four studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Informants</th>
<th>Data collection methods</th>
<th>Data analysis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>n=3 (including 15 interviews)</td>
<td>Qualitative open-ended interviews</td>
<td>Constant comparative analysis</td>
</tr>
<tr>
<td>II</td>
<td>n=156</td>
<td>Questionnaires</td>
<td>Rasch measurement statistics</td>
</tr>
<tr>
<td>III</td>
<td>n=156</td>
<td>Questionnaires</td>
<td>Rasch measurement statistics, descriptive statistical analysis, standardized differences, Pearson product moment correlation</td>
</tr>
<tr>
<td>IV</td>
<td>n=156</td>
<td>Questionnaires</td>
<td>Rasch measurement statistics, descriptive statistical analysis, Pearson product moment correlation, t test, Hedge’s g, linear regression</td>
</tr>
</tbody>
</table>

Participants

The participants were obtained from two different population groups. The participants in Study I were selected during an ongoing rehabilitation phase in a clinical ward. Participants for the other studies (Studies II-IV) were included in a population-based survey among very old people in northern Sweden.
Methods

Study I

The main criteria for participation in Study I were that the person should be temporarily enrolled for assessment and rehabilitation at a municipal rehabilitation unit subsequent to hospital stay. The person should be 65 years old or older, have no or negligible memory or communication problems, and be in need of adaptation and reorientation facing discharge. Three females between 66 and 85 years of age fulfilled the criteria and agreed to voluntary participate in the same group activity programme. All three had been admitted to the hospital for rehabilitation following a stroke in the right hemisphere according to clinical examination. At the time of this study, they had been hospitalised for 3 to 6 months at different hospitals since their acute admission, and were eventually facing discharge from the same in-patient rehabilitation unit. There were no other participants in the particular group under study.

Studies II, III and IV

These studies were a part of the Umeå 85+ study, a cross-sectional study of the very old people in northern Sweden. The methods of the Umeå 85+ study have been described elsewhere (von Heideken Wågert et al., 2006; von Heideken Wågert et al., 2005). Briefly, the potential Umeå 85+ study sample comprised half of the population of those 85 years old and the total population aged 90 years and 95 years and older from an urban/suburban area and a rural area in northern Sweden. The participants were identified from the National Tax Board and the selection of 85-year-olds was done by randomization.

For Studies II-IV, all participants in the Umeå 85+ study who had scores of at least 20 on the Mini-Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975) when data collection was first initiated, and were willing to participate, were asked about their life satisfaction and daily occupations (see Figure 1). Of the total potential population, 32% declined to participate; those who declined to participate did not differ in ADL or cognition, $t \leq 1.6; p \geq 0.09$; nor did they differ in living condition, geographic settings, age, or gender, $X^2 \leq 1.0; p \geq 0.36$. Those who declined to participate had significantly higher level of self-rated health, $t = -2.2; p = 0.03$, although the effect size was small, Hedges’s $g = 0.3$ (Rosenthal, 1994).
Methods

Participants in Umeå 85+ with an MMSE score below 20 were excluded from these studies as it was presumed that they might have cognitive problems severe enough to interfere with participation. Exclusion was based primarily on ethical, but also on practical considerations, as the reliability of the answers for a cognitively impaired group could be questioned. The characteristics of the studied sample are given in Table 3.

![Flow chart over the study sample in Studies II-IV](image)

*Figure 1. Flow chart over the study sample in Studies II-IV*
Table 3. Demographic characteristics of the participants in Studies II-IV, presented by total sample

<table>
<thead>
<tr>
<th></th>
<th>Total (n=156)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong> (years) $M \pm SD$, (range)</td>
<td>88.6 ±3.9, (85-98)</td>
</tr>
<tr>
<td><strong>Gender</strong> (% men)</td>
<td>31</td>
</tr>
<tr>
<td><strong>Geographic living</strong> (% living in rural area)</td>
<td>35</td>
</tr>
<tr>
<td><strong>MMSE</strong>, $M \pm SD$ (range)</td>
<td>26.1 ±2.8 (20-30)</td>
</tr>
<tr>
<td><strong>Barthel ADL Index</strong>, $M \pm SD$ (range)</td>
<td>19.0 ±2.4 (4-20)</td>
</tr>
<tr>
<td><strong>Philadelphia Geriatric Center Morale Scale</strong> (PGCM), $M \pm SD$ (range)</td>
<td>12.1 ± 3.1 (1-17)</td>
</tr>
<tr>
<td><strong>Self-rated health</strong> (SF-36), $M \pm SD$ (range)</td>
<td>3.1 ±1.0 (1-5)</td>
</tr>
<tr>
<td><strong>Living situation</strong> (%)</td>
<td></td>
</tr>
<tr>
<td>Living alone</td>
<td>83</td>
</tr>
<tr>
<td>Own house/apartment</td>
<td>79</td>
</tr>
<tr>
<td>Assisted living</td>
<td>21</td>
</tr>
<tr>
<td><strong>Hearing</strong>* (%)</td>
<td>89</td>
</tr>
<tr>
<td><strong>Reading</strong>** (%)</td>
<td>89</td>
</tr>
<tr>
<td><strong>Cardiac disease</strong> (%)</td>
<td>65</td>
</tr>
<tr>
<td><strong>Musculoskeletal disease</strong> (%)</td>
<td>59</td>
</tr>
<tr>
<td><strong>Previous stroke</strong> (%)</td>
<td>18</td>
</tr>
<tr>
<td><strong>Depression</strong> (%)</td>
<td>20</td>
</tr>
</tbody>
</table>

* A normal speaking voice from 1 m, with or without hearing aid  
** A word printed in 3 mm capital letters, with or without glasses
Methods

Assessments

**Occupations in the leisure area**

A modified version of the NPS\(^4\) Interest Checklist (MNPS) was used for measuring leisure. The original checklist was developed in Sweden, but no scientific evaluation of the checklist was found. The first version of the checklist included 18 predetermined groups (activity types) of leisure tasks (e.g., outdoor activities, hobbies) (Norling & Jägnert, 1986). Later, two more activities were added (housework and cooking) (Pettersson & Selander, 1996) and the tool was then named the NPS Interest Checklist. Each group or type of activity represents an item and the respondents were asked (for each item), about their (a) degree of interest, (b) performance of, (c) perceived importance for their well-being, and (d) changes after disability. The checklist was modified for the Umeå 85+ study by the addition of a question about their motivation to perform each leisure activity and exclusion of the question about changes after disability. The Modified NPS Interest Checklist (MNPS), therefore, contains 20 groups of leisure tasks and four scales. Items in the interest scale are rated “none”, “casual”, or “strong”, items in the performance, motivation, and well-being scale is rated “yes” or “no”. All four scales were used in Studies II and III, and two of them (performance and motivation) were used in Study IV.

**Occupations in the area of ADL**

Occupations within the area of ADL were evaluated using the ADL Taxonomy (Sonn, Törnquist, & Svensson, 1999; Törnquist & Sonn, 1994). The taxonomy contains 48 items, and for Study IV, the participants were asked if they performed and if they wanted to perform in relation to each item (Borell, Lilja, Carlsson-Alm, & Törnquist, 1995). Thus, the ADL Taxonomy had two scales (performance and motivation); each item on both scales was rated “yes” or “no”. This instrument was used in Study IV.

**Life satisfaction**

For measuring life satisfaction, the LiSat 9, with one global and eight domain-specific questions, was used (Bränholm, Eklund, & Fugl-Meyer, 1991; Fugl-Meyer, Bränholm, & Fugl-Meyer, 1991). Each of the nine

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\(^4\) NPS refers to the original developers of this tool: Norling, Pettersson, and Selander
Methods

items was rated on a 6-point scale (1= very dissatisfied and 6= very satisfied). LiSat 9 is a commonly used instrument in research, both in OT (Unsworth, 2000) and other disciplines (Fugl-Meyer, Melin, & Fugl-Meyer, 2002). This instrument was used in Study IV.

Procedures and interventions

Study I

Before the data collection started, a pilot test was performed regarding the interview guide and the procedure for the study. Data were then collected through repeated interviews with the three respondents immediately after (the same day) each of the five group sessions in the programme. The interviews were conducted by the first author in an office connected to the clinical ward and they were tape-recorded. An interview guide was used which focused on the experiences the respondents had of each group activity in each session. The respondents were encouraged to freely narrate and reflect upon what had occurred during the session. The answers were followed-up by inquiries about the situations and experiences they brought up, and the theme of the session and the meaning they ascribed to participating in the group. Each interview lasted between 25 and 40 minutes. Because the group activity programme covered five sessions, each of the three respondents was interviewed five times. Thus, in total, the results of this study are based on 15 interviews.

The intervention: A group activity programme

The respondents participated in a group activity programme that formed part of the regular OT intervention at an in-patient rehabilitation clinic in a Swedish city. The group activity programme consisted of five sessions over 16 days. Each group session followed the same routine. Firstly, there was an introductory phase involving a relaxing activity, followed by an activity phase with a main theme activity. Finally, there was a concluding phase incorporating a summary, reflections, and conclusions. The themes for each of the five sessions were inspired by Kielhofner (2002) and included the following: “What do I want?”, “What can I do?”, “What are my habits and roles?”, “What does my environment look
Methods

Methods like?” and, finally, “What is my vision for the future?”. The approach in the group activity programme was to encourage the participants to share their experiences and support each other (Finlay, 1993). In the programme, each participant had individual goals determined by the therapist and the participants together, and intended to match their needs. The therapeutic activities embraced both creative activities (e.g., painting and pottery), and household activities (e.g., preparing light meals). All activities were continually adapted to meet the capacities and interests of the participants. The leader of the group was an occupational therapist experienced in leading activity groups; she was not otherwise involved in the research process.

Studies II-IV

All potential participants who met the criteria for these studies and agreed to voluntarily participate were visited in their homes by an occupational therapist with experience of working with older people. After establishing rapport with the participant, the therapist read the items and response choices from each instrument aloud. For Studies II and III, the MNPS was used, in Study IV, the MNPS, ADL Taxonomy, and LiSat 9 were used.

The participants were free to ask questions or discuss the different activities. The participants had an enlarged copy of the response choices to choose from, and could either answer verbally or point to their chosen response. Their responses were recorded by the occupational therapist. The total time taken to develop rapport and complete the evaluations was approximately 1.5 hours.

Data analysis

Study I

The tape-recorded interviews were transcribed verbatim by the first author and then analysed using a constant comparative approach as described by Bogdan and Biklen (1998). This method rests upon Grounded-theory principles developed by Glaser and Strauss (1967), and involves the researcher open-mindedly going back and forth between the data and the emerging codes and categories in search of a core category

5 The first author or one of two other occupational therapists
and a pattern describing the conditions and mechanisms of the issue under study. First, all interview transcripts were read several times to obtain a thorough overall understanding of the text. Thereafter, all data concerning the respondents’ experiences of the group programme were identified. Data that were irrelevant for the purpose of this study, such as what day it was and the weather that day, were thereby deleted. Next, units of data with their corresponding content were grouped together into subcodes and major codes in a process of repeated comparisons. Finally, through this constant comparison procedure, the major codes formed two core categories that together embraced and represented all other codes, and, consequently, the experiences of the respondents as they reported them (Bogdan & Biklen, 1998). To ensure that the findings were grounded in the data, the emerging codes and categories were continuously compared with and rechecked against all data. To establish trustworthiness and limit bias, every step in the analysis made by the first author was subject to examination by the second author, and consensus was always reached between the two authors before accepting any code or category.

Study II

We used the Rasch computer program FACETS (Linacre, 1991-2003), for our series of Rasch analyses. Separate analyses were conducted for each dimension in the MNPS: interest, performance, motivation, and well-being. Using leisure interest as an example, the assertions of the MNPS Rasch model are: Leisure activities that are more likely to be endorsed as interesting, are more likely to be interesting to all persons than are those that are less likely to be endorsed as interesting. Persons with more leisure-related interest, are more likely to be interested in leisure activities that are less likely to endorse as interesting, than are those persons with less leisure interest. Given these two assertions, if a leisure activity was relatively more likely for some people to endorse as interesting, but relatively less likely for others, that activity (item) would fail to demonstrate goodness-of-fit to the Rasch model of MNPS. Likewise, it would be unexpected for someone to be interested in an activity that was overall less likely to be endorsed as interesting, whilst simultaneously not being interested in activities that are more likely to be interesting to all persons. Such a person would fail to demonstrate goodness-of-fit to the Rasch model of the MNPS (Bond & Fox, 2001; Wright & Stone, 1979).
A Rasch rating scale model was used to analyse the interest dimension, and simple (dichotomous)\(^6\) Rasch models were used to analyse the other three dimensions (Bond & Fox, 2001; Wright & Stone, 1979). The statistics generated by the FACETS program were used to answer our research questions.

More specifically, to evaluate if the items and people demonstrated acceptable goodness-of-fit to the respective MNPS Rasch model, mean square (\(MnSq\)) and standardized (\(z\)) goodness-of-fit statistics were examined. Whilst there are no pre-established criteria for acceptable fit values (Wright & Linacre, 1994), we judged items and persons to misfit based on criteria proposed by Linacre (Linacre, 1991-2003): \(MnSq\) was \(\geq 1.5\) and the \(z\) value \(\geq 2\). When the criteria for acceptable fit is set at \(z\) value \(\geq 2\), it means 5% of items or persons are expected to misfit by chance.

The separation indices generated by FACETS (Linacre, 1991-2003) were used to evaluate the reliability of the MNPS scales. The separation index for the items indicates how well the people separated the items into different levels of difficulty. The separation index for persons indicates how well the items separated the persons into different levels of ability. The separation index must be at least 2.00 to indicate that the items or people can be separated into at least three groups. The separation index has associated with it a many-faceted equivalent of Cronbach alpha reliability coefficient; when the separation index is 2.00 the reliability coefficient will be 0.80 (Fisher, 1992). Higher separation and reliability reflects higher stability of the estimated item calibrations across samples and person measures across items.

To examine how well targeted the items were to the people, the group mean leisure measure for each scale was compared to the mean item calibration. The mean item calibration is always zero. When the group mean leisure measure varies substantially from the item mean of zero, off targeting likely is present. Off-targeting can also be evaluated visually by comparing the distribution of the people to the distribution of the items when they are plotted on the same scale. This plot is called the item-person map, and is generated by FACETS (Linacre, 1991-2003). Examination of the plot is also used to evaluate for the presence of gaps in the item distribution.

\(^6\) The simple Rasch model is used when there is a dichotomous two-category, one step “rating scale”. A rating scale model is used when the number of categories increases to at least three and the number of steps to at least two.
Methods

Study III

In the first step of Study III, Rasch analyses were used to generate linearized item difficulty calibrations for the 20 leisure activities (items) in each scale of the checklist. These linearized item difficulty calibrations represent equal interval hierarchies of leisure interest, performance, motivation, and well-being. That is, for each subscale (interest, performance, motivation, and well-being), each of the 20 items was calibrated along a linearized hierarchy from most to least likely to be affirmed. The linearized activity calibration values were expressed in logits or log-odds probability units.

In the second step, separate Rasch analyses of the data were performed for men and for women. The linearized item calibrations, \( d_i \), for men and women were then compared to determine if the extent of interest, performance, motivation, or well-being in any activities differed significantly between groups. Similarly, separate Rasch rating scale analyses were made for the urban/suburban and the rural groups, and their linearized item calibrations were compared to identify any significant differences. Finally, separate analyses and comparisons of their linearized item calibration were also done for cognitive status, where one group were those with MMSE scores of 20 to 23 and the other group with scores of 24 and above. To compare the item calibration values for significant differences between groups, standardized differences (\( Z \)) were calculated (Wright & Masters, 1982), where:

\[
Z = \frac{(d_1 - d_2)}{(SE_{d_1}^2 + SE_{d_2}^2)^{1/2}}
\]

The last step was to evaluate the relationship between performance of leisure and the other three dimensions that underlie participation (interest, motivation, and perceived well-being). For these analyses, each person’s overall leisure interest, performance, motivation, and perceived well-being measures generated by the Rasch analyses were used. Pearson product moment correlations were computed using the 12th version of the Statistical Package for the Social Sciences (SPSS). The size of the correlation coefficients was interpreted according to Hinkle, Wiersma, and Jurs (1988).

Study IV

The first step in the data analysis for Study IV was to create two linear scales of “engagement in occupation”, one for leisure and one for ADL.
Methods

Therefore, performance raw scores and motivation raw scores for leisure and for ADL were combined into a single set of leisure items and a single set of ADL items. These data were then subjected to Rasch rating scale analyses and the new engagement scales (leisure, 40 items; and ADL, 96 items) were carefully examined to ensure internal scale validity and person response validity.

Since all scales (life satisfaction, leisure engagement, and ADL engagement) were determined to be unidimensional and meet the assumptions of the respective Rasch model, Rasch rating scale analyses were then used to generate linearized person measures that could be analyzed with parametric statistics (Wright & Masters, 1982; Wright & Stone, 1979) using SPSS package 12.0.

More specifically, Pearson product moment correlations were used to evaluate associations between the Rasch-generated measures of life satisfaction and the Rasch-generated leisure and ADL engagement measures. These correlation coefficients were interpreted according to Hinkle, Wiersma, and Jurs (1988), and effect sizes for correlation coefficients were interpreted according to Cohen (1988).

To investigate the extent to which leisure and ADL engagement, when considered together, explained variation in life satisfaction, linear regression (forced entry) was used. Testing for multicollinearity was done using variance inflation factors (VIF); interpretation was done according to Myers (1990), where a VIF exceeding 10 indicates a problem of concern.

To determine if there were significant differences in life satisfaction between those who have relatively more versus relatively less engagement in ADL or in leisure, the sample was divided in half based on their ADL or leisure measures. The mean life satisfaction measures for each half were then calculated and compared using independent t-tests (high ADL vs. low ADL, high leisure vs. low leisure). Effect sizes were computed and interpreted according to Hedges’s g (Rosenthal, 1994).
Methods

Ethical considerations

Approval for this research was obtained from the Ethical Committee of the Medical Faculty, Umeå University, Sweden (Study I: Um Dnr 00-039, Studies II-IV: Um Dnr 99-326).

The respondents for all studies were carefully informed about their rights before they agreed to participate in the study. For example, they were informed, both orally and in writing, that they could withdraw from participation at any time without explanation and that neither withdrawal nor statements they made would affect any of their treatment and rehabilitation at the clinical ward (Study I) or harm them in any other way (Studies II-IV).

As the participants in Study I were in rehabilitation and could experience vulnerability, we ensured that none of the researchers was connected to the particular clinical ward or the group activity programme. Data collection was also undertaken in a location separately from the clinical ward to assure that the respondents would never feel any hesitation about expressing their honest opinions about the experiences of the group activity programme during the interviews. Finally, participants that in Studies II-IV were identified as having untreated medical problems were referred to specialist for further examination and care.
Main findings

Evaluation of occupational engagement

Experience of occupation in older people

The participants’ experiences of participating in the group activity programme (Study I) were organised into two core categories, which we called “experiences of activation” and “experiences of transformation”. The category of activation emerged from their experiences of a creative force while engaged in activities and their perception of the group as a place for learning. The engagement in the group activities also seemed to bring about a transformation in the participants in that their experiences initiated reflection and adaptation contributing to a changed attitude and a personal synthesis where their new discoveries were internalised.

“Experiences of activation”

In the core category “experiences of activation”, the first property identified was the experience of a creative force. In this property, the creative force in the group activities was put forward as a source of inspiration and creativity that also transferred to areas outside the programme.

The experience of creativity offered pleasure, joy, relaxation, and well-being. Participation in the group activities obviously brought about positive experiences for the participants. They expressed, for example, joy at having accomplished something, as well as pride at that which they had achieved. This inherent creative force, obviously awakened by the experiences of applying their creativity, also led to an unwillingness to bring the activity to an end. As one participant expressed it: “You feel that you are carried away because it is interesting or exciting, you want to keep pressing on. You feel the sparkle when you get started with silk painting or something like that.”
Main findings

You feel so much of the sparkle that you don’t want to stop at all.” The experience of activation was also considered to be important by the participants since they felt that life had to be filled with important activities because these had the power to contribute to good health and well-being.

The awakened creativity led to curiosity on the part of the participants towards the other activities in the programme. This new-found curiosity brought both the interest to continue with the ongoing engagement and the will to try other activities as it also implied excitement. One participant said: “You become interested in trying when you discover that it may turn out well” The participants also seemed to be able to transfer the creative force they experienced during the group activities to other areas of life besides the here-and-now. For example, one of them said she had a pleasant feeling that she really would get going with things when she had returned home. Thus, the creative force seemed to foster motivation and thereby raise new possibilities.

The group activities were characterised by a combination of usefulness and pleasure that proved to be important for the participants. According to their traditional background values, engagement in purely pleasurable activities was unacceptable. Hence, they found the discovery of the usefulness of their activity especially rewarding and gave explicit and concrete feedback in return for the effort the participants had made. In addition, the participants also reflected on the aesthetical dimensions of the products they had manufactured, such as the beauty in terms of form and colour.

The second property of the core category “experiences of activation” was the experience of the group as a place for learning. In this property, the other participants, content, and group leader were evidently felt to be sources of acquiring new knowledge (i.e. of learning).

The participants felt that it was easier to learn new things when they were doing something together in the group than alone. Thus, the group was powerful in the sense of providing a feeling of “togetherness”. Furthermore, they indicated that the better they came to know each other, the stronger this group force seemed to be, since their mutual experiences welded them together.

Participation in the group activities also created expectations among the participants. Initially, a certain degree of anxiety was expressed about not
Main findings

to fitting into the group, but thereafter expectations of learning were raised. For example, the expectations were described as follows: “Well, there is always something new to learn from them [the others]. You always learn from the others, that’s how it is.” They also trusted the group to be able to find solutions to their everyday problems. Not only did they share new experiences, they also compared themselves to the others in the group, thus promoting new insights of themselves. For example, one of them recounted how she had totally lacked confidence in her competence, but from reasoning with the others in the group, she had come to realise that she was capable of doing things.

The participants also explicitly pointed out that the qualities of the group leader were important for what they learned from the group programme. The group sessions were considered to be well planned and organised. The participants felt that the leader supported them by providing advice and guidance rather than ruling and controlling the sessions. These qualities and the competence that they felt the leader had were considered to be important for the group process as well as for the individual participants’ opportunity to learn.

“Experiences of transformation”

In the core category “experiences of transformation”, the first property was constituted by the participants’ experiences of reflection and adaptation. In this property, the participants’ way of thinking and reasoning showed that they were undergoing a transformation process where individual adaptation took place and new perspectives emerged. These individual processes seemed to develop progressively as the group session themes altered and the development of the perception of the group as a place for learning was reinforced.

The group activities initiated reflective comparisons and adaptation. By and by, the participants seemed to apply what had taken place in action and discussion during the group activity sessions to their present situation. The conversations that took place there seemed to initiate an adaptational process. They described how, after the sessions, they individually continued to contemplate and reflect on their own on the themes that had been brought up and on their current life situations. This opportunity to reflect also helped them to discover their limited capacities. One of them said: “You have a lot of time to think about things when you spend all that time lying on top of the bed, waiting for something to happen. You ponder a great deal on what you are able to, and I certainly don’t know that anymore.”
Main findings

We reasoned a lot [at the session] about what we actually want [to achieve], and I, for one, want many things.”

When the participants’ process of reflection and adaptation in the group sessions had started, they also seemed to exhibit an increasing ability to consider their own situation from a more distanced and more insightful position.

When the respondents viewed themselves in what seemed to be a new and broader context, they also described new perspectives on their everyday lives and their forthcoming situations. The conversations during the sessions seemed to generate a new viewpoints and alternative views on well-known issues. For example, one of the participants that found an alternative for one of her hobbies, there was no need to get stuck on the idea of: “never, never being able to sew again- [because] there are other things that I can do instead.” The group members also told of how they were being inspired to try new strategies and alternative avenues for performing everyday tasks; this process of change also implied alterations in habits and patterns of daily activities.

The second property of the core category “experiences of transformation” was the experience of a personal synthesis. In this property, the participants’ efforts to synthesise the newly gathered knowledge while making existing knowledge explicit throughout the group sessions came forward as characterised in the subcategories below. Eventually, both existing and newly gained knowledge seemed to be brought together in an emerging personal synthesis.

The participants recounted how they gathered new knowledge from their fellow participants and through the group activities. Each of them was also able to contribute by teaching others and sharing the knowledge that they themselves brought with them into the group. Hence, useful insights emerged from the conclusions they eventually drew, such as realising the limitations of their capacities as well as the possibilities for adaptation.

The fact that the group activities allowed the participants to try out activities and thereby gain an insight into their present and future capacity proved to be important for achieving a personal synthesis. One participant expressed this as follows: “The more things you get to try out, the more you realise that it is not just a matter of going home again. But at the same time, you also come to realise, more and more, that there are things you can do.” Another
Main findings

participant explained that through trying to engage in activities in the group programme, she eventually came to realise what kind of changes she had to face. Thus, the new insights of their present capacities and the need for adaptation resulted in the participants changing their perception of themselves, which seemed to contribute to their emerging personal synthesis.

The activities and issues that were brought up during the sessions revived old memories in the participants. Hence from these memories, details and situations from the past were brought to expression, and the past seemed to be connected to and incorporated with the present as well as with the future.

The group activities also contributed to their exploration and discovery of their possibilities, in spite of their disability, and inspired them to search for alternatives to former procedures and habits. They also led to concrete reflections and plans for the future at home. Before the group programme, they said that they avoided thinking about the future altogether, but this had obviously changed. One of them said: “Today [in the group] we also talked about Christmas coming up, and planning for it and all that, and that is something I really haven't wanted to think about. Now it seems much more fun.” Thus, the group seemed to imply that bringing up practical issues in the present opened up anticipatory plans for the future, thereby also contributing to a personal synthesis.

Measurement of leisure among older people

In Study II, the leisure measures covered a wide range in all dimensions. One person had a maximum measure on the motivation dimensions, and on the well-being dimension, one person had a minimum measure and they were therefore excluded; the resulting number of persons included in these both analyses were therefore 155, respectively (see Table 4 for description).
Main findings

Table 4. Separation and reliability coefficients for items and people; and range, mean and, standard deviation for leisure measures after analysis done with items centred at zero.

<table>
<thead>
<tr>
<th></th>
<th>Interest (n=156)</th>
<th>Performance (n=156)</th>
<th>Motivation (n=155)</th>
<th>Well-being (n=155)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item separation index/reliability coefficient</td>
<td>7.98/0.98</td>
<td>7.93/0.98</td>
<td>7.60/0.98</td>
<td>6.82/0.98</td>
</tr>
<tr>
<td>Person separation index/reliability coefficient</td>
<td>1.60/0.72</td>
<td>1.50/0.69</td>
<td>1.51/0.69</td>
<td>1.77/0.72</td>
</tr>
<tr>
<td>Item measure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>-2.25</td>
<td>-4.92</td>
<td>-4.81</td>
<td>-3.63</td>
</tr>
<tr>
<td>Max</td>
<td>1.47</td>
<td>3.19</td>
<td>4.34</td>
<td>4.16</td>
</tr>
<tr>
<td>M</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>SD</td>
<td>1.03</td>
<td>2.21</td>
<td>2.24</td>
<td>1.91</td>
</tr>
<tr>
<td>Person measure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>-3.96</td>
<td>-4.78</td>
<td>-3.75</td>
<td>-5.21</td>
</tr>
<tr>
<td>Max</td>
<td>4.63</td>
<td>2.68</td>
<td>2.91</td>
<td>1.67</td>
</tr>
<tr>
<td>M</td>
<td>-0.17</td>
<td>-0.28</td>
<td>-0.12</td>
<td>-0.63</td>
</tr>
<tr>
<td>SD</td>
<td>1.19</td>
<td>1.10</td>
<td>1.15</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Evidence of validity

All items in all four dimensions demonstrated acceptable goodness-of-fit to the respective MNPS Rasch model. In the performance dimension there were two items, Ballgame and Equipment sports, that none of the participants performed; these were therefore excluded by the FACETS program from the analysis. Because all items in each dimension fit the respective MNPS Rasch model, we concluded that the four dimensions (each of the four scales) demonstrated internal scale validity (Study II).

When examining the goodness-of-fit statistics for the 156 very old participants, 95 to 96.2% fit the Rasch model. Because no more than 5% of the participants failed to demonstrate goodness-of-fit, we concluded that these findings supported person response validity of all four dimensions in the MNPS (Study II).

Evidence of reliability

As revealed in Study II, the participants separated the items in each dimension into 7 or 8 different difficulty levels; the range of separation
indices for the MNPS dimensions ranged from 6.82 to 7.98 (old values 6.67-8.01). Reliability coefficients were 0.98 for all dimensions in the MNPS. We concluded, therefore, that the items are well distributed into different levels of difficulty and that the activities probably would have the same placement along the continuum if we gave the questions to another sample of older people (Bond & Fox, 2001).

As shown in Table 4, the items in the MNPS appeared not to separate the persons into more than one or two levels; the person separation indices ranged from 1.50 to 1.77 (old values 1.39 to 1.74). The associated reliability coefficients were between 0.69 to 0.72 (old values 0.66 and 0.75). These results suggest the replicability of person ordering if our sample was given another checklist measuring the same constructs may be only moderate (Bond & Fox, 2001).

Examination of the item-person map for each scale indicated that the persons have a typical unimodal distribution. The mean person measures were between 0.12 and 0.63 logits (Table 4), suggesting that overall the items were more likely for the participants to respond to positively, indicating more interest, performance, motivation, and perceived well-being. Nevertheless, items in the different MNPS dimensions were relatively well matched to the sample.

Leisure repertoire of very old people

The very old people were most likely to be interested in, perform, be motivated for, and perceive well-being from Social activities, Cultural activities, and TV/video/movies (Study III). The tasks that the respondents were least likely to be interested in, perform, be motivated for, and perceive well-being from were Equipment sports and Ball games. Overall, very old people were more likely to be interested in, perform, motivated for, and perceive well-being from the same tasks across all subscales of the checklist, but the linear magnitude or range

7 The results reported here are based on a more typical analysis where the items are centered with a mean of zero. In the published manuscript of Study II, the persons were centered at zero. Table II in Study II is actually the mean item values when people are centered at zero. Overall, there were no substantive differences in the results that would affect the conclusions. The main differences were (a) slightly better separation of both persons and items, and (b) lower mean abilities of persons, see Table 4 for details. These new findings are all positive in terms of consideration of the significance of our original results.
Main findings

varied across the subscales. The range from least to most likely tasks was largest for the performance scale and smallest for the interest scale.

Some significant differences due to gender, geographic living, and cognitive status were found in all studied dimensions of leisure. Overall, men were significantly more likely to endorse Bathing/boating/sailing, Sport observation, and Fishing/hunting/shooting, while women were significantly more likely to endorse Hobbies, Cooking, and Housework. People living in the urban/suburban area were overall significantly more likely to endorse Cultural activities and Hobbies; while people in the rural areas were significantly more likely to endorse Pets, Music, and Fishing/hunting/shooting. The largest cluster of differences was found in perceived well-being between the urban/suburban and rural groups. Between the two cognitive status groups, the group with higher MMSE was found to be significantly more likely to endorse leisure activities. Differences were found in such activities as Exercise, Bathing/boating/sailing, and Fishing/hunting/shooting; and here the largest cluster was found in the motivation dimension.

When examining the correlations between performance and the other three subscales, high positive correlations were found. The highest correlation was found between performance and motivation, \( r = 0.821 \). The relation between performance and interest was \( r = 0.686 \); the relation between performance and well-being was \( r = 0.541 \). To ensure no gender effects due to the higher proportion of urban women in the total sample, similar analyses for gender and geographic settings were performed with every other urban woman removed from the analysis. The results were nearly identical, and therefore not reported.

Relation between occupational engagement and life satisfaction

An exploration of the hierarchal ordering of items among the domains included in the life satisfaction questionnaire in Study IV identified Leisure as the domain that the studied group was least likely to be satisfied with; Family life and Partner relationship were the domains that they were most likely to feel satisfaction with (see Table 5). Two of the nine items in the questionnaire were excluded as too few answers were available (i.e., a very high rate of missing values). The items excluded were satisfaction with Sex life and Vocation.
Table 5. **Domains in life that very old people are least to most likely satisfied with (in logits).**

<table>
<thead>
<tr>
<th>Life satisfaction domain</th>
<th>Measure</th>
<th>Least likely to be satisfied with</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leisure</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>Economy</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>ADL</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Life as a whole</td>
<td>-0.09</td>
<td></td>
</tr>
<tr>
<td>Contacts</td>
<td>-0.23</td>
<td></td>
</tr>
<tr>
<td>Partner relationship</td>
<td>-0.36</td>
<td></td>
</tr>
<tr>
<td>Family life</td>
<td>-1.06</td>
<td>Most likely to be satisfied with</td>
</tr>
</tbody>
</table>

Examination of the correlations between life satisfaction and engagement in leisure and in ADL revealed that both were significantly related to life satisfaction ($p<0.05$), but both relations were low. Life satisfaction correlated with leisure at the level of $r=.34$ and with ADL at the level of $r=.31$. Effect sizes for both variables were interpreted as medium.

The results of the forced entry regression analysis revealed that when both leisure and ADL were forced into the regression model, both variables together explained only a slightly higher variation of life satisfaction (12.4%) than leisure alone (11.2%). Testing for multicollinearity revealed a VIF of 1.9, indicating no problem.

Significant differences in mean life satisfaction were found when comparing the upper and lower sample halves for engagement in leisure and engagement in ADL. For leisure, the lower half had statistically lower life satisfaction ($\text{LiSat}_M=-0.27$) than did the upper half ($\text{LiSat}_M=0.56$), $t=4.9$, $df=152$, $p<0.001$. Hedges’s $g=0.73$, indicated a medium effect size. For ADL, the lower half had statistically lower life satisfaction ($\text{LiSat}_M=-0.14$) than did the upper half ($\text{LiSat}_M=0.42$), $t=3.15$, $df=152$, $p=0.002$, but the effect size was low (Hedges’s $g=0.48$).
General discussion

This thesis was written to highlight aspects of occupational engagement in older people with a special focus on the evaluation of occupational engagement, the repertoire of engagement, and the relation between occupational engagement and life satisfaction. As one of the basic beliefs in OT is that occupation is related to health, this topic is of great interest. The theoretical guidelines for health in older people have been mostly developed within gerontological perspectives where activities are included but are not the primary focus. OT models of practice provide basic foundations of occupation for the human being and suggest that occupation is good for health. Even though no explicit guidelines are given for how to guide and support older people in their occupational lives, there is an awareness of change in human occupation during the life span.

The findings in this thesis add new knowledge in two different ways concerning occupational engagement in older people. Firstly, in relation to evaluation, the experience of occupational engagement during therapy can be described from both a perspective of action and a perspective of inner reflection which together might support the developmental process (Study I). Moreover, the evaluation of a new instrument revealed that it is possible to obtain a true linear measure for leisure for very old people by converting ordinal data using Rasch analysis (Study II), and thereby, it is possible to organize leisure occupations into a hierarchical repertoire of engagement (Study III). This instrument, the MNPS, that showed initial evidence of both validity and reliability (Study II), could be used for evaluation of very old person’s leisure life. Secondly, the contribution of occupational engagement to life satisfaction may be essential, but explains only 12 percent of the total satisfaction with life in very old people (Study IV). A closer examination of the findings will be further discussed in the following section.
General discussion

Evaluation of occupational engagement of older people

It is obvious that we can evaluate engagement through different perspectives, and, by using different methods, we can enrich our view and understanding of the studied phenomenon. In this thesis, we evaluated occupational engagement from a subjective perspective in all four studies. This choice of perspective means that the results are based on an inner view from the respondents. These studies take two different inner views, where Study I had a deeper inner perspective focusing on the quality of the experience, and the other studies focusing on catching the subjective view through a self-report.

When using qualitative interviews, the search is for the complexity of the experiences in order to understand and deepen our knowledge (Krefting, 1991). For the older persons in the group activity programme in Study I, active engagement could promote the experiences of being creative. These findings are especially interesting since the insider perspective on being occupied has received little attention in research to date (Andersson Svidén & Borell, 1998; Laliberte Rudman, Valiant Cook, & Polatajko, 1997). The method used was appropriate as the experience of occupation only can be described by the persons themselves (Yerxa et al., 1989).

It was explicit that the respondents in Study I experienced the doing and being creative as an opportunity for learning and adapting. Andersson Svidén (1998) and Eklund (1996) also described a creative source within occupation. For the older person in Study I, being absorbed by engagement in occupations gave joy and stimulated creativity. These were also transferred to other activities in their daily lives and gave new perspectives on their own capacities and abilities. Achieving new insights and increased belief in one's own ability also seemed to promote the experience of hope for the future which has been shown to be vital for well-being among older people (Borell, Lilja, Andersson Svidén, & Sadlo, 2001; Laliberte Rudman, Valiant Cook, & Polatajko, 1997).

Furthermore, the intervention in Study I provided the older persons opportunities to try different activities in a social, therapeutic context, so that through these activities, the participants could learn about their own possibilities and limitations. Earlier studies have shown that taking an active part in social activities has a strong impact on well-being, quality of life, and decreased mortality among the older people (Glass, de Leon, Marottoli, & Berkman, 1999). The experiences of being engaged made
the older persons in Study I aware of there capacities and helped them to prepare for everyday life and facilitated adaptation to new situations and well-being. The findings could be illustrated as a process in which the experiences might lead to development that, in turn, facilitates adaptation to life situations (see Figure 2).

Figure 2. Schematic view of experiences of occupational engagement during therapy and a possible outcome

The respondents’ descriptions of their experiences in Study I are in many ways in agreement with other studies (Clark et al., 1997; Dahlin Ivanoff, 2002; Jackson, Carlson, Mandel, Zemke, & Clark, 1998). Hence, this may be an indication that interventions based on basic OT principles, focusing on engagement in occupations (Meyer, 1922; Reilly, 1962), with a client-centred design (Christiansen, 1996; Fisher, 1998; Townsend, 1997), and planned and organized using theories about group work (Finlay, 1993; Yalom, 1975) could operate as promoters of creativity and health.

Another way of exploring occupational engagement in older people is through measurement. While self-reports still focus on the inner perspective, they lack the depth of qualitative interviews. Yet, OT researchers agree that there is a need for developing formal and valid assessments of leisure (Suto, 1998; Thibodaux & Bundy, 2000; Turner, Chapman, McSherry, Krishnagiri, & Watts, 2000), especially when so much attention is given to leisure and its relation to other occupations and health (Glass, de Leon, Marottoli, & Berkman, 1999; Menec, 2003; Wang, Karp, Winblad, & Fratiglioni, 2002). Thus, the issue of no standardised or valid tools has been highlighted as a limitation that must be addressed if meaningful progress toward agreement about leisure research methods can be continued (Havitz & Dimanche, 1997).
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Study II provided the first psychometric evaluation of an assessment designed to evaluate different dimensions of engagement in leisure in very old people. We have been able to demonstrate that it is possible to measure leisure without having to rely on the counting of frequencies or time spent in a particular activity. This means that we potentially have a true linear measure that can be used in clinical practice.

Standardized evaluations have several advantages when used in practice. One can use the summary score to evaluate the older person (i.e., before and after interventions) and to compare persons, but also as a method to implement evidence-based practice (Fisher, 2006). Further research is clearly needed to examine additional aspects of validity and reliability of the MNPS. Nevertheless, the ability to reliably scale different groups of leisure activities (items) along a linear, hierarchical continuum has the potential to inform rehabilitation professionals about leisure activities older adults are more or less likely to be interested in, perform, be motivated to perform, and perceive well-being from.

From the results of Study II, we have shown that it is possible to convert even simple checklists, from ordinal raw data to true linear measures provided the items target the same unidimensional concept. This is in agreement with others (Bond & Fox, 2001; Wright & Linacre, 1989) who stated that to use ordinal data, which are most common in tests of human performance, and treat them as interval data has major limitations. The results from Study II, therefore, contribute with the development of new measures of different dimensions of occupational engagement in the leisure area. This has the advantage that we now can start analyzing these measures with traditional statistics without forcing the fundamental principles of statistics. It is well-known that most statistics are based on interval data (e.g., mean, Pearson correlation coefficient), and analyzing ordinal data with these kinds of statistics violates the underlying assumptions and leads to misleading interpretations (W. P. Fisher, 1993; Merbitz, Morris, & Grip, 1989).

Leisure repertoire of older people

The unique finding in Study III was not the reconfirmation of earlier studies (Drummond, 1990; Horgas, Wilms, & Baltes, 1998) that very old people are most likely to engage in social activities and watch TV. Instead, Study III provided insight into the details of the hierarchies of leisure tasks. For the first time, it was possible to see how tasks cluster along a linear scale, what kinds of tasks are grouped together, and where
there are gaps. The findings also made it possible to more deeply understand the relation between the different dimensions of leisure. That is, Study III is the first study that attempts to broaden the view of leisure beyond a single view of, for example performance, and to include other aspects that underlie engagement: interest, motivation, and perceived well-being. The reported correlations were high positive. This might mean that there is an overlap among the dimensions, but they likely contribute with unique aspects to leisure engagement. Obviously, further research is needed to evaluate this possibility.

As already mentioned, earlier studies have all used differing methods which makes comparisons among studies difficult. Hence, findings in Study III could only somewhat confirm earlier findings showing that tasks like Equipment sport and Ballgames are the tasks that were least common for the very old people to have in their leisure repertoire (Armstrong & Morgan, 1998; Bennett, 1998). Also, the tasks that very old people find most likely to have in their leisure repertoire, Cultural activities, Social activities, and TV/video/movie, somewhat support other studies (Darrell Parker, 1996; Strain, Grabusic, Searle, & Dunn, 2002) even though Häggblom-Kronlöf and Sonn (in press) reported social activities as non-preferred. Some of these results are very logical and were not unexpected. To more likely have Social activities than Equipment sport in the repertoire of a very old person seems to be expected.

In relation to OT models of practice, there are several things that could underlie the repertoire in the very old. This is beyond the scope of this thesis, but would be of interest to focus on in future studies. For example, it seems that very old people are more likely to have home-based leisure tasks on their repertoire, like Hobbies, Music, Cooking, and Culture activities. These findings are in agreement with other studies that found that very old people prefer individual and sedentary leisure tasks more than younger people (Häggblom-Kronlöf & Sonn, in press).

These results could be seen as supporting a withdrawal from society according to disengagement theory (Cumming & Henry, 1961) or “gerotranscendens” theory (Tornstam, 1989). On the other hand, these results could support earlier evidence that environmental factors are critical (Kielhofner, 2002), and could constrain the occupational repertoire in older people (Iwarsson, 1997).
The domestic activities that are more common among very old women’s leisure repertoires have not been demonstrated as having any health benefits (Lawlor, Taylor, Bedford, & Ebrahim, 2002), contrary to other leisure activities that seem to promote health in different ways. It is also interesting to note that while women were more likely to endorse domestic activities than were men, domestic activities were not the ones that women were most likely to endorse. This may mean that other activities, those activities they most endorsed (e.g., social activities, cultural activities, and TV) are those that have the greatest health benefits.

The fact that gender differences generally followed traditional gender differences may be due to a learned behavior that men perform activities outdoors while women are working indoors. Other studies have also found similar traditional gender patterns (Armstrong & Morgan, 1998; Bennett, 1998; Di Mauro et al., 2001; Smith & Baltes, 1998) and discuss a general pattern with a strong influence through roles. A majority of the participants in Study III were living alone. Hence, it seems that occupational role identity may continue to influence the occupational repertoire long after the actual role commitment has ended. These results could also be interpreted to confirm continuity theory – that older people overall maintain their general occupational patterns when aging (Atchley, 1999).

These gender differences are of particular interest in relation to OT theory, and could contribute to the understanding of gender differences in a life span perspective. These results could also add to the philosophical base of already existing OT models of practice. The relatively high correlations between the different dimensions of leisure (interest, performance, motivation, and well-being) give us an indication that there could be one overall construct or dimension which in turn could contribute especially to understanding the relation between volition and occupational performance within MOHO (Kielhofner, 2002). Yet, even if very old people still seem to want to engage in many leisure occupations, their performance does not reach the same level.

As a concluding remark about the leisure repertoire, and supported by other studies (Avlund & Legarth, 1994; Häggblohm-Kronlöf & Sonn, in press), the repertoires of the very old are impressive, with a broad range of tasks that they endorse. These results would not support the idea of withdrawal from society as proposed by disengagement theory (Cumming & Henry, 1961), rather the opposite.
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Relation between occupational engagement and life satisfaction

Study IV added some support for earlier assumptions that a higher level of task performance is related to a higher level of life satisfaction (Menec, 2003; Warr, Butcher, & Robertson, 2004) even though earlier studies have compared frequency or duration of task performance to life satisfaction. In turn, our results support theories about successful aging as being dependent on an active lifestyle (e.g., activity theory) (Lemon, Bengtson, & Peterson, 1972).

The active lifestyle has both in gerontology (Havighurst & Albrecht, 1953; Lemon, Bengtson, & Peterson, 1972; Rowe & Kahn, 1997; Rowe & Kahn, 1998) and OT (Reilly, 1962; Townsend, 1997; Wilcock et al., 1998) received extensive support. From a theoretical standpoint, researchers often have studied how many leisure tasks older people perform and the time they spend in leisure. Research based on counts and time has supported the assumption that “more activity is better” (Lennartsson & Silverstein, 2001; Menec, 2003), but there are also studies that do not fully support this assumption (Fitzpatrick, Spiro, Kressin, Greene, & Bossé, 2001; Horgas, Wilms, & Baltes, 1998; Parker, 1996). Among the problems with such methods for evaluating are that there is no consistent method for grouping tasks (Everard, Lach, Fisher, & Baum, 2000; Menec, 2003), and gathering data related to the time spent in a particular task does not take into consideration different levels or extent of the participation or how strenuous were the different tasks (Wang, Karp, Winblad, & Fratiglioni, 2002). There is also a risk, when evaluating in terms of frequencies and time, of forgetting the complexity of occupation as an interaction between the person’s capacity, routines, motivation, and the environment (Kielhofner, 2002). Therefore, the value of a particular task cannot only be determined by how many or how much (frequency or time) (Lloyd & Auld, 2002). Instead, a broader view is needed.

In Study IV, we tried to broaden the concept of engagement to include both performance and motivation. The idea that engagement includes both performance and motivation has been discussed in earlier literature (Kielhofner, 2002; Yerxa, 1998; Yerxa et al., 1989), but has rarely been used in research. We consider our method of using magnitude-based measures of occupational engagement instead of frequency of task performance (as our independent variable) to have been successful. With these results, we could confirm earlier reported quite low relations between occupation and life satisfaction. Together, this means that
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occupation contributes to a person’s view of satisfaction, but these results also dispute the general belief that this relation is powerful.

The results from Study II and Study IV can also be viewed as a starting point for leaving the well-known path of relying on frequencies or time spent in leisure, and instead taking a broader perspective of engagement and minimally including motivation and performance. Likely, other variables need to be added to even better capture the complexity of engagement from an OT perspective. That is, although Study IV confirmed that a person who is 85 years or older would probably rate themselves as having a higher life satisfaction if they also rate themselves as being more engaged in occupation, only 12% of the variance in life satisfaction could be explained by occupational engagement. It would be of interest, therefore, to further expand the concept of engagement in future studies.

*Indirect effects of occupational engagement?*

The results from Study II showed that MNPS can be a useful instrument when examining the leisure occupations of the very old people. Yet, the MNPS likely only covers part of occupational engagement when this tool is compared to the in-depth description of the experience of occupation that emerged in Study I. That is, the MNPS only captured a glimpse of that which in Study I was called “Experiences of activation”; the part called “Experiences of transformation” is not covered at all by the MNPS. Yet, the transformation experiences were considered by the participants to be important for their developmental process and to have their origin in the occupational engagement. These experiences of transformation may often be neglected in OT as inessential but they are an indirect effect of the actual doing. While these experiences may be an important therapeutic agent they also need to be examined more closely.

These experiences of transformation have also been discussed by Menec (2003) as indirect factors that could have positive effects. According to Menec, activities can affect persons indirectly, for example, by giving them a positive self-esteem that can, in turn, lead to a more positive view of life and a higher level of life satisfaction. In fact, Wilcock (1998) also described these indirect effects that subsequently affect health. These indirect effects could, in fact, be seen in Study I where the respondents discussed how occupation led to creativity, joy, and relaxation which transferred to other occupations.
If these transformation experiences could be more fully explored, it may even become possible to integrate them into existing OT models of practice. For example, in MOHO (Kielhofner, 2002), these experiences might be part of an essential transaction between volition and occupational performance. These experiences of transformation also might further clarify the adaptation process in OA (Schkade & Schultz, 1992; Schultz & Schkade, 1992) or spirituality in the CMOP (Townsend, 1997).

Adaptation – critical for occupational engagement

The results in Study IV revealed that very old people are least likely to be satisfied with leisure type occupations, but also that these occupations did explain some of their variation in life satisfaction. Moreover, leisure activities may be a more important factor for life satisfaction than ADL. This leads to a need to look more deeply into the adaptation process, which the respondents in Study I described as starting when they were engaged in occupation. Adaptation to new situations is critical for occupational performance and is highlighted in practice models within OT (Kielhofner, 2002; Schkade & McClung, 2001).

As changed circumstances are frequent in older people, more knowledge about how to support adaptation through engagement in occupation is needed. The awareness of the need and readiness for adaptation could have been supported by the opportunity for discussion and the available tasks that were embedded in the group programme (Study I). This possibility has been somewhat supported by Jonsson, Josephsson, and Kielhofner (2000) who found that narration could predispose older persons toward action. The concept of support of adaptation through occupation certainly needs further research that hopefully will lead to possible ways to develop preventive interventions for older people.

Leisure – the unvalued factor

Many researchers have highlighted leisure as a very important issue for older people’s health. Leisure brings positive outcomes in terms of less disease and decreased mortality (Everard, Lach, Fisher, & Baum, 2000; Glass, de Leon, Marottoli, & Berkman, 1999; Wang, Karp, Winblad, & Fratiglioni, 2002). The results from Study IV support this general line of research. An issue that needs more attention is that even though occupational lives include leisure, work (or productivity), and self-care (Law et al., 1996; Townsend, 1997), leisure by tradition is given less attention in OT practice (Turner, Chapman, McSherry, Krishnagiri, &
Watts, 2000). According to Hammell (2004), this view is not random, but instead is a politically driven effort to prioritize self-care and productivity activities as they are more economically valued in terms of less need for help from society. Occupational therapists thereby serve as “agents of the state” when they continue to diminish the value of leisure.

The results from this thesis support possible ways to explore the meaning of leisure and address leisure occupations when working with older people. For example, Study IV provides evidence that leisure probably contributes more to life satisfaction than ADL. Other researchers have reported somewhat similar findings (McGuinn & Mosher-Ashley, 2000; Riopel Smith, Kielhofner, & Hawkins Watts, 1986). Although not much focus has been given to leisure occupations in practice, and in agreement with others (Sveen, Thommessen, Bautz-Holter, Bruun Wyller, & Laake, 2004), the results of Study IV challenge that tradition, and suggest instead more emphasis on leisure occupations one is motivated to perform in clinical OT.

Another concern is that the common practice in OT for older people is to provide OT services to the older people only after they have occupational problems, and to not work preventively, which might have positive rewards (Carlson, Clark, & Young, 1998; Clark et al., 1997). This also is a societal issue which must be addressed and highlighted. As we know that older people, and especially very old people, will be the fastest growing segment in our society, and that prevalence of disease and occupational limitations increase with age, we must become more proactive. We just cannot sit and wait for their occupational problems to emerge. Results from this thesis could serve as a source of inspiration for developing and evaluating programmes with the purpose to preparing and supporting older people for transitions within the last part of their life span.

Methodological considerations

Rigor in qualitative research, as well as adequate description, are of great concern to ensure trustworthiness (Gliner, 1994; Krefting, 1991). In Study I, the quality of data was ensured by tape recording while collecting data and auditing the transcription to ensure accuracy. Auditing transcripts involves careful listening, reading, re-reading, and getting in close contact and familiar with the data. This level of
familiarity was important during the data analysis to get a thorough understanding of the data.

Each of the authors in Study I did part of the analysis separately and in parallel. This enabled us to compare categorizations and reach consensus. As each respondent participated in five interviews, the interviewer was able to establish a relationship with each respondent which in qualitative research, is also a key issue (Charmaz, 2004). These data collection and analysis procedures all supported the credibility of the findings (Guba, 1981; Krefting, 1991).

Several other issues needed to be considered with relation to data collection. Firstly, the trustworthiness of the respondents descriptions must always be considered (Kvale, 1997). In order to get as open and as rich descriptions as possible, and maximize the range of information the interviewer was able to gather, the interviewer did not specifically search for any particular experience (e.g., positive or negative). Instead, the interviewer encouraged the respondents to describe the issues that came up during the interviews more deeply, with details. Secondly, to minimized the retrospective reconstruction of the experience and strengthened the quality of the data, the interviews were done the same day as each of the group sessions. Thirdly, to be involved in the research process, as a respondent, is known to be a factor that could influence the results (Tuckett, 2005); this might have influenced the findings in Study I. Finally, as the group programme did not include follow-up interviews, it is important to consider the results in Study I from that point of view.

As the interviewers themselves can be seen as the instrument in qualitative research, this issue also needs to be highlighted. The interviewer had previously worked at the clinical ward, but had had no contact with the ward for more than 4 months before the study was conducted. Still, to diminish the problem of the possibility of the interviewer meeting former colleagues related to the interviews (e.g., those who led the activity programme), the interviews were held in the evening (when fewer staff were working) and not in a room within the ward (e.g., to minimize the risk of disturbances).

Because Studies II, III, and IV were based on a cross-sectional cohort, we do not know if the results are stable or change as one ages. Despite this, the findings point to important issues that deserve further investigation. Longitudinal research focusing on changes in the leisure repertoire over time is indicated. Such research might also compare
leisure engagement to other indicators of successful aging. It is a strength of Studies II-IV that the analyses were performed within a population-based study even though we do not know if the group of participants was representative of the general population 85 years and older. Almost every third possible respondent declined participation in our studies. As these studies (II-IV) were a part of a population-based survey, the respondents already had had visits from the research team; this could have been one cause why they declined participation. Based on those comparisons we could perform (e.g., geographic living, gender), we found, however, no differences between the studied sample and those who did not participate (except higher level of self-rated health among those who declined participation). Another strength with Studies II-IV is that we included all persons with a cognitive status of 20 or more on MMSE, even if they were institutionalized. The exclusion of only those with very low cognitive status below 20 on MMSE were done mostly of ethical reasons and this of course may have influenced and limited our results. That is, the results of Studies II-IV could represent a selective population of relatively cognitively strong survivals which could give somewhat overly optimistic views about very old people. Yet, from these results, preliminary conclusions can be drawn as to how to maintain healthiness in older people.

All three instruments were previously used in different research projects, but knowledge of their validity and reliability as well as their use with very old people was limited. Therefore, we conducted Rasch analyses of all three included instruments and established their validity and reliability for use with very old people. The life satisfaction questionnaire (LiSat 9), in particular, needs further investigation when used with very old people as we had to exclude two of the nine items as too few of the participants answered them. The items excluded were satisfaction with Sex life and Vocation. In most cases, the items were not answered as the situation was not present (e.g., they did not have a sexlife/partner, they retired more than 20 years ago).

Most OT models of practice describe the environment as having an important impact on occupational performance. The issue of not including information about the environment in our collected data might be seen as a limitation. Information about the environment could not only give descriptive information about the very old peoples’ geographic and housing conditions, but also might answer questions as to why differences in the occupational repertoire (e.g., between rural and urban living) were found. Another problem with the collected data is that we
did not consider occupational balance. Occupational balance might also play a role in relation to life satisfaction (Christiansen, 1996; Law et al., 1996; Meyer, 1922). On the other hand, earlier research that tried to capture occupational balance seems to have encountered problems with finding instruments, questionnaires, and methods that covered the phenomenon.

Finally, of concern with our way of collecting data is that we held on to the traditional way of organizing tasks into self-care and leisure. This categorization has received much criticism, both because such categorization is too simplistic and unstable (because the same individual may define an occupation differently at different times) (Hammell, 2004). Tasks in the area of leisure are of a complex nature, and many different benefits can come from one single activity (Thibodaux & Bundy, 2000) depending on who is performing, where and with whom it is performed, and so on. Though leisure often is described in relation to paid work (Kelly, 1972; Primeau, 1996), this leads to the problem of describing leisure as when a person experiences periods of non-work. While leisure can be thought of as an area for occupational performance or a kind of task, it may also be more of a state of mind, an experience, or time that needs to be filled (Kelly, 1992; Suto, 1998). Hence, it is clear that the classification of leisure tasks can be done in different ways, and the way it was classified in Studies II-IV might have influenced our results.

Clinical applications

There are some benefits for OT clinical practice from the results of these studies. As the segment of the older people in our society is growing, there is a need to start working with preventive interventions that anticipate that people can experience decreased occupational repertoires, which in turn could lead to decreased life satisfaction and health. Occupational therapists can play an important role in guiding older people to continue to engage in and live the occupational lives they want to live and support adaptation to changes in their capacities or environments.

- Group programmes that enable engagement in occupation have many features which could be used therapeutically to regain the capacity for mastery of one’s occupational life. Of special importance in the group programme seems the match of tasks to
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the participant’s ability and need, but also the competence of the leader.

- Active engagement is a source for creativeness which in turn has therapeutic potential. Group programmes seem to be one possible way to support active engagement among older people.

- The MNPS can be used as a valid tool for evaluating engagement in leisure life among very old people. By using this tool, knowledge about interest, performance, motivation, and perceived well-being from leisure will be available.

- When evaluating changes in leisure life (e.g., after intervention), the MNPS could be used, but the tool’s sensitivity is still not well known and more investigation is therefore needed.

- Very old people are most likely to endorse social and cultural activities, and least likely to play ballgames and equipment sports. As engagement in leisure tasks plays a role in perceiving satisfaction with life, at least the tasks that are most likely to endorse could be considered as important for very old people to have available.

- There are some differences in very old people’s leisure repertoire due to gender, geographic setting, and cognitive status even though the tasks they are all most likely to endorse do not differ.

- Although women are more likely to endorse domestic tasks than are men, social activities, cultural activities and TV/video/movie may be more important for their overall health (e.g., life satisfaction).

- To support very old people to develop or continue to have a high degree of engagement in especially leisure tasks could be valuable as this engagement seems to support a higher degree of life satisfaction in very old people.

- ADL and leisure engagement explain 12% of the variation of life satisfaction among very old people which, in turn, means that even though these occupations are important, other variables also need careful examination.
Future research

From the results of these studies, new research lines arise in at least four different areas: measuring leisure, leisure type occupations, occupational-based interventions, and gender-related research.

Measuring leisure

More research is clearly needed to further establish validity and reliability of the MNPS for different groups and cultures. There is also a need to further develop the test to improve its separation reliability in order to make it more useful in evidence-based research. Future research should also target exploration of the engagement measure in relation to cut-off levels for minimal engagement in leisure among older people. Perhaps a certain amount of leisure engagement is related to a certain level of health. If that level could be found, it would be in line with hypotheses from earlier studies (Mobily, Lemke, & Gisin, 1991; Mobily et al., 1993).

As differences in the leisure repertoire were found between groups by gender, geographic setting, and cognitive status, this could suggest a presence of differential item functioning (DIF). When sufficient data is available, the impact of DIF, if present, needs to be evaluated.

Leisure occupations

In order to more fully understand the nature of engagement in leisure occupations, we need more “deep inside” information. Qualitative interviews which focus on how older people define leisure, what kind of tasks they refer to in relation to leisure and how leisure tasks are prioritized and chosen might also be some questions to answer that would enable us to gain a better understanding of leisure from an OT perspective. From these results, an even broader view on leisure engagement could be developed, a view that might explain more of the variation in life satisfaction among older people.

Occupational-based interventions

With the findings that leisure is something very old people want to engage in, but which they associate with the lowest level of satisfaction, leisure needs to be more in focus in intervention. With well-designed single-case and randomized controlled studies, evidence of whether or not, and if so, to what extent leisure-based interventions contribute to
enhancing life satisfaction and health among older people could be accumulated. It would particularly be interesting to conduct preventive interventions as different results have been previously found (Clark et al., 1997; Horowitz & Chang, 2004). Perhaps these interventions could be focused on prevention of a decreased occupational repertoire.

**Gender-related research**

Finally, further research is needed to understand how the occupational repertoire develops throughout the life span and especially in later life. The results in Study III showed gender differences in the leisure repertoire, and although earlier studies claim that the domestic tasks that women engaged in more than men do not have any health benefits, it would be interesting to explore this more deeply.
Conclusions

From the results generated through the studies included in this thesis, some overall general conclusions can be drawn:

- Older people’s experiences from engagement in an occupation-based group programme during therapy can be described as experiences of activation and experiences of transformation. These experiences describe how occupation starts a creative process, how the group supports this process, and also how reflections about performance of daily life tasks that emerged during the programme are incorporated in a personal conclusion or synthesis.

- By using Rasch analysis, data from the MNPS leisure interest checklist could be converted into linear measures which give us the potential to measure dimensions of leisure engagement among very old people. MNPS showed preliminary evidence of good validity, including person response validity and internal scale validity. The scale showed reliable item calibration estimates, but the reliability of the separation of people was somewhat low (equivalent to a Cronbach alpha =0.66 to 0.74).

- Very old people are most likely to endorse Social and Cultural activities and TV/video/movie as a part of their leisure repertoire. It is least likely that very old people endorse Ballgames and Equipment sports. The correlation between performance of leisure and motivation to perform, interest, and perceived well-being from leisure support the possibility of a single underlying leisure-related engagement construct that needs further investigation. Some differences in the repertoire could be found due to geographic settings, gender, and cognitive status even though there were more similarities than differences.

- Leisure seems to be the domain in life that the very old people are least likely to be satisfied with while family and partner
relationship is domains in life that very old people are most satisfied with.

- Engagement in occupation, including motivation and performance of ADL and leisure, could explain about 12% of the variation in life satisfaction among very old people. Engagement in leisure seems to be a stronger “predictor” than ADL. This means that it is more likely that a person 85 years or older rates him- or herself as more satisfied if he or she is more engaged in leisure than is a person of the same age with less engagement in leisure.
Engagemang i aktiviteter bland äldre är angeläget att undersöka då gruppen äldre är den grupp i samhället som ökar snabbast i antal och då engagemang i aktiviteter beskrivs inom arbetsterapi som grundläggande för människans hälsa. I denna avhandling är tre perspektiv på engagemang i fokus, dels att bedöma och utvärdera engagemang i aktiviteter ur både kvalitativt och kvantitativt perspektiv, dels repertoaren av engagemang i aktiviteter hos äldre och slutligen relationen mellan engagemang och livstillfredsställelse. Det övergripande syftet med avhandlingen var att studera aspekter på engagemang i aktiviteter hos äldre med särskilt fokus på erfarenheter av ett gruppaktivitetsprogram, utvärdering av fritidsaktiviteter, fritidsreportoiren samt relationen mellan engagemang i aktiviteter och livstillfredsställelse.

Avhandlingen består av fyra studier som alla, på olika sätt, bidrar till ökad förståelse för engagemang i aktiviteter bland äldre. I den första studien intervjuades tre äldre personer om deras erfarenheter av engagemang i aktiviteter då de deltog i ett gruppaktivitetsprogram. Kvalitativa intervjuer gjordes med varje deltagare efter varje gruppssession, totalt 15 intervjuer. De övriga tre studierna i avhandlingen är baserade på en subgrupp från en tvärsnittsstudie av de allra äldsta, Umeå 85+ studien. De allra äldsta med 20 poäng eller mer på MMSE skalan tillfrågades om att delta i studierna II-IV (n=156). Frågor ställdes i samband med hembesök om engagemang i aktiviteter som ADL och fritid liksom den upplevda livstillfredsställelsen.

De kvalitativa intervjuerna analyserades med en Grounded theory ansats och resultatet visar två olika dimensioner av upplevt engagemang hos deltagarna i gruppaktiviteter. Dels upplevdes en ”känsla av handling” med en skaparkraft och en möjlighet att lära men också en ”känsla av omvandling” med reflektion, adaptation och en personlig sammanfattning. Utvärdering av fritidsaktiviteter genom det modifierad instrumentet NPS (MNPS) gjordes med hjälp av Rasch analys. Resultaten visar att preliminära belägg för validitet av instrumentets frågor och validitet av personernas svar. Instrumentets mått är lågt till
måttligt reliabla, motsvarande Cronbach alpha .98 för frågor och en spridning mellan .66 och .75 för personer. De allra äldstas repertoar av engagemang i fritidsaktiviteter omfattar mest sannolikt sociala och kulturella aktiviteter och minst sannolikt bollspel och anläggningsidrott. Traditionella könsskillnader upptäcktes, liksom vissa skillnader mellan de allra äldsta i stad respektive landsbygd och personer med relativt hög kognitivt nivå respektive låg kognitivt nivå. Signifikanta relationer hittades mellan livstillförsäljning och både engagemang i ADL aktiviteter ($r=.31$) och engagemang i fritidsaktiviteter ($r=.34$) hos de allra äldsta. Regressionsanalysen visar att båda variablerna (ADL och fritid) tillsammans förklarar något mer (12.4%) än fritid förklarar ensam (11.2%).

Erfarenheter av engagemang i terapeutiska gruppaktiviteter hos äldre kan beskrivas både utifrån erfarenheten att vara aktiv men också erfarenheten av att vara i en förändring, dessa båda typer av erfarenheter kan tillsammans bidra till en utvecklingsprocess. I samband med utvärderingen av instrument för att mäta engagemang i fritidsaktiviteter kunde en hierarki och linjära mått erhållas. Måtten i MNPS visar belägg för att vara valida och reliabla. Genom Raschanalysen var det möjligt att konvertera ordinala data till linjära mått och därmed också organiserar fritidsaktiviteter till en hierarkisk repertoar av engagemang. Denna repertoar bidrar till att öka kunskap om aktiviteter som är viktiga för de allra äldsta att ha tillgång till. Slutligen, engagemang i aktiviteter bidrar på ett väsentligt sätt till de allra äldstas livstillsförsäljning men förklarar endast cirka 12% av den totala livstillförsäljningen.
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