INNER STRENGTH AMONG THE OLDEST OLD

A GOOD AGING

Björn Nygren

Umeå 2006
## CONTENTS

### ABSTRACT

### ORIGINAL PAPERS

#### INTRODUCTION
1

#### BACKGROUND
1

- The Umeå 85+ study
2

- A good aging
2

- Concepts of personal strength in relation to aging
5
  - Inner Strength
6
  - Resilience
8
  - Sense of Coherence
10
  - Purpose in Life
11
  - Self-Transcendence
12
  - Other concepts related to personal strength
12

#### Rationale for the study
13

#### The overall purpose and aims of the included papers
13

### PARTICIPANTS AND METHODS
14

- Participants
14

- Methods of data collection
18
  - Instruments
18
  - Interviews
22

- Procedures
22

- Methods of analysis
23
  - Statistics
23
  - Phenomenological hermeneutics
24
ABSTRACT

The overall purpose of this thesis is to describe, explore and illuminate inner strength among the oldest old. The thesis has a salutogenic perspective where strengths and health are in the foreground instead of weakness and ill health. The thesis is part of The Umeå 85+ study and comprises four studies with both quantitative and qualitative data.

The aim of Study I was to test reliability and validity of the Swedish language version of the Resilience Scale (RS) in regard to its stability, internal consistency and validity. A convenience sample of 142 participants aged 19 to 85 years answered the questionnaires the first time and 126 on the retest. In Study II scales aimed to measure phenomena related to inner strength, health and development were used. The aim was to describe resilience, sense of coherence, purpose in life, and self-transcendence in relation to perceived physical and mental health in a sample of 125 participants aged 85 to 103 years. Study III aimed to give a more extensive knowledge of resilience among the oldest old. The relationship between resilience and physical health factors, psychological health factors, diseases and social relations were examined among a sample of 192 persons aged 85 to 103 years. In order to deepen the knowledge about inner strength from a life world perspective the aim of study IV was to illuminate the meaning of inner strength as narrated by women and men 85 and 90 years old. The sample consisted of those 18 participants that scored the highest on the scales aimed at measure phenomena related to inner strength.

The findings in study I showed that the Swedish version of the RS was both valid and reliable. Construct validity was established by satisfactory correlation coefficients between the RS and the Sense of Coherence Scale and the Rosenberg Self Esteem Scale. A principal component analysis corresponded well to the original version of the RS. Reliability was assured with both satisfactory internal consistency as well as test-retest reliability. The findings in study II showed significant correlations between the scales aimed to measure resilience, sense of coherence, purpose in life and self-transcendence which indicates that the scales reflect some kind of common core, which was interpreted as inner strength. The oldest old scored high on all scales, this indicating that strength can be preserved or perhaps even increased in old age. The finding also showed lack of significant correlations between the scales and perceived physical health but significant correlations between these scales and perceived mental health among the women but not for the men. No significant correlation was
found between physical and mental health. In study III a regression analysis showed that a strong resilience among the oldest old was found to be associated with health, mainly represented by absence of depressed mood but also by not being on medication and by the absence of psychological symptoms. Also raising children in the past gave a meaning to the present by having a family and this produced feelings safeness and security in facing the inevitable future; that is, being resilient means living in connectedness with one’s past, present, and future. In study IV a phenomenological hermeneutic approach to the interview text disclosed a meaning of inner strength as *Life goes on – living it all*, meaning that inner strength still makes it possible to live, handle and being open to ones life in many of its potentials. Inner strength means that one can chose to stand up and fight as well as living in reconciliation, a possibility to work hard as well as feeling relaxed, inner strength means having tasks to accomplish as well as feeling content and proud over ones life as well as life itself, it means relying in oneself as well as having faith in others and God (for some), knowing that you as a person is the same as well as accepting and adjusting to changes. It means that one can chose aloneness and still be connected, it is to be living in the present as well as in one’s past and in the future. That is, living in wholeness.

The findings of the studies are discussed in relation to personal strengths and a good aging

**Key words:** aged, aging, development, health, inner strength, oldest old, resilience
This dissertation is based on the following papers, which will be referred to in the text by their Roman numerals (I-IV):


III Nygren, B., Brulin, C., Gustafson, Y., Norberg, A., & Lundman, B. Resilience in people 85 years old and older. The stronger resilience the greater well-being and the better health. Submitted manuscript.

IV Nygren, B., Norberg, A., & Lundman, B. Inner strength as disclosed in narratives of the oldest old. Submitted manuscript.

Reprints were made by kind permission of the publishers.
INTRODUCTION

Almost 29 years ago I started work as a district nurse, providing nursing care to people of all ages. My main interest initially lay within child health care, probably because my wife and I had just had our first child — and more were to come. My first fumbling effort in the academic field was a paper on child health care. Today, nearly all of our children are living independently; and over time my interest in the situation and life circumstances of elderly people has grown. In meeting with some of these elderly people I became fascinated by their way of living and their narratives. For my master’s thesis, I interviewed people who had cared for their next of kin who had died at home. One of them told me that during this time she “…felt so strong, like a train, nothing could stop me.” Another phrase that I heard many times from older people was: “This is something that I will live upon for a long time”; often said after something joyful. Both of these quotations express some kind of energy, or strength; the first in the context of a negative life experience and the second in the context of a positive life experience. So when I was invited to participate in the planning and initiation of the Umeå 85+ study, there was no hesitation from my point of view. My hope is that this thesis will convey some of the insights that I have gained from meeting with those participating in the study.

BACKGROUND

In Sweden, being old is defined as being 65 years or older; this is also the general retirement age. The World Health Organization (2006) defines 60 as old and 80 as oldest old, or very old. In this thesis, which forms part of the Umeå 85+ study, the oldest old are defined as those aged 85 or older. Sweden, like most developed countries, has an increasing proportion of older people. Today in Sweden, 17.5% of the population are 65 or older and 2.5% are 85 or older, and population projections place the proportion aged 65 or older at 18.6% in the year 2010 and around 22.5% in the year 2030, the greatest increase being in the age group 85 and older (SCB, 2006). It is important to learn more about the experience of being among the oldest old.
The Umeå 85+ study

The overall aim of the Umeå 85+ study is to explore the experience of being oldest old. The study has a salutogenic perspective on aging, that is, it focuses attention on gains rather than losses, health rather than ill health, and strengths rather than weaknesses. It is a multidisciplinary collaboration between the Department of Nursing and the Department of Community Medicine and Rehabilitation, Geriatric Medicine, Occupational Therapy, and Physiotherapy Units at Umeå University, and the researchers include nurses, occupational therapists, physiotherapists, physicians, dieticians, and social workers. So far, data has been collected among the oldest old in Umeå, a medium-sized town, and five rural municipalities in northern Sweden. A follow-up data collection is in progress, and others are planned.

The studies presented in this thesis are of cross-sectional and explorative design. While the Umeå 85+ study explores both good aging and threats against good aging, this thesis focuses on good aging.

A good aging

There are many concepts aimed at describing and understanding good aging, and these concepts are often interwoven and sometimes used synonymously. Below three concepts that often are used to help portray good aging will be briefly described: successful aging, active aging, and healthy aging.

The research field of successful aging is wide, and the concept has been studied from a number of different academic disciplines. Two main perspectives can be recognized. The first states that successful aging is a state of being (e.g. Rowe & Kahn, 1987; 1997; Garfein & Herzog, 1995), while the other sees successful aging as a process of continuous adaptation and development of the individual (e.g. Havighurst, 1961; Freund & Baltes, 1998). The former perspective, that of successful aging as a state of being, fits in with The World Health Organization’s (WHO) definition of health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (World Health Organization, 1946). On the other hand, when factors such as a positive meaning and purpose in life are described as important for successful aging (e.g. Wong, 2000), then people who are infirm, or not physically healthy, can be
included. This way of looking at successful aging corresponds to the process perspective, and adds a spiritual dimension to successful aging (e.g. Crowther, Parker, Achenbaum, Larimore, & Koenig, 2002). Within the process perspective, there are theories and models stating that life-long development leads to successful aging. Havighurst’s (1961) understanding of successful aging was adding years to life and getting life satisfaction from leading an active life and finding new roles. Cumming and Henry (1961), on the other hand, characterized a successful aging as acceptance of and reconciliation with loss of power in old age.

A great number of theories and models of successful aging have been presented over the years, and there is no single commonly-accepted definition, theory/model, or even pattern of criteria (Baltes & Carstensen, 1996). One of these models is Rowe and Kahn’s (1997) model including three main components: avoidance of disease and disability, high physical and cognitive function, and thirdly active engagement in life. Another is Baltes and Baltes’ (1990) model of “selective optimization with compensation”. This model states that development enables the old person, in spite of losses and increasing vulnerabilities, to adapt in order to reach goals in life and thereby achieve a successful aging. Another model is Erikson’s (1982) theory of human development, in which reaching the last stage of development means finding peace of mind and ego integrity (wholeness and meaning), and thereby gaining wisdom, which is considered to be one criterion for successful aging in old age (Erikson, Erikson, & Kivnick, 1986). Yet another development theory is Tornstam’s (1997) theory of gerotranscendence, which describes transcendence with a shift of meta-perspective from a materialistic to a rationalistic perspective, enabling a movement from the actual body to a more spiritual reality; a shift that is related to life satisfaction and successful aging. Ryff (1982) argues that multiple aspects of life must be included in successful aging. Her integrative model of successful aging comprises six dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. In a concept analysis, using the method described by Walker and Avant (1995), Flood (2002) found three essential foundation elements: functional status, gerotranscendence, and spirituality. She means by this that a satisfactory fulfilment of each element/dimension must occur in order for the old person to experience life satisfaction, meaning, and purpose in life; and thereby to age successfully.
The WHO has adopted the term *active ageing* to express the process of aging as a positive experience for the older people. To be active means to continue participating in “social, economic, cultural, spiritual and civil affairs…” (p. 12). Active ageing involves a maintained autonomy and independence and quality of life for all people, including those who are frail, disabled, and in need of care. Mental health and social connections are as important as physical health (World Health Organization, 2002). “Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age” (p. 12). Active ageing aims at a prolonged period of health, and a good quality of life. Active ageing allows people to become conscious of their potential for physical, social, and mental well-being throughout life. The WHO also uses the term *healthy aging*, but *active ageing* is intended to convey a broader meaning including health care policy programs in the form of such things as adult education (cf. Davey, 2002).

*Healthy aging* has been studied in several academic disciplines and from physical, psychological, social, and cultural perspectives. In molecular biology and biochemistry, the focus is on special genes and inflammatory processes that have an effect on healthy aging (e.g. Franceschi & Bonafe, 2003; Weibel, Sorensen, & Kristensen, 2006). Within epidemiological research, a number of behavioural determinants have been found to influence a healthy aging. Peel, McClure and Barlett (2005) identified smoking status, physical activity, body mass index, and alcohol use as determinants of healthy aging. In addition to those determinants, Michael, Colditz, Coakley and Kawachi (1999) found that factors relating to one’s social network, such as having close friends, relatives, and a confidant, were also important for a healthy aging among women. Other important aspects of healthy aging are family, community, and being active in social interaction (Ebersole, Hess & Smidt Luggen, 2004). In a longitudinal study among men, Reed, Foley, White, Heimovitz, Burghfield and Masaki (1998) found that the most consistent predictors of healthy aging were low blood pressure, low serum glucose, not smoking, and not being obese. Socioeconomic factors such as income and education have also been related to a healthy status and the prospect of healthy aging (Buckley, Denton, Robb, & Spencer, 2004). Additionally, self-esteem, in the form of a positive social identity, seems to facilitate accommodation to low health circumstances among older adults, and thereby contributes to a healthy aging (Bailis & Chipperfield, 2002).
Hansen-Kyle (2005) has carried out a concept analysis of healthy aging using the method described by Walker and Avant (1995). She presents a model of healthy aging with antecedents (that is, events which are necessary for healthy aging to occur) and consequences of a healthy aging. The antecedents to healthy aging, according to the model, are adaptation, compensation, and resilience. These antecedents lead the individual towards healthy aging. Adaptation and Compensation will lead to resilience and the resilient individual, when needed, evaluates her or his strengths and weaknesses and compensates. The consequences of healthy aging, according to the model, are successful aging (defined as the ability to establish and maintain stated goals or lifestyles and involvement in prescribed roles), independence, and autonomy. So instead of seeing healthy aging and successful aging as interchangeable concepts, Hansen-Kyle sees successful aging as a result of a healthy aging. This concept analysis leads to a new comprehensive definition of healthy aging: “Healthy aging is the process of slowing down, physically and cognitively, while resiliently adapting and compensating in order to optimally function and participate in all areas of one’s life (Physical, cognitive, social and spiritual).” (p. 52). Hansen-Kyle (2005) also comments on the consequences of independence being a cultural value, and thus something which may not be seen as healthy aging in some cultures.

Looking at the three concepts — successful aging, active ageing, and healthy aging — on an overall level, they all are in some way multi-dimensional, including physical, psychological, social, and spiritual components of life. I feel that the most appropriate label for this process of aging positively is good aging. The concepts of being successful, active, and healthy, although important in the process of aging, are not self-evident in association with the oldest old. What constitutes success at the age of 85? What activities are important for a good aging at the age of 90? What is being healthy at 95 or older? The experience of a good aging as oldest old involves recourses of different kinds. One recourse that is embedded in the concepts described above is personal strength; and, of special interest in this thesis, inner strength.

Concepts of personal strength in relation to aging

Reaching the age of 85 or over means meeting adversity in different forms — loss, limitation, and disease. Attempts have been made to explain and
understand why some old people manage these stressful events better than others. Concepts such as inner strength (Moloney, 1995), resilience (Wagnild & Young, 1990; Staudinger & Fleeson, 1996; Foster, 1997), sense of coherence (Antonovsky, 1993; Larsson, Johansson, & Hamrin, 1995; Nesbitt & Heidrich, 2000), purpose in life (Sarvamäki & Stenbock Hult, 2000), and self-transcendence (Reed, 1991a) have been associated with this managing of adversity among older people.

Inner Strength

The concept of inner strength as an inner recourse has primarily been described from a nursing perspective. Moloney (1995) interviewed 12 women over the age of 65, seven Afro-American and five European-American, in order to analyze the meaning of being strong. She used a Heideggerian hermeneutical approach with a feminist perspective. Her point of departure was “that all women in our culture possess the potential for inner strength; that this quality of inner strength is developed through living in the world into which they are born” (p. 104). She found three constitutive patterns, each of which was formulated from themes. The three patterns were: surviving, finding strength, and gathering the memories... seeing the patterns. Surviving comprised four themes: living with loss, living through hard times, being different, and putting it behind. Finding strength also comprised four themes: being close to others, drawing strength from others, being at home, and feeling good about oneself. The final pattern, gathering the memories... seeing the patterns, comprised five themes: telling my story, having regrets, living today, knowing one’s strength, and looking back over. In a phenomenological study, Rose (1990) interviewed nine healthy women, 25-53 years of age, about their perceptions of inner strength. Nine themes emerged from the narratives to describe the women’s experiences: quintessencing (realizing ones own inner strength and accepting the self), recognizing (coming to listen to one’s own strength), becoming (making sense of one’s life), accepting (respecting and trusting oneself and “seeing” one’s needs in life), being (knowing oneself and standing up for one’s beliefs), centring (making a balance between oneself and external events), quiescencing (finding strength by resting and reflecting), apprehending intrication (knowing, seeing, and understanding complexity), and introspecting (having an awareness of oneself as a subject). Rose found that the theme of quintessencing was something fundamental in inner strength. For several
of the women, humour was important in their lives and that inner strength was expressed through using humour.

In addition to the studies mentioned above, a great number of studies have been conducted on women with a variety of chronic diseases or health conditions. Roux, Bush and Dingley (2001) explored inner strength among women with breast cancer. Knobb, Roux and Bush (2002) investigated inner strength among women with multiple sclerosis, and concluded that inner strength can improve health outcome. Haile, Landrum, Kotarba and Trimble (2002) studied inner strength among women with human immunodeficiency virus (HIV) and concluded that inner strength can be developed for use in crises and is necessary for handling severe illnesses. All these studies were carried out in the US and in Canada on women with an American cultural background. In a study among men suffering from AIDS, Dancy (1994) found, using focus group discussions, that emotional support enhanced inner strength in those men. To explore any cultural variations, Dingley and Roux (2003) studied inner strength in Hispanic women aged 60 to 92 years with different chronic diseases or health conditions, and found that inner strength involved five interrelated dimensions: drawing strength from the past, focusing on possibilities, being supported by others, knowing one’s purpose, and nurturing the spirit.

Dingley, Roux and Bush (2000) performed a concept analysis of inner strength, and found that inner strength as a term was used in business, psychology, and nursing. The analysis revealed six defining attributes: growth and transition, confronting a life experience or event, deepening of self-knowledge, cognition of one’s needs and sources to meet those needs, connectedness, and focused and balanced interaction with the environment. Four consequences of inner strength were found: having capacity, meaning that inner strength facilitates healing and problem solving, a sense of control and self-determination, which contributes to overcoming problems, a sense of mastery over challenging life experiences, which then results in a positive self-concept, and finally psychological well-being.

Roux, Dingley and Bush (2002) developed a middle range theory of inner strength in women following a meta-synthesis of findings from five qualitative studies focusing on inner strength in women. The model is built on five constructs that will influence inner strength. The first of these is knowing and searching; searching for understanding, meaning, and
direction in one’s life can occur when there is no fear of knowing, this leading to finding meaning in life. The remaining constructs of the model are nurturing through connections (an acceptance of support, help and care, trust in others), dwelling in a different place by re-creating the spirit within (transcending, moving from illness to wellness), healing through movements in the present (being honest, active, and involved will lead to healing), and connecting with the future by living a new normal (helping and supporting others, which gives hope and vision for one’s own future).

Although Roux, Dingley and Bush (2002) define inner strength as a central human resource that promotes well-being and healing, most of the research focusing on inner strength has been carried out on women (e.g. Rose, 1990; Moloney, 1995; Kotarba, Haile, Landrum, & Trimble, 2003). There is thus a need for research involving inner strength in both sexes; and among old people.

Resilience

The concept of resilience sprang from a shift in perspective, from merely looking at risk factors leading to problems, to looking at strengths within the individual. The studies of Werner (1982) and Rutter (1979) on children at risk are often cited as early research in the resilience field. Although from the beginning most research regarding resilience has focused on children — and most still does — there are also reports on resilience among adults (e.g. Richardson & Waite, 2002) and among the elderly (e.g. Wagnild & Young, 1990; 1993; Gattuso, 2003). In a presentation of a metatheory of resilience Richardson (2002) identified three waves of resilience research. The first wave was to identify resilient qualities in individuals and support systems. The second wave described resilience as a process of accessing qualities described in the first wave of resilience. Finally, the third wave was a post-modern, multidisciplinary identification of forces within the individual that drive the individual to self-actualization and growth. Richardson concludes that resilience comes from within the human spirit but also from external sources of strength.

Resilience refers to ways of handling stressful situations in life. A wide range of research has been done, and still is being done, from many different disciplines and perspectives. There are many different descriptions in the literature of a resilient person. Werner (1982)
characterized a resilient person as being robust, tolerant, adaptable, socially responsible, achievement orientated, a good communicator, and in possession of good self-esteem. Rutter (1987) states that a resilient person has self-esteem, self-belief, problem solving skills, and satisfying interpersonal relationships. Beardslee (1989) and Caplan (1990) describe resilient individuals as possessing self-confidence and self-discipline; and Caplan (1990) also says that resilient people do not succumb to illness. Common to all these definitions is that a resilient person can moderate the negative effects of stress when meeting adversity, and that resilience enables one to bounce back from adversity. Kadner (1989) identified three characteristics enabling resilience: ego strength (a well integrated personality, a belief in one’s ability and a willingness, personal and social competence), social intimacy (a prime source of emotional support), and resourcefulness (the ability to generate self-controlling thoughts to alleviate helplessness). Wagnild and Young (1990) found five interrelated characteristics that defined resilience: equanimity (a balanced perspective on one’s life and experience), perseverance (a willingness to continue to reconstruct one’s life and to remain involved despite setbacks), self-reliance (a belief in oneself and one’s capabilities), meaningfulness (an understanding that life has a purpose), and existential aloneness (a realization that each person’s life path is unique and the acceptance of one’s life). Dyer and McGuinness (1996) carried out a concept analysis of resilience, and found four critical attributes: rebounding and carrying on (rebounding towards life, malleability, and pliancy), a sense of self (high self-esteem and a balanced perspective on one’s life), determination (an acknowledgement that difficulties in life are to be expected and dealt with), and a pro-social attitude (a friendly attitude to others, which can help with attachment to others).

There are a number of different scales for measuring resilience (e.g. Block & Kremen, 1996; Jew, Green, & Kroger, 1999). This thesis uses Wagnild and Young’s (1993) resilience scale. Resilience has been studied in relation to various aspects of social relations, for instance the importance of close personal relationships for resilience (e.g., Werner, 1982; Rutter, 1985; Garmezy, 1991). A study of resilience among the homeless showed that resilience was negatively correlated with perceived loneliness and hopelessness (Rew, Taylor-Seehafer, Thomas, & Yockey, 2001). Associations have been found between resilience and better general health (Wagnild & Young, 1993; Staudinger & Fleeson, 1996; Wagnild, 2003), health-related factors such as well-being (Wagnild & Young, 1993;
Aroian, Schappler Morris, Neary, Spitzer, & Tran, 1997; Christopher, 2000), life satisfaction (Wagnild & Young, 1993), ability to cope (Aroian et al., 1997; Christopher, 2000), and adaptation (Staudinger & Fleeson, 1996; Aroian et al., 1997). Foster (1997) concludes that strong resilience has a protective effect against psychiatric morbidity; for example, it is related to a decreased risk of depression. Wagnild (2003) found that indicators of successful aging — for example, psychological well-being, life satisfaction, and a health-promoting lifestyle — were associated with resilience, but found no association between resilience and income among older people. The stance taken in this thesis is that resilience is a driving force, a strength, that humans have less or more of; and that one can move from less to more, or vice versa, depending on life circumstances.

Sense of Coherence

Sense of coherence is seen as a way of viewing the world and one’s life, and as a kind of motivational force. Antonovsky (1987) described three dimensions which constitute a sense of coherence: comprehensibility (the extent to which an individual perceives the situation that confronts her or him as cognitively meaningful and predictable), manageability (the degree to which an individual perceives her or his resources to be sufficient to meet internal and external demands), and meaningfulness (the degree to which an individual feels that life is emotionally meaningful and perceives some of her or his problems as challenges rather than hindrances). There have been a number of discussions of whether sense of coherence decreases (e.g. Bernstein & Carmel, 1991), is stable (e.g. Suominen, Helenius, Blomberg, Uutela, & Koskenvuo, 2001), or increases (e.g. Nilsson, Holmgren, & Westman, 2000) during life. The concept has been studied extensively in order to investigate its properties. Antonowsky (1987) has developed a scale to measure the degree of sense of coherence, and numerous studies have shown that a sense of coherence is a crucial factor for self-rated health (e.g., Langius & Bjoervell, 1993; Lundberg & Nyström Peck, 1994). It has been shown to correlate positively with a sense of well-being (Lundman & Norberg, 1993; Coward, 1996; Söderberg, Lundman, & Norberg, 1997), and quality of life (Schnyder, Buchi, Mörgeli, Sensky, & Klaghofer, 1999; Caap-Ahlgren & Dehlin, 2004).
On the other hand, sense of coherence has been found to be inversely associated with mental and physical diseases and symptoms. Negative correlations with sense of coherence have been found in relation to psychiatric symptoms (Bengtsson-Tops & Hansson, 2001) and depression (Rennemark & Hagberg, 1997), but also in relation to symptoms such as shortness of breath, pain, and fatigue (Nesbitt & Heidrich, 2000). Rennemark and Hagberg (1999) found that sense of coherence had a strong negative correlation with physical symptoms from muscles, bones, and joints as well as with mental symptoms such as depression. Sense of coherence has been found to correlate positively to purpose in life (Sarvimäki & Stenbock-Hult, 2000) and hardiness (Williams, 1990). Rennemark and Hagberg (1997) found indications that the more positive the evaluation of one’s life history among elderly men and women, the stronger the sense of coherence.

Purpose in Life

Purpose in life as a concept originates from the orientation of humanistic psychology, and is based on Frankl’s (1963) will to meaning. Frankl states that meaning or purpose in life can be found in different ways. One way occurs when a person is confronted by a situation that seems hopeless, and manages to manipulate the situation into a positive outcome. Another way is by working, and finding one’s mission in life. Meaning can also be derived from nature, from culture, and from the experience of another person’s uniqueness (Frankl, 1963). Frankl described the will to meaning as the primary motivational force, and argued that frustration of this force produces a desperate feeling of existential vacuum, which could be seen as the opposite to purpose in life. Purpose in life has been suggested to facilitate adaptation to the changing life circumstances which accompany the aging process (Reker, Peacock, & Wong, 1987). Using the Purpose in Life Scale developed by Crumbaugh and Maholick (1964), Rappaport, Fossler, Bross and Gilden (1993) found a positive correlation between purpose in life and a positive view of the future, and Lyon and Younger (2001) found that a low purpose in life was a predictor of depressive symptoms. Sarvimäki and Stenbock Hult (2000) found associations between purpose in life and health, activities of daily living (ADL), and family network among older people. Reker (2002) showed that purpose in life was a predictor of successful aging in both community-residing and institutionalized older people.
Self-Transcendence

The concept of self-transcendence can be traced back several decades in the literature, Frankl (1966), for example, stated that “self-transcendence is the essence of existence” (p. 104) in that to be human means “to be open to the world, a world, that is, which is replete with other beings to encounter and with meanings to fulfill” (p. 97). Self-transcendence has been seen as a major psychosocial resource for developing maturity, which enables a person to extend their personal boundaries. Self-transcendence is defined as expansion of one’s boundaries; inwardly in various introspective activities, outwardly through concerns about others’ welfare, and temporally as one’s perceptions of one’s past and future enhance the present (Reed, 1991a). In this thesis, self-transcendence is assessed using a scale developed by Reed (1989). Self-transcendence enhances feelings of self-worth (Coward, 1990), and has been linked to feelings of spiritual connectedness (Bauer & Barron, 1995) and to well-being and feelings of self-worth (Reed, 1991a; Bickerstaff, Grasser, & McCabe, 2003). Self-transcendence has been found to be correlated to mental health (e.g. Coward, 1990; Reed, 1991a; Chin-A-Loy & Fernsler, 1998) but also to the ability to perform activities of daily living (Upchurch, 1999). In a concept analysis of self-transcendence, Haase, Britt, Coward, Kline Leidy and Penn (1992) found six outcomes of self-transcendence: a sense of well-being; enhanced feelings of self-worth; a greater connectedness with others, nature, and God; personal growth; finding meaning and purpose in life; and a sense of being healed.

Other concepts related to personal strength

There are many other concepts relating to personal strength in the literature, and a number of measurement scales have been developed. These concepts include: coping (Lazarus & Folkman, 1984), hardiness (Kobasa, 1979), locus of control (Rotter, 1966), self-efficacy (Bandura, 1977), and self-esteem (Rosenberg, 1965). Various scales were discussed in the planning phase of the Umeå 85+ study, but were not included in the study since they mostly have been used in age groups younger than those in the Umeå 85+ study and there was a need to minimize the number of scales.
Rationale for the study

Research among the elderly and the oldest old has often focused on the risks associated with aging, that is, on adversity, disease, loss, and weakness. Other research, although to a lesser degree, has focused on the positive aspects of aging, such as gains, health, and development. This latter approach can be described as having a salutogenic perspective. A salutogenic perspective in research among the oldest old focuses on the identification of recourses of importance for maintaining a good aging or moving in the direction of a good aging. This thesis explores and illuminates the personal recourses of inner strength, resilience, sense of coherence, purpose in life, and self-transcendence. It uses both a theoretical perspective and a life-world perspective. Almost all research focusing on inner strength has been carried out on women, specifically women with chronic diseases, and there is a lack of research on the meaning of inner strength among the oldest old. My belief is that inner strength is a human recourse, and that it is important to widen the field of research on inner strength. Inner strength in the oldest old, who encounter a relatively high level of adversity, can be of the utmost importance for the continuing of a good aging.

The overall purpose and aims of the included papers

The overall purpose of this thesis was to explore and illuminate inner strength, and phenomena related to inner strength, among the oldest old.

The specific aims of the papers were:

Paper I - to test the reliability and validity of the Swedish language version of the Resilience Scale in regard to its stability, internal consistency, and validity.

Paper II - to describe resilience, sense of coherence, purpose in life, and self-transcendence in relation to perceived physical and mental health in a sample of the oldest old.

Paper III - to examine the relationship between resilience and physical health factors, psychological health factors, diseases, and social relations, among the oldest old.

Paper IV - to illuminate the meaning of inner strength as narrated by women and men 85 and 90 years old.
PARTICIPANTS AND METHODS

Overview of the participants, main data and methods for analysis in the different papers are shown in Table 1.

Table 1. Overview of the papers comprising the thesis

<table>
<thead>
<tr>
<th>Paper</th>
<th>Participants</th>
<th>Main Data</th>
<th>Methods for analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>n=142 (54% women) 19-85 years</td>
<td>RS SOC RSE</td>
<td>Descriptive statistics Multivariate statistics</td>
</tr>
<tr>
<td>II</td>
<td>n=125 (69% women) 85-103 years</td>
<td>RS SOC PIL STS SF-36</td>
<td>Descriptive statistics Multivariate statistics</td>
</tr>
<tr>
<td>III</td>
<td>n=192 (63% women) 85-103 years</td>
<td>RS GDS DAS Health factors</td>
<td>Descriptive statistics Multivariate statistics</td>
</tr>
<tr>
<td>IV</td>
<td>n=18 (53% women) 90 and 85 years</td>
<td>Thematic life-story interviews</td>
<td>Phenomenological hermeneutics</td>
</tr>
</tbody>
</table>

RS=Resilience Scale; SOC=Sense of Coherence Scale; RSE=Rosenberg Self-Esteem Scale; PIL=Purpose in Life Scale; STS=Self-Transcendence Scale; SF-36=Short Form Health Survey; GDS=Geriatric Depression Scale; DAS=Death Anxiety Scale.

Participants

The inclusion criteria for the Umeå 85+ Study were that participants should be aged 85, 90, or 95 or older in the year the study was carried out, and living in a county in northern Sweden that includes rural areas and a medium-sized town. Participants were identified through the National Tax Board in Sweden; invitations to participate were extended to all those aged 95 or older, all those aged 90, and every second individual among those aged 85. In total 527 people were identified as belonging to the target group, and 363 agreed to participate. Further inclusion criteria for the papers presented in this thesis were the ability to complete Likert-type questionnaires and the ability to participate in thematic life-story interviews; 203 people, 125 from the city of Umeå and 78 from the rural municipalities, fulfilled these criteria and were included in papers II–IV in this thesis. Characteristics of the participants are shown in Table 2. Inclusion, exclusion, and dropout of participants are shown in Figure 1.
Table 2. Demographic characteristics of the participants (n = 203).

<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 95 years</td>
<td>34 (17%)</td>
<td>22 (17%)</td>
<td>12 (17%)</td>
</tr>
<tr>
<td>90 years</td>
<td>79 (39%)</td>
<td>51 (38%)</td>
<td>28 (40%)</td>
</tr>
<tr>
<td>85 years</td>
<td>90 (44%)</td>
<td>60 (45%)</td>
<td>30 (43%)</td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td>133</td>
<td>70</td>
</tr>
<tr>
<td>Living circumstances</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town/ Rural</td>
<td>125 (62%)/ 78 (38%)</td>
<td>86 (65%)/ 47 (35%)</td>
<td>39 (56%)/ 31 (44%)</td>
</tr>
<tr>
<td>With someone/ Alone</td>
<td>34 (17%)/169 (83%)</td>
<td>10 (8%)/123 (92%)</td>
<td>24 (34%)/46 (66%)</td>
</tr>
<tr>
<td>Own apartment or house/ Residential care</td>
<td>151 (74%)/ 52 (26%)</td>
<td>35 (26%)/ 98 (74%)</td>
<td>17 (24%)/53 (76%)</td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes/ No</td>
<td>177 (87%)/ 26 (13%)</td>
<td>114 (86%)/ 16 (14%)</td>
<td>7 (10%)/63 (90%)</td>
</tr>
<tr>
<td>Self-rated health*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent to good/ Fair or bad</td>
<td>120 (59%)/ 83 (41%)</td>
<td>72 (54%)/ 61 (46%)</td>
<td>48 (69%)/ 22 (31%)</td>
</tr>
<tr>
<td>ADL status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barthel index mean, (SD)**</td>
<td>18.6 (3.2)</td>
<td>18.2 (3.6)</td>
<td>19.3 (1.8)</td>
</tr>
<tr>
<td>Independent in p- and i-ADL***; Yes/ No</td>
<td>67 (33%)/134 (66%)</td>
<td>39 (30%)/ 91 (69%)</td>
<td>28 (39%)/43 (60%)</td>
</tr>
<tr>
<td>Cognitive status****</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MMSE mean, (SD)</td>
<td>25.4 (3.9)</td>
<td>25.4 (3.8)</td>
<td>25.5 (4.2)</td>
</tr>
</tbody>
</table>

* Measured with the General Health question from the SF-36 (Ware & Sherbourne, 1992)
** Measured with the Barthel Index (Mahoney & Barthel, 1965)
*** Measured with the ADL Staircase (Sonn & Hulter Åsberg, 1991)
**** Measured with the Minimal Mental State Examination (Folstein, Folstein, & McHugh, 1975)
The participants in paper I were a Swedish-speaking purposive sample including people in different phases of life. The 142 participants (54% women) aged between 19-85 years included 40 senior citizens over the age of 65, 50 members of the working population, and 52 students.

The participants in paper II were the 125 participants from the city of Umeå.

The participants in paper III included both those from the city of Umeå (n=125) and those from the rural areas (n=78); 11 of these 203 participants did not complete the RS, leaving 192 participants (95% of the target group).

The participants in paper IV were 18 of the oldest old from the Umeå 85+ study. These 18 participants were chosen on the basis of high scores on the Resilience Scale (RS) (Wagnild & Young, 1993), the Sense of Coherence Scale (SOC) (Antonovsky, 1987), the Purpose in Life Scale (PIL) (Crumbaugh, 1968), and the Self-Transcendence Scale (STS) (Reed, 1989). A sum index of these four scales was generated, where all the scales were transformed into a score fitting a possible maximum of 100. The RS, with a maximum of 175, was given a conversion score of 0.57; the SOC, with a maximum of 91, a conversion score of 1.10; the PIL, with a maximum of 140, a conversion score of 0.71; and the STS, with a maximum of 60, a conversion score of 1.67. Each individual’s converted score on each scale was added into a sum index with a possible maximum of 400. The sampling of participants could be characterized as a purposive sampling using a criterion methodology (cf. Polit & Beck, 2004). In order to identify those participants who would be most likely to be able to narrate about inner strength, those on the highest percentile, i.e. with a score of 360 or more, were selected, this resulting in a sample of 21. One of these participants only completed the scales and did not participate in the interview, and two interviews were excluded due to technical problems, leaving 18 participants, ten women and eight men.
Figure 1. Flow chart showing participation in Papers II – IV
Methods of data collection

Data for paper I were gathered using questionnaires handed out by the researchers to the participants. The ratings took place at three different places: the premises of a senior citizens’ organization, a workplace, and a high school. The researcher waited until the marking was completed. A retest was performed four weeks later; the questionnaire was mailed out to the respondents with a self-addressed envelope. One reminder was given.

Data for papers II-IV were gathered via home visits to the respondents. Sociodemographic data was gathered via questions to the participants and information concerning medication and diseases were gathered from the participant’s medical charts.

Instruments

The questionnaires used in the different papers were the Resilience Scale, the Sense of Coherence Scale, the Purpose in Life Scale, the Self-Transcendence Scale, the Rosenberg Self-esteem Scale, the SF-36 Health Survey, the Philadelphia Geriatric Centre Morale Scale, the Death Anxiety Scale, the Geriatric Depression Scale, the Gothenburg Quality of Life Instrument, the Minimal Mental State Examination, and the ADL Staircase.

The Resilience Scale (RS) (Wagnild & Young, 1993), which was developed from a qualitative study among elderly women (Wagnild & Young, 1990), consists of 25 items. Respondents rate statements about their personal view of themselves on a Likert scale ranging from 1 to 7. The possible scores range from 25 to 175, and the higher the score, the higher the degree of resilience. Scores over 146 indicate a strong resilience and scores below 121 are considered as weak resilience (Wagnild, 2003). Test-retest reliability has shown $r$ values between 0.67 and 0.84 ($p<0.01$), and construct validity has been tested with correlation between RS scores and Self-Esteem Scale scores (Rosenberg, 1965), with a $r$ value of 0.57 ($p<0.01$). Alpha coefficients between 0.76 and 0.94 have been reported (Wagnild & Young, 1993; Wagnild, 2003). The RS is presented in the Appendix.
The Sense of Coherence Scale (SOC) (Antonovsky, 1987) was developed from interviews with people who had recovered after adverse experiences. The focus was on salutogenesis (Antonovsky, 1987). The original scale comprises 29 items; the present study uses the later 13-item version (Antonovsky, 1993). The scale is of Likert type, with item ranges from 1 to 7. The range of possible scores is 13–91, and the higher the score, the stronger the sense of coherence. The scale was translated into Swedish by Langius and Bjoervell (1993) and has been proved to be psychometrically sound. For the Swedish 13-item version, alpha coefficients between 0.74 and 0.91 have been reported (Langius & Bjoervell, 1993). The SOC is presented in the Appendix.

The Purpose in Life Scale (PIL) (Crumbaugh & Maholick, 1964; Crumbaugh, 1968) was developed to detect existential vacuum, which Frankl (1963) viewed as the opposite of purpose in life. The scale consists of 20 items of Likert type, with item ranges from 1 to 7. The range of possible scores is 20–140, with 140 representing the highest degree of purpose in life. The PIL has been translated into several languages and has been used for more than 30 years (Crumbaugh & Henrion, 1988). Concept and concurrent validity have been reasonably well established (Crumbaugh & Henrion, 1988), and Meier and Edward's (1974) have reported test-retest reliability of 0.83. The Swedish version of the PIL was validated by Åkerberg (1987). The PIL is presented in the Appendix.

The Self-Transcendence Scale (STS) was developed to identify intrapersonal, interpersonal, and temporal experiences characteristic of later life, and to reflect expanded boundaries of the self (Reed, 1989). The STS is a 15-item scale with item ranges from 1 to 4. The possible range of scores is 15-60, with 60 representing the highest degree of self-transcendence (Reed, 1989). Construct validity has been tested by multiple testing, both in a phenomenological study and in analysis of data from correlation and longitudinal studies (Coward, 1990, 1996; Reed, 1991b). Studies using the STS report a Cronbach’s alpha ranging from 0.52 to 0.86 (Coward, 1996; Ellermann & Reed, 2001). The reliability and construct validity of the Swedish version of the STS have been evaluated and reported in a paper for a master’s degree, and the internal consistency of the Swedish version was found to be 0.70–0.85 (unpublished data). The STS is presented in the Appendix.
The Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) provides a measure of self-esteem, defined as the emotional value perceived by an individual. High self-esteem entails self-respect, and personal value of the individual. Having low self-esteem means that the individual feels inadequate and unworthy, and has low self-respect (Rosenberg, 1979). The Rosenberg Self-Esteem Scale is composed of 10 items in a Likert-type response format and, in this study, with a 4-point scale, ranging from 1 to 4. The range of possible scores is 10 to 40. High scores indicate a high level of self-esteem. The RSE has been proven reliable (alpha ranging from 0.72 to 0.88), and non-age specific (Fleming & Courtney, 1984; Essex & Klein, 1989; Sarvimäki & Stenbock Hult, 2000). The Cronbach’s alpha for the Swedish version of the RSE used by Sarvimäki and Stenbock Hult was 0.75.

The SF-36 Health Survey (SF-36) (Ware & Sherbourne, 1992) is a health-related quality of life instrument that was developed in the USA and has been used in a number of countries. The conceptual framework guiding its development included both physical and mental health domains as well as considered behavioural functioning, perceived well-being, social and role ability, and perception of health in general (Ware & Sherbourne, 1992). The SF-36 is organized into two main dimensions of health: the Physical Health Dimension (SF-36 physical component summary, or PCS) and the Mental Health Dimension (SF-36 mental component summary, or MCS). These two main dimensions comprise eight sub-scales representing eight aspects of health: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health, the first four of which sum to the Physical Health sum index and the last four of which sum to the Mental Health sum index. The SF-36 is a 36-item, Likert type scale. It gives scores on each sub-scale and on the two main dimensions. In this thesis only the sum index of PCS and MCS are used. A higher score indicates better health. The norm mean values for the general Swedish population aged 75 and older are 37.0 for PCS and 46.5 for MCS among women, and 40.5 for PCS and 52.3 for MCS among men. The SF-36 has been tested in a general Swedish population. Reliability values for internal consistency, as measured by Cronbach’s alpha, have ranged from 0.79 to 0.93 (Sullivan, Karlsson, & Ware, 1995).

The Philadelphia Geriatric Center Morale Scale (PGCM) (Lawton, 1972; 1975) was used in the present study to measure psychological well-being. The PGCMS comprises 17 yes/no questions. The range of possible scores
is 0–17, with scores between 0 and 9 indicating a low degree of well-being and scores between 13 and 17 indicating a high degree of well-being, according to the administration and scoring instructions. Test-retest correlations have shown $r$ coefficients of up to 0.91 (Lawton, 1972). The scale has demonstrated satisfactory reliability (Lawton, 1972) and construct validity (Kozoma & Stones, 1987). The Swedish version has been tested for inter-rater reliability with satisfactory results, $r=0.86$ (Löfgren, Gustafson, & Nyberg, 1999).

The Death Anxiety Scale (DAS) (Templer, 1970) comprises 15 yes/no questions with a scoring range of 0–15, a higher score indicating greater death anxiety. The DAS is frequently used, and has displayed satisfactory internal consistency (e.g., Lonetto & Templer, 1986; Rasmussen, Templer, Kenkel, & Cannon, 1998).

The Geriatric Depression Scale (GDS) (Yesavage et al., 1983) was used in the present study to estimate depressed mood. The original scale has 30 items, but the present study used a 15-item version (Sheikh & Yesavage, 1986; Alden, Austin, & Sturgeon, 1989). The possible range of scores is 0–15, scores between 5 and 9 indicating mild depression, and between 10 and 15 indicating moderate to severe depression.

The Gothenburg Quality of Life Instrument (Tibblin, Tibblin, Peciva, Kullman, & Svärdssudd, 1990) was used to measure quality of life. The number of physical, psychological, and management/capability symptoms was indexed using a symptom questionnaire compiled from the most common symptoms from those set forth in the Lund 80+ study (Svensson, Dehlin, Hagberg, & Samuelsson, 1993). The present study performed a factor analysis in which the examined symptoms were grouped into the categories of physical, psychological, and management/capability. The symptoms were self-rated via yes/no questions.

The Minimal Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975) is used to assess cognitive status, and is often used as a brief screening test for dementia. It measures orientation, memory, concentration, language, and visuospatial abilities, with a higher score indicating better cognitive status. The range of MMSE scores is 0–30, and scores below 24 indicate impaired cognition. Reliability and construct validity has been judged to be satisfactory (Tombaugh & McIntyre, 1992).
The ADL Staircase (Sonn & Hulter Åsberg, 1991) was used to measure independence in terms of both personal- (including cleaning, grocery shopping, transport and cooking) and instrumental (including bathing, dressing, toileting, transfer, continence and eating) –ADL. In Paper III, results of the ADL assessment were dichotomized as either total independence from help or dependence on help to any degree.

The Barthel ADL Index (Mahoney & Barthel, 1965) was used to measure personal ADL. The scale has a maximum of 20; a maximum score indicates independence in all activities.

Interviews

The data gathered in paper IV came from interviews that could be characterized as thematic life-story interviews (cf. Åstedt-Kurki & Heikkinen, 1994; Öberg, 1997) which address specific areas and aspects of the participant’s life. This is a type of interview where the researcher has control over the themes but the respondents are encouraged, via supporting questions, to give narratives concerning the themes. The themes of interest were: experiences of aging, aloneness and loneliness, serenity, tiredness/sleep, important life events, hard/stressful life events, meaning in life, consolation, and forgiveness.

Procedures

Three of the questionnaires, the RS, the STS and the DAS, were not available in Swedish so translations were necessary. Translation of a questionnaire from one language to another implies a threat to validity, due to cross-cultural differences in understanding of phrases and words. To reduce this risk a structured translation procedure is recommended (Tzuh Tang & Dixon, 2002). The translation followed a structured translation and back-translation procedure (cf. Guillemin, Bombardier, & Beaton, 1993) consisting of several steps. Firstly, the scales was translated independently by four members of the research group, then two pairs of the researchers agreed upon one translation each, and finally all four reached consensus on one version. That version was sent to a professional native English speaking translator for back-translation. The back-translated version was
submitted to the original authors for comments. This resulted in a minor modification of one item in each of the RS and the STS.

The Umeå 85+ study was approved by the Ethics Committee of the Medical Faculty, Umeå University (No. 99-326). An application for processing personal data according to the Personal Data Act was sent to the Swedish Data Inspection Board.

The participants were informed of and invited to participate in the Umeå 85+ study first by letter and then by telephone. After giving their informed consent, they were guaranteed confidentiality and a time for a home visit was booked. Following the lists from the National Tax Board, the oldest participants were first invited. In the Umeå 85+ study, data was collected in the participants’ homes by means of questionnaires, assessments/tests, and interviews. All data were collected following the same order in all visits. Due to the amount of data to be collected and the participants’ age, data was collected over the course of two to five home visits. In total for all parts of the Umeå 85+ study, nine researchers were involved in data collection, and 14 in data collection from the rural sample. The time between the first and last visits ranged between one to four weeks, and each individual participant met two or three researchers during the data collection.

The questionnaires were interviewer-administered, face to face; the researcher read the items aloud, and the participants were given an enlarged copy of the answer categories in front of them. The participants often answered verbally, and sometimes pointed to the chosen answer category, which the researcher then marked in the questionnaire. The thematic life-story interviews were the last data to be collected.

**Methods of analysis**

**Statistics**

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows; version 10.0 (Paper I), version 11.0 (Paper II), and version 12.1 (Paper III). Mean and standard deviation were used for the descriptive statistics (Papers I - III) and range (Paper I). Student’s t-test was used for comparison between groups (Papers I and III) and when
performing the univariate analysis of differences between the RS and dichotomized predictor variables (Paper III). *Analysis of variance* (ANOVA) was used to test differences when the predictor variable consisted of more than two groups (Paper III). *Pearson’s correlation coefficient* was used for calculating stability over time (Paper I), for associations between the scores on continuous variables (Papers II and III), for testing multicollinearity among the predictor variables (Paper III) and for estimating construct validity between RS and SOC as well as RS and RSE (Paper I). *Principal component analysis (PCA) with Varimax rotation* was used to explore dimensionality in the RS but also in order to determinate whether the Swedish version of the RS differed from the original scale in component loadings (Paper I). A *simultaneous multiple regression analysis* was performed with physical and mental health as outcome variables (Paper II) and with the RS as outcome variable (Paper III). P-values of $\leq 0.05$ were regarded as statistically significant. In Paper III, a p-value of 0.1 was used for entering into the regression model, in order to minimize the risk of missing important predictor variables. *Cronbach’s alpha* was used to estimate internal consistency reliability. Missing data on separate items in the questionnaires were replaced with the mode value for the actual item (Papers I - III). If a single questionnaire had more than three items with missing data, it was omitted from the analysis.

Phenomenological hermeneutics

A phenomenological hermeneutical method inspired by Ricoeur (1976) was used in the analysis in Paper IV. The method is suitable for researching lived experience, and has been developed and closely described by Lindseth and Norberg (2004), and used in numerous studies (e.g. Rasmussen, Sandman, & Norberg, 1997; Söderberg, Lundman, & Norberg, 1999). The analysis takes place in a dialectic movement between understanding and explanation, between parts and the whole of the text. The method comprises three methodological steps: *naïve reading*, *thematic structural analysis*, and a *critical reading* leading to a *comprehensive understanding*. In the *naïve reading* the whole text was read in order to grasp an initial naïve understanding of the meaning of the lived experiences of inner strength among the oldest old. In the *structural analysis*, the text was divided into meaning units that consisted of a portion of text, anything from just a couple of words up to a long paragraph, conveying a single meaning. Next, the meaning units were condensed
while still preserving the core. The condensed meaning units were then examined for similarities and differences, and sub-themes were worked out and abstracted into themes, in a dialectic process moving between parts and the whole. The structural analysis is the explanation, and the way of validating the understanding of the naïve reading. As far as possible, the intention in the structural analysis is to be objective towards the text, in the sense that the text is analyzed without deliberate interpretations. The text is seen only as text, and the explanation is to get hold of the parts to reveal structures and relations in the text. In the final step, the comprehensive understanding, the whole text, the naïve understanding, the themes and sub-themes are reflected upon, with inner strength in mind, and interpreted in relation to the authors’ pre-understanding and any relevant literature. The meaning units, which were decontextualized from the text as a whole in the structural analysis, were recontextualized, along with the naïve understanding, in the comprehensive understanding (Lindseth & Norberg, 2004).
FINDINGS

The point of departure of this thesis was to translate the Resilience Scale into Swedish. In Paper I, the Swedish version of the RS was tested for reliability and validity. The findings show evidence that the version is both valid and reliable. Test-retest reliability coefficient for the RS was $r = 0.78$ ($p<0.01$). Internal consistency was 0.88 and 0.90. The range for inter-item correlation was 0.71 and the range for corrected item-total correlation was 0.46. Construct validity estimated by a correlation coefficient between the RS and the SOC was $r=0.41$ ($p<0.01$), and the correlation coefficient between the RS and the RSE was 0.37 ($p<0.01$). Mean scores were 140.7 (SD±15.4) and 139.4 (SD±15.6) for the RS, 62.5 (SD±8.9) for the SOC, and 31.2 (SD±4.8) for the RSE.

The principal component analysis ended up in a two-dimensional solution that did not have any high secondary loading. In the rotated two-dimensional solution, fifteen items loaded between 0.41-0.73 on Component I. In a first step, seven items could be referred to Component II, with the initial criterion of 0.4 as a limit; but after consideration, even item 13, with a loading of 0.39, was referred to Component II, and so eight items with loadings between 0.39 and 0.76 were included in Component II. The 15 items that formed Component I were labelled as “personal assurance”; they reflect an active, confident personal characteristic, including self-belief, a strong capacity to act, curiosity, and joy. The eight items in Component II also reflect strength, but more expectant attitudes came into focus, such as the ability to be alone and to take things in one’s stride; these items were labelled “acceptance of self and life”. This solution is rather consistent with the solution presented of the original scale of Wagnild and Young (1993). The two-dimensional solution explained 36.6% of the variance in resilience. The internal consistency was 0.88 for additive scales derived from Component I, and 0.73 for those derived from Component II. It was concluded that the Swedish version of the RS measures resilience well, with satisfactory validity and reliability.

In Paper II, where resilience, sense of coherence, purpose in life, and self-transcendence were described in relation to physical and mental health, the mean scores on RS and SOC were higher among this aged population than those reported for younger age groups. Mean scores for the PIL and STS were comparable to those reported for younger age groups. Table 3 presents mean scores for these scales, along with SF-36 PCS and MCS.
Statistically significant correlations ranging between 0.33 and 0.58 (p<0.01) were found between all the scales aimed at measuring resilience, sense of coherence, purpose in life, and self-transcendence. There were statistically significant correlations between these four scales and perceived mental health among the women, with r-values of 0.34–0.50, but no statistically significant correlation for the men. There was also no statistically significant correlation between the four scales and physical health, either in the total sample or in women or men separately, and there was no statistically significant correlation between physical and mental health for either the women or the men.

Table 3. Mean scores (±SD) for the RS, SOC, PIL, STS, and SF-36 PCS and SF-36 MCS among total sample, women, and men.

<table>
<thead>
<tr>
<th></th>
<th>Total (n = 125)</th>
<th>Women (n = 86)</th>
<th>Men (n = 39)</th>
<th>p-value w/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS</td>
<td>117 ±16.0</td>
<td>148 ±16.9</td>
<td>150 ±13.7</td>
<td>0.45</td>
</tr>
<tr>
<td>SOC</td>
<td>116 ±10.3</td>
<td>72 ±10.7</td>
<td>74 ±9.2</td>
<td>0.22</td>
</tr>
<tr>
<td>PIL</td>
<td>115 ±15.7</td>
<td>103 ±16.3</td>
<td>110 ±13.3</td>
<td>0.02</td>
</tr>
<tr>
<td>STS</td>
<td>122 ±5.1</td>
<td>47 ±5.3</td>
<td>47 ±4.8</td>
<td>0.97</td>
</tr>
<tr>
<td>SF-36 PCS</td>
<td>110 ±10.9</td>
<td>36 ±11.1</td>
<td>40 ±10.2</td>
<td>0.07</td>
</tr>
<tr>
<td>SF-36 MCS</td>
<td>110 ±8.4</td>
<td>54 ±8.7</td>
<td>53 ±7.8</td>
<td>0.37</td>
</tr>
</tbody>
</table>

To further examine the relationships, and the unique effects of RS, SOC, PIL, and STS on mental and physical health, multiple regression analyses were performed for the total sample and for women and men separately. The regression analyses showed that the included variables explained 19% of the variance in mental health for the total sample, and the model itself reached statistical significance even though none of the single predictors showed statistically significant values. When looking at the models for women and men separately, it was found that the model for women accounted for 30% of the variance in mental health and that this model also reached statistical significance. The model for the men accounted for only 6% of the variance in mental health and did not reach statistical significance. It is hard to explain these sex differences. One explanation could be the relatively small size of the male sample, although it should have been sufficient for the analysis. Another explanation could be that the questions are gender biased. The RS, the SOC, the PIL, and the STS had little influence on physical health for either the women or the men.
Paper III examined the relationship between resilience and the factors of health, disease, and social relations. These factors formed the theoretical framework for the study. Each of the factors contained a number of variables, and a number of demographic variables were also included. Univariate analysis (t-tests) and (Pearson’s) correlation analysis were performed in order to uncover associations between these variables and resilience. The variables that were associated with resilience at a level of $p \leq 0.1$ were entered into a regression model as predictor variables. The health factors that met this criterion were: depressed mood, number of psychological symptoms, self-rated general health, death anxiety, independence in ADL, no prescribed drug, and feeling safe and secure. The only disease variable that met the criterion was heart failure (those omitted were cancer, hypertension and stroke). Among the social relation variables, feeling lonely and having a family to talk to were both associated with resilience. Two demographic variables met the criterion of $p \leq 0.1$: living in one’s own housing, and number of children. These predictor variables were entered into a multiple regression analysis model resulting in 10 steps. The findings revealed that depressed mood made the strongest unique contribution to explaining the variance in resilience, followed by no prescribed drug, number of children, psychological symptoms, having family to talk to, and death anxiety. These variables explained 27.5% of the total variation in RS scores, and the model was statistically significant ($p = 0.000$). The adjusted R square value was 0.250. The interpretation of the finding was that a strong resilience among the oldest old was found to be associated with health, mainly represented by absence of depressed mood but also by not being on medication and by the absence of psychological symptoms. A plausible interpretation including the remaining variables could be that raising children in the past gives a meaning to the present by having a family and this produces feelings of being safe and secure in facing the inevitable future; that is, being resilient means living in connectedness with one’s past, present, and future.

The aim of Paper IV was to illuminate the meaning of inner strength as narrated by women and men, 85 and 90 years old, who scored high on scales aimed at measuring phenomena related to inner strength. The text from 18 thematic life-story interviews was analyzed using a phenomenological hermeneutical method inspired by Ricoeur (1976), comprising three methodological steps: naïve reading, thematic structural
analyses and a critical reading leading to a comprehensive understanding (Lindseth & Norberg, 2004).

After the naïve reading with the aim in mind a naïve understanding of inner strength among the oldest old was understood as: Being an oldest old person with inner strength means looking back on one’s life with pride, knowing that one has overcome most of the challenges one has met. It means relying on one’s body, still meeting the challenges of life with faith in oneself, being determined but not too stubborn, and being aware that one can ask for and receive help if it is needed. It means the ability to accept and adjust to a situation, to forgive others, and also to see that something positive comes from the negative — one is learning from life. Being an oldest old person with inner strength means feeling needed, enjoying life, taking one day at a time but still “looking forward”, and being aware of one’s limitations and possible future difficulties. It means being connected with the people of today and also those of the past, by thinking back.

A comprehensive understanding of the meaning of inner strength among the oldest old was *Life goes on – living it all*, meaning that inner strength is openness to life’s many possibilities with its choices and its activities.

Five themes with sub-themes (Table 4) were disclosed in the structural analysis including positions with options for choices. In the theme *Feeling competent in oneself yet having faith in others* the options were handling things on one’s own or putting one’s trust in someone else’s hand. The theme *Looking on the bright side of life without hiding from the dark* enclosed the positions of merely seeing the positive and shut one’s eyes for the negative or be caught in “the dark” where everything is a hardship where there are no bright spots in life. In the theme *Feeling eased and also being active* the positions with choices, concerned working or resting, standing up for oneself or letting go, and taking one day at a time or planning for the future. The theme *Being the same yet growing into a new garment* had the positions of being inflexible and rigid to changes in life circumstances or being open to changes and adjusting, still being the same. Finally the theme *Living in a connected present and also in the past and the future* held being secluded or part of a greater whole, being only in the present or also in the past, and between being alone and being close. Several of the positions in the themes are not antithesis but still there are possibilities of choices to do.
Table 4. Themes and sub-themes from the structural analyses

<table>
<thead>
<tr>
<th>Feeling competent in oneself yet having faith in others</th>
<th>Looking on the bright side of life without hiding from the dark</th>
<th>Feeling eased and also being active</th>
<th>Being the same yet growing into a new garment</th>
<th>Living in a connected present and also in the past and the future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowing one’s own strength</td>
<td>Struggling as part of life</td>
<td>Working as part of life</td>
<td>Feeling as before Changes is a part of life/Adjusting to new circumstances</td>
<td>Being close is strengthening</td>
</tr>
<tr>
<td>Finding help and strength from others</td>
<td>Looking for and finding a positive aspect</td>
<td>Putting one’s foot down and fighting</td>
<td>Being alone is important but feeling lonely is dangerous</td>
<td>Being alone is important but feeling lonely is dangerous</td>
</tr>
<tr>
<td>Trusting in God</td>
<td>Dying as part of life</td>
<td>Taking the days as they come</td>
<td>Feeling an inner peace and being proud about life</td>
<td>Living on/in memories</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Being part of a greater whole</td>
</tr>
</tbody>
</table>
Carver and Scheier (2002) have described that both perseverance and giving up reflect human strength and that the strength is to know when to choose one position or another. Likewise Rose (1990) described inner strength as a “paradoxical coalescence of vulnerability with safety, tenacity with flexibility, resolution with ambiguity, movement with stillness, and emotion with logic” (p. 61) showing different positions. These findings, together with the understanding of the narratives’ atmosphere of contemplation, contentment, calmness, and closeness — that is, a good life as well as a good aging — lead to Aristotle’s Nicomachean Ethics about the virtues and the golden mean, to further illuminate the meaning of inner strength among the oldest old. Inner strength can be understood as the knowledge that Aristotle calls phronesis. Phronesis is knowledge about values and reality, about people and their actions. It is practical knowledge about life that enables an individual to transcend general patterns of behaviour in order to see what ought to be done in a specific situation; and the action which follows is one that aims at the good life (good for humanity, for oneself and/or for others), that is, the action has its aim in itself – in praxis. To help explain what practical wisdom is, Aristotle describes a practically wise person as one who is able to reflect, in a noble way, what is good and beneficial for oneself; not in a selfish way and for the moment, but “about what conduces to living well as a whole” (p. 107) (Aristotle, 2000).

This comprehensive understanding of inner strength was discussed and reflected upon using Erikson and Erikson’s (1997) theory of the eight developmental stages, including the ninth stage. The rather negative and threatening picture that is described in the ninth stage is not present in the understanding of inner strength; on the contrary, inner strength means that the syntonic elements in each stage are salient — e.g. trust rather than mistrust, integrity rather than despair — and this leads to the strength of wisdom. So, in looking at the basic strength as well as the syntonic elements in Erikson’s theory of the eight stages including the ninth, the findings could be interpreted as inner strength among the oldest old is that life goes on by living the whole of the syntonic and strengths. 

Being an oldest old person possessing inner strength means that one can choose to stand up and fight as well as living in reconciliation, a possibility to work hard as well as feeling relaxed. It means having tasks to accomplish, feeling content and proud about one’s life as well as about life itself. It means relying on oneself as well as having faith in others and God (for some). One knows that as a person, one is the same yet accepting and
adjusting to changes. It means that one can choose aloneness and still be connected; it is to be living in the present as well as in the past and in the future. That is, living in a wholeness that includes what Erikson, Erikson and Kivnick (1986) call vital involvement in life, which is a basic condition for “staying really alive” (p. 63) (Erikson & Erikson, 1997). Having inner strength when oldest old thus means having practical wisdom to choose the golden mean.

The participants in the study presented in Paper IV have lived long lives, lives that in many senses can be said to be full. An openness to life has given them a practical wisdom that enables them to go on living a life in wholeness.
METHODOLOGICAL AND ETHICAL CONSIDERATIONS

One of the key aspects of research is the search for results that are trustworthy, that is, valid, reliable, and transferable. Another important issue is that the research must be justified from an ethical point of view. For an investigation to be trustworthy there is a need for rigor in every phase of the research process (Morse, Barrett, Mayan, Olson, & Spiers, 2002) from the planning of the project to the publication of the results. This thesis presents findings that have sprung from a process including many decisions and actions starting long before meeting the first participant. Below, I will describe and reflect on the research process from a perspective of trustworthiness and ethics.

For me, the process started when I was invited to participate in the Umeå 85+ study. The project title was “Salutogenic perspective on oldest old in their last development stage.” Collection of both quantitative and qualitative data was planned. The quantitative data was to be collected by means of questionnaires derived from theories and models, and analyzed by means of statistical procedures. The qualitative data was to be gathered from narrative interviews, and analyzed using qualitative methods such as the phenomenological hermeneutical method used in this thesis.

In projects with extensive data collection where lots of different measures are used, there is a risk of bias due to the order in which the measures are presented to the participants. To minimize variation in outcome due to the order in which the measures are presented, there was an agreement in the research group that the data collection should follow a specific procedure, starting with data more concerned with the issue of “threats against good aging” focusing e.g. diseases, illnesses, symptoms, falls, nutrition, treatment, physical function (cf. von Heideken Wågert et al., 2006). Data collection and several of these assessments could be performed on people with low cognitive levels; and one of the reasons for this order of data collection was that those participants who did not have the ability and strength to answer Likert-type questionnaires and participate in the narrative interviews should not be subjected to unnecessary visits. As MMSE was tested among all the participants, there were discussions over whether a specific cut off limit should be used for answering the Likert-type questionnaires and participating in the narrative interviews, but it was agreed in the research group that the researchers visiting the participant should judge the participant’s ability to give reliable answers to the
questions. It turned out that participants with rather low MMSE scores were able to answer the questions seemingly reliably.

Another methodological consideration was how to administer the questionnaires. As described earlier, a interviewer-administered face to face method was used. Of course, this type of data collection “invites” to a dialogue between the participant and the researcher. Many of the questions on the questionnaires are of a kind that needs to be reflected on, and at such times the researcher functioned as a sounding board. This is in concordance with Mishler (1986), who states that when people are asked questions in an interview situation, they tend to give not only an answer, but also meaning; thus, an answer is given in a context. This was very prominent during the data collection. There is also an ethical issue; we as researchers have been invited to the participants’ homes, and we should show interest in what they have to say and not just in the marks they make on a piece of paper. This sensitivity can enhance the respondent’s feeling of competence and security, thereby causing him or her to answer more freely without adjusting to the researcher and/or the research situation. This is important above all in interview situations, but also in relation to questionnaires. Some questions contain double negations, and it can be hard to know how to answer on the Likert scale; in some cases participants turned to the researcher for clarification: “If I mark a 7 will that mean that I answer…?” This can be seen as a kind of support, a support that probably made the answers more valid (cf. Mallison, 2002). However, as Mishler (1986) writes, one has to be sensitive, which in this case can be understood as being aware of the risk of bias in the form of the researcher’s influence on the participant’s decision-making.

In total, there were about 100 questions to answer, which raises the question of participant fatigue — which is both a methodological and an ethical issue (cf. Gibson & Aitkenhead, 1983). The researchers had to be observant in order to notice signs of fatigue. Mostly, there were no problems with finishing all the questionnaires during one visit, but occasionally two were necessary. On one of the first home visits, to a 95 year old man, I remember that the first three questions on the first questionnaire took 45 minutes to complete! During that time, he told me about how proud he was of his daughter. I remember that I found the situation stressful, and wondered whether he would ever manage to complete the questionnaires. However, after he had finished talking about his daughter, the remaining questions took less time. This also raises the
question of researcher fatigue; how to keep up one’s sensitivity and interest in the situation.

Looking at the findings in e.g. Paper III where the regression explained 27.5% of the variance in resilience model, it has to be recognized that there are properties in resilience that are unexplained. One way of addressing this issue can be to use qualitative methods in order to gain more knowledge.

In the Umeå 85+ study, the collection of data for qualitative analysis was carried out by means of thematic life-story interviews (cf. Åstedt-Kurki & Heikkinen, 1994; Öberg, 1997). The interviews took place after completion of the questionnaires most of the time during a second visit. The intention was that the participants would then feel more safe, secure, and relaxed in the interview situation and thereby feel free to narrate, as the researcher was no longer a total stranger (cf. Domarad & Buschmann, 1995). Narrating episodes from one’s life, and being asked to narrate difficult/hard life situations, can bring up painful memories; it was important for the researchers to be prepared for this and to be observant and sensitive. This was discussed in the research group; additionally, the interviewers were nurses with experience of working with old people.

The research question in paper IV was to illuminate the meaning of the phenomenon of inner strength among the oldest old. In order to do this, it is necessary to start from the lived experiences of the participants. From the planning of the interview to the presentation of the findings, there are many factors which need to be taken into consideration in order to ensure trustworthiness in the findings.

As mentioned earlier, the themes of interest in the interviews were: experiences of aging, aloneness, loneliness, serenity, tiredness/sleep, important life events, difficult/hard/stressful life events, meaning in life, consolation, and forgiveness. When planning for the interviews, it was presupposed that the narratives regarding difficult/hard life events would reveal personal strength. When it came to analyzing the text, however, it became evident that narratives disclosing inner strength were present in most interview themes. This can be an illustration of the observation of Ricoeur (1976), that the fixed text has a “surplus of meaning”.

35
There were three researchers involved in the interviews for Paper IV, and this will have had an effect on the interviews and the narratives; as Mishler (1986) writes, “the interview is jointly constructed by the interviewer and the respondent” (p. 52). The interviewers were all of the same generation and more or less the same socioeconomic background, and all three had previously worked as nurses. However, the fact that two were female and one was male, and the discrepancy in age and socioeconomic background between the interviewers and the participants, almost certainly influenced the interview situation. Randall, Prior and Skarborn (2006) have shown how the interaction between interviewer and interviewee varies depending on the interviewer. In their study, two female interviewers and one male, interviewed older people about their lives. It was shown that, for example, patterns of follow-up questions varied between the interviewers. Whether this contributed to or hindered richer narratives was not elucidated in the study. Another aspect on the relation in the interview situation is that of power and equality. Many interviews were held where the interviewer was a middle age man with academic background interviewing an oldest old woman with just a few years of school background. This situation has of course influenced the interviews. Bhavnani (1993) states that the researcher shall not just take notice of the imbalance in power between the interviewer and the interviewee but also study how this imbalance has effected the interview and the project itself. This has not been done in the Umeå 85+ study. However this issue has often been discussed among the three interviewers.

In an interview which is tape recorded, as was the case with the interviews of Paper IV, the tape recorder can be intrusive in the interview situation, above all at the beginning of the interview; it was obvious to us that the participants (and also the researcher) “forgot about” the tape recorder after a while. This situation has at least two different aspects. For one thing, it can have implications for the order of the questions/themes; they may be arranged so the “easy” ones come first, allowing the participant to become relaxed about the situation. However, there is also an ethical aspect; if the strategy is that the tape recorder is to be “forgotten”, this could be seen as a way of “cheating” the participant into revealing something that she or he did not want to have recorded.

Another methodological question concerning validity that became apparent to us was that the tape recorder should be of good quality as two interviews had to be omitted due to bad recordings. Good recordings as well as
carefully formulated instructions to those doing the transcriptions, regarding not only the verbatim part but also the necessity to note pauses/silences, laughter, and other intonations contributed to rich text which is important for validity.

In paper IV, the structural analysis is the objective part of the analysis of the text. It is a way of validating the interpretations in the naïve understanding (Ricoeur, 1976). A method that is used in qualitative research to establish validity is to present the interpretations back to the participants for checking (Riessman, 1993). This is a suitable method in studies where the findings present the meaning of the participants. In paper IV, which used a phenomenological hermeneutic method, the meaning of the text — or, actually, the meaning in front of the text — is presented (cf. Ricoeur, 1976), so this was not a suitable strategy. Instead, to ensure trustworthiness, my co-researchers/authors “followed me” closely in the analytical process, by validating the themes, ensuring that my interpretation was grounded in the data, and giving me ideas and references to reflect on.

When the analysis and interpretation have come to an end, it is time for presentation of the findings, often in the form of a manuscript for publication. In the analysis and interpretation of the text, there has been the to describe the method thoroughly, including descriptions of how the interpretations were produced, in order to strengthen the trustworthiness of the results (cf. Riessman, 1993). The interpretations have been illustrated with quotations from the interviews in order to give the reader possibilities to follow the interpretation process (Rolfe, 2006).

It is important to keep in mind that this thesis presents “the voices” of a selected sample, albeit a population-based one. The participants were those who met the criteria of being able to participate in narrative interviews and answer questions of Likert type, that is, the healthiest and “strongest” among the oldest old. This can be seen as a appropriate approach for studying personal strength. I have in no way forgotten about the less fortunate, those with multiple diseases and those who are weak; on the contrary, this research is aimed at improving and preventing negative life situations.
REFLECTION AND DISCUSSION

The overall purpose of this thesis was to explore and illuminate inner strength and phenomena related to inner strength among the oldest old.

As shown in Paper II, the participants scored high on the RS, SOC, PIL, and STS. Compared to samples including adults and the younger old, the oldest old participants presented in paper II scored about the same or higher (e.g. Carmel, Anson, Levenson, Bonneh, & Maoz, 1991; Wagnild & Young, 1993; Upchurch, 1999; Sarvamäki & Stenbock Hult, 2000). This indicates that the oldest old had strong resilience and a sense of coherence, had found some purpose in life, and had the ability to transcend.

Another important insight from the findings of Paper II was that the phenomena measured by the separate scales share a common core, as evidenced by the statistically significant correlations between the four scales. This core was interpreted as inner strength, and can be seen as a kind of driving force that enables a person to meet strains and challenges in life, and to overcome adversity; that is, to stand steady, and to get back on one’s feet after stumbling or falling. These concepts — resilience, sense of coherence, purpose in life, and self-transcendence — have all sprung from the attempts to understand the strengths and driving forces of human beings. What then constitutes that common core? When looking at the theoretical descriptions of the concepts that form the basis for the scales, meaning appears to be vital, although it is not so distinctly described in all the concepts. Purpose in life is actually all about finding meaning in life as an essential goal. One of the key components of the concept of sense of coherence is meaningfulness – the motivational component. Antonovsky (1987, p. 22) also considered meaning to be the most crucial dimension in sense of coherence, stating that “without meaning strong comprehensibility or manageability is likely to be temporal.” Likewise, one of the five characteristics that defines resilience is meaningfulness – an understanding that life has a meaning (Wagnild & Young, 1990). Meaning does not form part of the theoretical descriptions of self-transcendence as obviously as in the other concepts, but finding meaning and purpose in life has been described as an outcome of self-transcendence (Haase et al., 1992). In any case, two of the items in the STS questionnaire are concerned with finding meaning, in past experiences and in spiritual beliefs (cf. Reed, 1991a). Thus, finding and seeing meaning in life is an important quality of inner strength, and one which discloses an existential dimension. This
assumption that meaning is a part of the common core is supported by the fact that the Purpose in Life Scale showed the highest correlation coefficients among the scales.

Another common area that is present in the theoretical descriptions of the four concepts is an ego-strength, or a reliable self. Different aspects of self are mentioned in almost every description of resilience; for example, self-confidence (Caplan, 1990), self-reliance (Wagnild & Young, 1990), self-discipline (Beardslee, 1989), self-belief (Rutter, 1987), and self-esteem (Werner, 1982). This was also evident in Paper I, where statistically significant correlation was found between the Self-Esteem Scale and the RS. The two components identified in the principle component analyses of the RS, Personal Assurance and Acceptance of Self (and Life), also point to self as an important dimension in resilience. Sense of coherence as a concept is ego-centred, and a strong self is inherent in a strong sense of coherence (Haase et al., 1992). The theory itself is individualistic, and the concept is formulated from a feeling of confidence that resources to meet adversity in life are available for the individual to comprehend and manage different challenges. Statistically significant correlations have also been found between sense of coherence and self-esteem (Bengtson-Tops & Hansson, 2001) Self-transcendence as a concept is based in self, with descriptions of enhanced feelings of self-worth. Within the concept purpose in life, self is inherent as having will to meaning and searching for meaning (cf. Frankl. 1963). Thus, a reliable self is an important quality of inner strength.

A third common property for at least three of the concepts is that they point to an activity or ability. This activity is the response to the main question which the separate concepts can be supposed to answer. For resilience, this question could be formulated as: “What makes a person recover after adverse experience?” and the activity is bouncing back. For sense of coherence, the question would be: “What makes a person move towards health?” and the activity is to comprehend, to manage, and to strive for coherence. For self-transcendence, the activity is of course expanding one’s boundaries in answer to the question “What is the meaning of transcendence?” Finally, the question for which purpose in life is the answer could be formulated as: “What is the meaning of life?”, and the natural activity would then be to search for and find this meaning.
In addition to the common properties mentioned above, all four of the concepts have showed associations with health and well-being. In this thesis this is shown in both Papers II and III and numerous other studies have showed the same which of some are presented in the background.

It is important to highlight the fact that the oldest old scored high on these scales, as this is a contrasting picture to the one often painted of aging with a constant decrease in functioning and in strengths (cf. Erikson & Erikson, 1997; Baltes & Smith, 2003). Depending on where in the flow chart (Figure 1) one takes one’s departure, the sample presented in Paper II actually represents somewhere between 36% and 56% of the total sample. The findings presented in Paper II also showed that there were no correlations between physical health and the scales aimed at measuring resilience, sense of coherence, purpose in life, and self-transcendence. This finding can be understood from the perspective that transcendence of physical health and functional capacity is possible through adaptive processes (cf. Lang, Rieckman, & Baltes, 2002). The women rated their physical health statistically significantly lower than the men, in line with the findings of the Berlin Aging Study (Smith & Baltes, 1998) in which the oldest old women were found to suffer from more co-morbidity and musculoskeletal illness. The gender difference was also apparent in the unique effects of the RS, the SOC, the PIL, and the STS on mental health. A regression analysis revealed that these scales explained 30% of the variation in mental health scores among women but only 6% among men, even though the women and men rated their mental health the same. The fact that there were statistically significant correlations between these scales and mental health among the women and not among the men can eventually be understood from the perspective that the women had a greater “need” to transcend their bodies. In a study of people’s experiences of chronic illness, Charmaz (1995) concludes that “They believe in their inner strength as their bodies crumble. They transcend their bodies as they surrender control” (p. 675).

In Paper III, the aim was to more closely examine the relationship between resilience and factors of health, disease, and social relations among the oldest old. Rowe and Kahn (2000) identified and suggested two new research directions in the field of successful aging — resilience and wisdom. They write: “Intensive research on the determinants of resilience and the means of increasing it is much needed” (p. 75). The findings in Paper III showed that a depressed mood and psychological symptoms had
a great impact on the variation in resilience score, a finding in line with the findings in Paper II. However, findings presented in Paper III also indicate that factors of social relation and connectedness played a role for resilience among the oldest old. Rutter (1987) and Werner (1982) also identified “social” characteristics in resilient people, Rutter in terms of having satisfying interpersonal relationships and Werner in terms of being socially responsible. The interpretation of the two components in the PCA presented in Paper I, personal assurance and acceptance of self and life, more reflects the self; and the five characteristics that define resilience according to Wagnild and Young (1990) — equanimity, perseverance, self-reliance, meaningfulness and existential aloneness — do not imply that social relations are prominent in their definition of resilience.

In Paper IV the meaning of inner strength was disclosed in five themes: Feeling competent in oneself yet having faith in others, Looking on the bright side of life without hiding from the dark, Feeling eased and also being active, Being the same yet growing into a new garment, Living in a connected present but also in the past and in the future. Each of the themes comprised several sub-themes (see Table 4 in Findings).

As mentioned above, when reflecting on the concepts of resilience, sense of coherence, purpose in life and self-transcendence, from a theoretical perspective, meaning and meaningfulness seemed to constitute one common property of these concepts. If this is a valid conclusion one would expect to find meaning to be visible in the themes/sub-themes in Paper IV. Meaning and meaningfulness were apparent in the narratives, yet not directly visible in the labeling of the themes and sub-themes. An interpretation of this could be that the oldest old in the study had found their meaning in life and that meaning was inherent in them and subsequently inherent in the narratives. Meaning and meaningfulness were both directly expressed by the participants and also inherent in the themes, sub-themes and narratives. Directly it was expressed as e.g. “..it is a meaning with everything.” or “So my purpose in the world has been to stay here and I think that I have had a good purpose and I have done it out of love”. In the theme, Feeling eased and also being active, meaning can be found in the sub-theme ´work is a part of life´ in the engaged way of looking at work where the meaning in life comes from doing good activities. Meaning can also be found in ´feeling eased´, if one ´takes the days as they come´ one does not have to search for meaning, one has found it. In ´feeling an inner peace´ and in ´being proud´, meaning is present. To
be proud about one’s life is to have found meaning in life, likewise with actions. It is hard to be proud over what one has done if one cannot see the meaning of the action. To comprehend that one is a part of a greater whole is to see one’s place in this wholeness and thereby finding meaning. To be virtuous is to be good and good enough in situations and in one’s doing in life (cf. Aristotle, 2000) and if one is aware of that one is good and good enough, then one has found meaning.

A reliable self was also found as a common property in the theoretical reflection. If meaning was not apparent in the themes or sub-themes, a reliable self is. This reliable self is present in ‘knowing one’s own strength’ and also in one’s feeling of safeness and secure in meeting the evitable future. To feel that one is ‘being the same’ in spite of ‘adjustments and changes in life’ circumstances is also a way of expressing a reliable self. However, in the narratives it was shown that reliance in others also was a part of inner strength and they also revealed that ‘being close is strengthening’ which also shows that inner strength among the oldest old is more than a reliable self.

The third property that was judged to be common, in the reflection on the concepts, was activity. Activity was present in all themes, ‘struggling’, ‘working’, ‘adjusting’, ‘finding the positive’ and ‘thinking back’ are examples of activities important for inner strength. The comprehensive understanding of the meaning of inner strength among the oldest old concerns the activity to choose and to choose the good.

What is visible in the findings in Paper IV is that connectedness is vital to inner strength. This connectedness is not that apparent in the theoretical descriptions of the four concepts explored in paper II. However in Paper III, connectedness was interpreted as important for resilience as raising of many children and having a family to talk to were variables that remained in the final step of the regression analysis.

The findings presented in paper IV also showed that there was a perspective of past, present and future in inner strength. This perspective was important for e.g. the connectedness and living in wholeness. This temporal perspective is present in self-transcendence but not clear in the other concepts.
Questionnaires used for the purpose of measuring concepts related to inner strength, and interviews give partly similar types of knowledge and partly different types of knowledge compared to interviews. The questionnaires give, among other things, knowledge about associations with various health variables important to older people. Interviews give a deeper knowledge about the meaning of inner strength. This makes it possible to “draw” a written picture of what it means to be a person with inner strength. A picture drawn from the findings presented in Paper IV could be as follows:

Inner strength means, with an open mind, proudly and at a self-chosen pace, strolling (moving) back and forth on the life path in connection with people and situations from the past and the present not worrying about the future. It means that life goes on – living it all, still “working” full time, helping and being helped, finding new tasks/assignments filling up the time and that the heritage is past on to future and on one’s moving on the life path, in one’s connections with people and situations, it is necessary to now and then choose to slow down or fasten one’s pace, perhaps stop for a while and even change direction in order for a good life to go on. In these choices the meaning of inner strength is to be virtuous by choosing the mean.

This understanding of the meaning of inner strength corresponds in some senses to the defining attributes in the concept analysis conducted by Dingley, Roux and Bush (2000). In the attribute of Growth and transition, strength is revealed in a shift between quiet, calmness and action/movement. This is similar to what is described in Paper IV under the theme Feeling eased and also being active. In the defining attributes A deepening of self-knowledge and Connectedness with others, Dingley, Roux and Bush (2000) describe that spending time with oneself and a connectedness to oneself and to others were recurring themes in literature describing inner strength. Connectedness was also found to be important in inner strength in the findings in Paper IV. Finally the attribute Cognition of one’s needs and sources to meet those needs, described that faith in God and in one’s own abilities and acceptance of help from others were sources of inner strength, this also corresponds to the theme “Feeling competent in oneself yet having faith in others” presented in Paper IV. The metasynthesis of inner strength in women presented by Roux, Dingley and Bush (2002) also showed correspondence to the findings in Paper IV as
e.g. adjusting to new circumstances, giving and receiving help from others, connectedness and activity as parts of inner strength.

**Implications for care**

The oldest old are a very diverse group in viewing e.g. health. In this thesis the voices of those with comparatively good health has been heard. The findings have shown that the participants in general had high degree of inner strength. As inner strength is closely associated to health this is important knowledge in care of older people. In Papers II and III findings were presented, showing mental health in form of e.g. a depressed mood, psychological symptoms and anxiety to be negatively associated to inner strength. Therefore it is important for persons working with older people to be aware of signs of a mental ill-health and to work with the goal of preventing if possible and to cure when that is necessary. As the findings in this thesis are of cross-sectional type there is not possible to answer the question if inner strength prevents a depressed mood or if a depressed mood tears down one’s inner strength. Future longitudinal studies can shed light over this.

It is, however, possible to promote and preserve inner strength among older persons, both among healthier older persons and also among those who are frail. The findings presented in Paper IV showed that having inner strength is to be able to choose. In looking at the daily life in e.g. a nursing home with frail older people promoting and maintaining inner strength is possible during carrying out daily routines. To choose what clothes one should wear, to choose in what degree one wants to participate in the morning washing and dressing is a way of knowing one’s own strength and to feel competent. This is a “training” of one’s physical capabilities in joints, muscles and also one’s capabilities in inner strength, i.e. to practice a holistic view incorporating both body and mind. Inner strength is to be given the time and opportunity to struggle in daily activities. To promote inner strength can be to open up for talking and expressing thoughts of one’s inevitable future and it can also be in the choice between resting and being physically active i.e. having time of one’s own or being together with others in physical and social activities. To promote inner strength can be to look at outburst of anger as putting one’s foot down as signs of inner strength instead of confusion and disturbing behaviour. To find ways to support the possibilities of experiencing connectedness by e.g.
reminiscence and contact with close ones is also ways to promote and maintain inner strength. It has been shown that integrity promoting care among people with severe dementia disease have had a positive effect on these peoples’ strength (Kihlgren, Hallgren, Norberg, & Karlsson, 1996).

It is reasonable to assume that inner strength promoting care with an opening of possibilities for active choices among older persons, will effect the health and well-being in a positive way. Future research can shed light on this.

Today in Sweden there is the ambition that all older people should, to any price, live in their ordinary housing for as long as possible. People that apply for moving to different types of old people's home are by the authorities denied that, until they are so frail that ordinary living is impossible. To promote and maintain inner strength among healthy old people could be to open up the possibilities for choosing when and where one wants to move. Other ways of promoting and maintaining inner strength among healthy old people could be to widening the alternatives for activities addressing old people such as writing, talking about their lives, drawing, relaxing and meditating.

And….

Finally, back to the questions put forward in the background in relation to a good aging. What constitutes success at the age of 85? According to the findings in this thesis success, when being oldest old, is to do virtuous choices resting on practical wisdom. What activities are important for a good aging at the age of 90? To be active when being oldest old is to have a wide perspective on activity. Active is to have an engaged view of work where work is a part of life. Activity is also the time in the armchair, when being alone, thinking back on one’s life in connection with people and event from the past. What is being healthy at 95 or older? Looking at the findings in this thesis, being healthy when 85 years and older means that, in spite of that one easier runs out of steam when working, having diseases of different kind etc., it is possible to be “strong” and experiencing a good aging. A good mental health by not having a depressed mood is closely associated to this. To promote inner strength gives potential for a good mental health and development throughout life which can facilitate to transcend physical health problems.
SVENSK SAMMANFATTNING

Bilden av att åldras och att bli gammal har i forskningssammanhang ofta beskrivits utifrån ohälsa, förluster och svagheter och mera sällan utifrån hälsa, vinster och styrkor. I denna avhandling betonas det senare. De allra äldsta är den snabbaste växande åldersgruppen i Sverige såväl som i övriga västvärlden och ökad kunskap angående ett gott åldrande är viktigt. Det övergripande syftet med avhandlingen var att beskriva och belysa innebörden av inre styrka hos de allra äldsta.


I delarbete II ingick 125 personer från Umeå kommun och i delarbete III 192 personer från Umeå och inlandskommunerna som hade förmåga och var villiga att delta i intervjuer och i att svara på frågor i de ingående frågeformulären. Antalet deltagare motsvarar ungefär 40 % av samtliga personer i de utvalda åldersgrupperna. I delarbete IV presenteras resultat av intervjuer med de 18 personer som hade skattat sig högst på de ovan nämnda frågeformulären och därmed antogs ha en hög grad av inre styrka.

Resultaten av delarbeten II och III visade att nedstämdhet och psykiska ohälsofaktorer har samband med låg grad av resiliens och därmed på den inre styrkan. Resultaten visade även att de allra äldsta skattade resiliens, känsla av sammanhang, livsmening och själv-transcendens lika högt eller högre i jämförelse med studier där yngre personer deltagit. Detta talar för att alla styrkor och förmågor inte behöver minska i takt med att man åldras. Resultaten visade att de fyra skalorna hade starka statistiska samband mellan varandra vilket pekar på en gemensam kärna, denna gemensamma kärna tolkades som inre styrka. Kvinnorna skattade sin fysiska hälsa sämre
än männen. Resiliens, känsla av sammanhang, livsmening och självtranscendens hade också ett samband med psykisk hälsa bland kvinnorna men inte bland männen. Resultaten visade också på att det inte fanns något samband mellan fysisk och psykisk hälsa bland de allra äldsta.

Syftet med delarbete IV var att belysa innebörden av inre styrka hos de allra äldsta och intervjuerna analyserades med fenomenologisk hermeneutisk metod. Resultaten visade att innebörden i inre styrka när man är gammal är att livet går vidare, med en öppenhet inför livets möjligheter av aktiviteter och val, och att leva i helhet. Innebörden i inre styrka är att välja den gyllene medelvägen, d.v.s. att göra goda val, goda för sig själv, goda för andra och gott liv. Inre styrka visade sig i de teman som framkom: Att själv känna sig kompetent men även känna tilltro till andra, Att se livet från den ljusa sidan utan att blinda för den mörka, Att känna lugn och frid men även vara aktiv, Att vara densamma men också kunna växa in i en ny roll, och slutligen temat Att leva i kontakt och samspel med nuet och också i och med det förflutna och i framtiden.

En bild av en äldre människa med inre styrka är att med ett öppet sinne, stolt och med en takt man väljer själv vandra fram och tillbaka på livets stig i kontakt och samspel med människor och situationer från förr och i nuet utan att bekymra sig över framtiden. Livet går vidare med ”arbete på heltid”, man hjälper och blir hjälpt, man finner nya uppgifter och åtaganden och man upplever att arvet förs vidare. På sin vandring på livets stig är det nödvändigt att då och då välja, att sakta ner eller att öka farten, kanske stanna en stund för att sen ändra riktning, allt för att ett gott liv och ett gott åldrande ska fortsätta.

Att som äldre få behålla och även öka sin inre styrka kan ses som en del i att få utvecklas hela livet. Inre styrka hos de allra äldsta är viktigt för ett gott åldrande och en del i upplevelsen av hälsa.
ACKNOWLEDGEMENTS

This thesis has been carried out at the Department of Nursing, Umeå University. There are so many persons who have contributed to the becoming of this thesis. I wish to express my sincere gratitude to everyone that has been supportive in so many ways, making me enjoy, endure and finally complete this work. In particular I would like to thank:

The participants in the Umeå 85+ study for generously sharing some of their thoughts and rich life experiences.

Berit Lundman, my supervisor, for making me feel competent and also for giving me help and strength, for lifting both me and the text up when needed, for enabling me feeling eased when the writing became a part of my life, for encouragement, advice and criticism – for making this thesis possible.

Astrid Norberg, my co-supervisor for inviting me to the project, for all support when struggling became a part of my life, for the engaged work and for knowledge as well as practical wisdom.

Lena Aléx and Regina Santamäki-Fischer for all the enriching discussions and the sharing of ideas, thoughts and knowledge, for the strengthening closeness and the continuous support.

My colleagues at the Department of Community Medicine and Rehabilitation, Geriatric Medicine, Physiotherapy and Occupational Therapy Units who in different phases been part of the Umeå 85+ study. Special thanks to Yngve Gustafson for academic guidance, support and the engagement in the 85+ study and to Petra von Heideken Wägert for all the good collaboration, for warmth and enthusiasm.

My co-authors Christine Brulin, Elisabeth Jonsén, Kerstin Björkman Randström, Anna Kerstin Lejonklou for engagement and enjoyable collaboration.
My room mate Vera Dahlqvist for all the fruitful discussions and the important small talk and Inga-Greta Nilsson for patiently have reminded me about the doctoral student’s duties.

My fellow lecturers and workmates at the department from whom I have felt a great support during my time as a doctoral student.

The fellow doctoral students and researchers at the department who with creative criticism and moderate sensitiveness during seminars helped me to improved plans and manuscripts.

And finally to my family, who means the most to me, William, Noel, Hilda, Ida, Carl, Johan, Anna, Fredrik, Maria, my wife Kerstin, who in so many ways supported and helped me through this, and to my mother Sigrid. You all make me feeling proud about life. Thank you for letting me know that Life goes on, and for giving me the gift of Living it all.

This work was supported by grants from the Vårdal Research Foundation (No. V200379), the Swedish Research Foundation (No. 521-2002-6510), King Gustav V and Queen Victoria’s Foundation, and the Research Foundation of the Faculty of Medicine at Umeå University and Äldrecentrum Västerbotten (Field research centre for elderly in Västerbotten).
REFERENCES


85+ Study. Aging and Clinical Experimental Research, 18(2), 116-126.


