Inner strength as a health resource among older women

Erika Boman

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Department of Nursing
Umeå University, Sweden
www.umu.se

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Till mormor Adele
& mamma Elisabeth

Abstract

Background Long life does not inevitably mean more healthy years; older women have an increased risk of disabilities, diseases and adverse life events. Nevertheless, many older women experience health. This may be explained by possessing resources that promote health, despite adversities. Inner strength is seen as a resource as such. In this thesis inner strength is interpreted according to a theoretical model where inner strength comprises four interrelated and interacting dimensions: connectedness, creativity, flexibility and firmness, and being rated by the Inner Strength Scale (ISS).

Aim and methods The overall purpose of this thesis was to explore inner strength as a health resource among older women. In study I six focus group interviews were performed with older women (66-84 years; n = 29) and the interviews were analysed by a concept driven approach and by means of qualitative content analysis. Studies II–IV had a quantitative, cross-sectional design. A questionnaire was sent to all older women (65 years and older) living in Åland, an autonomous island community in the Baltic Sea, and 1555 (57%) women responded. The data was analysed using descriptive and inferential statistics.

Results In study I, exploring how inner strength and its dimensions can be identified in narratives of older women, connectedness was interpreted as a striving to be in communion, creativity as the ability to make the best of the situation, firmness as having a spirit of determination – "it is all up to you", and flexibility as a balancing act. The results of study II showed that strong inner strength was associated with better mental health, but not physical health. In exploring factors associated with health-related quality of life, fewer symptoms of depressive disorders was the strongest explanatory variable, and together with not feeling lonely associated with better both physical health and mental health. Better physical health was also explained by not having a diagnosed disease, being of lower age and the opportunity to engage in meaningful leisure activities. Better mental health was additionally explained by having enough money for personal needs. In study III the result showed that non-depressed women were likely to have a strong inner strength, as well as never or seldom feeling lonely, taking fewer prescribed drugs, feeling needed and having the opportunity to engage in meaningful leisure activities. In study IV poorer mental health was associated with weaker inner strength in total, and in all four dimensions of inner strength. Symptoms of depressive disorders and feeling lonely were related to lower scores in three of the dimensions (except firmness and creativity, respectively) and

poorer physical health was associated with lower scores in two of the dimensions (firmness and flexibility). Some other health threats were significantly associated with only one of the dimensions (connectedness or creativity), and others were not significantly associated at all.

Conclusion The results add nuance to the notion of inner strength and deepen empirical knowledge about the phenomenon. It is elucidated that the ISS can be used not only to rate inner strength but also to offer guidance as to the areas (i.e. dimensions) in which interventions may be profitable. It is further shown that inner strengths can be identified in narratives of older women. Mental ill health has shown to have overall the strongest association with weakened inner strength among community-dwelling older women. The causality can, though, not be studied due to the cross-sectional design; therefore, longitudinal studies are recommended. Notwithstanding that limitation, the findings can be used as a knowledge base in further research within this field.

Keywords Connectedness, creativity, flexibility, firmness, inner strength, old age, women

Abbrevations

GDS	Geriatric Depression Scale
HRQoL	Health-Related Quality of Life
ISS	Inner Strength Scale
MCS	Mental Component Summary (mental health)
PCS	Physical Component Summary (physical health)
SF-12	Short Form 12-item health survey

Original papers

This thesis is based on the following papers, which will be referred to in the text by their Roman numbers.

I. Boman E, Hägglom A, Lundman B, Nygren B, Santamäki Fischer R. Inner strength as identified in narratives of elderly women: a focus group interview study. ANS Adv Nurs Sci. 2015;38(1):7-19.

II. Boman E, Hägglom A, Lundman B, Nygren B, Santamäki Fischer R. Identifying variables in relation to health-related quality of life among community-dwelling older women: knowledgebase for health-promotion activities. NJNR. Doi: 10.1177/0107408315599691 [Epub ahead of print]

III. Boman E, Gustafson Y, Hägglom A, Santamäki Fischer R, Nygren B. Inner strength – associated with reduced prevalence of depression among older women. Aging Ment Health. 2015;19(12):1078-1083.

IV. Boman E, Lundman B, Nygren B, Årestedt K, Santamäki Fischer R. Inner strength and its relationship to health threats in ageing – a cross-sectional study among community-dwelling older women. *Submitted for publication*.

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PREFACE

When I entered this field of research I had two overarching motives. One was that health care personnel in general are focused on finding problems, weaknesses and deficits among the patients, and further to resolve the problems for the patient [1-3]. And rightly so, if the mission is to treat and cure disease. But should not health care be just as much about health as it is about illness? And what about the value or purpose of nursing other than working within the illness paradigm supporting and promoting the practice of medicine? According to Newman et al. [4] "[n]urses are thirsting for a meaningful practice, one that is based on nursing values and knowledge, one that is relationship centered, enabling the expression of the depth of our mission, and one that brings a much needed, missing dimension in health care." ([4] p. 27). My belief is that this thirst, as expressed in the quotation, could be eased by focusing not only on the problems and deficits of the patient, but also on the patient's resources or strengths, and in this thesis specifically studied as inner strength.

Another motivator has been that I consider Åland, an autonomous island community in the Baltic Sea with today about 29,000 inhabitants, to be a region of special interest when it comes to studying health and strengths among older women. Firstly because the island community offers conditions for performing population-based studies in a well-defined geographic area. Secondly, life expectancy among the women on Åland is high – more than 84 years [5], and looking into the statistics, it seems Ålanders in general have good health. Furthermore, it has emerged that there is a lack of public health data, especially concerning the older population – a knowledge gap of the essence to fill.

INTRODUCTION

> If you ask people on the street to describe older people, you get the impression that ageing involves physical impairment, and brings about losses, grief, depression and other illnesses. Further, ageing involves consuming a lot of medicines and being dependent on care. If I were to listen to that description, I would say that all older people should live in institutions. But we all know that this is not true. Why is this the case?

The text above is a modification of the trigger I used in the first study in this thesis. I met groups of socially active older women and interviewed them. When the women heard the trigger (the original is presented on page 21) they objected widely; they could not recognize themselves in it. And rightly so: growing old may be far from the scenario presented above. And even though some older people are stricken with more adversity than others, they still may express health and well-being. However, it should not be overlooked that there are older people who have been inequitably afflicted by hardship and are more or less unprotected from suffering. In old age, women are considered to be especially exposed to threats affecting health. Women live longer than men; however, long life does not inevitably mean more healthy years [6]. Older women have an increased risk of disabilities, diseases and adverse life events in comparison with older men [7-12]. For health and social care it is important to have knowledge about the ageing population and factors associated with health to be able to plan for health-promoting activities – activities that are interpreted to be of great importance in meeting the challenges that come with an ageing population. In promoting health, I find it valuable to focus on resources that can underpin older people themselves in meeting the sometimes inevitable hardship that accompanies growing old. Inner strength can be a resource as such. Thus, this thesis is about exploring inner strength as a health resource among the population understood to be most afflicted by adverse health events, yet still living the longest, that is, older women (65 years and older). It is also about achieving an overarching interpretation of health and factors associated with health among an yet scarcely studied population, namely, older women living on Åland.

BACKGROUND

Growing old

Growing old can be seen as a natural and gradual process without remarkable features [13-15]. To actively participate in life may enhance feelings of "staying in tune" and being needed [16]. It can be about keeping going, being able to contribute to society and feeling good about oneself [17] – continuing "leading life as usual" [14, p. 264]. However, growing old as a natural and gradual process is understood to require some level of health potential [17]. Mobility problems, as well as visual and mental functional impairment, have been addressed in particular as creating difficulties in accomplishing valued activities [17]. Still, people enter old age with a lifetime of valuable experiences – experiences that have shaped and transformed the person's personality and which can be used as resources when dealing with the vicissitudes that follow old age. This means that, depending on personal experiences, the same circumstance may be unbearable for some, and tolerable or even beneficial for others [18]. Some people have resources to handle adversities successfully and thus keep on going without remarkable features, and even experience health despite hardship [19, 20].

Growing old can also be seen as a period of life evaluation, philosophical reflection, and increased wisdom and maturity [13-15, 21, 22]. To experience health while growing old, an inner experience or mental process of reviewing one's life (i.e. reminiscence) can be of relevance. As the past marches in review, it may be reflected upon with reconsideration of previous experiences and their meaning, often with attendant revised or expanded understanding. This process can contribute to giving new and significant meaning to one's life and may also prepare one for death, mitigating one's fears [14, 23]. Thus, growing old can mean being intertwined with time, with the whole life course [14, 16, 21]. Growing old can further be about taking one day at a time, being unable to pursue goals in life as before, and accepting irreversible changes [15, 24]. It can involve self-acceptance and emotional intimacy rather than extrinsic values concerning money, physical attractiveness and popularity [25]. Growing old may thus contribute to knowing what values are of importance in life and to pursuing such objectives with a more mature sense of purpose than earlier in life [21, 25]; that is, satisfaction or fulfil-

ment in old age may be experienced as a consequence of achieving greater wisdom over the life course, and wisdom, rather than objective circumstances, has a greater impact on satisfaction of life [18].

Old age can also be seen as a period of increased freedom, new interests and fewer demands [13]. In qualitative studies among older women this has been expressed as appreciating each day in its own right [16], or being able "to get up and do as much as you want when you want to" [17, p. 933]. Remaining free and independent has emerged as an important contributor to better health [17], as has participating in meaningful leisure activities [26]. Later life can further be a time for personal growth through expansion and exploration of new leisure activities [27]. It can involve opportunities to learn, and be a time to "get to the root of things" [17].

Growing old can further be seen as a period of losses, both interpersonal and job related [13], bringing about a feeling of being forgotten and alone as well as experiencing that one's body is changing [14, 15]. Losses in relation to the ageing body and social network will be presented in more detail later; however, quotations such as "It's not the golden years, it's definitely the rusty years" and "I think I just kind of fall apart" express how diseases and disability can effect health while growing old [17, p. 934]. Loss of social network can be related to losing friends to disease and death, but one's social network may also be reduced when retiring. Retirement can further involve an experience of being no longer needed or a vital part of society; "'Oh, I'm a pensioner', oh that's it, you know, you're a pensioner, you're nothing, you're lower than the lowest" [28, p. 207]. In general, retirement also means lower income. Not having the financial resources to be able to do things one has anticipated doing can be a disappointment while growing old [17].

Thus, the feature of growing old has infinite variations, and ageing can be perceived differently from person to person. This means that as a group older people can be interpreted as being a most heterogeneous group in our society.

Development while growing old

There are several theories related to development while growing old. Here, some of the theories that are interpreted to be of relevance for the perspective in this thesis will be presented.

In the theory of human development, Erik Homburger and Joan Erikson describe a developmental process by which the person's maturity grows through nine

crises or development stages [29]. In each stage, the person confronts, and hopefully masters, new challenges. The eighth and ninth stages are associated with old age. The eighth stage includes a retrospective outlook on what one has achieved in life and concerns the crisis between integrity and despair, resulting in wisdom or disdain. In the ninth stage the crisis between integrity and despair deepens, referring to living with a body that continues to lose its autonomy, where independence and control are challenged and self-esteem and confidence weakened. Through all development stages the conflict and tension are sources of growth, strength and commitment. In the extended version of *The Life Cycle Completed* Joan Erikson has added a chapter on the theory of gerotranscendence and refers to the study how aged persons face the deterioration of their bodies and faculties [29].

Cohen [30] compliments E.H. Erikson for being one of the first influential thinkers to assert that some kind of psychosocial development occurs while growing old. Yet, Cohen comments on the fact that the majority of the stages in the Eriksonian theory are related to the first part of life. Cohen therefore responds to the challenge to continue the Eriksonian work on development in mature life, presenting four development phases on psychosocial development in the second part of life. Cohen states that people enter and pass through the developmental phases under an "impelling force of inner drives, desires, and urges that wax and wane throughout life" [30, p. xvii]. The force is called an "inner push" – the fuel that motivates development [30]. The first developmental phase is related to midlife re-evaluation, engaging people of about 40 to 65 years old in questioning what is true and meaningful in their lives. This phase is followed by the liberation phase, common in the late fifties into the seventies; a time to free oneself from earlier inhibitions or limitations, a time to experiment and be innovative: "If not now, when?" This phase is followed by the summing-up phase, commonly introduced in the late sixties through the seventies and eighties. It is a time for recapitulation, resolution and review. Autobiographical summing up is common, as well as volunteerism and philanthropy. Finally, the last phase is characterized by the French phrase "encore" – again, still, continuing, characterized by a desire to go on enabling new manifestations of creativity and social engagement [30].

Another perspective of development in ageing is the model of selection, optimization and compensation [31]. Baltes and Baltes [31] divide ageing into normal, pathological and optimal aging. Normal ageing refers to ageing without biological and mental pathology, whereas pathological ageing is characterized by an ageing process dominated by medical aetiology and syndromes of illness. Optimal ageing, on the other hand, refers to the idea that older people possess much latent

reserve capacity, but that to enable this capacity, and to age optimally, development-enhancing and age-friendly environmental conditions are required [31]. It is understood that individual and social knowledge enrich the mind and can compensate for age-related decline. However, with age, the balance between gains and losses becomes increasingly negative; the range of the latent reserve capacity and the ability to adapt decrease, and finally, the self in old age remains a resilient system of coping and maintaining integrity [31]. The model takes a global view that all stages in human development include a constant seeking to master life through application of the three components of selection, optimization and compensation. Selection refers to developing and choosing goals, optimization to the application and refinement of goal-relevant means and compensation to the substitution of means when previous means no longer are available [31-33].

In the theory of gerotranscendence Tornstam [34] presupposes that aging is characterized by an individual process of maturation and wisdom that, when optimized, brings new perspectives on life. The individual gradually changes basic conceptions, becomes less self-occupied and more selective in choices of social and other activities, has an increased need of solitude and develops a feeling of becoming a part of a larger context and being a part of the universe. This involves a process by which the individual experiences a redefinition of self and relationships with others [34]. The theory of gerotranscendence can be interpreted as having similarities with the disengagement theory [35], but there are major differences. Disengagement implies turning inwards, using passive coping strategies and social withdrawal ("social breakdown"), whereas gerotranscendence implies a new definition of reality: multiple coping patterns suitable for the older person, social activities where solidarity is of importance and social activities are carefully chosen by the older person [34].

To summarize, growing old means being exposed to circumstances in life that propel development. However, ageing does not just mean development and growth of the person; threats related to health also tend to grow.

Threats associated with growing old

From a physiological perspective cumulative molecular and cellular damage occurs in the ageing body. This damage is influenced by genetic and environmental factors, leading to a reduced physiological reserve in several of the body systems (i.e. in endocrine, immune, skeletomuscular, cardiovascular, respiratory and renal systems as well as in the brain) [36]. When physiological decline reaches

an aggregated crucial level, frailty[1] becomes evident. The main consequence is increased risk for multiple adverse health-related outcomes [37]. Frailty is more prevalent among women than men [36], and overall older women are more disabled and report more health problems than men of the same age [7-12].

Further, the bodily changes do not only bring about impaired physical condition. There is also a strong association between functional disability and poor mental health [38, 39]. Older adults are particularly threatened by mental health difficulties, in part due to age-related changes to the brain and in part because of the multitude of changes that occur with ageing [40]. In general, older women report more depressive symptoms than older men [8, 11, 12, 41]. Late-life depression is also associated with old age, being single, somatic illness, poor self-rated health, functional and cognitive impairment, low degree of education, lack or loss of close social contacts, not feeling valued and history of depression [41-43]. Further, late-life depression is common, under-recognized and undertreated [41, 44-46] – i.e. depression is understood to be a major health threat among older women. Age-related changes to the brain may also bring about cognitive impairment [36], and even mild cognitive impairment is associated with poor health and not being as active as earlier [47, 48].

Further, old age is in general accompanied by loss of social network members. As women outlive men, spousal loss is common [10, 11]. The loss may threaten multiple dimensions of health, and the effects are long term rather than transient [49]. Loss of other network members is also seen as a threat, having the power to propel older people towards bad outcomes [50]. Although capacity for adjusting to loss remains while growing old, and can even provide opportunities for self-knowledge and personal growth [51], the range of options is often more limited for older persons due to multiplicity of losses, limited time and diminishing functional abilities. The ability to adjust is further diminished if the old person is suffering from dementia or different psychiatric conditions [51]. Further, being unmarried, living alone and being childless emerge as being associated with lack of support, loneliness and poverty [52-55]. In general, old women have an impaired economic situation, as well as lower education, compared with old men [11, 16], both being associated with poor health perception [56, 57].

Another threat in ageing is the view of older people in the society. Youth is still the standard held in highest esteem. Stereotypic perceptions of "the old" underpin

1 An age-associated biological syndrome characterized by decrease in biological reserve and resistance to stress due to decline in several physiological systems.

ageism and may affect the person growing old. Many have problems overcoming the deep-rooted stereotypes and discriminative attitude, and the cumulating effect of prejudicial and discriminative attitude to older people may manifests itself in negative tendencies in their entire mentality and behaviour. These tendencies are very strong as far as motivation, mental welfare, goal-setting, self-concept and emotional sphere are concerned [58]. Gergov and Asenova [58] state that "[m]any seniors start to believe the stereotype which leads to the lowering of their own self-esteem as they are afraid that their behaviour might prove the stereotype right. Their own self-image in most of the cases blocks their actual abilities and determines their further mental development as negative." [58, p. 73].

To summarize, being an older women means being exposed to threats concerning different aspects associated with health and quality of life; threats that may have a greater negative impact than earlier in life. On the other hand, one may enter old age with a lifetime of experiences that may be an asset in adjusting to life circumstances and in developing while growing old.

Conceptual framework

The conceptual framework of this thesis has its origin in health resources and processes that can promote health (cf. salutogenic perspective [59]). Thus, the pathogenic, disease-oriented perspective and the clinical diagnoses are not the centre of interest here, yet threats diminishing the ability to handle adversities cannot be foreseen. It is about studying health and determinants of health among women who are in the process of growing old. It is about knowing more about resources that may promote health, and in this thesis, more specifically, inner strength as a resource as such. It is further about adding life to years, more than adding years to life, focusing on quality of life in relation to health, in this thesis interpreted as health-related quality of life (HRQoL).

The theoretical framework of HRQoL is largely based on a multidimensional perspective of health as physical, psychological and social functioning and well-being [60], prerequisites for a person to meet the day-to-day demands of life and thereby fulfil needs and desires [61]. HRQoL can be self-rated and can be a reliable complement to other assessments of a person's health, as self-rated health measures are reported to give results that are broadly consistent with those based on so called objective measures [62]; a decline in self-rated health might even capture physiological changes before and beyond the disease diagnosis [63]. Thus, health is in this thesis interpreted as being more than absence of disease; health refers to an integrated concept of well-being (cf. [64]). Health can be defined as

> a dynamic state of wellbeing characterized by a physical, mental and social potential, which satisfies the demands of a life commensurate with age, culture, and personal responsibility. If the potential is insufficient to satisfy these demands the state is disease. This term includes sickness, illness, ill health, and malady. [65, p. 336]

The term potential in the definition refers to all capacities to handle the demands, and can be seen as an individual determinant of health. In general, a person in good health has greater possibilities to respond to all sorts of challenges than a person in ill health. The potential also has much to do with the person's history, as it is related to innate constitution, including genetic background and previous personal conduct that influences health [65]. The potential can be divided into (i) biologically given potential, which initially results from genetic constitution and prenatal development, and is greatest at the time of birth and diminishes thereafter, and (ii) personally acquired potential, referring to every potential a person can acquire during life, such as immunological competence, physical abilities, learning and other skills. The personally acquired potential is quite small at birth, but increases rapidly, and if cared for, may grow throughout life (Figure 1). However, if neglected, the personally acquired potential may also diminish. The growth lies to a great extent within the power and responsibility of each person and of the person's social context [65]. The personally acquired potential is in this thesis referred to as resources of health or strengths.

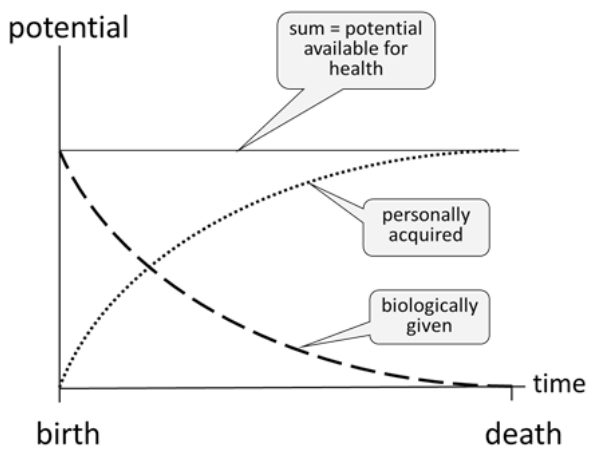

Figure 1. Graphic presentation of the potential throughout life [65] (reproduced with permission of the author).

In the theoretical framework by Bircher [65] the potentials are to be related to the demands of life. The factors that determine the demands vary throughout life [65, 66] and refer to physiological demands as well as psychosocial and environmental demands [66].

Health as movement and development

In the framework presented by Bircher [65] health is interpreted as a movement ("being health") as opposed to a state ("having health") (cf. [67, 68]). Health can further be seen as something desirable: health as a goal. But health can also be seen as a mean to achieve other goals [67, 68]. Health and ill health can be understood in relation to each other as two poles on a continuum, with an ongoing movement between the poles [59, 69]. The movement can be asserted to be the relationship between one's resources to handle a reluctant body (i.e. biologically given potential) and the variety of demands one stands before in everyday living. For older persons it may be important to reduce the demands, to achieve balance between demands and the potential to perceive health [59]. The movement can further be asserted to be the relationship between resources and goals; health as a development or movement can be related to balancing resources and goals in relation to each other. Nordenfelt [70] suggests that one is healthy if, and only if, one has the ability, given the standard circumstances[2], to reach one's vital goals [70]. A movement towards ill health may be a response to unsuccessful balancing, that is, the demands or goals may be too high or too low in relation to the resources (cf. [68]). Health as a movement and development can also be understood from a life-world perspective; biologically given potentials, demands and goals, as well as resources change during life, that is, the situation today differs from the situation a month ago, a week ago or even perhaps a day ago (cf. [68]). Thus, the dynamic relationship between, respectively, the resources and the biologically given potential, and goals and demands, is crucial to health (cf. [70]).

Supported by the model by Bircher [65, 66] and similar conceptualizations presented above, this thesis take a standpoint in the personally acquired potential, referred to as resources or strengths and in particular, to inner strength.

Inner strength

The phenomenon of inner strength has been studied from different perspectives. As early as in the early 1990s, Rose was interested in the meanings, qualities and

2 Standard circumstances are not related to statistically normal circumstances, but rather to the cultural norm [70].

structures of the lived experiences of inner strength [71]. The study by Rose was later encapsulated in a middle-range theory of inner strength in women [72-74]. The theory was developed through a series of qualitative studies focusing on women with chronic health conditions – how their individual strengths facilitated growth and recovery – providing a framework for understanding the experiences of women who face a challenging life situation or chronic health conditions [75].

Inner strength as a phenomenon and concept has been of interest in various qualitative studies; in relation to women with a history of post-myocardial infarction [76], in women with HIV infection [77] and in critically ill patients [78]. A few quantitative studies have interpreted and measured inner strength with somewhat divergent results. In two studies the female sex was associated with lower inner strength scores [79, 80], but Moe [81] reported no significant differences between genders [81]. Rustøen et al. [82] found that patients with cystic fibrosis considered themselves to have stronger inner strength than the general population. This was interpreted as disease and serious illness might lead to rethinking of what is important in life and redefining of values, thus leading to growth and strength [82]. On the other hand, Lundman et al. [83] found that the prevalence of some other chronic diseases was associated with lower degrees of inner strength. Similar results were found by Viglund et al. [84]. A strong inner strength is further associated with better overall self-rated health [84] and more satisfying relationships among the oldest old [83] as well as increased quality of life among cancer survivors [85]. Further, Nygren et al. [86] suggest that the oldest old have inner strength at least in the same extent as younger adults. Other findings suggest that among older people inner strength seems to decrease with age [79]. To summarize, inner strength has been studied from different conceptual frameworks, among different populations and the results are not conclusive.

In a study by Nygren et al. [86] a statistically significant correlation was found between measures of sense of coherence, resilience, purpose of life and self-transcendence among the oldest old in northern Sweden. It was concluded that these salutogenic concepts had a common core that could be described as a person's inner strength. Further, Lundman et al. [87], through a meta-theoretical approach, developed a model of inner strength, and this model is used as a conceptual framework for inner strength in this thesis. The theoretical model is composed of four interacting and interrelating dimensions: connectedness, creativity, firmness and flexibility. Connectedness involves engagement, commitment and meaningful involvement with people, things, context, society and the universe. Connectedness further includes willingness and ability to reach beyond oneself and experi-

ence communion with others or connectedness with the universe. Creativity means having good problem-solving skills and the ability to think and act in various ways – the capacity to adapt. It also implies a predisposition to struggle to influence outcomes and to learn, a refusal to sink into passivity and avoidance, and a belief that changes provide opportunities for growth. Creativity also means being able to use one's resources to transcend body, time and space. Firmness refers to having self-discipline, self-esteem, awareness of one's boundaries – a view of the world as predictable, structured and lawful – and existential courage to cope with stressful situations instead of giving up. Flexibility involves resisting and enduring when life is experienced as hard and demanding, as well as transforming personal tragedies into meaningful experiences. It means, moreover, to extend oneself beyond constricted views of self and the world.

Based on the identification of the four dimensions of inner strength, Lundman et al. [80] further developed a questionnaire, the Inner Strength Scale (ISS), aiming to measure each dimension and thereby a person's degree of inner strength (Appendix). The scale offers measures preferable in quantitative research, for example, exploring inner strengths in relation to age, cultural differences and health measures (cf. [79, 84]).

Thus, inner strength seems to be a health resource of importance while growing old; a resource of relevance for development in ageing, and an asset in relation to diminishing biologically given potentials, common health threats and demands in ageing.

Settings and study context

The studies included in this thesis are performed on women living on Åland. Åland is an autonomous, Swedish-speaking island province in Finland, with more than 6700 islands and at this time about 29,000 inhabitants [88]. The majority of the population lives on the main island (about 40% in the city of Mariehamn and 52% in rural areas), and about 8% lives in the archipelago [89]. An increasing proportion of older people means that Åland is expected to have the highest dependency ratio in the Nordic countries along with Finland – people over 65 will account for half of the adult population in 2030 [5]. Furthermore, Åland has a low unemployment rate and high GDP per capita compared with other Nordic countries [5].

As a self-governed area, Åland has legislative authority over health care and medical treatment as well as social welfare [90]. As in other Nordic countries, health care is publicly provided and largely financed by taxes, and Åland has

well-established systems for primary care [3]. The basic philosophy in caring for the old is that older people's interests and needs should be in focus [91]. The ambition is that the majority of the older population (90% of those over 75 years of age) have the opportunity to grow old in the home of their choice [91].

In general, Ålanders seems to have good health. Compared to other provinces in Finland, the morbidity index[3] is lowest in Åland [92]. Some other health-related data are produced by Statistics and Research Åland (i.e. bed-days in hospital, requests for home care and elderly home placements, and causes of death) [89]. Comparative data with other Nordic countries are compiled by the Nordic Council of Ministers, and furthermore, some local public health reports have been published. However, there is a lack of health data when it comes specifically to the older population living on Åland, including the older women [93].

Older women living on Åland

Women on Åland have for centuries been affected by circumstances related to living in an island community.

> "The Ålandic woman is generally vigorous and daring. The conditions, especially the increasing seafaring, have made her this way. She may sometimes be seen steering the plough as well as wielding the scythe, and may equally be seen driving the wagon as well as helping with the nets." [translated from Swedish] [94, p. 82].

In the beginning of the 1900s Finland and Åland were part of Russia, but in 1917 Finland became an independent state, and in 1921 the League of Nations approved making Åland an autonomous province. Agriculture was at the time one of the main industries in Åland. It resembled the agricultural industry of the mainland, but was still distinguished by the small domestic market and the distance to the main market on the mainland. Many men had to go across the sea to sell their goods, leaving the women responsible for taking care of the farming and household [95, 96]. The other main industry in the early twentieth century was shipping. The seafaring men were often away 12 to 18 months and at home for a few weeks up to a few months. In the men's absence the women adapted to taking care of

3 The morbidity index is calculated based on the mortality rate and the percentage of the population being of working age yet receiving disability pension, as well as the percentage of the population entitled to reimbursement for drugs and nutrition preparations. The index is standardized for age and sex, which means that it is possible to make regional comparisons, regardless of differences in age and gender structure.

daily life with all that it entailed [95, 96]. The oldest Ålandic women can therefore be said to have lived in many ways a strenuous life, which was also affected in various ways by the Second World War (1939–1945). As Åland was a demilitarized zone, the province was not affected directly by the war, but rather indirectly, by, for example, lack of supplies.

Today, approximately one out of ten of the Ålandic population are older women (65 years or older) [88]. Among the youngest old (65- to 74-year-olds), only a few per cent are in need of long-term solutions of health and social care services. However, the need increases with age; of the women aged 85, nearly 40% are in need of either care in a nursing home or service apartment, or care of a relative [97]. Further, older women are the most frequent clients in the public health care [97]. The Ålandic older woman does not always live in the best financial situation; the pension for the Ålandic women is less than 70% of what the men receive, and the largest proportion of the relatively poor in Åland are found among the older population, with women being at greater risk [98].

Rationale for this thesis

The conceptual framework of this thesis has its origin in the salutogenic perspective, focusing on resources that may promote health, in this case, among older women living on Åland. Entering this field, it seemed relevant to have knowledge about health in the current population. Here I came across a blank space, as there turned out to be a lack of health data concerning older people living on Åland – a knowledge gap to fill. Moreover, studying HRQoL, specifically among older women in this region, is considered to be of special interest; the morbidity index for this province is the lowest in Finland and compared with other Nordic countries, women on Åland are expected to live longest. Still the older women are in most need of social and health care services.

The main interest in this thesis is to study health resources, and the resource of specific interest in this thesis is inner strength. Previous research on the phenomenon is not conclusive; thus, there is a need to explore inner strength further. It is well known that adversities threatening health while growing old are common, and older women are especially exposed. However, it is unclear how these threats may be associated with inner strength. Further, the relationship of inner strength and depression is of specific interest, as depressive disorders are understood to be one of the greatest threats to health among older women. Moreover, the ISS is considered to be a useful tool in assessing inner strength. However, using a questionnaire might not seem appropriate in every situation. It is therefore also relevant to render other possibilities for identifying inner strength.

AIM

The overall purpose of this thesis was to explore inner strength as a health resource among older women.

The thesis is built upon four studies with the following specific aims:

Study I To explore how inner strength and its dimensions, as described in a theoretical model, can be identified in the narratives of older women

Study II To explore health-related quality of life and associated factors among community-dwelling older women

Study III To explore whether inner strength is independently associated with a reduced prevalence of depression, after controlling for other factors known to be associated with depression

Study IV To explore the relationship between inner strength and health threats among community-dwelling older women

MATERIALS AND METHODS

Design

The thesis is built upon four studies, one qualitative study and three quantitative studies. In study I focus group interviews were performed to explore how inner strength and its dimensions can be identified in narratives of older women. In study II the aim was to explore HRQoL, partly because health data among the current population were found to be scarce, but also to explore factors that may promote health. Thus, a scale rating HRQoL was used as dependent variable and the ISS, together with a set of factors interpreted to be of relevance for HRQoL, as independent variables. Study III explored whether inner strength was independently associated with depression. The women were categorized as depressed or non-depressed, and the ISS was used as independent variable together with other known risk factors associated with depression. In study IV the aim was to explore the relationship between inner strength and its dimension and health threats among community-dwelling older women. Inner strength and its dimensions were used as dependent variables and factors known as health threats were used as independent variables. An overview of design, participants and analysis of the included studies is presented in Table 1.

Table 1. Overview of the design, participants, data and analysis

Design	Participants	Analysis
I. Qualitative Interview study	n = 29 Mean age 74.6, SD 5.0	Concept-driven approach Qualitative content analysis
II. Quantitative Cross-sectional	n = 1023 Mean age 72.9, SD 6.8	Descriptive statistics Multiple linear regression analysis
II. Quantitative Cross-sectional	n = 1452 Mean age 73.9, SD 7.2	Descriptive statistics Logistic regression analysis
II. Quantitative Cross-sectional	n = 1270 Mean age 73.1, SD 6.8	Descriptive statistics Robust multiple linear regression analysis

Sampling and participants

In study I focus group interviews were performed within pre-existing groups. The respondents were selected through purposive snowball sampling [99] by contacting different kinds of activity groups (e.g. sewing circle, charity organization, choir). Women aged 65 and older were asked to participate, and in total, 29 women participated in six different focus group discussions. The size of the groups varied from four to seven people. The age of the participants varied from 66 to 84 years (mean 74.6 ± 5.0 years). Eighteen of the women were married, one woman lived apart, and ten were widows. The women lived in different areas of Åland (55% in the city, 39% in rural areas and 14% in the archipelago).

Studies II to IV are based on a postal survey. All women at the age of 65 and older (born 1945 or earlier) living in Åland in 2010 were invited to participate by filling in a questionnaire (n = 2724). After one reminder 1555 women had agreed to take part in the survey (response rate: 57%) (mean age 74.4, SD 7.4, range 65–101 years). The mean age of those who did not respond to any part of the questionnaire (n = 1169) was 77.5 years. Of the responding women 46% lived in the city, 44% in rural areas and 10% in the archipelago.

Study II focused on HRQoL among community-dwelling older women; thus, women who had not filled in the HRQoL questionnaire, the Short Form-12 Health Survey (SF-12) (n = 448) were excluded, together with women who lived in service flats or nursing homes or who had not registered their housing condition (n = 84). This gave a total of 1023 participants. The non-respondents to the SF-12 were significantly older (mean age 76.4, SD 7.2 years) than the respondents (mean age 72.9, SD 6.8 years) ($p < 0.001$). The non-respondents were to a lesser extent married or divorced and were more often widowed ($p < 0.05$).

In study III the main interest was depression, and therefore, non-respondents (i.e. more than five missing items) on the Geriatric Depression Scale (GDS) were excluded (n = 103), ending up with 1452 participating women. The non-respondents to the GDS were significantly older (mean age 81.4, SD 7.7) than the respondents (mean age 73.7, SD 7.2) ($p < 0.001$), were more likely to live alone ($p < 0.001$) and more likely to have a diagnosed disease ($p < 0.05$).

Study IV focused on inner strength among community-dwelling older women. Thus, non-respondents to the ISS (n = 230) were excluded, together with women who lived in service flats or nursing homes or who had not registered their housing condition (n = 55), ending up with a total of 1270 participating older

women. The non-respondents to the ISS were significantly older (mean age 77.8, SD 8.8) than the respondents (mean age 73.1, SD 6.8) ($p < 0.001$).

Data collection

Focus group interviews

The interviews were conducted in premises where the groups usually met, except for one group that preferred to meet in a conference room at Åland University of Applied Sciences. The women were given the information that this interview study would be part of a bigger project exploring inner strength and its relationship to health among older women. Before the interviews started, the women were asked to tell something about their background. The interviews were moderated by the author of this thesis and were started up with the following trigger:

> In the literature, you can read that you are old when you are 65 years and above. According to that definition, you are all regarded as old, as far as I can see. If you ask a person on the street to describe older people, you can hear that aging involves physical changes, that aging brings losses and grief, depression and other illnesses. Ageing also can involve consuming a lot of medicines and being dependent on care. If I were to listen to that description of older people, I would say that all of you should be staying in a retirement home. And yet you are here. How is this possible? What do you think?

The decision had been made not to lead the informants directly into the concept of inner strength but to start with the trigger to get the women to speak freely, despite a perception of the old as frail and dependent. It was presupposed that the women would give expressions of inner strength emanating from this perspective. The first interview was seen as a pilot, and the trigger was interpreted as fulfilling the intent. A second interview was conducted with the same group after approximately two months to clarify some remaining questions, and to test alternative and follow-up questions before the forthcoming interviews. As the quality of the pilot interview was interpreted as high, it was decided to include them in the study. The other groups were interviewed only once.

One task for the moderator was to keep the discussion centred on the actual topic, and further, to ask follow-up questions and especially checking from time to time to confirm that the informant's meaning was comprehended correctly. Another task was to see to that all women in the group had the possibility to express their opinion. All spoke freely, though some women were more pensive.

The interviews, which lasted between 65 and 80 minutes, were tape-recorded and transcribed verbatim by the same person who had moderated the interviews (i.e. the author of this thesis).

Questionnaire

The questionnaire was sent by post along with a prepaid response envelope. The questionnaire included three scales: the ISS, the SF-12 and the GDS, as well as various background characteristics considered to be of importance for the experience of health and inner strength.

The Inner Strength Scale. The ISS [80] includes 20 items, covering five assertions related to each of the four dimensions of inner strength (i.e. connectedness, creativity, firmness and flexibility). The items are positively phrased and responses are registered on a Likert-type scale ranging from 1 to 6 ("totally disagree" to "totally agree") (Appendix). Scores within each dimension can vary from 5 to 30, and total ISS scores range from 20 to 120, with higher scores denoting stronger inner strength [80]. When analysing the results, three missing values were accepted and were replaced with the mode value of the responses of the participant. The ISS has been found to be a valid and reliable instrument for obtaining a multifaceted understanding of inner strength [80]. In the current study Cronbach's alpha for the ISS total was 0.92, and for connectedness 0.78, for creativity 0.86, for firmness 0.82 and for flexibility 0.72.

The SF-12 Health Survey. To explore HRQoL the SF-12 [100] was used; a short form of the SF-36 [101] comprising 12 questions on quality of life in relation to health. Some items on the SF-12 are scored as absent/present, while others are scored on a Likert scale with ranges varying from item to item. Two sum-scores – the physical component summary (PCS, physical health) and the mental component summary (MCS, mental health) – are generated, with higher scores indicating better HRQoL. No missing values were accepted when analysing the results. The SF-12 survey has been shown to be psychometrically valid and reliable among older adults living independently [100, 102].

The Geriatric Depression Scale. The GDS was used to estimate depression [103]. In the studies in this thesis a shorter form of the scale was used, the 15-item version (GDS-15) [104] with a possible range of scores from 0 to 15. According to Sheikh and Yesavage [104], scores of 5 or higher indicate depression. Scores below 5 are accounted for as symptoms of depressive disorders. The GDS-15 is interpreted to be a well-validated tool for screening depression among older

people [104-107]. The GDS has been shown to be useful for overall assessment of depressive symptoms, even among very old people with impaired cognitive function (those with Mini-Mental State Examination scores of 10–17) [108]. In studies III and IV one to five missing items on the GDS led to recalculation; for example, if a person answered 12 of the 15 items and reported a score of 3 points, the total score was imputed to be $\frac{3}{12} \times 15 = 3.75 = 4$ (Aging Clinical Research Center website). Internal consistency evaluated by Kuder Richardson coefficient (KR-20) showed results of 0.70 (study IV).

Background characteristics included age, marital status, place of residence, housing conditions, children, financial situation and level of education. There were also questions related to having someone close to share both troubles and joy with, whether one could manage without important others in everyday life and whether one was feeling lonely. Further, respondents were asked about having the opportunity to engage in meaningful leisure activities, whether they were engaging in volunteer work, whether they had been outdoors the previous week and whether they felt needed. One question asked whether the respondent believed in God or a higher power. In addition, the women were asked about diagnosed disease(s) and number of prescribed medicines.

Analysis

In study I the focus group interviews were analysed in two steps. First, the transcribed material underwent concept-driven coding. Concept-driven coding is a deductive strategy for building a coding frame using a pre-existing source [109], in this case, the theoretical model of inner strength, and its core dimensions [87]. The dimensions have explicit descriptions, and a coding frame, or matrix, was designed based on the descriptions of each dimension (Table 2).

Table 2. Matrix based on definitions of the descriptions of inner strength (Lundman et al., 2010)

Connectedness	**Creativity**	**Firmness**	**Flexibility**
Engagement, commitment and meaningful involvement with people, things, context, society and the universe. Willingness and ability to reach beyond oneself and experience communion with others or connectedness with the universe.	Good problem-solving skills and the ability to think and act in various ways – the capacity to adapt. Predisposition to struggle to influence outcomes and to learn, a refusal to sink into passivity and avoidance, and a belief that changes provide opportunities for growth. Being able to use one's resources to transcend body, time and space.	Self-discipline, self-esteem and awareness of one's boundaries. A view of the world as predictable, structured and lawful. Existential courage to cope with stressful situations instead of giving up.	Resistance and endurance when life is experienced as hard and demanding. Transformation of personal tragedies into meaningful experiences. Extension of oneself beyond constricted views of self and the world.

The transcribed material was sorted according to the explicit descriptions in the matrix, and was accordingly divided into descriptions of connectedness, firmness, flexibility and creativity. As the dimensions in the model are interacting, some items related to more than one dimension. In those cases, the item was labelled with the dimension that was deemed to be the most relevant. One example of this was when one woman talked about sitting at home alone and not feeling lonely, but feeling that she belonged to a larger whole. This was then interpreted as a description of connectedness but it could also indicate the ability to transcend (creativity). Upon reading the interviews, it emerged that the specific episode that the women wanted to share with the group was often nestled within a bigger context, and it became clear that not all content in the interviews was related to inner strength (for example, when participants talked about how they used to travel to get to school). These parts of the text were excluded. After the content was sorted according to the four dimensions, the next step was to analyse the text under the four dimensions separately, using qualitative content analysis as described by Graneheim and Lundman [110]. Meaningful units were highlighted, and the content was further condensed and coded. Content that shared commonality was categorized. After reflection and discussion in the research team, the underlying meanings were formulated into themes and subthemes.

In study II physical health and mental health were the dependent variables, assessed with the SF-12 (PCS and MCS, respectively). Pearson's correlation analy-

sis was used for associations between the dependent variables and independent continuous variables. The strengths of the relationships were interpreted according to Cohen [111] (r = 0.10–0.29, small; r = 0.30–0.49, medium; r = 0.50–1.0, strong relationship). Independent t-test was used to compare participants with or without specific characteristics. A p-value of <0.05 was regarded as statistically significant. Significant variables were tested for multicollinearity, outliers, normality and linearity. Marital status was excluded due to multicollinearity with living conditions. The rest of the significant variables were included in multiple linear regression modelling to find factors that independently explained the variation in PCS and MCS scores. Non-significant variables with the highest p-value were removed manually one by one until all variables were significant, still controlling for age and socioeconomic factors.

In study III depression was the dependent variable, assessed with GDS and dichotomized as non-depressed (GDS <5) or depressed (GDS ≥5). Continuous variables were studied with Student's t-test, and the background characteristics were compared using chi-squared test. A p-value of <0.05 was regarded as statistically significant. Multicollinearity was controlled for by using Pearson's correlation coefficient analysis; none of the variables was excluded due to multicollinearity. Significant variables were entered into multiple logistic regression analysis. Non-significant variables with the highest p-value were removed manually one by one until all variables were significant, still controlling for age. The result was compared with backward logistic regression using same variables with almost the exact result.

In study IV the dependent variables were inner strength and its dimensions, assessed with the ISS. Descriptive statistics were used to present characteristics of the participants. To explore the relationship between inner strength and health threats, multiple linear regression analyses was performed, i.e. robust regression modelling as the dependent variables deviated significantly from a normal distribution. One regression model was used for ISS in total, and for each of the dimensions. A p-value of <0.05 was considered statistically significant.

For statistical calculations in the quantitative studies the following programs were used: SPSS version 21.0 (studies II and III) and version 22.0 (study IV) (IBM SPSS Statistics for Windows, IBM Corp., Armonk, NY) and Stata (StataCorp., College Station, TX, USA) (study IV).

Ethical considerations

The work of this thesis has been guided by the ethical principles of autonomy, beneficence, non-maleficence and justice, in line with ethical guidelines for nursing research [112], the Declaration of Helsinki [113] and the IEA Guidelines for Proper Conduct in Epidemiologic Research [114]. The project as a whole was considered by the ethical committee of Åland's Public Healthcare Service on November 20, 2008, with the response that no specific ethical approval was needed, as the planned studies did not involve patients in care, and as that the presumptive participants were to be offered voluntary participation.

In study I, focus group interviews were performed. The participants were informed about the study and the principles of voluntary participation both orally and in writing. Their right to full disclosure was affirmed. Only the involved researchers had access to the recorded and transcribed material. However, in group interviews, compared to individual interviews, others in the group take part in what is being said, a precondition of this method that may imperil confidentiality, and which may not be controlled by the researcher.

Studies II–IV had a quantitative approach using questionnaires to gather data. All questionnaires were coded, making it possible to send reminders to non-respondents, and for potential forthcoming longitudinal studies. The specific running numbers (codes) have during the entire process been locked up, with access limited to the person responsible for sending out the questionnaire (i.e. the author of this thesis). Further, the questionnaires have been kept in a safe, separated from the list of the codes, all in line with the IEA Guidelines for Proper Conduct in Epidemiologic Research [114]. When sending out the questionnaires, a letter enclosed with the questionnaire described the voluntary nature of participation, the confidentiality of the data and the presentation of the results. A completed questionnaire was regarded as consent to participate.

RESULTS

Inner strength interpreted

Study I aimed to explore how inner strength and its dimensions – connectedness, creativity, firmness and flexibility – as described in the theoretical model of inner strength by Lundman et al. [87], could be identified in the narratives of older women.

Connectedness was identified as striving to be in communion, meaning the importance of having someone to share everyday life with, to physically "get out there", to come into contact with other people and to have someone to share everyday life with. Connectedness also meant being there for others, doing good for others yet also being appreciated, feeling that one has a mission, feeling needed. But it was also expressed that one can feel communion while being alone yet related, feeling that someone or something is looking out for you – being a part of the neighbourhood, the community, the world or something more.

Creativity was identified as the ability to make the best of the situation. The women expressed the importance of still being physically active and finding ways of overcoming one's reluctant body. Having a good spirit, looking on the bright side of life and not having excessive expectations of what life has to offer were revealed to be important factors for successfully dealing with adversities. Making the best of the situation also included the willingness to embrace novelties. Creativity was seen as an awareness of one's resources as well as one's limitations for making the best possible choices in the current situation.

Firmness was identified as a belief in oneself and having a spirit of determination. The dimension was expressed as "it is all up to you"; setting one's own goals and carrying out what one has started – having Finnish *Sisu*[4] "in the veins". It referred to a sense of duty, of concern for leaving others in difficulty if one's obligations

4 Finish *Sisu* is a concept that cannot be translated metaphrastically into the English language, but can be loosely translated to mean stoic determination, bravery, ability to bounce back after adversities, expressing the historic, self-identified Finnish national character.

were not fulfilled. But it also meant having the right to do whatever, not always following the norms. When it is all up to oneself, one might have to stand up for what is right and confront oneself and others.

Flexibility was interpreted as an act of balancing by being the same but in a different way. It meant having the ability to see both sides of the coin, seeing life from different perspectives. Flexibility was also interpreted as humbleness towards what life has to offer. Being exposed to adversities makes one stronger as well as changing one's view of life. Flexibility concerns the existential courage needed to "walk the tightrope" while being supported by one's faith in oneself and by one's conviction that life is good.

It was concluded that the identified descriptions of inner strength enriched and nuanced the theoretical formulation of the dimensions of inner strength and that the result demonstrates the possibility of identifying inner strength in conversations with older women.

Inner strength among other health-promoting factors

Although inner strength seems to be of importance in ageing well, there are other factors that may contribute to health and quality of life in old age. Study II aimed at exploring HRQoL and associated factors among community-dwelling older women living on Åland. The results of the final regression model (presented in Table 3) showed that inner strength was associated with mental health, but not physical health. Fewer symptoms of depressive disorders was the strongest explanatory variable associated with better HRQoL and, together with not feeling lonely, explained variations in both physical health and mental health. Better physical health was also explained by not having a diagnosed disease, lower age and having the opportunity to engage in meaningful leisure activities. Better mental health was additionally explained by having enough money for personal needs.

Table 3. Factors with a unique contribution to the PCS and the MCS scores

Variables with a unique contribution to the Physical Component Summary (physical health) (PCS)			
	B	**95% CI for B**	**p-value**
Symptoms of depressive disorders (GDS)	−0.378	−2.472 to −1.713	<0.001
Having diagnosed disease(s)	0.231	4.396 to 7.386	<0.001
Age	−0.147	−0.330 to −0.135	<0.001
Having the opportunity to engage in meaningful leisure activities	0.142	2.448 to 6.466	<0.001
Feeling lonely	−0.070	−3.588 to −0.220	0.027
Variables with a unique contribution to the Mental Component Summary (mental health) (MCS)			
	B	**95% CI for B**	**p-value**
Symptoms of depressive disorders (GDS)	−0.419	−1.997 to −1.420	<0.001
Inner strength (ISS)	0.130	0.038 to 0.114	<0.001
Feeling lonely	0.113	0.958 to 3.565	0.001
Having enough money for personal needs	−0.077	−5.572 to −0.613	0.015

Model-adjusted R^2 ($p < 0.001$) for the PCS = 0.344 and for the MCS = 0.277

It was concluded that to be able to support older people, and for society and health care personnel to better deal with the challenges that come with an ageing population, it seems relevant to pay attention to health resources such as inner strength and meaningful leisure activities, in addition to disease prevention. It also seems to be of importance to pay attention to the economic situation of older women. In particular, the results suggest that health care personnel should invest in identifying, and initiate interventions for older women expressing loneliness and/or symptoms of depressive disorders to promote overall HRQoL.

Depression and inner strength

Based on the result of the previous study, indicating that depression is a threat of relevance to HRQoL among older women, study III concerned the relationship between inner strength and depression. Indications of depression (GDS ≥ 5) were found among 11.2% of the participants. The prevalence increased with age and was as high as 20% in the oldest age group (80+). The association between depression and inner strength (rated by the GDS and the ISS, respectively) was explored and in addition, factors associated with depression were controlled for. The results of the final regression model (Table 4) were significant and χ^2 (6, n =

1187) = 245.99 ($p < 0.001$), indicating that it was possible to distinguish between depressed and non-depressed respondents. The model as a whole explained between 18.7% (Cox and Snell R^2) and 39.4% (Nagelkerke R^2) of the variance in depression and correctly classified 90.1% of all cases. The ISS independently explained variance in depression, even when controlling for other factors associated with depression (odds ratio = 0.963, $p < 0.001$).

Table 4: Factors predicting likelihood of reporting depression

	Wald	**p-value**	**Odds ratio**	**95% CI for odds ratio**
Never or seldom feeling lonely	40.14	<0.001	0.206	0.135 to 0.347
Inner strength score (ISS)	30.93	<0.001	0.963	0.951 to 0.976
Number of different kinds of prescribed drugs	26.33	<0.001	1.221	1.131 to 1.317
Feeling needed	23.97	<0.001	0.225	0.124 to 0.409
Having the opportunity to engage in meaningful leisure activities	20.03	<0.001	0.309	0.184 to 0.516
Age	1.095	0.295	0.982	0.950 to 1.016

The results showed an association between strong inner strength and being non-depressed, and that inner strength independently has an effect on depression. The findings can be interpreted as suggesting that inner strength has a protective effect on depression, but further studies are needed to verify whether strong inner strength can reduce the incidence of depression.

Identifying threats challenging inner strength

In study IV the main focus was to identify health threats challenging inner strength by exploring the associations between health threats and inner strength in total and in its dimensions (rated by the ISS) among community-dwelling older women. The overall ISS mean score was 100.0 ± 13.9 (mean ± SD), and in the dimensions, for connectedness 25.6 ± 4.1, creativity 23.9 ± 4.8, firmness 27.0± 3.7 and flexibility 23.5 ± 3.9.

Overall weaker inner strength was associated with symptoms of depressive disorders and poorer mental health. Lower scores in the dimension of connectedness were associated with feeling lonely, not having someone close to share both troubles and joy with, not being able to influence society to the extent one wishes, symptoms of depressive disorders and poorer mental health. Lower scores in the dimension of creativity were associated with higher age, not having higher education, symptoms of depressive disorders and poorer mental health. Lower scores on the dimension of firmness were associated with feeling lonely and having poorer health, both physical and mental. Lower scores on the dimension of flexibility were associated with feeling lonely, symptoms of depressive disorders, and poorer health, both physical and mental.

Thus, poorer mental health was the only variable associated with weaker inner strength in total, and in all four dimensions. Symptoms of depressive disorders and feeling lonely were related to lower scores in three of the dimensions (except firmness and creativity, respectively) and poorer physical health was associated with lower scores in two of the dimensions (firmness and flexibility). Some other health threats were only significantly associated with one of the dimensions (connectedness or creativity) and other health threats were not significantly associated at all (i.e. being divorced/single/widowed, having meagre economic conditions, not having children, living alone, not feeling needed and not having the opportunity to engage in meaningful leisure activities). Model statistics and statistics for the associations between health threats and inner strength are presented in Table 5.

Table 5. Model statistics and statistics for the associations between health threats and inner strength

	Dependent variables				
Independent variables	**ISS total**	**Connectedness**	**Creativity**	**Firmness**	**Flexibility**
Age	-0.099	0.004	-0.103*	0.015	-0.015
Marital status					
Married/cohabiting	Ref	Ref	Ref	Ref	Ref
Divorced/single	-0.695	-0.668	0.086	-0.250	0.136
Widowed	1.424	0.335	0.377	0.212	0.500
Not having children	0.117	-0.130	-0.223	0.164	0.367
Education					
Lower education, 9 years or less	-1.419	0.276	-1.445*	0.033	-0.283
More than 9 years, but not higher education	0.042	0.538	-0.711*	0.235	-0.019
Higher education: institute, university college or university	Ref	Ref	Ref	Ref	Ref
Meagre economic conditions	0.320	-0.051	0.211	-0.150	0.311
Living alone	-0.979	0.040	-0.464	-0.382	-0.174
Feeling lonely	-2.524	-0.657*	-0.390	-0.501*	-0.975**
Not having someone close to share both troubles and joy with	-2.181	-1.791*	0.117	-0.674	0.267
Not having the opportunity to engage in meaningful leisure activities	1.744	0.410	0.372	0.459	0.502
Feeling unable to influence society to the extent one wishes	-1.536	-0.708*	-0.557	0.028	-0.321
Not feeling needed	-1.917	-1.342	0.303	-0.853	-0.025
Symptoms of depressive disorders (GDS – 15)	-1.283**	-0.321*	-0.572**	-0.162	-0.228*
Physical health (PCS – SF12)	0.067	0.005	0.005	0.027*	0.030*
Mental health (MCS – SF12)	0.266**	0.050*	0.068*	0.072*	0.075**
Model statistics					
F-value (df: 17, 774)	10.00	7.24	9.41	5.44	6.37
R2**	0.158	0.130	0.176	0.098	0.110

*$p < 0.05$
**$p < 0.001$

It was concluded that the ISS not only estimates inner strength but can also offer guidance as to the areas (i.e. dimensions) in which interventions may be profitable. Longitudinal studies are needed to reach a deeper understanding of the associations between health threats and inner strength and its dimensions. Studies about longitudinal trajectories regarding inner strength and associated factors should be prioritized.

DISCUSSION

The overarching aim of this thesis was to explore inner strength as a health resource among older women. Inner strength in this thesis has been studied from the perspective presented in the theoretical model by Lundman et al. [87], built upon an analysis inspired by meta-theory construction, wherein inner strength relies on four interrelated and interacting dimensions: connectedness, creativity, firmness and flexibility [87]. Further, Lundman et al. [80] constructed a scale to rate inner strength, the ISS [80]. The scale is considered to be a useful tool; however, a scale may not be appropriate to use in every situation. Therefore, focus group interviews were performed to explore how inner strength and its dimensions can be identified in narratives of older women (study I). Inner strength was expressed as "Strive to be in communion" (connectedness), "Make the best of the situation" (creativity), "It is all up to you" (firmness) and "A balancing act" (flexibility). It was concluded that inner strength can be identified in the narratives of older women, and that the study adds nuance to the notion of inner strength and deepens empirical knowledge about the phenomenon. In study II inner strength (rated by the ISS) was used as an independent variable, together with other known variables related to HRQoL, to explore the associations with physical and mental health, respectively. Strong inner strength was independently associated with better mental health in the final regression model. It was further concluded that older women on Åland rate HRQoL as relatively good. Symptoms of depressive disorders was the strongest explanatory variable associated with HRQoL and, together with loneliness, explained poorer health, both physical and mental. As a sequel, depression was used as a dependent variable in study III, and the results showed that inner strength was independently associated with a reduced prevalence of depression after controlling for other factors known to be associated with depression. Finally, in study IV, the relationship between inner strength and its dimensions, and health threats among community-dwelling older women, were studied. The main findings imply that mental ill health is associated with weak inner strength in total and in its dimension.

In the exposition of the results it has become evident that there are associations of relevance between weak inner strength and mental ill health. This will be

discussed after reflecting on the dimensions of inner strength and presenting a nuanced comprehension of inner strength. Finally, health among older women living on Åland will be reflected upon.

Reflections on the dimensions of inner strength

In this section I will reflect on the dimension of inner strength mainly in relation to the results in studies I and IV, and the conceptual framework of this thesis, together with other literature deemed to be of relevance.

Strive to be in communion

In study I connectedness was interpreted as striving to be in communion. Striving involves making an effort towards a goal, a movement towards something desirable, and in this thesis striving be in communion is interpreted to be a driving force in the movement towards health on the health–ill health continuum. It is about striving to be in communion with others, with community, with Other or a greater whole, and with inner space. This interpretation is in line with those of other researchers [14, 115, 116] exploring the multidimensionality of connectedness – being connected to others and society as well as being metaphysically and spiritually connected.

In the striving, engagement, commitment and meaningful involvement with others are emphasized. According to Rykkje [115], human beings need to place themselves and find meaning in relation to other human beings in society. The women in study I stressed the importance of meeting people of the same age. Similar results were found by Santamäki Fischer et al. [14], studying meanings of growing old and being connected: "It becomes important to be with someone who shares one's memories and experiences; in other words, someone who is of the same generation" [14, p. 265]. The results further revealed that family is of great importance, and that "being with" family members also means "doing for"; including obligations and fulfilments (cf. [115, 117]). Connectedness can thus be seen as a caring act of both receiving and giving, and mean sharing a responsibility; one gives a vow of ethical and moral commitment – as you are "being given", you seek to "give back" [115]. Being able to give back to others can be seen as a fulfilment of oneself – one is doing good for others and being appreciated (Study I). It can also be seen as a notion of acting out of love for others emerging from beliefs and a sense of altruism. This interpretation is in line with the development theories presented in the background in this thesis; both Tornstam [34] and

Cohen [30] state that volunteerism and philanthropy are common when "summing up" life and important for development in ageing.

Connectedness also include a strive to be in communion with inner space, being alone yet related, and can be about finding reconciliation, looking inwards to allow oneself to reach out, going beyond oneself and experiencing transcendence and growth (c.f. theory of gerotranscendence [34]). This can mean to be connected to one's past and to gather strength through memories, and according to Nygren et al. [21] this is made possible by spending time alone. In study I a few women gave utterance to the contentment of being alone. Other women, some more persistently than others, expressed an urgent need to interact with others, a "need to get out there". This diversity can be understood from different developmental phases in ageing (e.g. [30, 31, 34]). In the theory of gerotranscendence [34], it is expressed that in the process of maturation the individual gradually changes basic conceptions and becomes more selective in choices of social and other activities, acquires an increased need of solitude and develops a feeling of being a part of a larger context. This line of reasoning can further be supported by the results in study IV; it could be presupposed that lower scores in the dimension of connectedness would be associated with older age, as social networks in general gradually diminish as one is growing old. However, no such associations were found. This result was interpreted to mean that successful development in ageing means having the prerequisites to succeed in striving to be in communion, even though social networks are diminishing. On the other hand, a failure might lead to a sense of alienation (not having someone close to share both troubles and joy with, experiencing loneliness, not feeling being able to influence society), being associated with a weak sense of connectedness (study IV). Another moderating effect could be that the women aged in place. Study IV was performed on community-dwelling older women, and according to Martinsen [118], to dwell is more than having a roof over one's head; to dwell has to do with a fundamental interpretation of life. Dwelling is related to habitat, to that which one is familiar with, the things to which one is tied; to being free, knowing that home protects against danger and shelters so one may be at peace; to taking care of, so that something may thrive and grow [118]. The fact that the women aged in place may thus be considered a resource in striving to be in communion.

Make the best out of the situation

In study I the dimension of creativity was interpreted as making the best of the situation; overcoming one's reluctant body, looking on the bright side of life and

being open to novelties. In study IV creativity was the only dimension that was associated with age and level of education, that is, lower scores in the dimensions of creativity were associated with higher age and lower level of education. Similar results were found by previous researchers [22, 79], and it has been shown that more creative personality traits tend to be present with higher levels of education [119]. Creativity as a strength in this thesis is not the figurative creativity of art or music; rather, creativity here refers to being underpinned by the capacity to adapt within changing circumstances (in line with Nicholson et al. [120]). Late-life creativity can also be seen as reflecting aspects of late-life thinking: synthesis, reflection and wisdom [121] (cf. [29]).

The assumption that creativity is a part of inner strength is supported by others. According to Fisher and Specht [122], the individual deepens the understanding of self through creativity and strengthening of a sense of the self as competent, efficacious and capable of doing [122]. Through learning about oneself, it may be possible to experience personal growth and to transcend the immediacy of problems associated with old age [123]. According to Cohen [26], people have an inner drive that fosters psychological growth and each new developmental phase allows them to re-evaluate life and to experiment with new strategies to gain access to and activate untapped strengths as well as new and creative sides of themselves [26]. It has been discussed that older people demonstrate creativity even as they experience loss, being able to relate to one's body and surroundings in new and creative ways [120] – to make the best of the situation. The outcome of creative adaption emerges in new ways of behaving and thinking about oneself that allow the person to move forward in spite of a loss of a function or ability, or an important person, or in spite of awareness of limited time [51].

In the results of study I creativity was partly described as "viewing the bright side of life" and was reflected on as "one has to view life as positively as possible", and a spirit of "worse things may happen". Parallels can be drawn with optimism, reflecting the extent to which people hold generalized favourable expectancies for their future [124]. Higher levels of optimism have been associated with better well-being in times of hardship [124], supporting the thesis that creativity is an important resource for experiencing health despite adversities.

Creativity was further partly explained as being open to novelties. This was exemplified by one women being so tired of not knowing anything about computers that she bought a computer and took a computer course. My perception is that there is a bit of societal disdain when it comes to older people and novelties, that older women in particular have difficulties learning new technologies and over-

all embracing "the latest". Nonetheless, the women interviewed demonstrated awareness of the plethora of innovations introduced during their lifetime: dishwashers, electric stoves, cell phones, and so forth. Even more important, the women did not just mention them; they had embraced them, and they praised them for making everyday life so much easier. So perhaps a possible unwillingness to embrace every novelty on the market can be explained as simply as not perceiving the product to be useful – rather, it is just another thing to possess, and why make life harder than it is? It could be about embracing intrinsic values instead of materialistic ones (cf. [25]), and about selectively making choices assumed to have the greatest personal benefit and relevance, and further, if needed, compensating for deficits or disabilities by drawing on assistive devices that are really useful for one's own well-being (cf. [31]).

Furthermore, assistive devices and a creative mindset are considered to be handy when having to overcome one's reluctant body (study I). Hence, it could be expected that with diminished creative resources it would be harder to overcome the reluctant body; that is, an association could be expected between lower scores on the dimension of creativity and poor physical health. No such association was found (study IV), thus, creativity seems to be more closely related to cognitive and mental aspects.

It is all up to you

The dimension of firmness was revealed as "it is all up to you". In the interviews "being firm" was about setting own goals and carrying out what one has started (study I). The results are in line with the conceptual framework of this thesis that health is related to goals, and can be validated by previous research by Bryant [17]; health among older people is about "going and doing something meaningful", having something worthwhile to do, balancing between abilities and challenges and also having appropriate external resources, and personal attitudinal characteristics (e.g. a positive vs. a "poor me" attitude, in line with the dimension of creativity – to make the best of the situation) (cf. [125]). Also, parallels can be drawn with other salutogenic concepts (i.e. self-efficacy and resilience), as people with high self-efficacy are more likely to make efforts to complete a task and to persist longer in those efforts than those with low self-efficacy, and resilient people tend to trust their own ability (traits understood as relevant for being firm) [126], all in the end related to better self-rated health. These relationships are interpreted as strengthening the results; firmness, understood as setting one's own goals and carrying out what one has started, can be a health resource of relevance.

However, being firm was also interpreted as having the right to do whatever and not to always follow the norms. In study I this was exemplified by one woman saying that that she dressed the way she wanted to, without following any kind of rules. When hospitalized, she went through the corridors wearing her big pink earrings, her fluffy down slippers and her own pink bathrobe, and she felt good about it! "Having the right to do whatever" can be compared with the liberation phase described by Cohen: a time to free oneself from earlier inhibitions or limitations, a time to experiment, to be innovative and enhance development in growing old [127].

The dimension of firmness is interpreted as being closely related to self-determination and being in control, as well as to self-esteem and self-confidence (cf. [17]). It can also be related to a sense of conscientiousness, a spectrum of constructs that describe individual differences in the propensity to be self-controlled, responsible to others, hardworking, orderly and rule abiding [128]. In study I it was expressed that one "sometimes has to command oneself" and it may feel harsh from time to time. But at the same time the women concluded that it was mostly worth it; they were rewarded with a sense of well-being. Similar results have been reported previously by Malterud and Hollnagel [117], describing stubbornness and endurance as health resources. It has been stated that conscientiousness plays an important role in positive aging [129], as it may serve to promote both physical and psychosocial health [130]. This can be related to the results in study IV showing associations with lower scores on the dimension of firmness and poorer health, both physical and mental. The relationship to physical health may be explained as self-esteem and confidence (interpreted as important attributes to firmness) possibly being weakened as bodily changes become more evident (cf. [29]). Parallels can be drawn to Baltes and Smith's [131] conceptualization of the fourth age, characterized as a tip of the balance in life toward more losses than gains, where some of the oldest old are at the limit of their capacity, "being in stillness and in movement as well as being on the threshold and being ready to let go" [132, p.13]. Thus, it may be that being at edge of diminished biological potential (cf. [65]) it is no longer possible to be firm at a level that can meet the demands.

A balancing act

The dimension of flexibility was expressed as a balancing act; being the same but different, having the ability to see both sides of the coin, and being humble towards what life has to offer (study I). Lundman et al. [87] suggest that flexibility and firmness, although seemingly contradictory in nature, are closely related. I

can agree to some communality, as the results revealed that firmness and flexibility were the only dimensions associated with physical health (study IV). Experiencing poor physical health was not only associated with reduced capacity to be firm; it further seems that "the act of balancing" becomes unfeasible when bodily changes become more evident (cf. [29]), being on the edge of diminished biological potential (cf. [65]) (in line with the reasoning related to poor physical health and firmness).

Referring to the similarities between dimensions, I would, however, say that the dimensions of creativity and flexibility are those with the most similar manifestations. The interpretation of the results is that both dimensions portray the ability to adjust to circumstances in life, but in nuanced ways. Whereas creativity reflects the ability to adjust in viewing the self as competent and having the ability to learn, being ingenious and having a positive view of life, flexibility is seen to be more about adjusting and developing through reflecting on different scenarios, accepting changed circumstances in life and bowing to the necessities. The latter may be read as pattern of resignation, and thus may be understood as disengagement (cf. theory of disengagement [35]). On the other hand, parallels can be drawn with the model of selection, optimization and compensation [31]; development and experiencing health in old age are related to being more selective in choices of leisure and social activities and disengaging from stressful and difficult pursuits to instead reinvest in appealing and manageable ones [32, 33, 133, 134] – that is, adjusting and developing but not disengaging. It could be that some older people need to accept a degree of dependence, including a process of mourning their "previous selves", and adapt to create a "new self" with a different future and direction, to function optimally and to improve quality of life (cf. [51, 135]).

Further, flexibility is understood as being closely related to reflective activity, including philosophical reflections of self and on what is important in life (cf. [13, 14]). In study I it was expressed that when younger, the women did not appreciate being healthy, but now they are happy for every day they can get out of bed. One woman spoke about being sick with cancer as "an educational experience" making her more humble, ending up with a revised outlook on life. A summarized interpretation, then, is that to be characterized by reflection, flexibility involves "flipping the coin" back and forth to see the bigger picture, having that potential to recognize oneself in the mirror while accepting being in a different way, and being humble towards all that life has to offer – all together formatted as the pole supporting one when balancing on the tightrope between health and ill health.

A nuanced interpretation of inner strength as a health resource

The results emphasize that health in ageing is about balancing, on one side, diminishing bodily resources as well as demands and goals in life, and, on the other side, strengths. Having inner strength is about having the power to set up goals and to strive for them. It is about being firm and sometimes commanding oneself, yet also having the right to do whatever. It is also about accepting that life and health are progressive and changeable – life is a balancing act. To attain health despite adversities is to be humble towards what life has to offer and having the ability to see both sides of the coin – having a flexible approach is to revise what is important as life changes. It is further about having the ability to extend oneself beyond a constricted view, that is, being the same but different. It is about making the best of the situation, having the ability to overcome one's reluctant body, being open to novelties and looking on the bright side of life. This creative approach is interpreted as an awareness of one's resources as well as limitations for making the best possible choices to weigh up and balance to find stability – if not for long, yet for the moment. Together with striving to be in communion, that is, sharing everyday life with others, doing good and being appreciated, and being alone yet related, older women may mature and grow toward potential health.

Inner strength and mental ill health

In processing the results it has become evident that there are associations of relevance between inner strength and mental ill health, that is, poor self-rated mental health, depression and symptoms of depressive disorders, as well as expressing a feeling of being lonely. Obviously, feeling lonely or expressing symptoms of depressive disorders is not per se the same as mental ill health. However, it is known that depressive disorders and symptoms thereof, as well as loneliness, are strongly associated with poor well-being and poor mental health, and with each other [8, 136-139]. The variables are therefore discussed all together in this section.

In study II overall strong inner strength was associated with better mental health. In study IV poor mental health was associated with weaker inner strength in all the dimensions. Further, symptoms of depressive disorders and feeling lonely were associated with three of the four dimensions. The results are in line with previous studies associating weak inner strength with depression [84]. Further, it has been shown that low ratings on other salutogenic concepts (e.g. resilience, sense of coherence, purpose in life and self-transcendence) is associated with poor mental health and depression [83, 140, 141]. So, how could this relationship

be explained? One explanation could be that people who strive for personally acquired potential, studied here as inner strength, will usually develop more of it (cf. [65]). Mental ill health can be understood as a hindrance in striving, and further, depression can make it difficult to think that anything is worth doing, even if one has the physical abilities [17]. However, it would be of value to study these relationships further.

In study III an association was found between strong inner strength and being non-depressed. The results can be interpreted as inner strength possibly having a protective effect on depression. However, further studies are needed, as another salutogenic concept (i.e. purpose in life), has shown to have an inverse relationship with depression in a cross-sectional study, but did not seem to protect against development of depression over time [142]. To conclude, mental ill health is interpreted as a threat of relevance to inner strength as well as to experiencing health among older women; mental ill health is understood "to draw on the reserves", diminishing relevant health resources.

Health among older women living on Åland

The studies were performed on Åland, an island community where health data among the older population are understood to be scarce. Although not a primary aim of this thesis, the results in study II give valuable information about HRQoL and related factors. Further, inner strength was studied as an independent variable in relation to HRQoL, and according to the results, strong inner strength is associated with better mental health, implying that actions aiming at strengthening inner strength may improve mental health among the older women. No associations were found between inner strength and physical health in the final regression model. The results are in line with previous studies, showing associations between salutogenic concepts and mental health, but a weaker relationship with physical health [86, 141, 143].

Referring to health among the studied population, pre-existing data state that the morbidity index for Åland is the lowest compared with other regions in Finland, and according to the results (study II), HRQoL among older women living on Åland is relatively good (cf. [144-146]). Saying this, I feel bound to address the heterogeneity of the older population. The mean values on the PSC and MCS were 43.6 and 54.9, respectively, but they ranged from 13.9 to 62.7 and 16.4 to 69.0, respectively; that is, although the results are interpreted as older women on Åland in general rating their health as good, there are older women living in difficult circumstances, experiencing ill health. It was also made clear that

women aged 80 years and older reported the poorest health, both physical and mental, compared to women in the other age groups. Thus, from a societal perspective special attention should be paid to the oldest old with regard to HRQoL.

According to the results, there is potential to enhance health in general among older women. Better physical health was, not unexpectedly, partly explained by lower age and absence of disease(s), but also having the opportunity to engage in meaningful leisure activities. Society is understood to have an important role in promoting health, as the motivation to participate in leisure activities may be predicted by the leisure opportunities available to older people (cf. [147]). Further, it would be important to strategically work towards the inclusion of older people in society and to create opportunities for meaningful existence. The promotion of active ageing, together with disease prevention, has proven to be of great importance for experiencing health as one grows old [148-151]. "An active ageing approach" may also prevent feelings of alienation [148-151], interpreted to be of relevance, as older women who expressed a feeling of being lonely reported poorer health, both physical and mental (study II). The strongest explanatory variable for poorer physical and mental health was depression. Thus, from a public health perspective an increased awareness about mental ill health among older women is recommended. One simple question, such as "Do you think you suffer from depression?" could be used [152]. Another recommended option is to use screening tools like the GDS [104] to initiate a necessary dialogue. Preliminary identification of symptoms/diseases still needs to be followed up by a more elaborate diagnostic procedure. Thus, it is of importance that there is a well-functioning chain of care involving healthcare personnel with competence to assess and, if needed, initiate care and/or treatment appropriate for the unique older person. The importance of knowledge in gerontology and geriatrics, and collaborative and interprofessional cooperation when caring for older people cannot be overestimated.

Methodological considerations

Study I had a qualitative design and studies II–IV a quantitative design. The methodological considerations will therefore be divided into two sections referring to differences in achieving trustworthiness between the two different epistemological and methodological assumptions/standpoints.

Methodological considerations concerning study I

In the first part trustworthiness will be discussed in relation to the following recommended terms for establishing rigour in qualitative research: credibility, dependability, transferability, conformability and authenticity [153, 154].

Credibility deals with the focus of the research and in the preparation phase choosing the best data collection method and representative participants to fulfil the aim [110, 154, 155]. In the current study focus group interviews were chosen, as these capitalize on the fact that the group members react to what is being said by others; that is, the interactions between participants generate data, potentially leading to a richer and deeper understanding [154, 156]. In recruiting participants, it is essential that the sample is appropriate and comprise participants who best represent or have knowledge about the research topic [153]. Therefore, a purposive snowball sample of community-dwelling older women was performed, and the sample included women of various ages (range 66–84 years) living in different contexts (e.g. variations in marital status and locality of living). There is no commonly accepted "rule" for sample size in qualitative studies [153], or for the size of the groups in focus group studies [99, 156, 157]. However, the apprehension is that in the current study a suitable group size was attained; most women spoke freely, although some acted more pensively, and more data were most likely gathered than if the women had been interviewed individually. It should, though, be noted that the downside of group dynamics is that the articulation of the group norms may silent individual voices of dissent [154, 156]. To give the readers information on the participants, to judge credibility, a brief description of the participants was included (cf. [153]). The fact that the women were socially active suggests that they were of certain health that enabled them to participate in these kinds of activities; a selection of participants with more health problems, in other cultural contexts, or of nursing home residents could have contributed to another result. Also, the result may have varied if the interviews had included men or had been face-to face interviews.

To further enhance credibility a pilot interview was performed (cf. [153]). The interview was moderated, as were the other interviews, by the author of this thesis. After transcription, two of the more experienced researchers in the team read the transcribed material to confirm the quality and to endorse further interviewing. The experienced researchers further read the transcribed material after every interview and reflected on the actions of the moderator, which enhanced awareness of possibly non-desirable actions in the subsequent interviews (cf. [153]). Another

advantage of this procedure was that the interviews underwent a shallow analysis in the team during the process, which contributed to a consensus of saturation in the end of the process (cf. [153]).

Credibility in the analysis process can be further reaffirmed by choosing the most suitable meaning units and evaluating how well the categories cover the data. The categorization matrix was found to be valid, as the descriptions of the categories were reassembled from the theoretical model of inner strength and interpreted to capture the essence of the concepts (i.e. dimensions) (cf. [153]). The matrix was also tested, in line with Schreier [109], as a naive "test analysis" was performed after the pilot study. Moreover, in the analysis process the researchers repeatedly returned to the original text to make sure the final results and conclusions were grounded in the data (cf. [158]).

Dependability can be affirmed by reporting how the results were created, with the intention that the reader can follow the analysis and conclusions [153, 154]. The steps in the analysis process have been exemplified in the method section to provide the reader with adequate information. Another way to affirm dependability is to determine that another researcher can readily follow the decision trail used by the initial researcher [159]. This has been tested first in the research group and later in research seminars and in the pre-review before publishing, and the descriptions have been revised several times before being considered as comprehensive.

Transferability addresses the possibility of transferring the result to another context, therefor the context must be described adequately [158]. The results are considered to be transferable to other community-dwelling, socially active women in similar cultural contexts. A weakness in study I is the incomplete description of the culture/context; it is, though, described in greater depth in this comprehensive summary. As previously mentioned, studies involving other selections of participants are encouraged, which also contributes to the transferability.

Confirmability requires one to show the way in which interpretations have been arrived at during the process, and can be established when credibility, dependability and transferability are achieved [158]. Confirmability can also be affirmed as findings represent the information that the participants provided [154]. Even though one researcher (the author of this thesis) was responsible for the process, all team members read the interviews, and the overarching analysis was performed in the team as recommended (cf. [109, 153]). Confirmability was also strengthened by quotations (cf. [110, 154]).

Authenticity can be affirmed by highlighting the research area and showing a range of realities [153]. In the discussion section of the study the results have been interpreted in relation to relevant theories and current research, and clinical implications are suggested. Another way of enhancing authenticity is to keep the analysis close to the text, to bring forth the "tone of the participants" [153], which is accomplished through by use of quotes from the interviews.

Methodological considerations concerning studies II–IV

In this second part of the methodological considerations the scientific quality of study II–IV will be discussed in relation to common concepts related to trustworthiness, that is to say, rigour, in quantitative research: validity, reliability, generalizability and objectivity [154].

Validity can be defined as the "degree to which inferences made in a study are accurate and well-founded" [154, p. 745]. Validity can be discussed in relation to the choice of design. When, as in studies II–IV, the primary question concerns prevalence or explores associations between dependent and independent variables, a cross-sectional study design is the natural choice (cf. [160]). The design has a distinct advantage in relation to other observational study designs, as no follow-up is required. On the other hand, this advantage is also related to the major disadvantage; as measurements are made at a single time-point, no causal inferences can be made [160]. Thus, there is a need for longitudinal studies to further explore the relationships found in the current studies.

Validity can also be discussed in relation to the included scales. Inner strength can be interpreted as, in some ways, an abstract construct, difficult to measure. The ISS, however, has shown acceptable psychometric properties [80], and the construct is built on a thoroughly performed and presented meta-analysis [87], and is therefore seen as a relevant framework for this thesis.

The SF-12 questionnaire has been used to estimate HRQoL and specifically addresses both physical health (PCS) and mental health (MCS). SF-12 is a shorter version of SF-36, and recommended for use with elderly respondents, because it has fewer questions and does not include questions about work [102]. SF-12 has been found to be a reliable and valid measure of health status in older adults living independently [161-163] and has, according to Ware and Sherbourne [102], the potential for use as either a predictor or an outcome measure. SF-12 is thus considered to be a valid instrument for use in the included studies.

Validity of the GDS-15 can be discussed in relation to the ongoing discussion about the outcome of summarized scores (e.g. depressive symptoms, symptoms of depressive disorders or depression). In this thesis scores below 5 were accounted for as symptoms of depressive disorders, whereas ratings on the GDS of 5 or more were interpreted as depression, a procedure supported by others [105, 106, 164], though it has been suggested that higher cut-off points might be more accurate for the diagnosis of depressive episodes [105]. Also, since the GDS is sensitive for major depression, our measurement excludes persons with other kinds of depressive states, and this could be considered a weakness. Validity could thus have been strengthened by having access to medical records/clinical diagnoses.

Reliability refers to the stability, consistency or dependability of the studies [154]. The reliability in the overall results might have been influenced by low response rates affecting precision of the surveyed persons' estimates [165]. In total, 57% returned their questionnaires, which is in line with response rates for postal surveys in medical journals [166], and it is said that participation rates in epidemiologic studies tend towards declined participation [167]. Thus, the response rate is seen as satisfactory. Nonetheless, there were many internal dropouts, a common problem in postal questionnaires [165, 168]. Face-to-face interviews or telephone interviews might have been an option to increase the response rate (c.f. [165, 167]). On the other hand, self-administration of questionnaires can increase respondents' willingness to disclose sensitive information [165], contributing to reduced measurement errors in relation to social desirability response bias or interviewer bias [154, 165].

The reliability of the included instruments (ISS, SF-12 and GDS) has been tested previously. The ISS has been applied among adult populations with participants as old as 90 years of age [79, 80, 84]. The scale has been tested, to my best knowledge, mostly among Caucasian women living in the north of Europe. This is not thought to be a problem, though, as previous selection of participants is coherent with the population included in this thesis. In testing internal consistency of the ISS in total and in the dimensions, respectively, Cronbach's alpha was at a similar level in our studies as in previous ones [79, 80]. When analysing the results, three missing values were accepted and were replaced with mode value of the respondent. In study IV, in which the ISS was the dependent variable, 215 questionnaires involved imputation; however, 230 questionnaires were excluded due to three or more missing values. This may be asserted to reflect the complexity and design of the ISS: 20 questions with a six-graded Likert scale, and in the included questionnaire, as in its original, all on one page (see Appendix). For

further development of the ISS it may be desirable to consider reducing the number of steps on the scale, and perhaps also consider redesigning the scale. Another consideration related to the construction of the ISS scale is that all questions are phrased in the same direction (1–6, with higher values indicating strong inner strength). According to Bowling [165], research indicates that in self-administered questionnaires respondents are likely to begin with the first response option presented; they may chose an early response alternative without much thought if it is agreeable, and then move on to the next question. As this was not the case in the current studies, as the answers were negatively skewed, it could be understood as the respondents have taken their time to read the questions carefully, contributing to reliability.

The SF-12 has, as previously mentioned, proven to be a valid and reliable measure of HRQoL, including among the older population. When analysing the results, no missing values were accepted, leading to reduced numbers of participants due to internal dropouts (n=448).

The GDS has proven to be useful even among very old people with impaired cognitive function [108]. Kuder Richardson coefficient of reliability (KR-20) for the GDS was 70.0 (study IV), similar to the calculated Cronbach's alpha, i.e. 0.73, which is in line with previous studies [107]. Further, the prevalence rates of depression in study III are in line with previous studies [43, 169, 170], indicating that the results appear reliable.

The "objectivity of the scales" can also be discussed. Cultural, social and language differences can all have influenced interpretation of the questions in the questionnaire (cf. [165]), also effecting reliability.

Generalizability first may concern whether the research sample is representative of the population [154, 160]. In the included studies no selections were made; every woman registered at the Local Register Office in Åland and born in or before 1945 was invited to participate. However, the result may have been affected by the response rate. The results may also have been affected by the low response rate from the oldest old, persons living alone and those with more diseases, that is, the frailest old. It is known that surveys of older people are susceptible to health-related non-response [171-173]. Postal surveys can be demanding for the respondent. Answering a questionnaire requires some skills, including reading and comprehending the question, following instructions, recognizing numbers and keying in responses (demanding both cognitive and some physical functioning) [165]. Combining the questionnaire with face-to-face or telephone interviews

would probably be a less burdensome method for the respondent [165, 173]. The relatively high numbers of dropouts in the groups mentioned may negatively affect the ability to transfer our results to older women in general, though they are presumably generalizable to women in the third age (i.e. the young old, cf. [131]). It should also be mentioned that research has shown that the oldest respondents to questionnaires (aged 80 years and older) also tend to be slightly healthier than the general population of old people [174].

Another aspect of generalizability is whether the results can be referred to other geographic areas and/or cultural contexts [154]. Although this study was conducted within a limited island area, the results are considered to be generalizable to other older people (both men and women) living in sparsely populated areas in Scandinavia.

Objectivity, addressed as neutrality of the researcher [154], is interpreted to be reached to a high degree in the quantitate studies. Another way of reflecting on the objectivity is found in the fact that the results are founded on the subjective, self-rated experience of health and health-related variables. Some clinical characteristics (diagnosed diseases, number of prescribed drugs) were provided by the participants themselves, but the level of objectivity is interpreted to be doubtful. Thus, it is possible that information from medical records could have added a further dimension to the comprehensive understanding of the data. There is also a possibility that respondents may have had help filling in the questionnaire, and that the answers may have been affected by the presence of the other person (social desirability response bias or interviewer bias) (cf. [154, 165]). Despite this uncertainty, we have no reason to doubt that the participants have done their best to answer the scales as honestly and sincerely as they could.

CONCLUSION

The results of this thesis add nuance to the notion of inner strength and deepen empirical knowledge about the phenomenon. It is elucidated that the ISS can be used not only to rate inner strength but also to offer guidance as to the areas (i.e. dimensions) in which interventions may be profitable. It is also shown that inner strength can be identified in older women's narratives. How inner strength is expressed can vary, and the diversity may be explained by being in different stages of the ageing process. Mental ill health has shown to have the overall strongest association with weakened inner strength among community-dwelling older women. The causality can, however, not be studied due to the cross-sectional design; therefore, longitudinal studies are recommended. In any case, the findings can be used as a knowledge base in further research within the field, and in forthcoming intervention studies recommended to explore means to underpin inner strength as a health resource for growth and maturation among older persons.

Further, it is concluded that older women on Åland experienced quality of life in relation to health (i.e. HRQoL) as relatively good. Notwithstanding that, the studied population mainly represented women in the third age, and it should be recalled that the older population is a most heterogeneous group in the society; the features of growing old vary indefinitely. From a salutogenic perspective, population-based studies such as the ones included in this thesis may give valuable information regarding in which areas health-promoting activities may be profitable – on a community level. However, in health and social care service the needs and objectives of the older person, as well as his/her strengths – on an individual level – should be the centre of interest. It is comprehended that only then the growth towards potential health can be successfully nurtured.

Implications from a nursing perspective

In health care "the deficit model" remains the dominant model of care. Health care personnel focus on finding problems, weaknesses and deficits, and further on resolving the problems for the patient [1-3]. There is no doubt that skills in problem-solving are of great importance for working effectively within the illness

paradigm to treat and cure disease. But for nurses this is not enough – nursing concerns health just as much as it does illness [175]. Nursing is just as much to care for patients suffering from illness as to act proactively – to promote health. Hence, it is prime time to embrace the salutogenic perspective and for nurses to devote themselves to nurturing the growth of the personally acquired potential of the other person. Inner strength is interpreted to be a potential or resource as such, and the phenomenon is thus worth paying attention to in nursing. Identifying strengths is understood to be an important first step in the nursing process; being in need of care is not the opposite of being a resourceful person. Here the ISS may be a useful tool, and inner strength may also be successfully identified in narratives of older women. Once recognised, the strengths need to be acknowledged and implicated.

Inner strength is understood to be nurtured by reinforcing the dimensions of inner strength. It is interpreted that to support connectedness, engagement, commitment and meaningful involvement should be emphasized. It is about being given the opportunity to share everyday life with someone in a caring relation, about feeling valuable as a person and being a part of the greater whole. It is about being given the opportunity to engage with other people and society, but also to be given the opening to transcend; to be within yet reaching out to find communion with a greater whole.

To support the dimension of creativity can be about giving the older woman the space and encouragement to come up with creative solutions herself, contributing to a strengthened sense of being competent, efficacious and capable of doing. When needed, alternative solutions are to be presented, so that novelties/new methods/personal assistance that it are interpreted to be relevant may be embraced, selecting to optimize and compensate to overcome the reluctant body and to achieve valuable objectives. It can further be about recalling strengths and through a creative approach encouraging the older woman to look on the bright side of life.

Inner strength may further be supported by underpinning the dimension of firmness. To support firmness, a caring plan based on partnership is found to be essential; it is about the relational "being with" just as much as the task-oriented "doing for". It is about listening to the story of the other person: to what she considers to be the problem, and what her goals, beliefs and values are. To safeguard the partnership, documentation is of importance; documenting gives legitimacy to perspectives of the other person and makes the patient–provider

interplay transparent. Further, endorsement of reaching goals is understood to be important.

To support the dimension of flexibility, caring conversations are considered to be essential, wherein the older woman is given the possibility to share her problems, losses and concerns. Different perspectives may be illuminated, and through exploring the meaning of hardship and suffering a turning point may be reached, accepting the unchangeable circumstances, getting in touch with new ways of knowing oneself and reaching some way forward.

POSTFACE

When I entered the world of research it was with delight mingled with terror. And rightly so, the process has really had its ups and downs. But now, being in the end of the journey and looking back on what got me started, I feel convinced that a health promotive, strengths-based perspective, based on the values of person-centered care, is a field of research I want to hold on to. As stated earlier, there is a need to perform longitudinal studies to confirm the results of this thesis. Therefore I feel grateful for now being able to initiate a five-year follow-up study on the older women living on Åland, and further, to have the privilege to also include the older men. But more importantly I hope this thesis will inspire others to see older women, and even other persons being in need of care, as resourceful persons with a life story full of experiences and strengths waiting for being disclosed. Moreover, to embrace that health care is just as much as much to acknowledge the experiences and strengths of the other person – to promote health – as it is to treat and cure disease.

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SVENSK SAMMANFATTNING

Inre styrka (*inner strength*) har visat sig vara en resurs av betydelse för att uppleva hälsa trots sjukdom, funktionsnedsättning och andra svårigheter i livet. I denna avhandling har inre styrka studerats utifrån en teoretisk modell, i vilken inre styrka antas bygga på fyra dimensioner: samhörighet (*connectedness*), kreativitet (*creativity*), fasthet (*firmness)* och flexibilitet (*flexibility*). Tillhörande modellen finns en skala, Inre Styrka Skalan (*The Inner Strength Scale*) (ISS) (Appendix), med vilken personers inre styrka kan skattas.

I avhandlingen har inre styrka studerats bland äldre kvinnor (65 år och äldre), en grupp i samhället som av olika orsaker kan betraktas som särskilt sköra och sårbara. Studierna har genomförts på Åland, ett självstyrt svenskspråkigt ösamhälle i Finland med idag ca 29 000 invånare. När studierna inleddes uppmärksammades att det saknades väsentlig hälsodata för den äldre befolkningen på Åland. Ett mål var därför att bidra till att fylla denna kunskapslucka. Det övergripande syftet med avhandlingen var dock att undersöka inre styrka som en hälsoresurs bland äldre kvinnor.

I studie I genomfördes sex gruppintervjuer med total 29 samhällsaktiva äldre kvinnor (medelålder: 74,6 år). Syftet var att undersöka hur inre styrka, utifrån den teoretiska modellen, kan komma till uttryck i äldre kvinnors berättelser. Samhörighet kom till uttryck som ”Strävan efter kommunion”; att dela vardagslivet med någon, att göra gott för andra och känna sig uppskattad samt att vara ensam men ändå känna samhörighet. Kreativitet kom till uttryck i form av ”Att göra det bästa av situationen” och omfattade att övervinna den motsträviga kroppen, se ljust på tillvaron och vara öppen för nymodigheter. Fasthet kom till uttryck i form av att ”Det är upp till en själv” och belyste vikten av att sätta upp mål och att eftersträva att uppnå målen, men också att ta sig rätten att göra det man känner för. Flexibilitet kom till uttryck som ”En balansakt” och innebar att kunna ha ett reflekterande förhållningssätt till sig själv, att inför olika situationer kunna se båda sidor av myntet och vara ödmjuk inför vad livet har att erbjuda.

Resultaten i studie II-IV baserar sig på ett frågeformulär som skickades till samtliga äldre kvinnor på Åland år 2010. Totalt besvarade 1555 kvinnor formuläret efter en påminnelse, vilket innebär en svarsfrekvens motsvarande 57 % (medelålder 74.4 år). Frågeformuläret innehöll en uppsättning av frågor och skalor kopplat till olika faktorer som kan vara av betydelse för hälsa och livskvalitet i åldrandet, inklusive ISS.

I studie II var syftet att studera hälsa i relation till livkvalitet bland äldre kvinnor på Åland. Det kunde konstateras att kvinnorna generellt skattade både den fysiska och mentala hälsan som relativt god. Kvinnorna i den äldsta åldersgruppen (80 år och äldre) hade sämre både fysisk och mental hälsa jämfört med kvinnorna i de lägre åldersgrupperna. Vidare var syftet att studera om inre styrka samt vilka andra faktorer som oberoende av varandra kan ha påverkan på hälsorelaterad livkvalitet hos äldre kvinnor. Resultatet visar att starkare inre styrka kan förklara bättre mental hälsa, men det fanns inget statistiskt signifikant samband mellan inre styrka och fysisk hälsa. Frånvaro av sjukdom, lägre ålder och att ha möjlighet att delta i meningsfull fritidsysselsättning hade samband med bättre fysisk hälsa. Tilläckliga ekonomiska resurser hade, utöver stark inre styrka, samband med bättre mental hälsa. Det största hotet mot hälsorelaterad livskvalitet visade sig vara symtom på depressivt tillstånd, som tillsammans med att känna sig ensam, förklarade sämre både fysisk och mental hälsa.

Syftet med studie III var att studera om det fanns samband mellan inre styrka och förekomst av depressivt tillstånd (motsvarande fem eller fler symtom på depressivt tillstånd). Ett samband kunde konstateras vilket tolkas som att stark inre styrka kan ha en skyddande effekt mot depressiva tillstånd. Denna tolkning måste dock bekräftas med studier där man följer äldre kvinnor över tid. I den aktuella studien kunde det också konstateras att 11,2 % av kvinnorna uppvisade fem eller fler symtom på depressivt tillstånd och i den äldsta åldersgruppen (80 år eller äldre) var motsvarande andel 20 %. Utöver stark inre styrka visade följande faktorer samband med icke-depressivt tillstånd: att inte känna sig ensam, äta färre receptbelagda läkemedel, känna sig behövd och ha möjlighet att delta i meningsfull fritidssysselsättning.

I studie IV var syftet att studera sambandet mellan vanliga hot mot hälsan bland äldre kvinnor och inre styrka och dess dimensioner. Sämre mental hälsa var den enda faktor som förklarade svagare inre styrka totalt och i alla dimensioner. Symtom på depressivt tillstånd och att känna sig ensam förklarade lägre poäng (dvs svagare styrka) i tre av dimensionerna (utom fasthet respektive flexibilitet). Sämre fysisk hälsa förklarade lägre poäng (dvs svagare styrka) i dimensionerna

fasthet och flexibilitet. Andra hälsohot (hög ålder, lägre utbildning, att inte ha någon att dela glädje och sorg med samt att inte kunna påverka samhället) visade samband med enbart en av dimensionerna (antingen samhörighet eller kreativitet). Övriga hälsohot (vara ensamstående/änka, ha knappa ekonomiska resurser, vara barnlös, vara ensamboende, inte känna sig behövd, inte ha möjlighet att delta i meningsfulla fritidsaktiviteter) visade inget statistiskt signifikant samband med inre styrka.

Sammanfattningsvis, utifrån studiernas resultat, dras slutsatsen att mental ohälsa har ett samband med svag inre styrka. Studiernas upplägg medför att det inte går att tolka sambandens riktning och vidare studier rekommenderas därför. Detta oaktat har studierna bidragit till en ökad förståelse för fenomenet inre styrka och kan ligga till grund för fortsatta teoretiska studier, men även som en kunskapsbas för kommande interventionsstudier. Vidare betraktas studierna komplettera befintlig folkhälsodata gällande äldre kvinnor på Åland. Trots att hälsorelaterad livskvalitet bland kvinnorna på Åland tolkas som relativt god måste det uppmärksammas att den äldre befolkningen är en mycket heterogen grupp i vårt samhälle. Det finns äldre kvinnor som är mycket sköra och sårbara och utifrån ett hälsofrämjande perspektiv och utifrån resultaten i denna avhandling kan det tolkas vara av vikt att fokusera på mental ohälsa bland äldre kvinnor. Resultaten visar också att speciell uppmärksamhet bör riktas mot kvinnor som är 80 år och äldre. Oavsett anledning till ohälsa och ålder bör dock den unika personens behov och intressen stå i centrum vid planering av vård och omsorg. Genom att fokusera lika mycket på personens resurser eller styrkor, som på problem och brister, antas hälso- och sjukvården kunna stödja personen att kunna uppleva hälsa trots sjukdom, funktionsnedsättning och andra svårigheter i livet.

Inre styrka

Nedan följer påståenden som beskriver hur Du kan uppfatta Dig själv och Din omvärld. Vi ber Dig ringa in/kryssa för den siffra som bäst överensstämmer med hur påståendet passar in på Dig. Alternativen skattas från 1-6 och de finns redovisade i tabellen nedan, där siffran ett [1] innebär att Du tar helt avstånd från påståendet medan siffran sex [6] innebär att påståendet stämmer helt med Din uppfattning. Det finns inga rätta eller felaktiga svar. Om påståendet inte är aktuellt just nu, så skall Du svara hur det mestadels varit för Dig under livet.

Tar helt avstånd	1
Tar nästan helt avstånd	2
Tar delvis avstånd	3
Instämmer delvis	4
Instämmer nästan helt	5
Instämmer helt	6

Jag tycker att det känns meningsfyllt att umgås med andra människor	1	2	3	4	5	6
Jag har lätt för att se saker och ting från olika synvinklar	1	2	3	4	5	6
Jag tycker det är spännande att prova på nya saker	1	2	3	4	5	6
Jag kan ”förhålla mig” till kritik som riktas mot mig	1	2	3	4	5	6
Jag genomför det jag planerat	1	2	3	4	5	6
Jag kan ta emot stöd från andra när jag behöver	1	2	3	4	5	6
Jag inser att världen inte är rättvis och kan hantera det	1	2	3	4	5	6
Jag känner öppenhet inför livet och dess möjligheter	1	2	3	4	5	6
Jag ser mig själv som en del i ett sammanhang	1	2	3	4	5	6
Jag värderar min självständighet högt	1	2	3	4	5	6
Jag kan vanligtvis släppa oförätter som drabbat mig	1	2	3	4	5	6
Jag ser på utmaningar som en möjlighet att utvecklas	1	2	3	4	5	6
Jag är en person som man kan lita på	1	2	3	4	5	6
Jag känner samhörighet med andra människor	1	2	3	4	5	6
Jag tycker att det är viktigt att våga anta utmaningar	1	2	3	4	5	6
Jag vet vad som hör till mitt ansvar	1	2	3	4	5	6
Jag har tålamod	1	2	3	4	5	6
Jag är en person som har båda fötterna på jorden	1	2	3	4	5	6
Jag söker stöd av andra människor när jag har det svårt	1	2	3	4	5	6
Jag är intresserad av att lära mig nya saker	1	2	3	4	5	6

[Lundman, Viglund, Aléx, Jonsén, Norberg, Santamäki Fischer, Strandberg, Nygren, 2010]