

Frail elders' experiences of health

A combination of qualitative and
quantitative studies with a salutogenic
perspective

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“True wisdom is to know what you do not know”

Socrates

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ABSTRACT

The overall aim of the thesis was to explore experiences of health and its influencing factors among frail elders and to evaluate the effect of the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home*.

Studies I and II had a qualitative approach, and aimed to explore frail elders' experiences with and perceptions on the phenomenon of experiences of health (study I), and to explore and identify influences on frail older adults' experience of health (study II). A sample of frail elders participated in qualitative interviews and reported about their experiences of health and its influencing factors. Eleven men and 11 women aged 67-92 years, who were varied in their ratings of self-perceived health from poor to excellent, were selected through a purposeful strategic sampling of frail elders from the main project *Continuum of care for frail elderly people, from the emergency ward to living at home*. The interviews were analyzed using Giorgi's descriptive phenomenology (study I) and qualitative content analysis (study II). Studies III and IV had a quantitative approach, and aimed to analyze the explanatory power of variables measuring health strengthening factors for self-rated health among community-living frail elders (study III) and to evaluate effects of the intervention on self-rated health, experiences of security/safety and symptoms (study IV). The two quantitative studies are based on the data from the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home*. The intervention involved collaboration between a nurse with geriatric competence at the emergency department, the hospital wards and a multi-professional team for care and rehabilitation of the elders in the municipality with a case manager as the hub. Elders who sought care at the emergency department at Sahlgrenska University Hospital/Mölndal and who were discharged to their own homes in the municipality of Mölndal were asked to participate. Inclusion criteria were age

80 years and older or 65 to 79 with at least one chronic disease and dependent in at least one Activities of Daily Living.

Study III was cross-sectional and study IV was a non-blinded controlled trial with participants randomized to either the intervention group or a control group with follow-ups at 3, 6 and 12 months. Data were collected between October 2008 and November 2011 through a face-to-face structured interview with elders aged 65-96 years (n= 161). In study IV the analyses were made on the basis of the intention-to-treat principle. Data were analyzed using binary logistic regression of a set of independent relevant variables and self-rated health (study III). In study IV the outcome measures were self-rated health, experiences of security/safety and symptoms that were analyzed using Svensson's method.

The results showed that frail elders described health as harmony and balance in everyday life which occurred when interviewees were able to adjust to the demands of their daily lives in the context of their resources and potentials (study I). To feel assured and capable was the main theme, which consisted of five subthemes: managing the unpredictable body, reinforcing a positive outlook, remaining in familiar surroundings, managing everyday life, and having a sense of belonging and connection to the whole (study II). We further found that being satisfied with one's ability to take care of oneself, having 10 or fewer symptoms, and not feeling lonely had the best explanatory power for community- living frail elders' experiences of good health (study III). The results from study IV indicated a positive effect of the intervention on the elders' self-rated health and experiences of symptoms. Regarding elders' experiences of symptom, the result showed statistically significant differences between intervention- and control group at the six month follow-ups. Concerning elders' self-rated health, the result showed statistically significant improving within intervention group from baseline up to 6 and twelve month.

Conclusion: It is possible even for frail elders to experiences good health. A multidisciplinary and person-centric social and healthcare system is desirable where the focus should not only be on ailments and problems but also to provide supportive services from a salutogenic perspective and thereby enable elders to feel secure in managing their everyday lives as this further reinforces their experience of good health.

Keywords: Experiences of health, frail elders, resilience, person-centered care, Salutogenic perspective

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SAMMANFATTNING PÅ SVENSKA

Denna avhandling handlar om sköra äldre personers upplevelse av hälsa. Sköra äldre personer karakteriseras av personer med nedsatt reservkapacitet, ökad risk för sjuklighet och funktionsnedsättning. Dessa äldre utgör en stor andel av de personer som behöver mångsidig vård och omsorg på olika nivåer från olika vårdgivare (primär vård, slutenvård, kommunal vård och omsorg). Fragmentering av vård och omsorg och behoven av att utveckla en samordnad och integrerad vård och omsorg för äldre personer är ett erkänt internationellt problem. Utmaningen att skapa ett integrerat vårdssystem för äldre personer växer med den ökande andelen av äldre population. Det övergripande syftet med avhandlingen var att undersöka sköra äldre personers upplevelse av hälsa och dess påverkande faktorer, samt att utvärdera effekten av interventionen *Vårdkedja för sårbara äldre personer från akutmottagning till eget boende*.

Metod: Studie I och II var kvalitativa studier och syftade till att undersöka sköra äldre personers upplevelse och uppfattning av fenomenet subjektiv hälsa (studie I) och att undersöka och identifiera det som förstärker sköra äldre personers upplevelse av hälsa (studie II). En grupp av sköra äldre personer (elva män och 11 kvinnor i åldern 67-92 år) med olika skattningar på sin hälsa från dålig till utmärkt deltog i kvalitativa intervjuer från deltagande i interventionsprojektet *Vårdkedja*. Intervjuerna analyserades med hjälp av metoden *Giorgis deskriptiv fenomenologi* (studie I) och *kvalitativ innehållsanalys* (studie II). Studie III och IV var kvantitativa studier, och syftade till att analysera förklaringsvärden av hälsans förstärkande faktorer för sköra äldre personers självskattade hälsa (studie III) och att utvärdera interventionens effekt på de sköra äldre personers självskattade hälsa, upplevelse av trygghet och symptom (studie IV). De två kvantitativa studierna byggdes på data från interventionen *vårdkedja för sköra äldre personer, från akutmottagning till eget boende*. Interventionen involverade ett samarbete mellan en sjuksköterska med geriatrisk kompetens på akutmottagning, sjukhusavdelningar och ett multiprofessionellt team för vård, omsorg och rehabilitering av de äldre i kommunen med en *Case manager* som koordinator. De äldre personer som sökte vård på akutmottagningen vid Mölndal och var hemmaboende i Mölndals kommun ombads att delta. Äldre personer i åldern 80 år och äldre eller 65-79 med minst en kronisk sjukdom och beroende i minst en daglig aktivitet inkluderades i studien. Studie III var tvärsnittsstudie och studie IV var en icke - blindad kontrollerad studie med deltagare randomiserade till antingen interventionsgrupp eller en kontrollgrupp med uppföljning vid 3, 6 och 12 månader. Data samlades in

mellan oktober 2008 och november 2011 genom en strukturerad intervju och en rad test i äldre personers hem. Data analyserades med binär logistisk regression (studie III). Effekten av interventionen *Vårdkedja för sköra äldre personer, från akutmottagning till eget boende* på självskattad hälsa, upplevelse av trygghet och symtom analyserades med hjälp av Svenssons metod (studie IV).

Resultat: Essensen i fenomenet upplevelse av hälsa för sköra äldre personer var att vara i harmoni och balans i vardagen, vilket byggdes på fem sammanflätade essentiella komponenter. Det vill säga varande i harmoni och balans inträffades om de sköra äldre personerna kunde uppleva: sig som herre över sitt liv, att kroppen sköter sig själv, tillfredsställelse med sin tillvaro, att bli bekräftad som en värdig person och att bli involverad och delaktig (studie I). Att ha trygghet och kontroll i vardagen förstärkte de sköra äldre personers upplevelse av hälsa. De sköra äldre personerna upplevde trygghet och kontroll i vardagen om de kunde: hantera den oförutsägbara kroppen, ha gott mod och vilja att möta framtiden, få bo kvar i sin välkända miljö (hemmet), styra över sitt vardagsliv och ha en känsla av samhörighet och känna sig som en del av helheten (studie II). Att vara tillfreds med sin förmåga att klara sig själv, ha 10 eller färre symtom och inte känna sig ensam hade bäst förklaringsvärde för självskattad god hälsa (studie III). Interventionen *Vårdkedja för sköra äldre personer*, hade statistiskt signifikant positiv effekt på sköra äldre personers självskattade hälsa och upplevd symtom (Studie IV).

Slutsatser: Fenomenet upplevelse av hälsa hos sköra äldre personer karaktäriseras av att vara i harmoni och balans i vardagen och upplevelse av god hälsa är möjlig om äldre kan uppleva trygghet och kontroll i vardagen. Implementering av interventioner som *Vårdkedja för sköra äldre personer*, förstärker sköra äldre personers upplevelse av god hälsa.

LIST OF PAPERS

This thesis is based on the following studies, referred to in the text by their Roman numerals.

- I. Ebrahimi Z, Wilhelmson K, Moore Dea C, Jakobsson A. Frail elders' experiences with and perceptions of health. *Qual Health Res.* 2012;22(2): 1513-1523.
- II. Ebrahimi Z, Wilhelmson K, Eklund K, Moore Dea C, Jakobsson A. Health despite frailty: Exploring influences on frail older adults' experiences of health. *Geriatric Nursing.* 2013;34(4): 289-294.
- III. Ebrahimi Z, Dahlin-Ivanoff S, Eklund K, Jakobsson A, Wilhelmson K. Self-rated health and health strengthening factors in community-living frail elders. (Submitted to *Journal of Advanced Nursing* 2014-03-18).
- IV. Ebrahimi Z, Eklund K, Dahlin-Ivanoff S, Jakobsson A, Wilhelmson K. Effects of a continuum of care intervention on frail elders' self-rated health, symptoms and sense of security/assurance: A randomized controlled trail. (Submitted to *Geriatric Nursing* 2014-04-29).

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ABBREVIATIONS

RCT	Randomized Controlled Trial
WHO	World Health Organization
SRH	Self- Rated Health
SOC	Sense of Coherence
PCC	Person-Centered Care
MRC	Medical Research Council
OR	Odds Ratio
ADL	Activities of Daily Living
P-ADL	Personal Activities of Daily Living
DV	Dependent Variable
IV	Independent Variable
LISAT	Life Satisfaction Assessment
GDS	Geriatric Depression Scale
IPA-O	Impact on Participation and Autonomy for Older persons
ITT	Intention-to-treat
CI	Confidence Interval
MCD	Median Change of Deterioration
RP	Relative Position
RV	Relative rank Variance

1 INTRODUCTION

This thesis deals with experiences of health among frail elders. It consists of two qualitative studies with explorative approach, aimed to describe the phenomenon of health (study I) and the factors that influences health (study II) among frail elders, and two quantitative studies. The two quantitative studies are based on the data from the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home* [1]. The first quantitative study aimed to test the association between self-rated health and a set of factors, which were guided from the qualitative study results (study III). The second one is an evaluation of the intervention *continuum of care for frail elderly people, from the emergency ward to living at home*, a randomized controlled study (RCT) (study IV).



Frail elders represent a great proportion of the persons in need of various care and support from the healthcare system in the various levels [2]. Fragmentation of care for elders is recognized as an international problem and furthermore the needs of developing a coordinated and integrated system of care for elders is suggested [3]. The challenge of creating an integrated healthcare system for elders is a globally relevant issue in the various levels; both for individuals, clinicians as well for researchers and politicians. This

challenge grows with increasing number of elders. People aged 65 and older are increasing in a constant trend worldwide [4] as well in Sweden [5, 6].

In Sweden, people aged 65-79 will increase by 45 percent, and those aged 80 and older will increase by 87 percent by 2050 [7]. Those aged 80 and older are the “oldest-old,” and 37% are in need of home care or special housing [8, 9]. In Sweden, in 2007 66 % and in 2012 72 % of the oldest-old lived in the ordinary housing [9]. People aged 65 and older account for 40 % of all visits to emergency department [10]. The oldest-old often is characterized by an increased risk for developing frailty, multi-morbidity and functional impairments [11]. A combination of multi-morbidity and dependence of other in daily activities increases elders frailty in very advanced aged [12, 13]. There is evidence that emphasize frailty among elders as a dynamic process [14] and suggests opportunity and intervention to postpone this elders' decline in health and frailty and thereby improve their well-being [14, 15].

Thus increased older population, its increasing needs of healthcare utilization [2] and the demand for continuity in healthcare system is emphasized [16]. Interventions must be planned to improve coordination of care of frail elders with focus on their needs and resources. It is well known that maintenance of health in old age is both a challenge and goal of the individuals and the healthcare system and there is still much potential to improve the care of elders. I believe that in this context the perspective of the frail elders about health and its influencing factors is essential.

I am a geriatric nurse and have worked for several years as a registered nurse within hospital and municipal elderly care and home nursing care. I have a caring perspective that considers four basic building blocks: human being, health, environment and caring. I have experienced the importance of exploring frail elders own perspective in planning of an integrated care for elders with complex needs. Further I have a person-centric perspective and believe that a successful healthcare plan for all individuals regardless of age starts with the person's narratives and experiences of disease and suffering in their everyday life context. This thesis has a salutogenic and person-centric perspective and therefore it starts with elders' narratives and experiences in their everyday lives context. I consider health as a dynamic multi-dimensional state of well-being, which is in agreement with Bircher's [17] definition of health that is “a dynamic state of well-being characterized by a physical and mental potential, which satisfies the demands of life commensurate with age, culture, and personal responsibility” (p. 336). The perspective of this thesis is a salutogenic; with a consciously positive view

that tries to highlight these frail elders' resources and opportunities to create good health in frailty.

The focus of this thesis is on the experiences of health from frail elders' own perspective. Thus in order to facilitate an understanding of experiences of health in frail elders the following relevant concepts are motivated to be presented in the background: Health and experiences of health from a salutogenic perspective is interrelated with well-being, quality of life, life satisfaction and sense of coherence. The target group is frail elders; therefore the concept of aging and frailty is central and will be highlighted. The process of elders' ability to create health in frailty depends on many factors on various levels that are described in terms of healthy aging, resilience and aging in place. Further frail elders' increasing needs of healthcare utilization require a well-planned integrated healthcare system and intervention, thus the concepts of caring, person-centered care, continuum of care, integrated intervention are relevant to highlight in the beginning of this thesis.

2 BACKGROUND

2.1 The concept of health

Health is a directive aim in the practice of health professions and has been described in various ways across diverse disciplines. Saracchi defines health as a condition of well-being, free of disease or infirmity, and according him health is a basic and universal human right [18], while Bircher [17] defines health as “a dynamic state of well-being characterized by a physical and mental potential, which satisfies the demands of life commensurate with age, culture, and personal responsibility” (p. 336). Nordenfelt [19] emphasizes the dynamic nature of health and defines health as individual’s ability to reach all his or her vital goals in an standard circumstances, across a continuum from a state of complete health to a state of maximal illness. World Health Organization (WHO) has the first holistic definition of health, which is construed as “a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity” [20]. Some researchers recommend a revised definition of health based on the WHO, wellness, and environment models [21].

To adequately define health, a multidimensional perspective must be employed. WHO made an addition to the definition of health, termed “Good health is a major resource for social, economic and personal development and important dimension of quality of life”(p.155) [22]. From caring perspective health defines as physical and mental soundness and feelings of well-being and wholeness[23]. The meaning of health is linked with the meaning of life and means that health is holistic and multidimensional, relative, and subjective. Health and suffering are intertwined and posits “health is enduring suffering” [24]. Unendurable suffering hinders human development, and therefore care is intended to alleviate it [24]. Smith [25] has done a philosophical inquiry over the definitions of health and summarized it in four models, including the clinical model which focuses on physiology, the role performance model which emphasizes the social aspect, the adaptive model which highlights the individual’s capacity and flexibility in a challenging environment, and the eudemonistic model which views individuals as civilized, cultured persons who have the capacity for continuous growth [25]. All four models is characterized by the view of health as a relative term, which people are judge healthy when measured against some standard or ideal of health [25]. A multidimensional definition of health views humanity through a lens of wholeness, unity and individuality, which necessitates a multi-professional definition [25]. I

consider health as a dynamic multi-dimensional construct of well-being in a continuous change, which doesn't mean to have a complete state of well-being.

Self-rated health (SRH) is a well-used reliable measurement of the broader concept of general health in a quantitative dimension [26, 27] and a predictor of both mortality [26, 28, 29] and further morbidity [29] [30]. SRH declined with age, but approximately two thirds of oldest-old (80+) reported their health at least as good [31]. SRH refers to overall health status and capture a multiple subjective aspect of health that is based on systems theory and the bio-psychosocial health model [32]. SRH is a significant predictor of morbidity, mortality and disability among elders [32, 33]. Low SRH was associated with disability and low physical functioning in an aging population [34, 35].

2.2 Some interrelated concepts of experiences of health

According to Bircher [17], health is a dynamic state of well-being. The concept of well-being is complex construct of being happy and pleased, which refers to a psychological optimal experience and functioning [36]. Subjective well-being is suggested to include moods and emotions as well as cognitive evaluations of life satisfaction [37]. People with high subjective well-being reported better health and fewer unpleasant physical symptoms [38]. Gough et al [39] defined well-being as “What people are notionally able to do and to be, and what they have actually been able to do and to be” (p.6). Well-being is more than the absence of illness or pathology with subjective and objective dimensions. A person's well-being characterizes by these aspects: good, benefit, advantage, interest, prudential value, welfare, happiness, flourishing, eudaimonia, utility, quality of life, and thriving [40]. In short well-being has been defined from two perspectives: the hedonic approach focusing on happiness and defines well-being as pleasure attainment and pain avoidance; and the eudaimonic approach focusing on the meaning and self-realization and defines well-being as the degree of whether a person is fully functioning. Well-being is conceived as a multidimensional phenomenon that includes aspects of both the hedonic and eudaimonic conceptions of well-being [36]. The new definition considers well-being as the balance point between an individual's resource pool and the challenges faced [41].

The cognitive dimension of subjective well-being is life satisfaction, which refers to individuals' global evaluation of satisfaction with their own lives [37, 42]. Life satisfaction involves judgments of fulfillment of one's needs, goals, and wishes [43]. High well-being and life satisfaction improve life within the four areas of health and longevity, work and income, social relations, and societal benefits [44]. Satisfaction with life as a whole is equated with happiness [45]. Life satisfaction among older persons is known to be related to their health [24]. Factors such as family life, health [46], frailty [47] and personality influences elders' assessment of life satisfaction [48].

Quality of life is a broad concept that incorporates all aspects of life. Quality of life is an overarching concept, where global and domain-specific life satisfaction are included [43]. Quality of life has also been defined "as the satisfaction of an individual's values, goals and needs through the actualization of their abilities or lifestyle" [49]. The definition is consistent with personal satisfaction and wellbeing stem from the degree of fit between an individual's perception of their objective situation and their needs or aspirations [50]. The World Health Organization defines Quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment" [51]. Health related quality of life is a complement measurement of result in the health care system, which intend to measure the impact of disease on health and quality of life and [52].

2.3 Aging

Aging and its consequences is a natural process of life, which gradually changes a vital adult person to a vulnerable older person. These changes are irreversible [53]. Aging is a dynamic complex and progressive process involving the individuals' biological, psychological and sociological aspects [54]. Biological aging deals with a successive irreversible deterioration of the functional capacity and resilience in molecule, cell and organ level [53], while sociological aging handles the changes in the individual's role and position associated with chronological age [55]. Aging from a psychological perspective deals with changes in the individual's mental condition and the degree of adaptability in relation to the demands of society for elders [55]. The risk of disease, health problem, disability and death increases with aging [56]. Some evidence emphasizes "the paradox of well-being" and shows that

individual's subjective well-being and experiences of health increases by aging [56-59]. There is some classification of elders depending on different life course levels such as: third age refer to older shortly after retirement with no or little functional decline, while fourth age refer to the oldest old people with more functional decline [60]. Frailty is a defining characteristic of physiological processes in fourth age [61, 62]. From elders' perspective lack of energy, to be dependence of other and exhaustion of dealing with changes in life give a sense of being old [63].

2.4 Frailty

Frailty has become an established concept in research [11, 64-67], it is more prevalent with increased age and is associated with higher risk of negative health outcome, need for long-term care, institutionalization and mortality [64, 68, 69]. Frailty is an emerging multidimensional perspective in the understanding of aging and health in elders [11, 70] across a continuum from healthy to robustness, pre-frail and frail [67, 71] considering a complex interplay of physical, psychological, social, and environmental factors [72]. The frequently used definition of frailty terms a physiologic state of increased vulnerability to stressors, which is result from decreased physiologic reserves and dysregulation of multiple physiologic systems. This definition indicates that frailty is a complex geriatric syndrome with several interacting factors related to disability and co-morbidity [11, 67]. Frailty is characterized by loss of function, physiological reserve capacity and increased susceptibility to acute illness, falls, disability, institutionalization, and death [11, 73].

There are a number of different efforts to operationalize frailty among elders but still there is no consensus on the concept [68]. The "Functional Domain" model links frailty in elders to the degree of functional disability in relation to elders' capacity to accomplish activities of daily living [66, 72]. "The Burden" model defines frailty according the degree of burden of disease, symptoms, complaints, disability, and cognitive impairment [66] [65], which is closed to the cumulative deficit model is composed of a checklist of clinical conditions and diseases [74]. "The Phenotype" model measures the presence of signs or symptoms [64] while the "Biological Syndrome" of reductions in capacity and impairment of the defense mechanisms against stress [11, 75]. A new consensus in researchers group in the area recommends using of the Phenotype model in measuring of physical frailty [76] that is developed by Fried and colleagues [11, 75] The model includes mobility, balance, muscle strength, motor processing, cognition, nutrition,

endurance and physical activity [67] and takes into account the presence of three or more of the following criteria: unintentional weight loss, self-reported exhaustion, low energy expenditure, slow gait speed, and weak grip strength [11, 64].

Frailty has a large effect on elders' disability, physical and psychological domains of quality of life [23]. Studies showed that frailty was associated with lower scores on both physical and mental health-related quality of life [77] and life satisfaction with health [78]. Social vulnerability is related to elders' experiences of health and is associated with higher mortality, which is higher among elders who are more frail [79]. Frailty is associated with cognitive impairment and increasing risk for depression and anxiety, and furthermore a co-existence of depression and psychiatric illness is higher among frail elders [80]. Frailty implies a risk of multi-morbidity and thereby a need of care from many care levels and from caregivers with different competences, such as gerontology, geriatrics, internal medicine, rehabilitation, nursing and social work. This makes it clear that frail elderly people need integrated, coordinated care [3]. The multidimensional concept of frailty must also take into account the contribution of both subjective perspectives, social and environmental factors [72]. Elders' perceived vulnerability is associated with increased depressive symptoms and decreased physical and psychological wellbeing [81]. Knowledge of frail elders' descriptions and perceptions of their health are scarce. To fully understand frailty, individuals' subjective perceptions of health in their unique context should be taken into account [72].

2.4.1 Frail elders' health

From the perspectives of elders, living with chronic diseases means a daily struggle to create health despite illness and infirmity [82]. Elders who live with chronic diseases must mobilize their resources to master everyday living, otherwise feelings of blame and shame arise in the context of a sense of responsibility that they are unable to effectively cope with daily living demands [83]. Peace of mind is an important basis for older peoples' experience of health [84]. Elders defined health as going and doing something meaningful, which had four components: something worthwhile to do, balance between abilities and challenges, appropriate external resources, and personal attitudinal characteristics [85]. Elders' experiences of health and ill-health encompass their perceptions of the positive and negative poles of autonomy, togetherness, tranquility, and security in daily life [86]. Better physical performance of mobility and cognitive functioning predicted the elders' ability to remain nondisabled [87]. The importance of

effective rehabilitation strategies [87] and supporting efforts that help the older adults to adjust to their everyday “real-life context” and to regain normality is the first step in recovering from illness to health [88].

Frail elders represent a great proportion of the persons in need of diverse care and support from the health care system at various levels [2]. Frail elders living in their own homes are frequently admitted to hospital [89]. Fragmentation of care for elders is recognized as an international problem [3], which may result in problems such as duplications, gaps and discontinuity [90] and furthermore the needs of developing a coordinated and integrated system of care for elders is suggested [90]. Unfortunately, many frail elders experience health and social care services that are not responsive to their main concerns, despite their high usage of such services [91].

An integrated health and care system is especially important for frail elders with complex needs [15, 92] and I and my co-authors believe that frail elders’ perception and description of health is essential in this context. Frailty among elders is characterized by a dynamic transition between frailty states and therefore prevention and remediation of frailty is possible [14]. A systematic review of ten RCT and five observational studies showed that case management in community aged care interventions significantly improved psychological health or well-being in the intervention group [93]. A systematic review of qualitative studies over the elderly patients’ views of their emergency care suggested several efforts to improve delivery of care. Initiate frequently communication, a leadership with both the medical and social needs and a care transition and involvement of caregivers were among the key efforts toward a patient-centered care [94].

Frailty from elders own perspectives is understood as a state of imbalance in which they experienced the loss of some connections whilst working to sustain others to create new ones. Frail elders did not define themselves as frail, rather they demonstrated capacity to overcome or find others to overcome their physical, emotional or social vulnerabilities [95]. I and my co-authors believe that the experiences of health are more articulated among frail elders just alike appearance of light in the darkness. Consequently exploring experiences of health from frail elders’ perspective is exceedingly relevant and essential in planning of intervention for these elders to postpone decline in health and creating well-being in this phase of the life.

2.5 The process of resilience

Resilience is a relevant concept that defines aging as a dynamic process involving many stepwise and gradual iterations toward a reconstituted sense of wellness; ultimately, it gives people the capacity to live a meaningful life despite adversity [96]. Charney [97] explains resilience and vulnerability in a model of psychobiological factors involving neural mechanisms of reward and motivation, fear responsiveness and adaptive social behavior. Resilience in aging is not avoidance of disease and ill-health but is a positive adaptation to hardship, through a process of “person-environment interaction” [98]. People who suffer from chronic illnesses hover between hope and despair; they often feel alone in their illness, experiencing their body as a hindrance in the constant struggle to create an easier life [99]. Older people with chronic illness seek to construct meaning in the illness experience and do their best to live healthy lives despite diseases and ailments. Validation of this daily quest by professionals and relatives has been found important in finding meaning in the elders' suffering [100]. Elders with somatic health problems have been found to strive to maintain control and balance in their lives through constant calibration and adjustment of expectations in order to adapt to a reduced energy level, aging and health problems [101]. Lundman et al. [102] emphasized the role of inner strength in resilience and creating well-being. They identified four core and interacting dimensions of inner strength: connectedness, firmness, flexibility, and creativity. Inner strength meant believing in one's own possibilities, making choices and having control over life's trajectory in a meaningful way [102].

Healthy aging has been associated with the elder's ability to constantly modify, reassess, and redefine oneself [103]. Older people perceive healthy, active aging as having and maintaining physical health and function, leisure and social activity, and social relationships and contacts [104]. This has been conceptualized as a balance among habits and activities in life in order to bring harmony and well-being [105]. There are different theories on healthy and “successful” aging but no consensus on definition. Aging from a public health perspective is defined as an optimal state of overall functioning and well-being (objective perspective), while older adults define successful aging as a process of adaptation within a specific individual context [58], as a social experience, a coping strategy and a way to have fun to achieve and maintain a feeling of well-being (subjective perspective) [106]. Older adults, who were independent in activities of daily living and rated their health as good to excellent, defined successful aging as multidimensional phenomenon encompassing physical, functional, psychological and social health [107]. Healthy aging highlighted a sense of agency in old age and from elders'

perspective healthy aging was seen as their level of control, as something that elders could do or work toward for themselves [108].

Being sensitive to elders' real and everyday needs, desires and challenges are among the key issues in planning a responsive healthcare system. Elders' desire and challenge to make choice about where and how they age in place, which involves a sense of connection, security and familiarity in relation to both homes and community is emphasized [109]. Elders reported they cannot imagine living anywhere else; while they were aware they might be forced to leave, they chose not to think about it [110]. Two other Swedish studies [110, 111] emphasized that the home has a central place in elders' lives and is equated with security and freedom [111]. In addition, aging in place was related to a senses of identity [109], self-determination and autonomy and further was a strengthening's factor of elders' control and satisfaction [112], and the role of having control over one's own life and its beneficial effects to quality of life and well-being [113]. Aging in place involves both being at own home and having a sense of being at home [109].

2.5.1 Sense of Coherence (SOC)

The salutogenic perspective of this thesis is based on Antonovsky's sense of coherence, which is a sociological perspective on the mechanisms behind humans' capacity to face difficulties and still continue to move toward the pole of health in stressful situation [114, 115]. Antonovsky means that an individual is never either completely healthy or totally sick, but he/she is in a constant movement between the two poles of healthy and diseased. Antonovsky described humans' sense of coherence based on three components: meaningfulness, manageability and comprehensibility. Further SOC describes as a person's access to her/his psychosocial healthy factors in order to experience internal and external stimuli as rationally predictable and graspable, having a sense of control over own life and the situation and having cognitive engagement to find meaning in the difficulty [115]. Self-rated health was positively correlated with SOC and functional capacity in community- living elders [116]. Elders with stronger coping ability according SOC had higher level of health related quality of life [117]. High SOC was associated with good mental health [118]. Elders with depression and cognitive decline had lower functioning and SOC [119]. SOC is a health promoting resource, which strengthens resilience subjective health [118]. Fairly stable self rated health in elders has been explained by elders' adaptive ability [87].

2.6 Caring

A predominant number of theories on caring have a humanistic holistic view on the human being that consider everyone as an unique and integrated entirety of body, mind and spirit and emphasize that all caring and nursing action should be based on this holistic view [120-122]. Health is the directive goal of caring, which refers to humans development, fulfillment and well-being [25, 121, 123]. Thus caring aims to help the individual to achieve a higher level of health and inner harmony [120]. Eriksson [23] emphasizes that unendurable suffering hinders human development, and therefore care is intended to alleviate humans' suffering [24]. The prerequisite for caring, alleviating suffering and despair is meeting and understanding the individual experience of suffering and life situation with disease and ill-health [124, 125].

The concept of person-centered care (PCC) has a long history in health care. It can be traced back to Florence Nightingale that stressed having the person in focus rather than the disease [126]. The Institute of Medicine of USA defined PCC as "care that is respectful and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions" (P.49) [127]. Another related concept to PCC is person-centered nursing that emphasizes that the relationship between nurses and the older person is key action to successful care of elders and it is necessary for decisions that will best serve the patient's wellbeing [128]. The result from an overview of the literature on person-centered nursing argued that the concept is based on four intertwined concepts; being in relation, being in social world, being in place and being with self [129]. PCC refers to both patient-centered care [127] and person-centered care [129, 130] and I and my co-authors prefer to have the concept of person-centered care, which relies on knowing the older person in their social context and care plans include others significant to the older person and the needs of the community of formal and informal caregivers [129]. Ekman et al [130] suggested three routines that ensure implementation of PCC in daily clinical practice; first step is to initiate the partnership through capturing the patient's narratives and experiences of his/her suffering in an everyday context. Next step is applying the partnership between patient and caregivers through a shared discussing and planning of care and treatment. The last step is giving legitimacy to patient perspectives through documenting patient preferences, beliefs, values and decision making [130].

2.6.1 Continuum of care

A current Swedish review support for an integrated and structured healthcare system, involving the multi-professional team with a direct patient responsibility for frail elders, healthcare systems are going to face many challenges due to frail elders' complexity of needs, [10]. Elders account for 40 % of all visits to emergency department [10]. Another newly published Swedish study showed that there is a polarization between medical and caring competencies at the emergency department, which influences the quality of care negatively [131]. Implementation of an integrated health and care program to meet elders' complex needs of health and care is emphasized [132, 133]. Integrated care has been described as a framework for developing integration of efforts across health and care system to promote more cost-effective continuum of care for the benefit of special patient groups [134]. Coordination of care also refers to "policies that help create patient-centered care that is more coherent both within and across care settings and over time" [135]. Continuum of care is defined as a series of initiating, continuing and concluding care events within health care system [136]. An optimal intervention for frail elders characterized by a multi-disciplinary, multi-factorial comprehensive approach directed by individualized needs [137]. A coordinated health and care service through a Case manager improved the quality of care [138] A review of randomised controlled studies of integrated care programs for frail elders showed that the most client benefits were ones in which the elders were involved [139]. Studies emphasized the need and importance of more research for evaluation of coordinate and integrated care regarding frail elders [138, 139].

2.7 Complex intervention

The frail elders' complex needs and problems require a multi-dimensional and complex intervention that involves a multi-professional team from different caregivers [15, 92]. Many of interventions in healthcare system are considered as complex intervention due to, among other things, the complexity of the human being and the complexity of healthcare systems. Complex interventions often contain several interacting components that independently and interdependently influence each other, and this complicates the evaluation of the effect of the intervention. One of the researchers' challenges is to precisely define the "active ingredients" of a complex intervention. The British Medical Research Council (MRC) stressed the challenges in evaluating complex intervention and assessing the impact of local contextual factors and recommends a mix of qualitative and quantitative evaluation methods [140]. Researcher in MRC has developed a

research framework including multiple steps for planning and evaluation of complex interventions. They suggested an approach with studying of a complex intervention, that comprises four stages: development, feasibility/piloting, evaluation, and implementation [140]. The research group recognized that the framework needs further developing and emphasized that the randomised controlled trial (RCT) is the optimal study design to minimize bias and provide the most accurate evaluation of a complex interventions effect and benefits [140, 141]. The intervention “Continuum of Care for Frail Elderly People” is evidence based complex intervention regarding frail elders with complex needs. Therefore the studying and evaluation of this intervention must involves a combination of both qualitative and quantitative approaches [1].

2.8 The rationale for the thesis

This thesis is based on the assumption that it is critical and relevant to explore frail elders' experience of health for person-centered care and planning of an integrated healthcare service. Frail elders' experience of health might be disturbed by the slightest changes in their lives because of their already reduced spare capacity. Research on the phenomenon of experiences of health in frailty and the influencing factors on these elders' experience of health from frail elders' perspective are still limited. I, as geriatric nurse assume the phenomenon of experiences of health can be best articulated among frail elders themselves, because they are dealing with the challenges associated with frailty on a daily basis. It is well known that maintenance of health in old age is both a challenge and goal of the individuals and the healthcare system and there is still much potential to improve the care of frail elders. In this context the perspective of the frail elders about health and its influencing factors is essential. This thesis has a salutogenic approach describing elders' experiences of health and health strengthening factors in their context to achieve a holistic and multidimensional perspective on experiences of health in frail elders. Frail elders are in need of diverse care and support from the healthcare system at various levels, therefore an integrated health and care system is important for frail elders with complex needs. The need of updating and developing of knowledge of intervention and RCT studies to evaluating the effects of continuum of care interventions regarding frail elders has been emphasized [139]. A combination of both qualitative and quantitative approaches is crucial to catch depth and broad knowledge on frail elders' own view of health [72].

3 AIM

The overall aim of the thesis was to explore experiences of health and its influencing factors among frail elders and evaluate the effect of the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home*.

The specific aims were:

1. To explore frail elders' experiences with and perceptions of the phenomenon of health.
2. To explore and identify influences on frail elders' experience of health.
3. To analyze the explanatory power of variables measuring health strengthening factors for self-rated health among community-living frail elders.
4. To evaluate the effects of the intervention "Continuum of Care for Frail Elderly People" on self-rated health, experiences of security/safety and symptoms.

4 METHODS

4.1 Study design and setting

The overall aim of the thesis was to explore experiences of health and its influencing factors among frail elders and evaluate the effect of the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home*, which guided the designing of this four studies and its chronological order.

Table 1 an overview of the methods for studies I- IV

	Study I	Study II	Study III	Study IV
Design	Qualitative	Qualitative	Cross-sectional	RCT
Participants/ sample	21community living elders from RCT project + one person out of RCT project	21community living elders from RCT project + one person out of RCT project	participants from RCT-project (161 community living frail elders)	participants from RCT-project
Data collection	Individual qualitative interviews	Individual qualitative interviews	Face-to-face interviews (questionnaires) at baseline of RCT project	Face-to-face interviews (questionnaires) at baseline, 3, 6,12 month follow-ups of RCT project
Outcome	The essence of the phenomenon of experiences of health	Subjective health strengthening's factors	Self-rated health, and a set of relevant variables *1	Self-rated health, Experiences of security/safety, Symptoms
Analysis	Phenomenological analysis	Content Analysis	Statistical analysis: Logistic Regression, Odds Ratio (OR), Nagelkerke R ² *2, Chi-square test	Statistical analysis: Svensson method, Chi-square test

*1 Variables: symptom, feeling assured, having someone to trust, GDS-20, Satisfaction with (Physical health, life as whole, Psychological health, ability to take care of self, Leisure time, contact with friends, the family life), feeling of loneliness, P-ADL, an overall question from IPA and three questions about environmental hindrances. *2 Nagelkerke R²= coefficient of determination

This thesis is part of a larger interdisciplinary intervention project entitled *Continuum of care for frail elderly people, from the emergency ward to living at home*. The intervention is part of the research program "Support for frail elderly persons - from prevention to palliation" <http://www.vardalinstitutet.net>. The intervention is a randomised controlled trial (RCT) designed and carried out by researcher from several disciplines. The participants were randomised to two study arms, one intervention group and one control group. The intervention project took place in the municipality of Mölndal, including municipal health and social care, the hospital of Mölndal, and primary care. Mölndal is a city with approximately 60,000 inhabitants in the beginning of 2009.

4.1.1 Intervention group

The intervention aimed to create a comprehensive continuum of care from the emergency department, through the hospital ward to the elders' own home. In addition, there was support for relatives, initiated as early as at the hospital. The intervention involved collaboration between a nurse with geriatric competence at the emergency ward, the hospital wards and a multi-professional team for care of the elders with a case manager in the municipality. The multi-professional team includes professionals with university degrees in nursing (the case manager), social work, occupational therapy and physiotherapy. The intervention started in the emergency department according following steps:

- At the emergency ward, the nurse with geriatric competence made an assessment of the elderly patient's needs of rehabilitation, nursing, geriatric and social care. This assessment was transferred to the ward and to the case manager in the municipality.
- The case manager was responsible for contacting the ward and the patient in order to initiate discharge planning. Discharge planning was done in collaboration between the case manager, a social worker, the patient, and the nurse and physician in charge at the ward.
- Patient care planning was done in the elders' own home within a couple of days after discharge. Patients discharged directly from the emergency ward were offered patient care planning by the case manager and the team.
- The multi-professional team was responsible for the patient care planning, which was done by involving the patient throughout the intervention. The care planning was based on a comprehensive geriatric assessment done by the team.

- The case manager contacted the relatives/informal caregivers, if approved by the elderly person, to give information/ involve them in the planning and to offer them support and advice. This was initiated as soon as possible, often as early as when the elderly person was in the hospital.
- The case manager was responsible to follow up the care planning one week after care planning, and then at least every month. The elderly person was included in the intervention for at least one year [1].

4.1.2 Control group

The control group received conventional care and follow-ups. Access to a case manager or multi-professional team is not part of the present organization of municipal care for elderly persons living in Mölndal. When needed, the patient care planning is done at the hospital by a team from the community consisting of different professional groups (social worker, nurse and occupational therapist or physiotherapist) responsible for all care planning at the hospital. After discharge, another team from the municipality elderly care - known as the district team is responsible for the follow-up of the care planning. If the patient is discharged from the emergency department directly to their home, there is no routine for information transfer from the hospital to the municipality. In addition to conventional care, there are also assessments at the research follow ups for the control group the same as for the intervention group, see under procedures below. If unmet needs were revealed at these research follow-ups, the elderly person got advice on where and how to seek help [1].

4.2 Participants/sample

4.2.1 Studies I-II

A strategic purposive sampling with the goal of identifying participants with varied experiences related to the phenomenon of experiences of health was engaged to provide rich, relevant, and diverse data [142]. In total 22 frail elders, 11 men and 11 women were selected. All participants except one person were recruited from the 161 participants in the main RCT project. Based on informants' own self-perceptions of their general health measured by one question, In general you would say your health is: five-point opportunity to answer from poor, fair, good, very good, and excellent, two men and two women from each category were chosen to be interviewed. The intention was to include the first two elders in each gender and health

category who agreed to be interviewed in the study. In the category of excellent, there was only one man who chose this rating and to include adequate representation for the excellent category, a woman was recruited from outside of the main project that met the inclusion criteria. See Table 2 that shows the variation in the participants regarding age, self-rated health, ADL, marital and educational status.

Table 2 Baseline Characteristics of study I and II participants

Total	n=22
Age (years)	
65-74	2
75-84	15
85-92	5
Self-rated health	
Excellent	2
Very good	6
Good	5
Fair	5
Poor	4
Marital status	
Married/cohabiting	11
Widow/single	11
Educational status	
Elementary school	10
High school graduate	8
University education	4
ADL (at least one dependent)	
Instrumental	16
Personal	9

4.2.2 Studies III–IV

The participants include 161 elders who sought care at the emergency department at Mölndal Hospital during the period October 2008 to June 2010 and who were discharged to their own homes in the municipality of Mölndal. The participants were recruited by two registered nurses with geriatric competence during the daytime on weekdays. Those who agreed to participate in the study were randomly selected to either the intervention group or control group through a system of sealed opaque envelopes. Participation was offered to 343 older persons of which 159 (46%) declined participation and 3 were excluded due to dementia. Among those who agreed to participate, a few persons died before baseline, and 12 persons in the

control group declined to continue participation before baseline. Baseline data were collected for 161 older persons (intervention n=85, control n=76) [1]. Nine respondents in the intervention group and seven respondents in the control group were lost to follow-up at the 3-month follow-up, as they died or declined to continue. Eight respondents were lost to follow-up at six months in the intervention group and three in the control group. Finally at twelve months, two respondents in the intervention group and seven in the control group were lost to follow-up. Hence, 125 respondents completed the 12-month follow-up (intervention n=66, control n=59). The data for Studies III and IV were collected between October 2008 and December 2011. Figure 1, p.24 shows a flowchart of randomization, allocation, follow-ups and analysis for the study period

The intention was that the study group should comprise a representative sample of frail elderly people at a high risk of future health care consumption. Inclusion criteria for participating were: elders age 80 and older or 65 to 79, and sought emergency department in Mölndal university hospital, with at least one chronic illness and dependent in at least one activity of daily living (ADL). Exclusion criteria were severe acute illness with immediate need of assessment and treatment by a physician within ten minutes, dementia (according to medical records) or severe cognitive impairment (according to judgement made by the registered nurses with geriatric competence) and palliative care as documented to medical records [1]. See Table 3 for overview on Characteristics of participants in study III and IV.

Table 3: Characteristics of study III and IV participants

Characteristics	Control group n=76	Intervention group n=85	p-value
	%	%	
Female	55,3	55,3	1,00
Living alone	60,6	56,5	0,63
Academic education	15,8	12,2	0,51
Self-rated health (excellent/very good, good)	28,0	40,7	0,10

P-vlue from Chi-2 test

4.3 Data Collection

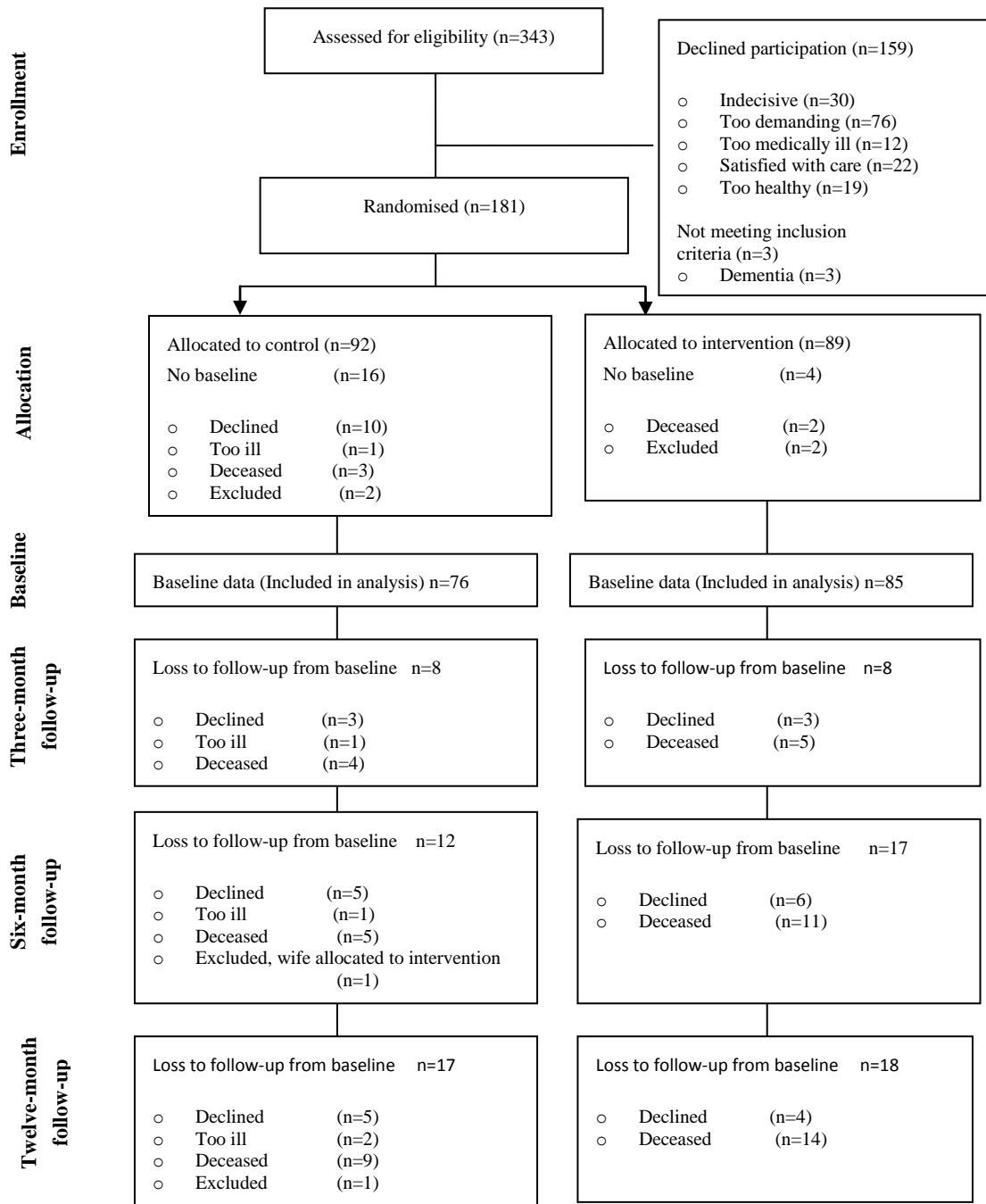
4.3.1 Qualitative individual interviews (studies I–II)

Qualitative individual life-world phenomenological interviews [143] that provide access to the interviewees' life-world were used. Interviews were characterized by an open and flexible conversation, with the interviewee controlling the direction and content of the conversation [144]. Semi-structured life-world interview inspired by phenomenology was intended to capture a rich description of the phenomenon from the interviewees' own perspectives [143, 144]. The interviewer adapted an attitude of active listening and flexibility to allow unexpected experiences and life stories to emerge [145, 146]. For studies I and II, data were collected through 22 interviews [143] in which both the interviewee and interviewer were like two travelers who wandered together in the interviewee's life-world through an open and flexible conversation [143, 147]. All interviewees had already completed the baseline interview for the main project and had time to think about and reflect on their health. However the interviews started with a general conversation and information about the study. The specific conversation about the study topic was audio recorded and began with the main question: Can you tell me what health is for you? Subsequently, other questions were asked depending on the interview content to gain a deeper understanding about the participants' own perceptions of the phenomenon of experiences of health: Can you describe a day, an everyday situation, where you experience health? What gives you the feeling of good health? What is the most important thing for you to experience good health today? Can you describe a day, an everyday situation, where you don't experience good health or you experience poor health? What gives you the feeling of poor health? What are you missing today to experience good health? In addition to these follow-up questions, the interviewer used probes to gain a deeper understanding of the interviewee's everyday life situation by using such phrases as "please tell me more about your experience, thoughts and emotions," "please give me some examples from your everyday life." The interview guide was developed based on two objectives: first, what is the phenomenon of experiences of health in frail elders' experience and perception (study I), and what strengthens and weakens the frail elders' experience of health (study II). A total of more than 11 hours of audio-recorded data about these frail elders' experience with and perception of health were collected. The visits ended with general and spontaneous reflections and questions. On average, each visit lasted one and half hours.

4.3.2 Structured interviews and questionnaires (studies III–IV)

The data were collected through face-to-face structured interviews and assessments in the participants' home. The baseline interviews were done predominantly within a week after discharge, but in three cases data collection was postponed one to two weeks and in one case the baseline interview was done with three month follow-up in view of the strain of the participants. The baseline data for the intervention group were collected by the multi-professional team as part of their comprehensive geriatric assessment. The baseline data for the control group and all follow-ups for both groups were collected by research assistants, who were either registered occupational therapists or registered nurses. Follow-up data was collected three-, six- and 12 months following discharge. All interviewers were well trained in interviewing, assessing and observing, according to the guidelines for the different outcome measurements. To ensure as much standardization of the assessments as possible, study protocol meetings were held regularly throughout the study. The interviews encompassed a comprehensive geriatric assessment including a range of questions, tests and measurements about activity, functional ability, life satisfaction, satisfaction with health and social care, dependence, self estimated health, health related quality of life, symptoms, medicine, etc [1].

Figure 1



4.4 Outcome and measurements

4.4.1 Study III

The design of study III was generated from two previous qualitative studies. These results guided the choice of the relevant variables to explore in relation of self-rated health in a larger quantitative sample of community-living frail elders in this study.

Dependent variable (DV)

Experiences of health was measured by self-rated health (SRH), using one statement derived from the SF-36- Item Short-Form Health Survey: “In general, you would say your health is,” followed by responses on 5-point Likert-type scale [148] dichotomized in poor (poor and fair) and good (good, very good, and excellent) health.

Independent variables (IV)

Experiences of being secure/safe in everyday life, which was the main theme and was based on five following strengthening’s factors were measured by two questions; “Do you feel secure/safe?” with five possible responses dichotomized into unconfident (never, rarely and sometimes) and confident (often and always). The other question was “Do you have someone you trust/rely on?” with yes and no responses.

Managing the unpredictable body was measured by symptoms and satisfaction with physical health. Symptoms were assessed by one part of “The Gothenburg quality of life instrument” , which assesses 30 symptoms during the last three months, with yes or no response [149]. It was dichotomized into two categories; 0-10 symptoms or more than 10 symptoms (ten symptoms was the mode-value and was chosen as cut-off for symptoms). Satisfaction with physical health was measured by one item from Fugel-Meyer-Life Satisfaction Assessment (Li Sat-11) [45]. The participants estimated their satisfaction with physical health on a six-grade scale, which were dichotomized into satisfied (rather satisfied, very satisfied and satisfied), or dissatisfied (rather dissatisfied, dissatisfied, very dissatisfied).

Reinforcing a positive outlook was measured with satisfaction with psychological health and satisfaction with life as a whole measured by Li Sat-11 [45] with the same dichotomization as for satisfaction with physical health

and with the Geriatric Depression Scale (GDS)[107]. The Swedish modified version of the scale (GDS-20) includes 20 items with yes or no response[150]. To have 0-5 points means that there is no risk for depression, while scores above 5 points suggest that there is a risk for depression.

Remaining in the familiar surroundings was measured by three questions with yes or no response; 1. Do you experience difficulties when leaving or entering your home due to obstacles in the environment? 2. Do you experience difficulties when moving around in the area of your residence due to obstacles in the environment? 3. Do you experience difficulties in mobility inside your home? On the basis of these three questions we computed a new variable and dichotomized into have problem (having at least one yes response), and no problem (no problem in all three questions). Two further questions with yes and no responses were also used in this theme: Are the rooms on your home in the same floor? Is your house adapted to your needs and problems?

Managing everyday life was measured by satisfaction with ability to take care of oneself from Li Sat-11 [45] with the same dichotomization as for satisfaction with physical health and one question from the statement "Impact on participation and Autonomy" (IPA) for older persons (IPA-O) [151, 152] about the person's opportunities to live the life that they want, with five possible responses dichotomized into disagree (neither agree or, disagree, strongly disagree) and agree(agree, strongly agree). Personal activities of daily living (p- ADL) [153] were used to measure the performance in personal activities of daily living (p-ADL), i.e. bathing, dressing, going to the toilet, transferring, continence and feeding graded as independent, partly dependent and dependent. In this study partly dependent and dependent considered as dependent. The summarized variable was calculated for each individual and dichotomized into independent (no dependency) and dependent if the individual was dependent in at least one activity.

Having a sense of belonging and connection to the whole was measured by satisfaction with leisure time, contact with friends and family life from Li Sat-11 [45] with the same dichotomization as for satisfaction with physical health and one question: Do you feel lonely with responses: yes rarely, yes sometimes or yes often dichotomized to yes and the response never dichotomized to no.

4.4.1 Study IV

Self-rated health (SRH) was derived from one statement of SF-36 questioner: “In general, you would say your health is,” followed by responses on 5-point Likert-type scale; excellent, very good, good, fair and poor [148].

Experiences of symptoms assessed by one part of “The Gothenburg quality of life instrument” to assess symptoms (30 symptoms) during the last three months, with yes or no response [149]. A sum variable computed for each participant and the sum variable of 1-30 symptoms computed in to a six grade scale with an interval of five symptoms in each grade.

Experiences of security/safety by a question about if the individual have a sense of security/safety, with five possible responses; always, often, sometimes, rarely and never was used to capture experiences of security/safety.

4.5 Analysis of the data

4.5.1 Phenomenology (study I)

Phenomenology is both a research approach and a philosophical frame, in which science is a part of the world that aims to study how reality/things “shows itself” to human and what it means different people’s experiences of phenomenon[154]. According to Husserl [155] the best manner to study a phenomenon is to go back “to things themselves” (p. 19) and being sensitive and accurate for lived experience [146]. Thus, the researchers went back to frail elders to gain a valid understanding of their own experiences with and perceptions of their health. Through a reductive approach, i.e., bracketing pre-understanding and being reflexively self-aware from data collection through analysis, the interviewees were given the opportunity to describe their subjective experienced of the phenomenon, i.e., their unique “lived body” [145, 147]. Phenomenological method seeks to reveal the nature of phenomena as humanly experienced [123]. The purpose for using of this method was to discover and reveal the meaning of experienced health through the analysis of frail elders’ subjective description with an open mind to any new and unexpected insights. In the study I the phenomenological approach, based on the subjective life-world perspective [145, 147] was employed. The transformation from raw data to essence of the phenomenon

was performed according Giorgi's phenomenological analysis [156-158] as modified by Malterud [159]. The method was implemented using the following steps:

1. Reading each interview several times to become more familiar with the context in its entirety.
2. Scrutinizing of the text line-by-line to break into meaning units, i.e., different aspects of the meaning of the phenomenon of experiences of health from caring science perspective.
3. All meaning units with similar content were organized under the same category which emerged from the overall impression. In this step, meaning units were de-contextualized, and simultaneously the material was made more manageable and easily structured for additional vertical analysis.
4. All meaning units were reread to condense the text and express the meaning in more general terms within a caring science perspective. In this step, the condensed meaning units were still close to the original text.
5. The various understandings of the material were used as keywords for clustering and summarizing the interview content. These keywords were then used as search terms to examine the relationship between and among the themes.
6. The emergent themes were then re-contextualized by moving between the themes and all interviews in original form to ensure that the themes were representative of the original materials as well as to discover any possible statements that were contrary to the emerged general themes.
7. To capture the essential structure for building the essence of the phenomenon of experiences of health, "free imaginative variation" was conducted by freely moving between and among the themes to see the phenomenon in a new and fresh view. This process was characterized by openness and flexibility, the themes were contextualized and de-contextualized until the essential structure appeared and shaped the essence.
8. The essence was then described and defined within a holistic caring science perspective.

4.5.2 Content analysis (study II)

In study II, a conventional content analysis was conducted whereby categories and themes emerge from the data based on participants' unique perspective [160] about what influences their experiences of health. The text was subjected to a close reading and interpretation into new systematic narratives consistent with a caring science perspective [161, 162]. This

analysis has a focus on the “latent content” which consists of the researchers’ interpretation of the underlying meaning of the text; i.e. the “latent content” is an abstraction of the “manifest content.” The manifest content was summarized under categories, while the latent content was described under themes [162]. All interviews were transcribed verbatim and read several times to understand the entirety and overall perception of the informants’ description of what influences their experiences of health through searching for what enable older adult to endure suffering, frailty and adversities [21, 22]. The analysis involved a continuous discussion and peer debriefing between researchers during all five steps of the data analysis process and modifying of categories and themes performed until consensus was reached. A summary of the steps in the analysis and an example of how the meaning units were connected to the main theme is showed in Table 4.

Table 4

Meaning unit	Condensed Meaning unit	Categories	Subtheme	Main theme
1. Each interview was read line-by-line to divide the interview text into “meaning units,” i.e., words, sentences or paragraphs, which contain aspects related to each other in their content and context	2. All meaning units were condensed without doing interpretation. The aim was to reduce the text and rewrite the text as close as possible to the original text	3. All condensed meaning units that have internal homogeneity and external heterogeneity were sorted into categories and were interpreted through continuous discussion in the research group until consensus was reached	4. Through a constant repetitive reading, interpretation and validation of the interviews in their entirety and comparisons to the categories five subthemes emerged	5. One theme representing the latent meaning of the content emerged comprising five sub-themes

4.5.3 Statistics analysis (studies III–IV)

In study III, Bivariate analyses were performed between self rated health (SRH) as dependent variable and 17 independent variables in order to have the most relevant variables in the regression analyses. Two-tailed Pearson coefficients were used to analyze association among a set of IV. Significant level was tested by Chi- squared ≤ 0.05 . Binary logistic regression (Forward Likelihood Ratio) was used to analyze explanatory power of association of this set of IV for self-rated health as DV. The Hosmer and Lemeshow was

carried out to test goodness of-fit of regression model. Nagelkerke R^2 was performed to test coefficient of determination [163]. The analysis was conducted according to recommended assumptions regarding logistic regression [164]. All data was analyzed using SPSS (PASW Statistics, version 19, IBM SPSS Inc, Chicago, IL).

In study IV, the analyses were made on the basis of the intention-to-treat principle (ITT), i.e., dealing with missing data through imputation of the missing values, by a estimated expected value [165]. Different methods for imputation were used depending on the reason for missing value [165, 166]. The basic assumption was that elders are expected to deteriorate over time in the natural course of the ageing process. Therefore for participants who declined to continue before any of the follow-ups the respective median change of deterioration (MCD) was imputed on each missing value, i.e., the MCD was added to the last actual individual value recorded and was imputed to substitute missing data at three-, six- and 12-month follow-ups, as suggested in previous studies [167, 168]. For participants who completed the study but did not have observed values at baseline or any of the follow-ups and for internal missing we involved the participants' own obtained values on the same outcomes at a different point of time [165]. Missing values at baseline were replaced with the values of the respective outcome for that participant at the next follow-up and missing values between two measurement occasions with observed values was imputed by a value between the observed values (mean) [165]. The worst case was imputed at each follow-up for missing data due to death. To ensure that the MCD analysis was in line with complete cases, a sensitivity analysis was made showing align trends [166].

The baseline characteristics of study participants in each groups were compared using chi-square test [169]. The effect of the intervention on self-rated health, experiences of security/safety and symptoms were analyzed using Svensson's method; a nonparametric statistical approach developed for evaluation of change in ordered categorical data [170]. The software for Svensson's method version 1.1.2 was used during the calculation phase. The Svensson method makes it possible to measure systematic patterns of change for the group separately from the individual variation unexplained by the systematic group change. A systematic change in position on the scale is measured by the relative position (RP), The RP value is the difference between the probabilities of systematic improvement and deterioration. Possible values of RP range from -1 to 1. A 0 value of RP means lack of systematic change [170, 171]. The higher RP indicated for the higher change. A RP above zero means that the for example self-rated health has increased and a value below zero means that the self-rated health has decreased [170,

172]. The individual variations in change between the measured occasions unexplained by the systematic group change are measured by Relative Rank Variance (RV). RV range from 0 to 1, the higher RV value the more heterogeneous the individual variation of changes. $RV > 0.1$ is considered cut-off value for evidence of heterogeneity. The 95% confidence intervals were considered for the RV and RP. There are statistically significant differences between the intervention and control group when the confidence intervals for the groups do not overlap each other. There are statistically significant change between the baseline and follow-ups within each group, when the confidence intervals do not include the zero value, [170, 173].

4.5.4 Power calculation (study IV)

A power calculation was done, with knowledge of more specific prevalence rates of functional abilities which had been concluded in the “Elderly persons in the risk zone” study [174]. The prevalence rates were for less frail older persons than those in our study, and therefore we anticipated lower functional status and higher standard deviance. This power calculation was based on the Berg Balance Scale, which was one of the primary outcome variables (range 0-56), with an assumed mean for the intervention group of 32 and for the control group of 28 (15% difference), and a standard deviation of 8 in both groups. To be able to detect a difference between the intervention and control groups with a two-sided test and with a significance level of $\alpha = 0.05$ and 80% power, a minimum of 65 persons in each group would be needed [1].

4.5.5 Ethical considerations

The main study and these studies were approved by the Ethics Committee of Gothenburg 080812, dnr 413-08. The studies were conducted in accordance with the Helsinki declaration and were guided by the ethical principles of respect for autonomy, beneficence, and justice [175]. Participants were informed that participation was voluntary, that they could stop the interview and withdraw from the study at any time and that the content was confidential. Written informed consent was obtained.

Several strategies were utilized to promote ethical and responsible data collection. Kvale’s [144] suggestions for ethical conduct of interview studies directed design and implementation of studies I-II. The interviewees received information about the purpose and procedure of interview via telephone, and then orally and in writing on the same day of the interview. Participants were informed that participation was voluntary, they could stop the interview and withdraw from the study at any time, that their interview content was confidential, and that any information reported would not allow for individual identification of interviewees. The interviewer sought to create a

positive and open environment for conversation through accurately disclosing the ethical issues related to the project and conveying an appreciation of the importance of the elders' participation and willingness to share experiences and stories. Thus, they felt their stories and contributions were important, and that they were doing something beneficial for themselves and society. The interviewer employed active listening, empathy, flexibility, openness and respect for every individual's life-world and story to create a power symmetric and open environment, and was sensitive to signs of interviewee fatigue being open to take breaks when needed. The interviewer's interest for interviewee's life-world and engagement and active listening also aimed to balance the "power asymmetry" that occurs in all interviews [144] and allow the interviewee to have control of and direct the process.

The intervention *Continuum of care, from the emergency ward to living at home* was an interdisciplinary project involving researchers from different disciplines with different research question and thereby specific measurement and instruments. The questionnaires used at baseline and follow-ups were quite extensive, including several tests, scales and items. To conduct the face-to-face interviews with frail elders was a challenge and required a certain amount of time that might tire the elders. The project management group held regular meetings with the interviewers during the project time, to discuss with the questioner and the ethical issues about how to avoid fatigue and inconveniences among the elders. Techniques that were discussed and performed during the interviews were to take breaks when necessary and in a few cases the interviews were divided up into two sessions, due to the elders being too tired to continue.

5 RESULTS

5.1 Study I

The essence of this life-world phenomenological description of health was **to be in harmony and balance in everyday life**. The phenomenon of experiences of health was described in terms of harmony and balance among salient components of health in their everyday lives. These components included: to be able to master daily life, experience that the body works by itself, be happy and satisfied with one's existence, be validated as a worthy and competent person, and be involved.

To be able to master daily life: These elders made great efforts to cope with their everyday lives, despite age- and disease-related ailments and limitations. They did their best to find their individual balance point based on varying capabilities and limitations to experience harmony and balance. The goal of these daily efforts and adjustments was to master life, to do something useful and not to be a burden on others. They pointed out their daily coping skills and mastering as signs of good health.

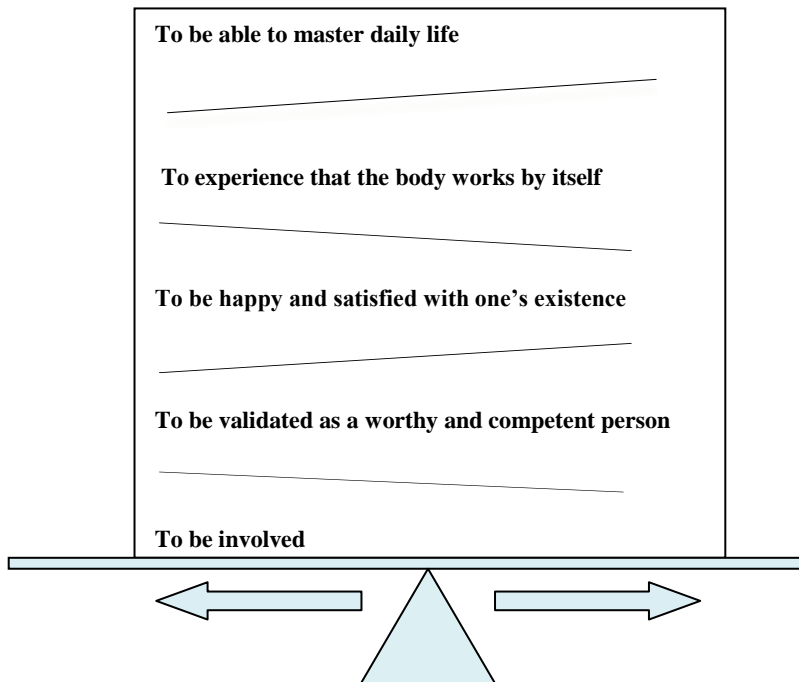
To experience that the body works by itself: The experience of being in harmony and balance was linked with elders' physical being and daily bodily function. Harmony and balance was achieved if they were able to maintain functionality of their bodies, albeit limited functionality for some, and to control their daily symptoms and complaints. The experience that the body works by itself in physical ways as well as cognitive aspects was a prerequisite to experience good health.

To be happy and satisfied with one's existence: Inner peace and satisfaction were necessary components to experience harmony and balance, which depended on the individual's insight about and understanding of changing life conditions. Acceptance of life as it is, happiness and contentment with life itself were among the signs of being in harmony and balance. Acceptance of one's changing conditions as a constant coupled with the perception that aging and death are natural parts of life facilitated necessary adjustments which promoted harmony and balance. The frail elders' inner peace, satisfaction and well-being stemmed from their abilities to think positively, see the happy side of life, be proud of and strong in their ability to struggle and move forward despite increasing disability.

To be validated as a worthy and competent person: The experience of harmony and balance was constructed in relation to society and the environment surrounding the elders. Other people's attitudes and thoughts were assessed as an important part of experiencing good health. Knowing that others saw the person behind the disease and disability and that they dealt seriously with the frail elders' problems and ailments were important to the construction of harmony and balance. Being in harmony and balance also depended on the experience of dignity, the interviewees appreciated other peoples' attention to and confirmation of their daily challenges and suffering.

To be involved: To have human contact, be in a social context with other people, and be outdoors and in nature gave these elders a sense of involvement and well-being; participating in the community and being among other people gave a sense of belonging. The interviewees saw themselves as a part of the whole as a result of this participation.

Figure 1. Essential Structures of the Phenomenon Health



Frail elders keep the essential structures of the phenomenon of experiences of health balanced and in harmony in their everyday lives through dynamic adjustment of the fulcrum (dynamic balance point symbolized by the triangle in the figure) via changes in their perceptions and expectations of these structures.

Healthy existence in frail elders was based on their experiences of being in harmony and balance in the present, i.e., to live a routine life to which they were accustomed. The essence of health was interdependent essential structures on which balance and harmony in everyday life was built. This balance and harmony could be disturbed, and ill health experienced, if one of the essential structures was altered. To regain balance after a disturbance in one of the essential structures, the elders adjusted their perceptions of their lived experience with the disturbed structure. This process of maintaining balance through changing perceptions and expectations was much like shifting the position of a fulcrum to keep a structure balanced. In other words, the threshold of what constituted health was dynamic over time, which depend on the movement of the perceived balance point contingent on the elder's appraisal of variable life conditions. This balance point or fulcrum could be moved and adjusted to secure balance and harmony, and as such, was an additional essential structure to the experience of health. These frail elders described the experience of health here and now in relation to its historical context, interests and habits. Broadly speaking, these essential structures had two dimensions which included the person and society/environment around the person. The experience of harmony and balance was influenced by characteristics inherent to the individual elder and factors in the social environment surrounding him or her. Being and becoming in harmony and balance depended on these essential intertwined building blocks and how they are balanced on the fulcrum.

5.2 Study II

The main factor that reinforced these frail elders' experiences of good health was feeling assured and capable of managing everyday life, which was dependent on predictability and perceived control over one's body and psychosocial context. A positive outlook was associated with having the resources to remain in familiar surroundings, managing and controlling everyday life, and a sense of belonging and connection to the whole. These factors reinforced the experience of good health and enabled the elders to better cope with their vulnerability and frailty. The main theme was identified as **feeling assured and capable of managing everyday life**. The five sub-themes related to feeling assured and capable in managing everyday life consisted of: managing the unpredictable body, maintaining a positive outlook, remaining in their familiar surroundings, maintain managing and steering everyday life, and having a sense of belonging and connection to the whole. In addition, the ability to continue the same life cycle as before and maintain a life-routine that elders were used to provided assurance to their everyday lives. The frail elders' experiences of health were strengthened

when they felt a sense of assurance and control over everyday life, whereas an unpredictable body and experiencing symptoms and ailments that affected their everyday lives produced a sense of anxiety and insecurity, which weakened their experience of health.

Managing the unpredictable body, The incomprehensible symptoms and ailments affected elders' daily lives and decreased their experiences of good health. When the body was experienced as unpredictable and untrustworthy, they perceived it as a hindrance and felt imprisoned in an unknown body. The symptoms that restricted their mobility and ability to conduct everyday activities were experienced as obstacles. Ongoing and persistent symptoms and ailments produced disappointment; their bodies were described as no longer able to bear their ailments. These bodily changes disturbed the rhythm of everyday life and weakened their experience of health.

Positive outlook and willingness to go on facing further challenges were dependent on awareness of age- and disease-related changes. Good mood and willingness to carry on and live despite consistent body hindrances were important driving forces, and enabled these elders to directly face the future and its concomitant changes in their lives. Knowledge and information increased awareness about resources and limitations, preparing them to meet the future. Insight, acceptance and adaption shaped willingness and strength to carry on and provided the foundation for a sense of meaning. Positive thinking and hope facilitated the ability to cope with increasing frailty, and those with a positive outlook were more likely to feel assured and capable of managing everyday life, particularly when the elders could understand the changes in their lives.

Remaining in familiar surroundings; These elders were deeply rooted in their homes and strove to stay there as long as possible. The home had much more meaning than just a residence; it brought about feelings of remaining in a pleasant place with familiar and important objects and shared norms, history and values. To remain in familiar surroundings, they preferred to adapt the home environment to accommodate their health conditions. A well-adapted home environment, ambulatory aids and supported access to the outdoors facilitated elders' mobility and participation in society. Thinking about the risk of being forced to leave one's home to be institutionalized raised anxiety among these elders. To stay in their own home strengthened the elders' experiences of safety and control, thereby promoting health.

Maintaining management and control of everyday life: To continue to manage and maintain control over one's life gave a sense of assurance and health. Frail elders experienced good health when they were able to manage

their daily activities independently, control their own lives in spite of dependency, remain occupied and engaged in useful activities, and not be a burden on others. Self-determination involved managing and steering the activities of one's everyday life, which strengthened the experience of good health. Adapting and continuing with previously enjoyed hobbies and interests, keeping up with the rapid developments in society, and mastering the details of everyday life enhanced the experience of good health despite frailty and promoted a sense of independence. When able to successfully manage their everyday pursuits despite frailty, these elders experienced themselves as independent.

A sense of belonging and connection to the whole: Social interaction validated a sense of connection to others and the rest of the world, which evolved through contact with others and having someone in their lives that cared about them. Having a connection to society of any kind reinforced their experiences of good health. Participation in social activities with peers assuaged loneliness and provided a sense of belonging. Meaningful, positive contact and regular social interaction with friends, neighbors, and relatives promoted happiness and a sense of security. Being able to move freely among other people and spending time in nature enhanced security and belonging. Lack of social interaction in combination with physical disabilities was related to the experience of loneliness and isolation. Participation in social contexts, and a sense of belonging led to increased feelings of security, which reinforced the experience of good health.

5.3 Baseline characterizes, studies III–IV

A total of 181 of 343 elders, who sought care at the emergency ward, were randomised to the study. A total of 161 elders consented to participate and were included in this study (Intervention =85, control =76). Of the 161 participants, 76 % were 80 years and older and 24 % were in the age group 65-79. The mean age of the sample in this study was 82 years, with a range of 65-96. In total 55 % of participants were women and 45 % were men. There were no significant differences between the intervention and control groups at baseline regarding sex, age, marital status, educations status, ADL, frailty, self-rated health and experiences of security/assurance. The participants in the control group had more symptoms. There was a statistically significant difference in number of symptom ($P=0.033$). For overview on baseline characteristics of study participants, (See table 2 study IV).

5.4 Study III

An initial Bivariate analysis showed that 13 of 17 variables were associated with self-rated health ($P\text{-value} \leq 0.05$): feeling of security/safety, number of symptoms, satisfaction with physical health, GDS-20, satisfaction with psychological health, satisfaction with life as a whole, P-ADL, satisfaction with the ability to take care of oneself, IPA (having opportunities to have a life that you want to live), having a sense of loneliness, satisfaction with leisure time, satisfaction with contact with friends and satisfaction with the family life. These variables that have not a significant association with self-rated health were one question from the main theme “being assured/ capable in everyday life”, and all three variables from the sub-theme “remaining in the familiar surroundings” (See Table 2 study III).

Table 5 Association between self-rated health, frailty and disease burden

	SRH		P-value
	Good % (n)	Poor %(n)	
Age (years)			
65-79	13.2(5)	86.6(33)	0.002
80+	41.0(50)	59.0(72)	
Frailty			
Non-frail	75.0(3)	25.0(1)	0.001
Pre-frail	55.0(22)	45.0(18)	
Frail	25.9(30)	74.1(86)	
Disease Burden			
No chronic disease or mild problem	28.6(4)	71.4(10)	0.67
At least one chronic Disease	34.3(49)	65.7(94)	
At least one chronic Disease With severe or extremely problem	27.8(25)	72.2(65)	0.07

Frailty was measured as a sum of eight core frailty indicators: weakness, fatigue, weight loss, low physical activity, poor balance, low gait speed, visual impairment and cognitive impairment.

Level of frailty was operationalised as; non-frail = 0 frailty indicator,

pre-frail = 1–2 indicators, frail = >2 indicators [167]

Chronic diseases/illness measured by Cumulative illness rating scale for geriatrics (CIRS-G) with calculation of illness in 14 organ systems with a severity index from 0= no problem, 1= current mild problem or past significant problem, 2= moderate disability or morbidity/requires “first line” therapy, 3= severe/constant significant disability/“uncontrollable” chronic problems), and 4=extremely severe/immediate treatment required/end organ failure/severe impairment [106].

All participants had disease burden in one severity level from mild problem to extremely severe problem. Totally 91 % of these elders had at least one chronic disease, and about 58 % had at least one chronic disease with severe or extremely severe problems. Twenty-eight percent of elders with severe or extremely disease problems estimated health as good ($P=0.07$). Totally 2.5 % of participants was non-frail, i.e., had no frailty indicators, 24.8 % was pre-frail, i.e., had 1–2 indicators, and 72.7 % was frail, i.e., had >2 indicators. Twenty nine percent of frail elders estimated health as good ($p=0.001$) (Table 5).

The results from the final model of forward logistic regression showed that having 10 or fewer symptoms ($OR=4.9$), being satisfied with the ability to take care of oneself ($OR=10.5$) and having less sense of loneliness ($OR=4.3$) had the best explanatory power with good self-rated health in this group of community-living elders. The Coefficient of determination (R^2), i.e., the explanatory power of the regression analysis was tested by Nagelkerke, which was 0.37 (See Table 3 Study III).

Additional analyses conducted only for frail elders ($n=117$). The initial bivariate analysis showed that 9 of 17 variables were associated with self rated health ($P\text{-value}\leq 0.05$): number of symptoms, satisfaction with physical health, GDS-20, satisfaction with psychological health, satisfaction with the ability to take care of oneself, IPA (having opportunities to have a life that you want to live), having a sense of loneliness, satisfaction with leisure time and satisfaction with contact with friends. The final model of forward logistic regression showed that being satisfied with physical health ($OR=3.8$), having less sense of loneliness ($OR=3.2$) and having 10 or fewer symptoms ($OR=2.7$) had the best explanatory power with good self-rated health in this group of community-living frail elders.

Table 6 Logistic regression of factors predicting good SRH in final model (only frail elders)

Final model	Nagelkerke R ²	OR	95 % CI	P-value
	0.28			
Being satisfied with physical health		3.8	(1.3-11.5)	0.02
Have less sense of loneliness		3.2	(1.2-8.7)	0.03
Have less symptom		2.7	(1.0- 6.8)	0.04

P-value= chi-squared, Dependent variable dichotomized as Good health = 0, poor health = 1
Hosmer and Lemeshow goodness of fit-test: $\chi^2 = 2.7$, $df = 4$, $p = 0.8$

Additional analysis conducted to explore differences between men and women. The initial analysis showed that more women were satisfied with family life (Men=58, Women=80), and satisfied with life as whole (men=56, Women=82). There were more women, who had over 11 symptoms (Men=33, Women=56) and more women rated health as poor (n=65) compared to men (n=40) (p-value < 0.05). In the final model of forward logistic regression, having opportunities to have a life that one wants to live (OR= 19), having 10 or fewer symptoms (OR=6.1) and having less risk for depression according GDS (OR=5.8) had the best explanatory power with good self-rated health in community-living men; while for women having less sense of loneliness (OR=19.0) had the best explanatory power with good self-rated health.

5.5 Study IV

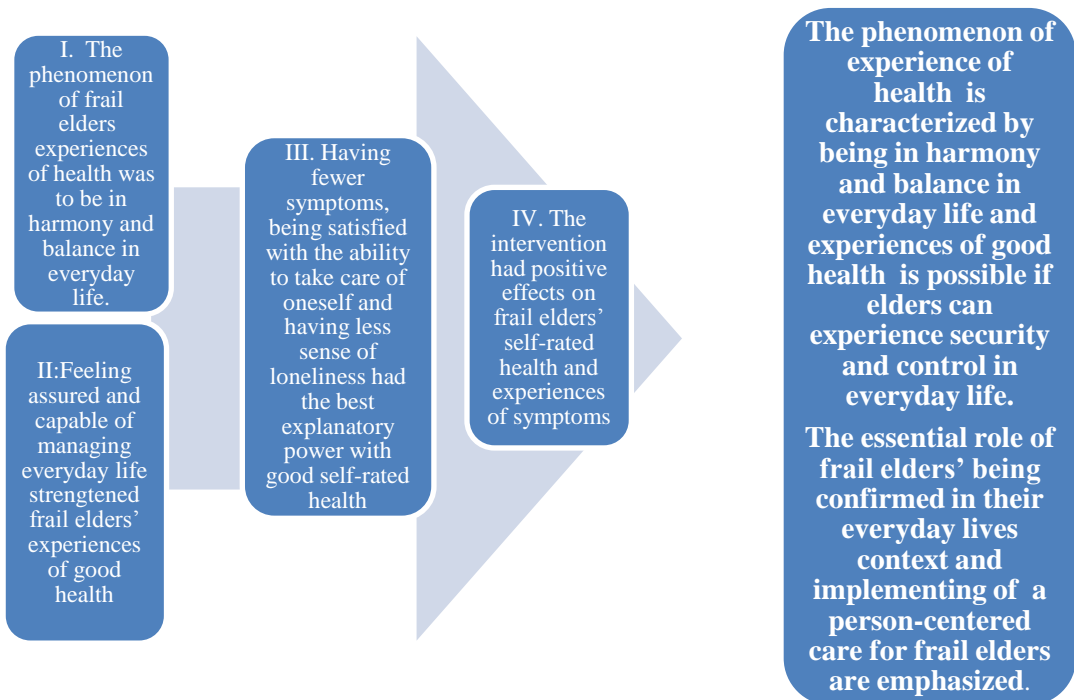
The results showed that there was a statistically significant difference in systematic change in experiences of symptom between the intervention- and control group at the six month follow-ups in benefit of the intervention group. The positive RP-value of the intervention at all follow-ups indicated that the frail elders' experiences of symptoms improved within the intervention group. The negative RP-values within the control group indicated deterioration in experiences of symptoms at all follow-ups. Further the results showed for improvement in elders' self-rated health, the positive

effects were statistically significant at the six and twelve month follow-ups. The results showed improvement of frail elders' experiences of security/safety within the control, this improvement was not statistically significant. Regarding frail elders' experiences of security/safety there were not statistically significant differences in changes between the groups. The results indicated existence of a more individual variation in changes at the six and twelve month in both groups, (See Table 3 study IV).

6 DISCUSSION

6.1 Discussion of the findings

The overall aim of the thesis was to explore experiences of health and its influencing factors among frail elders and evaluate the effect of the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home*. The design and the choice of analysis methods through the whole of the thesis and within four studies intended to capture a deeper and broad knowledge and understanding on the experiences of health in frailty.



The figure shows the chronological order of the studies and a schematic over the nature of the shaped knowledge from the four studies and additionally the conclusion from the thesis. First and second studies attained a vertical, qualitative deeper understanding on the frail elders' experiences of health and its influences factors, and the third and forth studies obtained a horizontal

wide knowledge on frail elders' self-rated health and its associated factors. Health strengthens factors that were guided from the second study was tested in relation to self-rated health in study III. The result from study III accomplished a model of factors with high explanatory power for self-rated health. In study IV the effects of the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home* was evaluated regarding these factors with best explanatory factors for self-rated health. The findings from this thesis are concluded in the last step.

6.1.1 Main findings from qualitative studies and its intertwining nature of the structures

The essence of frail elders' experiences of health was to be in harmony and balance in everyday life and furthermore the frail elders' experiences of good health were reinforced by feeling assured and capable in managing everyday life. The results from these two qualitative studies are very close and intertwined with each other. The first one considers the "what" is the phenomenon of experiences of health, while the second one answering the "how question", i.e., considers the influencing factors on the phenomenon health. The everyday life, i.e., the contexts in which frail elders experienced health and tried to create the sense of good health was crucial. The results suggested that having or creating a secure, safe and manageable everyday life reinforced the frail elders' being in harmony and balance and thereby enabled them to experience health despite frailty. The individual's lived experience of being in harmony and balance and feeling assurance in managing of everyday life was dependant on how the person experienced their own being and existence in relation to the world here and now. These results were in accordance with life-world phenomenological description of a phenomenon with three dimensions, i.e., lived body, space and time [176]. To regain balance after a disturbance in one of the essential structures, the elders adjusted their perceptions of their lived experience with the disturbed structure. This process of maintaining balance through changing perceptions and expectations was much like shifting the position of a fulcrum to keep a structure balanced. In other words, the threshold of what constituted health was dynamic over time. This dynamic process of creating health is described as a process of constructing the moral body through self-care among elders with multiple chronic conditions [177]. A constant calibration and adjustment of expectations in order to adapt to a reduced energy level, aging and health problems were involved in efforts to maintain control in chronic ill elders [101].

The five essential structures of being in harmony and balance in everyday life were interrelated to each other and simultaneously interrelated to the five

sub-themes of feeling assured and capable to manage everyday life. These intertwining natures of the structures depend on the naturally interrelation between the phenomenon health and its strengthening factors. These five subthemes emerged from content analysis concerning action and movement toward the goals, i.e., the five essential building blocks emerged from the phenomenological analysis. These five essential structures of the essence were intertwined and necessary, and like building blocks, they shaped the essence. Simultaneously the complete experience of health was based on the interactions between two dimensions: the person, and the environment surrounding the person, in agreement with the life course perspective [178]. These frail elders experienced good health when they were able to shift their fulcrum in such a way as to achieve harmony and balance of the essential components.

Being able to master daily life was implemented through a set of efforts that enabled frail elders to steer and have control over their everyday life. These frail elders perceived their daily mastering as a sign of good health. The feeling of assurance and capable to managing everyday lives emerged when they were able to control their own lives in spite of dependency, remain occupied and engaged in useful activities, and not be a burden on others. A newly published study described elders' efforts to maintain control in later life in terms of creating a proactively monitoring of physical and mental health through maintaining roles and identity that were important to them and attempt to fostering a personal growth and development [179]. Elders' being able to continue with their previous life style, and maintaining daily routines not only gave them a sense of usefulness and filled their days, it also created a sense of independence and autonomy, which is in agreement with other studies that emphasized the relationship between elders' experiences of mobility, independence, participation and well-being and further suggested intervention to improve frail elders' experiences of well-being [180]. Doing something useful and not being a burden to others enhanced their feelings of autonomy. Independence, autonomy and self-determination contributed to a sense of security and control and reinforced the feeling of being in harmony and balance in everyday life. A new study suggested for supporting and strengthening of frail elders' self-determination, and indirectly well-being and health through implementation of a person-centered approach of improving elders' health literacy [181].

To experience that the body works by itself was possible through a set of strategies to managing the unpredictable body, which was characterized as ongoing and persistent symptoms. The symptoms that limited mobility, such as poor balance, pain, vision loss, fatigue, and lack of energy were experienced as troublesome symptoms. These frail older adults experienced

their bodies as a barrier to being healthy, as an unpredictable entity that deceived and was no longer able to serve them. These bodily changes disturbed the rhythm of everyday life and weakened their experience of health. The older adults with manageable symptoms and disorders were more likely to experience safety and control, thereby experiencing good health. This finding is in line with Eriksson's [125] linking of health and suffering, that health can be experienced if one can endure the suffering [125].

6.1.2 A model of the associated factors with the best explanatory power for self-rated good health

Satisfaction with the ability to take care of oneself (functional capacity), having fewer symptoms and not feeling lonely showed the best explanatory power with frail elders' self-rated good health. This results is in line with other studies that showed good self-rated health was associated with self-care capacity [24] and functional status [182]. The explanatory power was tested by Nagelkerke, which was 0.37 and it means about 37 % of variation in the self-rated health is explained by variation in the satisfaction with the ability to take care of oneself, having fewer symptoms and not feeling lonely.

The results from study III was a test of the results that emerged from study II in a quantitative study, which results in a model of associated factors with the best explanatory power for self-rated good health. Results from study II have shown that frail elders' experiences of good health were associated with being assured and capable in everyday life based on five strengthening factors: managing the unpredictable bodies, reinforcing a positive outlook, remaining in the familiar surroundings, managing everyday life, having a sense of belonging and connection to the whole. After researchers' discussion 17 variables were considered as relevant variables for this objective. Among 17 selected variables that were intended to operationalize these above-mentioned themes, 13 variables showed significant association with self-rated good health. In the final model 3 variables remained that showed the best explanatory power for self-rated good health.

All 13 associated variables are still considered as important influencing factors in frail elders' self-rated good health. It is important to take into account that being independent in P-ADL and having the chance to have a life that these frail elders want to live showed a significant association with self-rated good health. Evidence shows the importance of independency in P-

ADL [183] and having autonomy and control over one's own life and its association with experiences of good health in elders [11, 70]. Another variable that showed significant association with good self-rated health was satisfaction with physical health, which is in agreement with studies that emphasize the importance of satisfaction with physical health [43, 46] and having fewer symptoms [182] and its positive association with experiences of health in elders. Satisfaction with leisure time, with contact with friends and with family life were also significantly associated with good self-rated health. Earlier research has shown that self-rated health and satisfaction among elders was associated with having good friend to talk [184] and the frail elders' sense of loneliness or fear of being left alone was a source of insecurity and was associated with poor self-rated health [185].

There were three variables considered to capture the sub-theme *remaining in the familiar surroundings*, and none of the variables showed significant association with self-rated health in bivariate analyses. One explanation can be that these three variables may have had limited validity to capture *remaining in the familiar surroundings*. However this theme is still essential and clinically relevant and is taken into account and there is evidence that emphasizes the importance of familiar surroundings and "aging in place" in elders' experiences of health [111, 112]. GDS-total score, satisfaction with psychological health and life as whole were associated with self-rated health. The association between health and those variables is essential in frail elders' lives context, which is emphasized in previous studies in area [182] [184], therefore those variables should be taken into account in planning of health and care interventions for frail elders. This is a model of associated factors with the best explanatory power to self-rated good health that is generated from elders own narratives on health and its associated factors with a phenomenological approaching.

Additional analyses conducted for only the frail group in comparison to the whole group that emphasized the importance of having less sense of loneliness and having 10 or fewer symptoms, which had the best explanatory power with good self-rated health in both model. The model intending to explore differences between men and women revealed more details. For women having less sense of loneliness and for men self-determination (IPA), having 10 or fewer symptoms and having less risk for depression had the best explanatory power with good self-rated health. These results emphasized the significance of well-being in the psychosocial factors and its influences on subjective health.

6.1.3 The positive effects of the intervention on self-rated health and experiences of symptoms

The purpose of designing study IV was to evaluate the effects of the intervention on those factors that were associated with self-rated good health in these community-living frail elders. The variable self-rated health was chosen because of its central role in this thesis and the variable experiences of symptoms was among the variables that showed the best explanatory factors with self-rated good health. The variable experience of security/assurance was also chosen because results from study II consider it as the main reinforcing factor in experiences of good health in frail elders.

The results showed that there was a statistically significant difference in systematic change in experiences of symptoms between the intervention- and the control group at the six month follow-ups. The positive RP- value within the intervention group at all follow-ups indicated that the frail elders' experiences of symptoms improved in the intervention group. The negative RP-values of the control group indicated deterioration in experiences of symptoms at all follow-ups. Furthermore the results showed for improvement in elders' self-rated health within the intervention group, the positive effects were statistically significant at the six and twelve month follow-ups. Previous studies on the effects of this intervention have shown improvement in frail elders' activities of daily living (ADL) [167], satisfaction of quality of care [186] and self-determination [187]. The implementation of this intervention has also shown positive results on implementation fidelity [188, 189] and attention to involved actors' commitment to the intervention [190]. The results from these evaluations of this intervention emphasized the positive effects of the intervention on many important factors in frail elders. It's impossible to evaluate which one of the "active ingredients" of this complex intervention had positive effect separately. This intervention in its entirety and unique content and context had positive effects in many factors. The positive effects of this intervention can be explained by its design with integrated care [137], having a person-centered focus [191] and the complex content of the intervention conducted at the several levels [14]. Another care planning program and coordination of care services by a case manager showed improvements in elders' subjective well-being [192], which is in line with our results that showed a statistically significant improvement on frail elders' self-rated health. A systematic review and meta-analysis pointed out the importance of implementing the complex interventions that aim to meet individuals' needs and preferences, which can help elders to experience safety and independency in their everyday lives [193].

Complex interventions regarding elders are more efficient in pre-frail elders, i.e., elders who are in the beginning of developing frailty [193]. Consequently two considerable key issues that should take into account are that the participants of this study were frail elders and that deterioration in their health was expected. Thus the intervention can be considered as successful, if these frail elders could maintain same experiences of health, security/safety and symptoms. The second issue is that the ordinary care services toward elders in Sweden are among the best services in the world [5, 10]. Therefore even a slightly improvement effect of the intervention is essential and should be consider as clinical significant improvement.

6.2 Frail elders' experiences of health in relation to some definitions of health

This life-world phenomenological description of health considers the phenomenon experiences of health as being in harmony and balance in everyday life, which was constructed of five essential intertwined buildings structures in a dynamic continuum with its three dimensional nature i.e., lived body, space and time in two connectedly individual and social levels. This definition corroborates the complexity of the phenomenon of experiences of health and articulates its dynamic construction and multidimensionality. Consequently this result is not in agreement with the WHO's meaning of health that terms health as "a complete state", therefore experiences of health has a relative dynamic construction. As the same time the results are in agreement with the WHO's [20, 22], Breslow's [194] and Nordenfelt [19] definition of health, when the dynamic and multidimensional nature of health are emphasized. The phenomenon of experiences of health from frail elders' perspective, i.e., being in harmony and balance in everyday life is in line with the definition of health from caring perspective that considers health as physical and mental soundness and feelings of well-being and wholeness [23]. In a previous study elders have described health as going and doing something meaningful, with four components: something worthwhile to do, balance between abilities and challenges, appropriate external resources, and personal attitudinal characteristics [195]. Elders' experiences of health and ill-health encompassed their perceptions of the positive and negative poles of autonomy, togetherness, tranquility, and security in daily life [86]. The findings from these two qualitative studies were in agreement with Bryant's [195] and From's [86] studies. These frail elders had a daily attempt to maintain harmony and balance and thereby experience health despite the vulnerability. Our description of the phenomenon of experiences of health is

in agreement with caring perspective on health, which refers to humans development, fulfillment and well-being [25, 121, 123] inner harmony [120]. This finding is also in line with Eriksson's [125] linking of health and suffering, that health can be experienced if one can endure the suffering [125]. The smallest remaining function and resources, which were critical to sustaining the ever-changing balance, were appreciated highly. This demonstrates the significance of the frail elders' everyday lives and their attempts to balance it in the context where health was experienced.

6.3 Frail elders' being in harmony and balance in everyday life and sense of coherence

The perspective of this thesis is salutogenic, which is a deliberately positive view that tries to highlight these frail elders' resources and opportunities to create good health despite frailty. These results point out that experience of good health are possible even in frail elders and elders with extremely disease problems. The results from study III showed that 28% of elders with severe or extremely disease problems and 29% of frail elders estimated health as good. These frail elders' feelings of being assured and capable to manage everyday life reinforced their experiences of health, which were dependent on predictability and perceived control over one's body and psychosocial context. Having a positive outlook was associated with having the resources to remain in familiar surroundings, managing and controlling everyday life, and a sense of belonging and connection to the whole. These factors reinforced the experience of good health and enabled the elders to experiences harmony and balance in their everyday lives.

The results are in line with Antonovsky's sense of coherence, which includes three components; meaningfulness, manageability and comprehensibility that enable mastering a stressful situation. These elders were able to managing frailty through an understanding of symptoms and bodily changes. Comprehensibility shaped security in frail elders' lives, provides them with a sense of having control and on their body and life in general. The role of inner strength in creating well-being despite frailty is emphasized by another study as "internal hardiness" [196], which was important in creating meaningfulness in frailty. Manageability shaped by having a positive outlook, which facilitated one's willingness to face further challenges and gave elders the ability to create insight and accept changes in their health situation. Insight and knowledge of aging, disease, and its effect on their lives made it easier to accept and facilitate adaption to age-related changes and

frailty. Insight, acceptance and will to adoption to the current situation were among approaches to obtain control over the life. The results is in line with Lundman et al.'s study [102], in which four core and interacting dimensions of inner strength were identified: connectedness, firmness, flexibility, and creativity. Inner strength meant believing in one's own possibilities, making choices and having control over life's trajectory in a meaningful way [102]. The qualitative studies from this thesis emphasizes the value of health and social care staffs' attitudes, positive interactions, and confirmation of elders' courage "external stimuli" and how insight to facing the changes and challenges in life "internal stimuli" facilitated elders' experiences of control and good health despite frailty. This result emphasized Antonovsky's description of sense of coherence, which refers to a person's access to her/his psychosocial healthy factors in order to experience internal and external stimuli as rationally predictable and graspable, having a sense of control over their own life and the situation and having cognitive engagement to find meaning in the difficulty [115].

6.4 Reinforcing frail elders' resilience through lived body and experiences of health in frailty

The focus of this thesis was experiences of health from elders' own perspective and the term of frailty was used as directional term to select the participants with a particular risk for diverse health outcome. The results from the first three studies led to a model of associated factors with the best explanatory power to self-rated health. This approach started with a phenomenological searching in elders' lived body and experiences of health through their narratives of their everyday lives, situations with experiences of health and narratives on the factors that reinforces and hinders their experiences of health. The intention was to highlight the elders' experiences of health, recourses and opportunities in their individual life context. The elders' process of resilience and their effort to creating health can be described from a life course theory [178] that emphasized the significance of the individual context in which people can grow and develop. Elders' individual efforts to managing everyday lives, their experiences of and perceptions of health are related to their personal past (the life course) and the changing context [88, 178].

This thesis stresses the essential role of a person-centered health and care system [191] with a salutogenic perspective [115, 197] on the human beings for planning of healthcare system especially for frail elders. Elders' efforts to

creating health despite frailty was stressed in study II as health reinforcing factors, which is the same dynamic process of resilience that refers to elders' many stepwise and gradual iterations toward a reconstituted sense of wellness and healthy aging; it gives people the capacity to live a meaningful life despite adversity. This resilience process of creating health in frailty is emphasized by a qualitative study, which identified five ways in which older people constructed healthy ageing: home and keeping active; managing lifestyles, health and illness; balancing social life; and balancing material and financial circumstances. From these elders' perspective healthy aging was seen as their level of control, as something that elders could do or work toward for themselves [108]. Furthermore in study III, a model of factors with the best explanatory power for self-rated health emphasized that elders being satisfied with physical health, having less symptoms and not feeling lonely were among the factors with the best explanatory power that reinforced elders to create health despite frailty. The model is in line with the concept of person-centered healthcare concept that relies on knowing the elders in their social context through their narratives and experiences [129]. I argue that this model is a valid model for evaluating of frail elders' self-rated health, because of it is generated from frail elders' narratives on their lived body and experiences of health. Hence the validity of this model as a person-centered generated model on frail elders self-rated health and its explanatory factors is emphasized due to conducting the phenomenological approach [155], which suggests the best manner to study a phenomenon is to go back "to things themselves" (p. 19) and being sensitive and accurate for lived experience [146], in combination of the emphasized positive effects of the intervention on self-rated health (study IV) and satisfaction with functional ability (according results reported from same intervention in another article) [198].

6.5 The intervention *Continuum of care for frail elderly people* and its person-centered characteristics

The content of the intervention "Continuum of care for frail elderly people" that started with a comprehensive geriatric assessment, involving the elders and their relatives in the planning of the healthcare and further conducting the care plan in the elders' own home gave the opportunities to start an equivalent partnership between professionals and the elders. This approach was in line with the routines for ensuring implementation of PCC in daily clinical practice suggested by Ekman et al [130, 191]. The concept of PCC that relies on knowing the older person in their social context and care plans

include others significant to the older person and the needs of the community of formal and informal caregivers [129]. The process of this intervention was building up the elders' narratives of their needs, problem, and resources in their life context, which is also in agreement with the life course theory [178]. The planning of further care and rehabilitation was done in a mutually equal relationship, in which the elders and their relatives were involved and decided on in the care plan. The effects of the intervention were in agreement with evidence that emphasized frailty among elders as a dynamic process [14, 88, 178]. This intervention had a positive effect on elders self-rated health, activities of daily living [167], views of quality of care [186], as well as self-determination [187]. The results was in line with another intervention program with coordination of care services by a case manager that showed improvements in elders' subjective well-being [137]. The evidence confirms possibility to postpone frailty [139], maintaining/improving experience of good health (study IV) though well-planned healthcare system, that considers elders as unique persons in their life contexts. The positive effects of the intervention *Continuum of care for frail elderly people* confirmed the essential function of coordination of the care and rehabilitation for the frail elders.

6.6 Methodological considerations

The overall aim of this thesis directed the design and the choice of the approaches. Having a Socratic approach in research is recommended [199] and my intention was to implement this approach from the starting point of the research to the end, i.e. from designing of the studies, data collection to writing the articles and this thesis. Researchers' attempts to have a Socratic approach can be implemented by having a good conceptualization and apparent description of research questioning, being aware about one's own unconscious desire to confirm own understanding/perception and hypothesis and being humble and thereby admit epistemic risk to the research, i.e., challenge to not only give an accurate description of the generated knowledge but also the limitations and non-knowledge [199]. According to Karl Popper the researchers' task and responsibility are to challenge the existing science and try to find evidence of falsification of the current science [200]. It means that there is no absolutely science /truth, but there is the best available knowledge [201]. The focus of this research was subjective health in frail elders. According to Husserl [155] the best manner to study a phenomenon is to go back "to things themselves" (p. 19) and being sensitive and accurate for lived experience [146]. This thesis has a salutogenic [114, 115] and person-centered [130, 191] perspective that started with qualitative studies based on

elders' narratives and experiences of health, i.e., the subjective life-world and lived-body [145, 147] and its associated factors in their everyday lives context. The choice of variables in the quantitative studies were even based on the two previous qualitative study results, focusing on health and its strengthening factors. I believe therefore, that the thesis in its entirety has salutogenic and person-centered approaches.

This selected combination of qualitative and quantitative methods was intended to capture both depth and width of knowledge on subjective health. Mixing of the methods and the design of studies in its chronological order offered the best opportunities for answering the specific research questions [202, 203]. A combination of qualitative and quantitative method in research has been accepted as a powerful third "research paradigm" that allows an intellectual logical and practical synthesis based on quantitative and qualitative researches [202, 204]. "Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration. Mixing and matching of design components that offered the best opportunities for answering the specific research questions" (p. 123) [202]. However Mixed method research has to involve understanding and making explicit every paradigm's philosophical positions [205]. The researchers' awareness of the validation of qualitative and quantitative approaches (strength, weakness) in respect for its ontological and epistemological assumptions, that clarified the stability and instability of knowledge, is an important part of research and here I attempt to describe the limitations and strength of the studies.

6.6.1 Qualitative approach

The study's design, sampling strategy, interview and analytical method, validation and reporting of the findings have been directed by the study's aim, i.e., to describe the phenomenon of experiences of health from the frail elders' perspective (study I) and health strengthening factors (study II). The critical approach and reflexivity have been followed in agreement with consolidated criteria for reporting qualitative research [142] and is discussed in accordance with the guiding concepts such as engagement, processing, interpretation, critique, usefulness, relevance, and ethics [206]. This approach was implemented to increase trustworthiness and transferability of the findings [207].

A strategic purposeful sampling was conducted to capture diversity of experiences of health and a description of what influenced this representative

group of frail elders' views of health. This implemented through capture frail elders, who varied in self-perceptions of general health status, sex and age (67 – 92 years). Limitations of the sampling strategy include the exclusion criteria which excluded a large group of frail elders including people with dementia, those in need of immediate assessment and treatment by a physician, and elders who were in the palliative stage. These groups were excluded because of practical and ethical issues of the research. Frail elders, who were not in need of or did not access emergency hospital services, were also excluded. Finally, the sample was recruited from one area in Sweden which limits the transferability of the findings to other cultures that may differ in terms of socioeconomic variables and sociopolitical context. Despite these limitations, attempts were made to produce as varied a sample as possible, which increases the diversity of reported experiences and probability of transferability of the findings to other groups of frail elders in similar contexts.

To perform a semi-structured life-world interview required a well conceptualized interview guide, which was neither an everyday conversation nor a closed questionnaire [144]. The key questions of the interview guide were tested through two pilot interviews, then discussed and adjusted by me and two of my co-researchers, to ensure that questions were relevant to interviewees' consciousness regarding the phenomenon of experiences of health (study I) and its influencing factors (study II). The intention was to have one qualitative study with two specified aims. During the analysis, the researcher decided to have two studies, partly because the data was divided into two parts i.e., the phenomenon of experiences of health (study I) and its influencing factors (study II), and partly because it was a substantial comprehensive datasets. Data collection through interviews depends on the interviewer's background, experience, knowledge regarding the investigated subject and her attitude during the interview [144]. I as interviewer am a geriatric nurse with many years of clinical and interviewing experience. Being an interviewer in a life-world phenomenological interview was a challenge, which required one to be completely present in a paradoxical world of being. At the same time, involvement, engagement, empathy, and active listening were required while seeking to be objective and naive by bracketing knowledge and beliefs about the investigated phenomenon was necessary. This simultaneous empathy and adherence to openness and objectivity was implemented to create a favorable environment for the phenomenon of experiences of health and its influencing factors to emerge from the interviewee's own perspective. To interview this group of elders, who suffered from several diseases and fatigue, was an ethical dilemma and could have been a limitation to go further in some interviews. All interviewees had already conducted the baseline face-to-face interview for

the main project and therefore I assumed that they had a current recall and reflection on their health. Still, it cannot be guaranteed that the researchers' understanding of the elders' statements completely captured what was intended. However collection of more than 11 hours of huge substantial audio-recorded data about these frail elders' experience with and perception of health was a strength factor of the qualitative studies. Interviewer-observed signs of fatigue led to the challenging endeavor of not burdening the elders. I believe that even shorter stories had a qualitatively rich content.

The choice of this research approach was intended to maximize credibility and trustworthiness [208, 209]. The requirements of data collection and analysis methods for bracketing of all knowledge and theories about the phenomenon, and our constant reflexivity about our presumptions, guided us throughout the study, and helped to preclude the making of premature interpretations. In study I the choice of the phenomenological analysis aimed to provide a understanding of the phenomenon and its structure better than before the research [147]. There was a structural and systematic organization through all steps of analyses from raw data to discovery of the essence. Investigator triangulation in the analysis of data allows for a comprehensive multi-perspective view on the investigated phenomenon, which increased the credibility and trustworthiness of the finding [209, 210]. The themes and findings have been exposed for discussing and debriefing, and have also been reviewed in two workshops and four phenomenological seminars [211]. The findings have been validated by re-contextualizing the emerging themes in the original data and conducting a systematic search for the voices that contradicted the emerging themes. Free imaginative variation and shifting of the focus and view on the phenomenon of experiences of health was also conducted.

In the study II the qualitative content analysis involved systematic categorization, interpretation, and validation of manifest content into a latent context-dependent social reality [161]. Researcher triangulation was conducted to increase credibility and validity of the findings, i.e., an interdisciplinary perspective on the finding reduced research bias, and reach the maximum critical approach and reflexivity crucial for the trustworthiness of the findings [207, 212]. I and my co-researchers with diverse backgrounds involved in the analysis of data and discussed the findings from our diverse professional perspectives to assure that the themes covered a holistic and relevant view on health-strengthening factors.

6.6.2 Quantitative approach

The design of study III was guided by a previous qualitative study in the selection of the relevant variables. This study was an attempt to test the results from the qualitative study in a quantitative sample. The combination of these qualitative and quantitative methods, which is suggested of researchers [196] extended our knowledge and perspectives in the area and increased the validity of the results. The objective of this study was not to create an instrument, but rather to increase the validity of the findings from our qualitative studies [213, 214]. The operationalization of qualitative meaning and transforming the data into quantitatively measurable value was a challenge. Using data from the larger quantitative study in which data already were collected could be a limitation to choosing the most relevant variables appropriate for the objective of this study. The aspect of content validity is considerable, i.e., if the specific variable has the properties to capture the phenomenon that is to be measured. However, the selection of variables have been discussed and debriefed by a multi-professional research team as recommended by Guba [212]. This study was cross-sectional, which does not allow cause-effect interpretations of the association between self-rated health and the significant variables.

Another recommended aspect with conducting logistic regression is to consider the effect of multicollinearity between variables. Bivariate analysis was performed between all independent variables. Variables with a correlation > 0.4 and P-value > 0.05 have been issues for consideration for not being part of the final model. Thus several logistic regression analyses were conducted and every time the model was adjusted regarding one of correlated variables. The variables having less risk for depression according to GDS, satisfaction with the ability to take care of oneself and not feeling lonely showed the best explanatory power with frail elders' self-rated good health, when the adjusted variable was the variable having fewer symptoms. The variables self-determination (IPA), satisfaction with the ability to take care of oneself and having fewer symptoms showed the best explanatory power with frail elders' self-rated good health, when the adjusted variable was the variable having less sense of loneliness. In all other cases, satisfaction with the ability to take care of oneself, having fewer symptoms and not feeling lonely showed the best explanatory power with frail elders' self-rated good health. These results indicate the validity of the final model and in additional emphasize the importance of the satisfaction with the ability to take care of oneself, experiences of having fewer symptoms and not feeling lonely in experiences of good health in these community-living pre-frail and frail elders.

The design of study IV have several strengths; first it was a randomized controlled trial (RCT), which is the optimal study design to minimize bias and provide the most accurate evaluation of a complex interventions effect and benefits [140, 141]. Second the fidelity of the implementation of the intervention *Continuum of care for frail older people* has been studied alongside the RCT study [189]. A limitation in the design of the intervention project was that the intervention had started at the emergency department and the baseline measurement was made after hospital discharge. There is some consideration, that it should be more correct evaluation of the intervention if the effects of the intervention should be evaluated at the emergency department, but it is seen not to be ethically correct to exhaust these elders with the extensive questionnaires at the emergency department. This limitation probably has accrued an underestimation of the intervention [1]. The drop-outs were not at random and appeared to be those who had deteriorated health status, reduced functional ability and were too tired to continue, or died. However the choice of imputation method for missing data for those who declined to continue with median change of deterioration (MCD) and for those who died with worst seem to be proper [165] [215]. The imputation method was based on our assumption that elders (80+) are expected to deteriorate over time, which was in line with other studies [215] and was verified by the persons' poorer health status in the dropout. In addition, the sensitivity analysis showed aligned trends when comparing with complete cases. Using instruments that were valid and adjusted for elders was a strength factor of studies III, IV.

6.7 Relevance and clinical implications

People aged 65 and older are increasing in number in a constant trend worldwide [4], as well in Sweden [5, 6]. It is well-known that oldest-old often are characterized by an increased risk for developing frailty, multimorbidity, functional impairments [11] and increased health care utilization [2]. Thereby the need of continuity in healthcare system of elders [16] with among other a person-centered concept is emphasized [129, 130]. As a geriatric nurse, I believe in the value of exploring frail elders own perspective in planning integrated care for them. Thus this thesis with its salutogenic and person-centered perspective started with elders' narratives and experiences of health and its influencing factors in their everyday lives context.

The findings suggest that the human being's desire and goal to experience health, to be in harmony and balance in everyday life is universal. To be in harmony and balance was highly individualized, and therefore, it is important to focus on frail elders' individual life situations to illuminate the factors that help them to achieve harmony and balance and thereby well-being in their everyday lives. Social care staff should be aware about the importance of frail elders' experiences of security/safety in their everyday lives and their association with their experiences of health. All support and intervention should be in line with these elders' everyday life context.

The findings showed an association between these frail elders' experiences of good health and feeling assured in their day-to-day lives. Having a manageable everyday life creates a sense of assurance and strengthens the elders' experience of good health. This suggests the possibility of supporting vulnerable elders in stimulating their experience of good health and well being despite frailty by focusing on the individual's resources, requirements and conditions in the life context to which they are accustomed. The challenge for health and medical personal is to focus on the factors that strengthen elders' health. Creating health despite frailty can be possible through enabling elders to feel assured, and to provide opportunities for managing their everyday lives, which requires on-going coping mechanisms and support.

The results indicate that being satisfied with the ability to take care of oneself, having 10 or fewer symptoms and not feeling lonely had the best explanatory power for elders' self-rated health. Knowledge about self-rated health in frail elders is important especially for health-care professionals and policy makers, in order to give opportunity and plan supportive meaningful activities or intervention in line with the needs and desires of these people. The results support a multidisciplinary approach that not only focuses on the

medical problem but also considers factors of importance in supporting the elders in maintaining their ability to take care of themselves and providing supportive services to elders with the aim of maintaining their independence and experiences of good health.

The results show that the frail elders who received the comprehensive continuum of care intervention were more likely to improve or maintain their self-rated health and experiences of symptoms than those who received ordinary care. Implementing of similar intervention with integrated continuity and collaboration within healthcare system and between different care givers with focusing on elders' resources and needs in their context is emphasized. A person-centered and salutogenic perspective in planning of care for frail elders would be beneficial.

The hub findings from this thesis are that being in harmony and balance in everyday life and thereby experience health is a universal human challenge. Furthermore, experiences of good health are possible even in frail elders. An integrated healthcare system of diverse levels with a multi-professional involvement guided by a person-centered approach and salutogenic perspective is desirable solution in caring of frail elders.

7 CONCLUSION

These four studies with four specific aims were intended to answer the overall aim of the thesis, which was to explore experiences of health and its influencing factors among frail elders and evaluate the effect of the intervention *Continuum of care for frail elderly people, from the emergency ward to living at home*.

In conclusion: The essence of the phenomenon of frail elders' experiences of health was to be in harmony and balance in everyday life and furthermore the frail elders' experiences of good health was reinforced by feeling assured and capable in managing everyday life. The everyday life, i.e., the contexts in which frail elders experienced health and tried to create the sense of good health was crucial. Having or creating a secure, safe and manageable everyday life reinforced the frail elders' feeling of harmony and balance and thereby enabled them to experience health despite frailty. The importance of supporting frail elders in their resilience in the context is emphasized by this thesis. Being satisfied with one's ability to take care of oneself, having fewer symptoms, and not feeling lonely were among associated factors with the best explanatory power for community- living frail elders' subjective health. The comprehensive continuum of care intervention was of benefit to individuals as well as society, and has the potential to maintain and improve frail elders' symptoms and subjective health.

Experiences of good health are possible in frail elders. A multidisciplinary and person-centered social and healthcare system is desirable where the focus should not only be on ailments and problems but also through a salutogenic perspective which should try to provide supportive services and thereby enable elders to feel secure in managing their everyday lives and further reinforces their experiences of good health.

“It always seems impossible until it's done”

Nelson Mandela

8 FUTURE RESEARCH

This thesis is one little piece of a puzzle of knowledge that highlights experiences of health and its influencing factors in community-living frail elders. It would be interesting to conduct the same studies in special housing-living frail elders.

Feeling of security and safety was one of the key issues for frail elders' experiences of good health. It is essential to explore the meaning of security and safety from elders' own perspectives by in-depth qualitative study. It would be interesting to design mixed-method studies to operationalization of the five sub-themes of experiences of security/safety in everyday life, i.e., health strengthening factors (generated from study II).

The validity of the model generated from study III can be tested in a longitudinal study, which will give a more accurate explanatory power and increase the predictive validity of the model.

There were some sex- differences in these frail elders' experiences of health strengthening factors, which is important to do more studies on.

Intervention and RCT studies to evaluating the effects of continuum of care interventions, and implementing of the integrated healthcare system with a person-centred approach regarding pre-frail, frail elders with complex needs and also the elders with cognitive impairment and dementia have to be implemented, updated and developed in the clinic continuity.

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