A Salutogenic perspective on resistance training
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Abstract


The number of people aged 60 years and over has doubled since 1980 and the World Health Organization predicts that the population of over 60s will reach 2 billion by the year 2050. An ageing population poses both challenges and opportunities for society and for individuals. Whilst these are positive statements, increases in life spans do not directly lead to increases in health spans. The naturally occurring ageing process can lead to reductions in functionality and, in order to address this, scholars have argued the benefits of regularly engaging in physical activity, and especially resistance training. Therefore, an important challenge for modern society is to develop strategies that delay the onset of disease, such as interventions that include physical activity. This licentiate thesis investigates older women’s physical activity in a resistance training context and how this affects different aspects of their health.

The overall aim of the thesis is to explore healthy and physically active older women’s experiences of what maintains and enhances their health after starting resistance training.

This thesis used a quantitative and a qualitative approach to investigate a group of old adult women. Data collection was structured in questionnaires (n=32) with one intervention group and one control group for the paper I, and focus group interviews (n=14) in paper II. Paper I studied the effects of resistance training on physically active and healthy older women. Paper II relates to the women who continued to exercise after the resistance training intervention ended in order to explore their health resources. The theoretical framework used in this thesis is a movement towards health as explained by salutogenic theory.

This thesis showed that resistance training has positive effects on psychological well-being and is important because it not only benefits those who are physically inactive, but also those who are already physically active and healthy.

From a salutogenic perspective, physical activity provides a meaningful, comprehensible and manageable way for older women to engage in the ongoing process of maintaining health.

Keywords: Health resources, exercise, resistance training, salutogenes, older adult women, healthy aging, hope, negative affect, psychological outcomes.

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**Förord**

vetenskap, i synnerhet mina *doktorandkollegor*, ni har varit vinden och seglet som gett mig skjuts framåt. Era synpunkter och glada hejarop har varit ovärderliga!

Tack till *min familj*! Ni har varit vattnet som hållit mig flytande. Hos er får jag energi. Ni vet det, jag vet det.
Original Papers


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Introduction

The number of people aged 60 years and over has doubled since 1980 and the World Health Organization predicts that the population of over 60s will reach 2 billion by the year 2050 (WHO, 2015). This age group is growing faster than any other age group (Beard et al., 2016; WHO, 2014). Whilst these are positive statements, increases in life spans do not directly lead to increases in health spans (Crimmins, 2015). An ageing population poses both challenges and opportunities for society and for individuals. The naturally occurring ageing process can lead to reductions in functionality and, in order to address this, scholars have argued the benefits of regularly engaging in physical activity, and especially resistance training (Chodzko-Zajko et al., 2009; Penedo & Dahn, 2005). Therefore, an important challenge for modern society is to develop strategies that delay the onset of disease, such as interventions that include physical activity.

Ageing affects people in different ways and is often characterised by reductions in muscle mass, muscle function (Henwood, Tuckett, Edelstein, & Bartlett, 2011; Sparling, Howard, Dunstan, & Owen, 2015), cognitive functions (Bauman, Merom, Bull, Buchner, & Singh, 2016) and social networks (Shankar, McMunn, Demakakos, Hamer, & Steptoe, 2017). Societies that adapt to this changing demographics and invest in healthy ageing can help older people to live longer and healthier lives, reduce the burden of disease and disability and improve their quality of life (Bauman et al., 2016). Healthy ageing can result in a longer working life, reduced healthcare, more years of health, quality of life and independent living (Bauman et al., 2016; Crimmins, 2015). Therefore, initiatives that prolong health, delay disability and disease and offer environments that contribute to keeping people healthy for longer periods should be prioritised, so that society can reap the benefits (Crimmins, 2015; WHO, 2009).
One important factor in the prevention of age-related, physical and psychosocial diseases and disabilities is the maintenance of an active lifestyle, which can facilitate independent living and enhance the quality of life for older people (Henwood et al., 2011; Powell, Paluch, & Blair, 2011; Sun, Norman, & While, 2013). Older people can gain substantial health benefits from regular physical activity and prolong their lives (Chodzko-Zajko et al., 2009). A report from the World Health Organization, WHO (2015) states that several issues related to health or ill health in older people can be prevented or delayed by engaging in healthy behaviour. The report also states that physical activity can enhance health and well-being. Thus, increasing physical activity is one way of meeting the challenge of an ageing population and prolonging people’s lives.

The benefits of physical activity for older people are many and include maintaining or improving physical and mental capacities, such as muscle strength, cognitive functioning, self-esteem and quality of life as well as reducing anxiety and depression (Penedo & Dahn, 2005). Physical activity can also prevent disease and reduce the risk of coronary heart disease, diabetes and strokes. It can and improve social outcomes, for example by increasing community involvement and maintaining social networks and intergenerational links (WHO, 2015).

Studies of old people who already are physically active say very little about the psychological and social outcomes of exercise, especially in a resistance training context. Bauman, Merom, Bull, Buchner and Singh (2016) and the World Health Organization, WHO (2015) highlight the importance of making a robust statement that promotes physical activity amongst older people as a way of ageing healthily. This naturally raises questions about how to create the best facilities and conditions for such activity. Randomised controlled trials have shown that (Pahor et al., 2014; Paterson & Warburton, 2010) progressive resistance training programmes can enhance
health (Liu & Latham, 2009) and increase people’s quality of life and sense of coherence (Kekäläinen, Kokko, Sipilä, & Walker, 2017). This licentiate thesis investigates older women’s physical activity in a resistance training context and how this affects different aspects of their health.

From a salutogenic point of view, the different aspects of health known as sense of coherence, hope, quality of life and affect are presented in the following paragraphs, together with details about the research gap. This is followed by the aim of the study, the results of the two papers included in the study and a concluding discussion.

**Definitions of health and health as a process**

As health is a multidimensional concept it is not easy to define what being healthy means. There will be a wide range of answers to the question of what is health, depending on who is responding. For example, in 1948 the World Health Organization (WHO) defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Health can thus be an optimal functioning. The WHO definition stresses that well-being is one factor for health and that good health is a major resource for social, economic and personal development and an important dimension of quality of life (WHO, 1986). According to the WHO, Ottawa Charter (1986):

“Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical mental and social wellbeing, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept
In this definition, health is more than just the absence of disease and/or disability. Nor is it something that is achieved without thought or effort. The basic conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity (WHO, 1986). Health is to be seen as a process, and health promotion is the process of enabling people to have more control over their lives, feel empowered and improve their health (WHO, 1986). Health is also about having functional relations and being part of a social context (Halfon, Larson, Lu, Tullis, & Russ, 2014). In order to reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and satisfy their needs and change or cope with the environment (WHO, 1986). Health is therefore to be seen as a resource for everyday life, rather than an objective (WMA, 2001).

According to (Antonovsky, 1979, 1987, 1996), it is a mystery that some people consider themselves to have good health at all. Antonovsky uses the metaphor of a river and a swimmer to describe health and explain the mystery of health. He describes people as swimmers in the river of life and says that we must all learn to swim and to stay in the right places in the river to survive if we are to have the slightest chance of staying healthy. Antonovsky (1996) presents a salutogenic perspective in the context of health that in western countries has mostly been characterised by a pathogenic thinking about health. Briefly, a pathogenic notion of health focuses on disease and what has become diseased. Here, the focus is on people searching for health-
care when they have health issues. Mittelmark, Sagy, et al. (2017) and Antonovsky (1987) state the need for both interpretations of health. The pathogenic way of treating and preventing disease is an effective way of curing illness, although when it comes to developing health, the salutogenic perspective of what can create or enhance health and strengthen the resources for well-being still needs to be explored. Antonovsky (1979, 1987) explains health as people moving on a continuum with ease on the one side and with dis-ease on the other, and that during their lives people move along this continuum with more or less health. This is akin to the swimming in the river metaphor, in that the river is the health continuum.

A number of terms are used in the thesis that need to be introduced and explained. Beginning with the term health-related quality of life, this usually refers to the degree to which a person’s life is desirable or undesirable, often with an emphasis on external components such as environmental factors and income (Diener, 2006). This can be measured in several different ways, for example by means of enjoyment and life-satisfaction (Endicott, Nee, Harrison, & Blumenthal, 1993). In contrast to subjective well-being, which is based on more subjective experiences, quality of life is often expressed as more objective and describes the circumstances of a person’s life, rather than as a reaction to those circumstances (Diener, 2006). However, quality of life can also include a person’s feelings, perceptions, thoughts and reactions to the circumstances in which they find themselves (Diener, 2006). In paper I we study the mental components of quality of life and health (MCS) and the physical components of quality of life and health (PCS) based on the SF-12 health-related quality of life survey (Ware, Kosinski, & Keller, 1996).

Health is multifaceted and connects to several connected and, in some cases, underlying terms. Another term and theory is hope theory (Snyder, 2002), which emerged in positive psychology and is closely related to optimism and self-efficacy (Luthans & Jensen, 2002). Hope is conceptualised
around three main components: goal, agency and pathways (Snyder, 2002). Hope is defined as the process of thinking about a person’s own goals, the motivation towards those goals (agency) and the ways of achieving them (pathways) (Snyder, 2000; Snyder et al., 1991). Hope theory was chosen because it has been validated as a good measure (Luthans & Jensen, 2002) of people’s motivational states, which are explored in some detail in paper I.

Feelings are also defined as affects and are measured in in paper I. The positive and negative aspects of affects are related to a person’s health (Watson, Clark, & Tellegen, 1988). Positive affect denotes pleasant moods and emotions, such as joy and satisfaction. Positive or pleasant emotions are part of subjective well-being in that they reflect a person’s reactions to events and signify that life is proceeding in a desirable way (Diener, 2006). A number of mood scales can be used to measure people’s mood and feelings. PANAS was chosen for this study due to the validity of the questionnaire (Watson et al., 1988) and because it is a relatively short. In order to measure people’s positive affect, the PANAS questionnaire uses terms like energy, pleasure, concentration and engagement. Negative affect are measured using terms such as anger, contempt, disgust, guilt, fear and nervousness and are seen as a general dimension of subjective distress and unpleasant engagement with life. Negative states that can cause ill-being are loneliness and helplessness (Diener, 2006). If a person has a low score on negative affects they are in a state of calmness, peacefulness and serenity (Howell, Kern, & Lyubomirsky, 2007). Negative affect include moods and emotions that are unpleasant and represent negative responses and reactions in their lives, health, events and circumstances (Diener, 2006).

Well-being has been studied in many disciplines, such as philosophy, economics, psychology, physiology and medicine and is often included in qual-
ity of life studies. As this thesis focuses on older women’s health, their subjective well-being and the connection to what is often studied as quality of life, well-being is considered to be an important determinant of health and healthy ageing (Ni et al., 2012). Several studies of health and well-being have been associated with feelings of happiness resulting from feeling healthy (Diener, Suh, Lucas, & Smith, 1999). Already in 1969, Branburn defined happiness as consisting of high positive affect and low negative affect. Diener (2006) defines subjective well-being as all the positive and negative evaluations that people make in their lives. It includes reflective cognitive evaluations such as life satisfaction and work satisfaction, interest and engagement and affective reactions to life events, such as joy and sadness. Thus, subjective well-being is an umbrella term for the different valuations that people make in their lives, the events that they are involved in, their bodies and minds and the circumstances in which they live (Diener, 2006). Well-being and ill-being (Diener, 2006) are subjective, in the sense that they reflect a person’s experiences and manifestations.

In the last decade a number of studies have been conducted on the relations between well-being, physical activity, health and ageing (Chida & Steptoe, 2008; Sadler, Miller, Christensen, & McGue, 2011). In studies of ageing, the word successful is often used to discuss what good ageing might consist of. Already in the 1990s, Rowe and Kahn (1997) tried to determine when ageing could be considered as healthy and successful, the three main components of which were: low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life. All three terms are relative and relate to each other (Rowe & Kahn, 1997). Rowe and Kahn also found that successful ageing was more than an absence of disease, but also more than the maintenance
of functional capacities. In their definition, both these components are important in successful ageing, but it is their combination with active engagement in life that represents the concept of successful ageing most fully.

Concepts like ‘successful’ ageing and healthy ageing have been criticised. For example, Katz and Calasanti (2014) argue that what can be conceived of as healthy or successful is mostly related to individual responsibility (i.e. the swimmer in the river metaphor), while in many cases healthy ageing depends on a person’s life situation and the conditions or resources they have access to (i.e. the river in the metaphor). However, as Antonovsky (1996) argues, sometimes the best way of promoting a person’s health is to change the river and see health as movement on a continuum of ease and dis-ease. In this thesis, the resistance training intervention that is conducted in study I is an example of changing the river and the swimmer. Here, older women are given an opportunity to change their conditions (the river) and themselves (the swimmer) and to take part in regular resistance training, which was a new experience for them all.

**Salutogenesis – Health as a movement**

The theoretical framework used in this thesis is a movement towards health as explained by salutogenic theory. The concept of health can be understood in different ways, and different theories can help with this. However, in the health promotion field, salutogenesis is often associated with the concepts that Antonovsky introduces in his book *Health, Stress and Coping*, published in 1979, and developed in many subsequent works (Mittelmark, Sagy, et al., 2017). According to (Antonovsky, 1979, 1987, 1996), health can be seen as the process of movement on a continuum. The continuum has two directions: in one direction there is ill health (what he calls *dis-ease*) and in the other there is health (*ease*) (Lindström & Eriksson, 2005). Moving in one or the other direction, and having more or less health in life,
depends on where ‘we swim in the river’ and where we ought to ‘swim in
the river’. In other words, it depends on our life experiences and our expo-
and Quennerstedt (2016) describe this as a useful approach for understand-
ing health and how health is developed through the course of life as a dy-
namic process, rather than exploring health as a normal condition with an
absence of disease, risk or deviant behaviour. This is also in line with the
Ottawa Charter (WHO, 1986). The salutogenic approach in health promo-
tion stems from a critique of a dichotomous classification of people as
healthy or diseased, and a focus on disease “... as the departure from the
norm and the normal, as that which has to be explained” (Antonovsky
1996, p. 171). Health is not something that someone has or does not have,
but rather something that is created by a combination of physical, psycho-
logical and social factors, where “... we are all terminal cases. But as long
as there is a breath of life in us, we are all in some measure healthy” (An-
tonovsky 1987, p. 50). In this way, a salutogenic approach provides a val-
uable perspective on the causes of health that complement pathogenic ori-
entations, which often focus on risks and the causes of ill health.

In some ways, life experiences further shape people’s sense of coherence
(SOC) – meaning how people see the world as comprehensible, manageable
and meaningful (this is described in more detail below). Having a strong or
high sense of coherence helps a person to mobilise his or her resources to
cope with stress and manage tension in different life situations (Mittelmark,

Zooming out again to the health ease/dis-ease continuum, the sense of
coherence is an important factor that affects a person’s movement on the
continuum. In its most general meaning, salutogenesis is a scholarly orien-
tation that studies the origins of health and assets for health, rather than the
origins of disease and risk factors for illness (Mittelmark, Sagy, et al., 2017).
But the main questions in salutogenic theory are ‘*what makes people healthy and what are the origins of health?’* Antonovsky’s suggestion of an answer to the second question is people’s sense of coherence. He regards sense of coherence as a key concept in the salutogenic model (Mittelmark, Sagy, et al., 2017). Antonovsky (1996) summarises the salutogenic orientation in a few sentences by contrasting it with the pathogenic orientation. He first of all contrasts the dichotomous classification of pathogenesis as being healthy or not with the salutogenesis concept in the healthy/dis-ease continuum. Secondly, he contrasts the pathogenesis risk factors for health with the salutogenic orientation that views success factors as actively promoting health, i.e. health resources. Thirdly, he contrasts the focus on a particular disease or disability of a person with the salutogenesis that relates to all aspects of a person. In the next section, salutogenic theory and health described as movement on a continuum are expanded to include the resources that people have and draw on in their strivings towards health.

**Health resources**

Health resources are factors that make movement on the health continuum possible (Lindström & Eriksson, 2005). Antonovsky (1979) uses the term general resistance resources to explain people’s capacity to make sense of their life situations. McCuaig and Quennerstedt (2016) instead advocate the term health resources, which is the term used in this thesis because it says more about the striving towards health. Antonovsky (1979) describes these resources as diverse individual and sociocultural factors, whereas Idan, Eriksson, and Al-Yagon (2017) explain them as the characteristics of a person, group or community that facilitate a person’s ability to cope effectively with stress and contribute to the development of a sense of coherence. Antonovsky (1987) also separates people’s resources into generalised and
specific resistance resources. Generalised resources can, for example, be social networks, while specific resistance resources are situation specific and can be exemplified as remembering the emergency services telephone number (Mittelmark, Bull, Daniel, & Urke, 2017).

Referring again to the river metaphor, specific resistance resources can be found in the river and be picked up and used by the swimmer in specific situations (Mittelmark, Bull, et al., 2017). Both types of resistance resources aim to avoid and overcoming stress. McCuaig and Quennerstedt (2016) state that these resources are physical, material, cognitive, emotional, attitudinal, relational and sociocultural, in that they provide meaningful and coherent life experiences that can help us to deal with stress. In this context, stress can be related to the demands of daily life.

A health resource is contextual and relative to aspects like gender, social class and ethnicity and are dependent on the historical and sociocultural contexts in which we live (Antonovsky, 1979, 1996; McCuaig & Quennerstedt, 2016). Using the river metaphor, health resources can be found in the river, in the swimmer or in the relations between them. Similar concepts are coping and resilience, although Lindström and Eriksson (2005) include conditions and mechanisms that are more rigid and contextual.

**Sense of coherence (SOC)**

Another concept that is used in salutogenic theory is sense of coherence (SOC). Sense of coherence reflects a person’s view of life and capacity to respond to stressful situations (Eriksson, 2017). According to Antonovsky (1996), SOC consists of three components: meaningfulness, comprehensibility and manageability and is about how we understand the situations we find ourselves in and how we use resources to manage and make sense of events in life. To use Antonovsky’s (1996) words, resources are what help people to “… see the world as ’making sense’” (p. 15). A health resource is
thus a resource that facilitates the development of health. Antonovsky’s (1987) original definition of SOC is:

“A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli from one’s internal and external environments in the course of living are structured, predictable and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; (3) these demands are challenges, worthy of investment and engagement”. (p. 19)

Antonovsky (1993) further refers to the ability to comprehend the situation as a whole and the capacity to use the resources that are available as sense of coherence. As Eriksson (2017) describes it, this capacity is a combination of people’s abilities to assess and understand the situation they are in and to find meaning in it.

The three components of SOC can be described as follows. Comprehensibility reflects a capacity to recognise that events in life are relatively understandable, ordered and structured, rather than inexplicable and random. Manageability means having access to individual, social and societal resources to tackle the challenges that occur in life. Meaningfulness relates to being devoted to situations, influencing the course of life and that life makes sense and is worth investing in (Antonovsky, 1979, 1987).

SOC has been widely studied and scholars often refer to it as ‘the sense of coherence theory’, rather than as a concept in salutogenic theory (Eriksson, 2017). When studying people’s sense of coherence, most of the findings indicate that if they have a high sense of coherence they will have a better perception of health. For example, a study of anxiety disorders found that adolescents with a high sense of coherence had lower levels of
anxiety than those with a lower sense of coherence (Remes et al., 2017). However, Antonovsky does not define SOC as a theory. Rather, it was his answer to the salutogenic question: What are the origins of health? In 1987 he developed a questionnaire to measure SOC in three subscales (meaningfulness, manageability and comprehensibility). This questionnaire is described in more detail in the method section. However, as the sample studied in this thesis is older women, the following sections focus on healthy ageing and physical activity in this particular target group.

**Healthy ageing from a salutogenic point of view**

Ageing affects people in different ways. On the negative side, the ageing process can mean a decline in health and the onset of different kinds of disability. Loneliness (A. Singh & Misra, 2009), physical disability (Janssen, Baumgartner, Ross, Rosenberg, & Roubenoff, 2004; Janssen, Heymsfield, & Ross, 2002) and a decline in the cognitive functions can also be experienced (Small et al., 2013). On the positive side, physical activity, and especially resistance training, can reduce these symptoms in older adults (Kekäläinen et al., 2017; Small et al., 2013) and could therefore be a way of meeting the challenge of ageing. In fact, physical exercise has been defined as one of the most robust determinants of healthy ageing (McKee & Schüz, 2015).

As the area of aging research is huge, it is important to highlight that this thesis has not studied the ageing process as a phenomenon, but rather ageing and health in terms of psychosocial aspects and from a salutogenic point of view in a resistance training context with a sample of older women. In 2015, The World Health Organization (WHO) released an active ageing policy framework with a major focus on the promotion of regular physical activity in later life for the maintenance of health. Active ageing has been introduced as a process of optimising opportunities for health in order to
enhance the quality of life of older people. The word active in in the WHO policy framework (2015) does not only refer to the benefits of physical activity for health, but also participation in social and cultural activities. This report focuses on the notion of functional abilities, the intrinsic capacity of the individual, the relevant environmental characteristics and the interaction between the individual and these characteristics (Beard et al., 2016). This is in line with studying older adults from a salutogenic point of view in a physical activity context.

**Motives for physical activity and exercise in later life**

Regular physical activity can bring significant health benefits to people of all ages and the need for physical activity does not end in later life (Sun, Norman, & While, 2013; Windle, 2014). Evidence increasingly indicates that physical activity can extend the years of active independent living, reduce disability and improve the quality of life for older people (Sun et al., 2013). The maintenance of good physical health is therefore an important starting point in the striving for health (Wiesmann & Hannich, 2014).

Regular physical activity is regarded as one of the most important lifestyle factors for the maintenance of health (Windle, 2014). Even though it has been confirmed that physical activity can bring significant health benefits (Henwood, Tuckett, Edelstein, & Bartlett, 2011; Powell, Paluch, & Blair, 2011; Sun et al., 2013) for people of all ages, it has to be acknowledged that physical activity levels decrease with age (Buchman et al., 2014). In the long run, an inactive lifestyle can lead to loneliness and isolation, which in turn can lead to symptoms of depression (Birch et al., 2016; Conn, 2010; Mammen & Faulkner, 2013).

Taking part in social activities, such as physical activity and resistance training in a group, can reduce the sense of loneliness in older people and create meaning (Golden et al., 2009; Kosteli, Williams, & Cumming, 2016;
Studies have also shown the positive effects of physical activity on brain function, cognition and well-being (Demakakos, Hamer, Stamatakis, & Steptoe, 2010; Kennedy, Hardman, Macpherson, Scholey, & Pipingas, 2017; Leckie, Weinstein, Hodzic, & Erickson, 2012; McAuley et al., 2008). These indications emphasise the importance of regular physical activity and that this should be a priority from both a public health investment- and rehabilitation perspective.

Resistance training, which is also known as strength or weight training, increases muscle strength and endurance, reduces sarcopenia (loss of muscle mass in the ageing process), improves bone density, improves the levels of function necessary for pursuing daily activities and reduces signs and symptoms of arthritis, diabetes, obesity and depression (Chodzko-Zajko et al., 2009; Liu & Latham, 2009). Physical activity has been widely studied and has been found to have numerous positive health effects and to contribute to a reduction in the mortality rate (Lee 2012, Hamer 2012). The most common definition of physical activity is any bodily movement produced by skeletal muscles that requires the expenditure of energy (Caspersen, Powell, & Christenson, 1985). According to the American College of Sports Medicine (ACSM), older people are recommended to participate in 150–300 minutes of moderate intensity activity every week, of which at least 150 min should be moderate-intensity aerobic activity (Chodzko-Zajko et al., 2009; Medicine, 2013). Older people should also do balance exercises.

However, many older people find it difficult to achieve this level of activity (Sparling, Howard, Dunstan, & Owen, 2015) and the proportion of older adults meeting the recommendations are low (Keadle, McKinnon, Graubard, & Troiano, 2016). There is thus a great deal of room for improvement. Today, recommendations for older people to engage in strength training are few and far between. As ageing leads to a reduction in muscle mass (Edholm, Strandberg, & Kadi, 2017; Peterson, Rhea, Sen, & Gordon,
2010; Strandberg et al., 2015), adding resistance training to the recommendations will probably be something for the future. At present, the tendency is to ‘only’ recommend cardio exercises. More studies in this are therefore needed.

The need for studies of healthy ageing

Given that the life expectancy for both men and women is increasing in most parts of the world, focused efforts on how to improve or maintain health in an ageing population are of great importance (Chodzko-Zajko, Schwingel, et al. 2009, Crimmins 2015).

In order to gain more knowledge about people’s strivings for better health, we need to study older people who are already physically active and consider themselves healthy. It is also worth mentioning that several studies examining the benefits of exercise in older adults have included participants with low physical activity levels (Chodzko-Zajko et al., 2009), diseases or disabilities (Billinger et al., 2014; Heller, Fisher, Marks, & Hsieh, 2014; James et al., 2014) and signs of frailty (Giné-Garriga, Roqué-Fíguls, Coll-Planas, Sitjà-Rabert, & Salvà, 2014), although this has not been done from a salutogenic perspective, as is the case in this thesis.

Further, most of the studies that have been conducted have used quantitative methods, and relatively few have used qualitative approaches to study experiences of ageing in the context of health and physical activity (Griffin and Phoenix 2014). Knowledge about how older people can maintain and even enhance health by being physically active (Liffiton, Horton, Baker, & Weir, 2012) should therefore be of interest. It is also important to look at older people’s health-spans and feelings of health and learn from them about how to stay healthy.
In Burton et al. (2017) study of older people doing resistance training, different identify motivators and barriers are identified in relation to resistance training as an older person. The most important motivators appear to be related to longevity, health status and being able to live their lives independently (Burton et al. 2017). The identified barriers are lack of will-power, poor health, family or work obligations and responsibilities and lack of exercise facilities (Burton et al., 2017). There is thus a need to explore how to develop and provide exercise environments that lead to the maintenance and enhancement of health for older adults.

**Being an older person**

The emergence of the ‘third age’ is included in a construction describing the modern human being’s lifespan in four stages (Laslett, 1987). The first age is the adolescence, which is characterized by dependence from others adults, education and becoming an adult. The second age is characterized by working, independency, social and family responsibility. The third age is the first part of the senior life characterized by ending work life, hopefully economic stability that creates security and few limitations in activities due to ill health or disabilities. The fourth age is where diseases and disabilities sets limits for living independently. As more and more people are now living beyond the age of 65 the third age is constantly increasing. Many people of this age still live active and independent lives compared to 50 years ago (Laslett, 1987). It is now not until the ‘fourth age’ that disability and disease start to take their toll and limit people’s independence. According to the World Health Organization, an old adult is defined as someone over 60 years of age (WHO, 2015). Older people constitute a varied group, with different and to some extent unequal opportunities for ageing (Randel, German, & Ewing, 2017; Santoni et al., 2015), such as socioeconomic status, social networks and earlier health conditions (Santoni et al., 2015). The levels of
physical activity, food habits, smoking and alcohol consumption affect health (WHO, 2017). The level of autonomy also seems to affect whether or not people are healthy, i.e. in terms of being physically active and making our own decisions about different aspects of life (Santoni et al., 2015; WHO, 2002).

As mentioned earlier, physical activity – and especially resistance training – seems to have a positive effect on older people in several respects. However, according to Hardcastle and Taylor (2001), a number of social barriers have been identified when older people, in their case older women, engage in resistance training. These are exemplified as older women saying “I am too old” or that “physical activity is too risky” and that such barriers have largely been ignored (Hardcastle & Taylor, 2001). Many older people say that physical activity staves off the effects of ageing, provides social networks and enables people to be fit enough to play with their grandchildren (Allender, Cowburn, & Foster, 2006). However, the older and physically active women in their study describe being exposed to social norms such as staying and looking young, which is not their driving force. Their participants want to feel and look the best for their age and try to ignore other comments (Hardcastle & Taylor, 2001). That is also in line with what Grogan (2016) discusses about body image, how old adult women tend to care less about body image and being more interested in body function. This could according to Grogan (2016) be an explanation to why older adult women are more positive about their bodies than younger women.

The participants in this thesis are in the ‘third age’ lifespan and in many respects have good prerequisites for staying healthy, such as a good socio-economic status, autonomy and the stamina to embark on resistance training at the age of 65-70 years. They also seem take responsibility for their own health and welcome the opportunity to maintain their health through
physical activity. The group is in this sense typical for the third age. However, they are not representative for the population in general in the ‘third age’, but none the less important to study.

**Limitations of the existing literature**

This introduction has presented theories and research relating to an ageing population and how physical activity could be a determinant for healthy ageing from a psychosocial perspective, as several scholars have suggested (de Souto Barreto, 2014; Netz, Wu, Becker, & Tenenbaum, 2005).

Even though physical activity has been identified as an important factor for healthy ageing (de Souto Barreto, 2014; Elavsky et al., 2005; Netz et al., 2005), very few studies have connected this finding to salutogenic theory and a focus on which resources are important for health. In addition, studies that only include physically active and healthy older women are rare.

To summarise, several studies have shown that regular physical activity can in some respects prevent illness and disease (Moore, Durstine, Painter, & Medicine, 2016; Pedersen & Saltin, 2015). Some have also focused on the positive effects of physical activity in terms of resources for healthy ageing. It is therefore of interest to further explore parameters such as sense of coherence, hope, quality of life and affects in already healthy and physically active older women. As Phoenix and Grant (2009) have suggested, in order to gain a more in-depth understanding of physical activity in older adults, we also need to ask them about their motives for continuing to be physically active. Therefore, studying older women from both a quantitative and qualitative perspective, as has been done in this thesis, will hopefully contribute to the existing knowledge about how to maintain or even increase health in older age. The reason for this approach is twofold. The first is that the study is part of a larger research project exploring the physiological effects of a resistance training intervention, see Strandberg et al. (2015). Knowledge
about the participants’ quality of life, hope, affects and sense of coherence are also part of the intervention study. The second reason, drawing on Griffin and Phoenix’s (2014) argument, is that more studies of older women are needed in order to design the relevant physical activity interventions for this target group.
Aim

The overall aim of the thesis is to explore healthy and physically active older women’s experiences of what maintains and enhances their health after starting resistance training. This is done by examining the psychological and social aspects of resistance training from the perspectives of health and well-being using different parameters. This is first of all approached from a pre-post perspective relating to an intervention investigating health outcomes through self-report questionnaires. Secondly, almost five years after the intervention ended, focus group interviews were held with the participants who continued resistance training twice a week in order to gain an in-depth understanding of their health resources in their strivings towards health.

The thesis is based on a sample of older physically active and healthy women. The reason for choosing these particular participants is due to the shortage of resistance training interventions with healthy and already physically active older women. Most of the studies that have hitherto been conducted relate to older participants with some kind of disease or disability (Lin et al., 2013; Murray, Lopez, & Organization, 1996; Rhyner & Watts, 2016). Further, from a salutogenic perspective, more knowledge is needed about the effects of resistance training in older women.

Specific aims and research questions

Study I (as reflected in paper I)– The aim of this study is to investigate a sample of physically active, healthy, older women aged between 65-70 in order to assess their sense of coherence (SOC), health related quality of life (HRQoL), hope and affect. The study sets out to investigate whether there is a change in these women’s levels of SOC, HRQoL, hope and the positive and negative affects before and after taking part in a 24-week resistance training intervention, compared to a control group.
Study II (as reflected in paper II) – The aim of this study is to explore older women’s health resources in relation to physical activity, in this case resistance training, that physically active women between the ages of 69-75 characterise as important for the maintenance of health.
Methods

The study context

Paper I in this licentiate thesis presents data from a resistance training intervention that was part of a larger project (Training Healthy Women) aiming to study the effects of resistance training on physically active and healthy older women using several physiological and health parameters, such as quality of life and sense of coherence. The resistance training intervention took place from autumn 2011 until spring 2012 and lasted for 24 weeks.

Paper II relates to the women who continued to exercise after the resistance training intervention ended and who participated in focus group interviews five years later in order to explore their health resources. The overall study context uses a salutogenic perspective, as can be seen in both papers.

Study design

In paper I, the resistance training intervention was designed as a random yet controlled study with one intervention group and one control group. The intervention group was asked to do resistance training in the gym twice a week for 24 weeks under supervision. The control group was asked to continue to live everyday life as they had always done before the study began. At the end of the intervention the control group participants were invited to the gym to hear about the results from the resistance training group’s supervised sessions and take part in the same exercises as those shown in the results. The data presented in paper I was collected before and after the intervention. Questionnaires were used to measure the effects with a view to covering the areas of well-being and quality of life from different angles.
in order to give a broader view of how and whether resistance training affected older women from a psychological and a salutogenic perspective.

In paper II, the focus group interviews included the women who continued to take part in resistance training after the intervention had ended. In order to explore the participants’ health resources, an interview guide was created with questions derived from salutogenic theory and the concept of sense of coherence (see Appendix 1, Interview guide). As paper II had a salutogenically guided theory driven approach, the analytical questions were also formulated using the concept of sense of coherence. The theory was thus used as a tool to identify a resource as a health resource (McCuaig & Quennerstedt, 2016).

The participants

In paper I the participants were aged between 65-70 years and in paper II between 69-75 years. In paper I, the women were recruited through an advertisement in the local newspaper, the heading of which was, “Women between 65 and 70 years of age: If you consider yourself healthy, please reply to this advertisement.” A total of 122 women were screened at baseline. All the participants were examined by a doctor before embarking on the training. The women who were healthy and physically active and had no mobility impairments were included into the intervention, which resulted in a total of 63 participants in three different groups. Those who were not included in the intervention did not match the strict inclusion criteria.

Paper I includes data from two of the three intervention groups, namely the resistance training group and the control group. Each group consisted of 21 women. Useful questionnaire data is $n=14$ from the resistance training group and $n=18$ from the control group. All the participants ($n = 32$) included in the study took part in various recreational physical activities, such as walking, Nordic walking, jogging, cycling, swimming and skiing. None
of the participants had previously participated in structured resistance training.

The participants who continued to do resistance training twice a week after the resistance intervention ended were asked to participate in focus group interviews. In this way the participants referred to in paper II were the same as those referred to in paper I. The inclusion criteria for participation are provided below. The participants in papers I and II were all physically active and healthy women living at home and had no nursing care.

**Resistance training intervention**

The data that is included in paper I was gathered from a larger research project called Training Healthy Women, the aim of which was to investigate various aspects of healthy older women before and after taking part in a resistance training intervention. The resistance training intervention had several goals, including physiological aspects in a resistance training context of ageing in older women and aspects relating to quality of life, sense of coherence, hope and affects.

Resistance training is currently considered as one of the most prominent non-pharmacological preventive strategies to delay the decline in muscle mass and muscle function (Peterson et al., 2010; Peterson, Sen, & Gordon, 2011). Further, as women often have lower levels of muscle mass than men throughout adulthood (Goodpaster et al., 2006) older women tend to be more prevalent for sarcopenia than men (Dam et al., 2014). Therefore an intervention of this type is regarded as suitable for investigating healthy older women.

Supervised progressive resistance training was performed twice a week in a gym over the course of 24 weeks. A gym is a place in which different
people in different age groups exercise and, in this intervention, every session was supervised. The participants performed three sets of exercises with a 2-minute rest between sets and a 3-minute rest between exercises. The initial workload corresponded to 50% of the one repetition maximum (1 RM) during the first 2 weeks, where the participants performed 12-15 repetitions per set. A workload of 75-85% of 1 RM (8-12 reps/set) was set for the rest of the intervention. The training load was adjusted throughout the intervention. The following exercises were performed: squats, leg-extension, leg-press, seated row and pull-down. Additionally, five minutes of core stability exercises and seven squat jumps were included in each session. The training sessions began with a 10-minute warm up and ended with 5 minutes of stretching exercises.

In order to decide each participant’s maximum strength, a 1RM test was conducted on every machine. A familiarisation session was provided first, so that proper lifting techniques could be practised. Maximum strength was estimated using a multiple repetition test procedure. On the second visit to the gym, the 1RM test was determined after a warm up period. The load was set at 90-95% of the estimated 1RM and increased by approximately 2.5-5% after each successful lift until failure. A 3-minute rest period was allowed between consecutive attempts and the 1RM was obtained within five attempts.

In order to be considered as healthy and included in the intervention study, the women were examined by a medical doctor and all the criteria outlined below had to be met. A medical history and electrocardiograms were assessed by a physician. The exclusion criteria were: 1) living in a nursing home, 2) self-reported inability to walk, 3) cardiovascular, pulmonary, metabolic, rheumatologic and psychiatric disease, 4) musculoskeletal problems, 5) use of medication and 6) unexplained weight loss. To be included in the study the women had to be aged between 65 and 70 years, have a
BMI under 30, a systolic blood pressure under 140 mmHg and a diastolic blood pressure under 90mmHg. Additionally, the women had to be recreationally physically active. The women’s physical activity behaviour was assessed by a previously validated questionnaire (EPAQ2) (Wareham et al., 2002). All participants included in the study participated in various recreational physical activities, such as walking, Nordic walking, jogging, cycling, swimming and skiing, but had never before taken part in structured resistance training.

In order to assess the physical activity level of the participants, accelerometers were used for five days at the beginning of the intervention, after 12 weeks and at the end of the intervention after 24 weeks. Accelerometers count the total number of counts/steps per minute per day in both the vertical and horizontal plane can therefore estimate the average number of minutes spent on moderate-to-vigorous physical activity per day.

**Theoretical frameworks**

The theoretical framework that is described in the introduction is an overall perception and the moving towards health is one way of explaining how to manage to stay healthy. The sample chosen is in line with the salutogenic perspective for studying healthy older adults. In paper I, several parameters are included for measuring subjective well-being and health. The hope theory is applied as background to comment on the participants’ hope, defined as their motivational state. Hope theory is part of positive psychology and is closely related to optimism and self-efficacy (Luthans & Jensen, 2002). Hope is theorised around three main components – goal, agency and pathways (Snyder, 2002) – and is defined as the process of thinking about one’s own goals, the motivation towards those goals (agency) and ways of achieving them (pathways) (Snyder, 2000; Snyder et al., 1991). The positive and negative aspects of the affects are related to a person’s health (Watson et
al., 1988). Positive effect denotes pleasant moods and emotions, such as joy and satisfaction. Positive or pleasant emotions are part of subjective well-being, because they reflect a person’s reactions to events and signify that life is proceeding in a desirable way (Diener, 2006). Later on the positive and negative affect are framed by their various dimensions. The health-related quality of life is also measured, as is the sense of coherence. However, it should be borne in mind that measuring the health related quality of life is always risky and can lead to results that might not be applicable in other countries (Tucker, Adams, & Wilson, 2016).

Paper II is explicitly framed within a salutogenic perspective on health (Antonovsky 1979, 1987). Also in paper I, the sense of coherence questionnaire takes a salutogenic approach to health.

A salutogenic approach represents a theoretical framework for mental health promotion (Wiesmann & Hannich, 2014). Following Antonovsky (1979, 1996), taking an interest in different origins of health and asking salutogenic questions about how people stay healthy (Antonovsky 1979), the focus in paper II is on what Quennerstedt (2008) and McCuaig and Quennerstedt (2016) call health resources. Health resources are historical and cultural contingent resources that people draw upon in different ways to enact their lives. McCuaig and Quennerstedt describe them as “diverse individual and sociocultural factors, including physical, material, cognitive, emotional, attitudinal, relational and sociocultural resources that provide meaningful and coherent life experiences” (2016, p. 3).

In paper II, salutogenic theory is used to identify health resources in relation to the physical activity that a group of physically active women aged 69-75 years interviews characterise in qualitative interviews as important for the maintenance of health.
Measurements

In paper I, questionnaires were completed by the participants before and after the resistance training intervention. In paper II, four focus group interviews were held with three or four participants in each group. In paper II, four focus group interviews were tape recorded, transcribed and analysed using salutogenic theory as a framework for the entire process.

Questionnaires

In paper I, the following four instruments were used to determine each participant’s measurements; the first time before the resistance training started and again at the end of the resistance training intervention.

Sense of Coherence (SOC-13)

The SOC-13 questionnaire is a shorter version of the established SOC-29 questionnaire and is here used to measure sense of coherence (Antonovsky 1987, 1993). This shorter version, with 13 rather than 29 items, was chosen partly because the participants had several questionnaires to fill in before and after the intervention and partly because it has a high internal consistency (Cronbach’s alpha = 0.70-0.92) (M. Eriksson & Lindstrom, 2005).

The sense of coherence questionnaire has three components: comprehensibility (a belief that the world makes sense), manageability (confidence in one’s own resources to cope with internal and external stimuli) and meaningfulness (a feeling that demands are challenges worthy of investment and engagement). Taken together, these components aim to measure how people manage stressful situations and stay well (Eriksson & Lindstrom, 2005). Meaningfulness can also be seen as a motivational component.
Short form health survey (SF-12)
This questionnaire aims to measure the health related quality of life (Ware, Kosinski & Keller, 1996). This is also a shorter questionnaire than the established SF-36 and was chosen for the same reasons as those indicated above. A high consistency between SF-12 and SF-36 has been demonstrated (Ware et al., 1996). The scores for the twelve items are divided into two scales, the physical component summary score (PCS) and the mental component summary score (MCS). PCS includes the following components: physical functioning, role limitations due to physical health problems, bodily pain and general health. Components that are included in the MCS are role limitations due to emotional problems, vitality (energy/fatigue), social functioning and mental health (psychological well-being/distress). The PCS subscale primarily focuses on general health, mobility, physical problems, limitations and pain. The MCS subscale focuses on feelings of depression and anxiety, social functioning, happiness, energy and vitality. A total score of each of the subscales PCS and MCS range from 0 to 100, the higher score indicating a higher health related quality of life (Ware et al., 1996). In the data set presented in paper I, Cronbach’s alpha was 0.83.

Trait Hope Scale
The Trait Hope Scale (Snyder et al., 1991) was used to measure hope before and after the resistance training intervention. In Snyder’s model, hope is conceptualised around three main components: goal, agency and pathways (Snyder, 2002). The concept is defined as the process of thinking about one’s own goals, along with the motivation to move toward those goals (agency) and how to achieve them (pathways) (Snyder et al., 1991). “Agency” refers to a person’s determination to pursue goal-directed behaviour, expressed by statements such as “I energetically pursue my goals” and
“I meet the goals I set for myself” (Snyder et al., 1991). In contrast, “pathways” refer to a person’s ability to meet personal goals, exemplified by thoughts such as “I can think of many ways to get out of a jam” and “Even when others get discouraged, I know I can find a way to solve the problem” (Snyder et al., 1991).

The Trait Hope Scale is a 12-item questionnaire consisting of a four-item agency subscale (e.g. “I energetically pursue my goals”), a four-item pathway subscale (e.g. “I can think of many ways to get out of a jam”) and four distractor items. The response alternatives range from 1 (definitely false) to 8 (definitely true). A total hope score is calculated by adding the scores from the subscales agency and pathways. The Trait Hope Scale has been found to be a valid and reliable measure of hope (Snyder et al., 1991), with internal consistency ranging from Cronbach’s alpha 0.74 to 0.84. The questionnaire has been translated into Swedish using a structured, back and forward, translation (Gustafsson, Skoog, Podlog, Lundqvist, & Wagnsson, 2013). From a different perspective, hope is conceptualised as a cognitive construct that is described as two-dimensional in nature, with the dual components of will and ways, involving agency and pathways (Snyder et al., 1991). Cronbach’s alpha = 0.90 in our data set.

Positive (PA) and Negative Affect (NA) Schedule (PANAS)
This questionnaire consists of 10 items and measures mood and affect (Watson, Clark & Tellegen, 1988). A self-rated high PA is a state of high energy, full concentration and pleasurable engagement, whereas a low PA is characterised by sadness and fatigue. Negative affect (NA) is a general dimension of subjective distress and unpleasant engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear and nervousness. Low NA is a state of calmness, peacefulness and serenity.
Positive and negative affect are two different constructions and not opposite ends of the same dimension (Diener, 2003).

Measures of affect were assessed using the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), which is a 10-item mood scale. Participants were asked to rate the extent to which they had experienced each of the affective content descriptions on a rating scale of 1 (very slightly or not at all) to 5 (extremely) before and after the resistance training intervention.

A number of mood scales have been developed to measure affect. However, this scale shows high validity (Watson et al., 1988) and is widely used (Schmukle, Egloff, & Burns, 2002), with reliability scores of 0.89 for the PA and 0.85 for the NA scales (Crawford & Henry, 2004). In our data set, Cronbach’s alpha = 0.70 for the PA scale and 0.60 for the NA scale.

**Focus group interviews**

Focus group interviews were chosen as a suitable way of studying the participants’ health resources. Focus groups often elicit discussion and vigorous responses from participants (Stewart & Shamdasani, 2014). The main idea of focus group interviews is to take advantage of group dynamics in an organised discussion with a group sharing a specific experience or topic (Krueger & Casey, 2014). The method allows the participants to share, reflect and discuss and creates a safe space for discussions about complex topics such as mental health (Hurley, Swann, Vella, Allen, & Okely, 2017). There is always a potential ‘risk’ when asking participants to discuss things or share experiences if they do not know each other and care should be taken to put participants in groups that they will feel comfortable in and where the climate is conducive to sharing (Hurley, Swann, Allen, Okely, & Vella, 2017). In paper II, all the participants knew each other well and were grouped with those they had good social relations with. They also received
the topics in advance so that they knew what kind of things would be dis-
cussed. Four focus group interviews were conducted with three or four
women in each group and lasted for between one to two hours.

**Analyses**

Quantitative and qualitative data was used in the thesis and was analysed
statistically (non-parametric test) and by means of a theoretically driven
analysis that was regarded as suitable for the specific data in question. For
paper I, the statistical analysis was conducted with the consent of the leader
of the training healthy women project. Regarding paper II’s trustworthiness,
the first step of the analytical process was that all the authors read the tran-
scripts several times on their own and then met together to synthesise the
health resources they had each identified. Quotations were used in the re-
sults section of paper II and were anonymised to ensure that the individual
participants could not be identified (Smith & McGannon, 2017).

**Quantitative analysis**

The four questionnaires that were completed by the participants in paper I
- sense of coherence, health related quality of life, hope and affect, were
analysed with the non-parametric Wilcoxon Signed Rank Test using SPSS
version 23.0 for Windows. As a first step in the analysis the participants’
scores were examined for missing values. No-one had more than 5% miss-
ing data in the various items. Two participants had missing item values of
less than 3%, and these values were replaced by mean scores (Pallant,
2013). The data was also checked for outliers. None were found to be out
of range or were excluded as an outlier. This test compared the same groups
on two separate occasions (related samples), in this case the intervention
group and the control group before and after the resistance training inter-
vention. This statistical test was chosen because the sample was not normally distributed and was considered as ‘small’ in an analysing questionnaire context. Non-parametric tests were regarded as the most appropriate for the data in this sample size (Pallant, 2013). This test investigated whether the mean ranks of the sample differed on the two occasions.

**Qualitative analysis**

A salutogenically guided theory driven approach was applied in the analysis of the focus group transcripts (McCuaig & Quennerstedt, 2016). In order to explore health resources in paper II, the reading of the transcripts was guided by the three research questions corresponding to the three SOC components. In order to explore the older women’s health resources, all the authors of paper II carefully read the four transcripts, each one separately. The authors of paper II read the transcripts guided by the three research questions corresponding to the three components of the SOC theory. These were: What do older women who participate in regular physical activity find important and meaningful (meaningfulness)? How do older women who participate in regular physical activity manage their daily lives (manageability)? How do older women who participate in regular physical activity comprehend their daily lives (comprehensibility)?

Based on the research questions, analytical questions covering the three components of SOC were constructed. Meaningfulness was covered using the following questions: How do the participants describe what is meaningful in their daily lives? How do the participants describe physical activity as meaningful in their daily lives? How do the participants describe their participation in physical activity as a contribution to their daily lives being more meaningful? The second component, manageability, involved the following questions: How do the participants describe the resources used to
manage their daily lives? How do the participants describe their participation in physical activity as a way of managing their daily lives? The third and last component, comprehensibility, was covered using the questions: How do the participants comprehend their daily lives? How do the participants comprehend physical activity in their daily lives? How do the participants describe their participation in physical activity as a way of comprehending their daily lives?

After a careful reading of the transcripts, the analytical questions of the three SOC components were used to formulate preliminary health resources in line with the salutogenic theory of how a health resource could be defined (McCuaig & Quennerstedt, 2016). Further, during the analytical process, the authors of paper II discussed their identified preliminary resources with each other. After this interactive discussion process, the authors of paper II synthesised all the identified health resources and agreed on distinct and commonly shared resources. Throughout, the process was guided by the research questions in order to form descriptions of the health resources from the transcripts.

Salutogenic theory played a central and critical role throughout the entire analysis process, i.e. in formulating the research questions, forming the interview guide and formulating the analytical questions in relation to the health resources identified in the focus group interview transcripts. Most importantly, though, the theory was used as a tool for identifying a resource as a health resource (McCuaig & Quennerstedt, 2016). Finally, quotes from the transcripts were added to further clarify each identified health resource.

**Ethical considerations**

The research included in this thesis was conducted in accordance with the Declaration of Helsinki and included fundamental ethical principles of autonomy (participation in the intervention and focus group interviews was
voluntary), doing good (information was available in advance), doing no harm and doing justice (WMA, 2001). As the data in paper I was part of a larger training healthy women project, the regional Ethical Review Board in Uppsala, Sweden, approved the research project for the resistance training intervention (dnr 2011/033). Throughout the entire research process in this thesis, ethical reflections were made in order to ensure the maintenance of high ethical standards. This involved thinking through and preparing every meeting with the participants, collecting the data and discussing possible scenarios and ways of solving any problems that might arise.

Guided by the Swedish Research Council’s ethical principles of good research practice (2017), the participants in both studies were informed orally and in writing before giving their written and informed consent. In paper I, all the participants were assigned a study code to ensure anonymity during the data collection and analysis processes. The code document and the data itself are stored in separate places in a locked fireproof room.

Regarding the ethical considerations during the resistance training intervention, all the participants were treated with respect and were familiarised with the machines and weights in the gym and the exercises before the intervention began. They were also supervised in all the training sessions during the resistance training intervention. The participants were able to ask questions during the training sessions in the gym. Proper lifting techniques were taught in an effort to create a safe space for the participants.

Concerning the focus groups interviews, each participant was letter-coded and never mentioned by name in the transcripts or quotes. Again, before starting the focus group discussions all the participants were informed that they could withdraw from the interview at any time during the process and had the right to refuse to answer any question in the interview. Once again, the voluntary nature of participation was emphasised. All the collected data remained confidential.
A question that was considered before the focus group discussions began was: What should be done if important issues of health and wellness are raised by the participants during the discussions? It was decided that if issues like this arose during a focus group discussion, the moderator would stop the interview and recording equipment and solve the problem as an empathetic fellow human and not just as a researcher (Swedish Research Council, 2017). As it turned out, no such issues were raised during the interviews, although the very act of thinking it through beforehand enabled the moderator to remain calm and focus on collecting the data.

Private health-related issues were also taken into account when forming the questions. The participants knew each other well and the women were consciously placed in focus groups with those they had travelled with from the same part of town or had a social connection with outside the gym. All this was done to ensure a safe space if the topic of health felt too private to discuss. However, as the aim was to explore the women’s health resources, no sensitive data emerged in the interviews and the participants were very open minded about sharing their reflections on the research topic.

The control group of participants who were not involved in the 24-week resistance training intervention were offered supervised resistance training at the end of the study. They were also invited to a lecture about training and health.
Results

The results of the thesis are based on the two papers outlined above and relate to the psychological aspects of resistance training, i.e. the health and well-being perspectives of healthy and physically active older women using different parameters and in-depth discussions about their health resources. In paper I, the health perspectives are measured as sense of coherence, quality of life, hope and affects, and in paper II health resources are measured in terms of the women’s strivings towards health. As the participants were both healthy and physically active before starting the resistance training intervention, the results were encouraging, with improvements in some parameters being registered.

When the resistance training intervention ended some of the women continued to do resistance training twice a week in the same gym. They did this because they wanted to remain active and enjoyed resistance training. They therefore formed their own training group and decided which days and times they would exercise together. The focus group discussions took place almost five years after the intervention ended. Questions about what had made these women continue to train on a voluntary basis, why they continued to exercise in the gym and what had happened during those years were raised in order to explore the women’s motives for continuing and the kinds of health resources that were involved. In paper II, the participants were able to discuss their resources in focus groups. The questions that were asked can be found in Appendix I at the end of the thesis document. The themes and questions for these focus groups encompassed the three components of the sense of coherence concept and salutogenic theory. Summarised descriptions of the results of each paper are provided in the following sections. The complete and detailed results can be found in the respective papers.
Paper I. Resistance training is linked to higher motivational state and lower negative affect among healthy women aged 65-70

The aim of this paper was to investigate a sample of healthy, physically active women between the ages of 65-70 to assess their levels of sense of coherence (SOC), health related quality of life (HRQoL), hope and affect and any changes that had occurred as a result of the 24-week resistance training intervention. These results were then compared with those of a control group.

The results revealed no significant changes from occasion 1 to occasion 2 with respect to SOC and HRQoL. For two outcomes, there was a significant improvement in certain aspects of the women’s health. For hope, the women reported a positive variation, with higher levels on occasion 2 than occasion 1 in the resistance training group. There were also positive variations with respect to negative affect. The women’s negative affects reduced significantly on occasion 2 compared to occasion 1. The control group also lowered their levels of negative affect on occasion 2 compared to occasion 1. The participants lowered their subjective estimated levels of feelings included in the negative affects subscale of the PANAS questionnaire, which was used with both groups. The feelings that were probed in the questionnaire were levels of anger, contempt, disgust, guilt, fear and nervousness. In sum, the results in paper I showed that starting strenuous resistance training at 65-70 years of age does not appear to negatively affect women’s psychological health.
Paper II. Health resources, ageing and physical activity: a study of physically active women between 69-75 years

The aim of this paper was to explore health resources in relation to physical activity, especially resistance training, that physically active women between the ages of 69-75 characterise as important in order to maintain their health. The paper focuses on the women’s understanding of resistance training, health and ageing. In order to investigate health resources, paper II draws on salutogenic theory and the concept of sense of coherence (SOC) (Antonovsky, 1979, 1996). During the data collection in-depth discussions were held about the participants’ health and resources, which in turn provided the researchers with rich data.

Seven health resources that the women characterised as important for maintaining their health according to salutogenic theory were identified in relation to physical activity and especially resistance training. These were: 1. social relations and care, 2. positive energy, 3. self-worth, 4. capability in and about physical activity, 5. the habit of exercising, 6. identity as an exercising person and 7. womanhood. A description of the formation of a sense of coherence to physical activity is provided below.

The first health resource is social relations and care and relates to affiliation, care for oneself and others and the meaning of having social relations. This health resource has been studied many times and results have shown that social relations and care are beneficial to a healthy life. This is also the case in this study. The participants argued that without social support and personal relations in the training group or outside that context, continuing to exercise would probably have eventually faded out. The participants thus regarded being part of a social setting and around people who cared for each other as a health resource. They also thought that being part of a caring
community made everyday life became more meaningful and comprehensible.

The second resource, positive energy, results from doing exercise and can be extended and explained as experiencing a relaxed body, becoming full of energy after an exercising session and having feelings of vitality. Some of the women described this as a ‘refill’ on the mornings they exercised, that it helped them to cope with the day ahead and relaxed their bodies. Further benefits when discussing energy were improved sleep at night and more energy and strength during the day. This resource encompasses positive feelings that generate well-being, both in general and more specifically in and during exercise.

The third resource, self-worth, is about having confidence and faith in yourself and the autonomy to make your own decisions. The participants described a sense of control and increased meaningfulness and comprehensibility in their daily lives and in the exercise context. They also described feelings of empowerment and autonomy to deal with life in a healthy way.

The fourth resource, capability in and about physical activity, mostly relates to how the participants described learning to be in a gym and mastering the exercises, weights and machines and their understanding of and openness to how exercise benefited the body both physically and mentally. The participants described the gym as a safe place and felt competent enough to continue to exercise there in the way they had become used to. They also felt that having a functional and fit body created a sense of manageability and meaningfulness in their everyday lives. They described it as an understanding of how to exercise, avoid injury and not be afraid of aching muscles as a result of the exercise.

The fifth resource, habit of exercising, helped the participants to create a structure in their everyday lives as pensioners. This is described as a resource
that creates regularity and routine in a weekly schedule and making it happen creates manageability. When meeting twice a week for exercise, the realisation that someone was missing prompted them to contact that person to ask whether everything was okay. Also, knowing that other people were waiting and expecting you created regularity and meaningfulness in continuing to attend the training sessions. Having routines and habits generated structure and meaning. Adding training to the schedule further helped them to guard against apathy and feeling low and lonely.

The sixth health resource is *identity as an exercising person*. The participants identified themselves as exercising persons and had become ambassadors for resistance training for older women. Several of them had recruited friends and family as members of the gym over the years. They described it as feeling proud and being confirmed by others as an exercising person. The exercising had a value for them that they considered meaningful.

The seventh resource is described as *womanhood*. Aspects of this resource are feelings of being and looking like a woman i.e. having the bodily shape of a woman. The descriptions of how the body changes with age is central here. After doing resistance training the women described how muscles were toned back to what they had been before the aging process began. They described their motives for exercising as retaining body shape and femininity. These aspects were important for both themselves and for how they appeared to others.

As the participants in paper II had continued to do resistance training twice a week for almost five years, their participation in focus group discussions was both important and valuable. Gaining access to these women was a good opportunity for follow-up studies such as this. Studies that explored the more in-depth motives for continuing to exercise and got ‘closer’ to the sample would also be beneficial. To conclude, paper II identified seven
health resources that older physically active women regarded as important for maintaining their health.
Discussion

The overall aim of the thesis is to explore healthy and physically active older women’s experiences of what maintains and enhances their health after starting resistance training. This is done by examining the psychological and social aspects of resistance training from the perspectives of health and well-being using different parameters. In paper I, the psychological aspects are measured as sense of coherence, health related quality of life, hope, positive and negative affect. In order to gain an in-depth understanding, in paper II the participants’ resources in their strivings towards health are explored in focus groups interviews. Health resources in this context, and according to salutogenic theory, include seeing the world as manageable, comprehensible and meaningful. The literature has at least one important limitation, which is that studies of older people are mostly conducted on those with some kind of disability, declining health, or sedentary lifestyle (WHO, 2002). Many older people in the ‘third age’ are healthy and live independent lives (WHO, 2015). The main conclusion that can be drawn from this thesis is that starting resistance training after the age of 65 does not appear to negatively impact older women’s physiological health. On the contrary, it seems to be associated with psychological health benefits. A further conclusion is that physical activity, and especially resistance training, carried out in a stable group of peers provides a meaningful, comprehensible and manageable way for them to engage in the ongoing process of maintaining health.

As Sun, Norman, and While (2013) declare, the global population is ageing at a dramatic pace, which brings new challenges and possibilities for societies to improve, or at least maintain, older people’s health by enhancing their quality of life.

It has been shown that resistance training can significantly increase muscle strength, hypertrophy and endurance (Charette et al., 1991; Chodzko-
Zajko et al., 2009; Kraemer & Ratamess, 2004). Lately, it has become increasingly noticeable that resistance training can have psychological outcomes (Beard, Officer, & Cassels, 2016). For example, resistance training has been linked to improvements in depressive symptoms (Kekäläinen et al., 2017; Ströhle, 2009), positive and negative affect (Arent, Landers, & Etnier, 2000), self-efficacy and quality of life (Kekäläinen et al., 2017; Penedo & Dahn, 2005).

Discussions about resistance training and well-being are similar to those about aerobic exercises, which also increase general well-being (Chodzko-Zajko, Schwingel, & Park, 2009; Kekäläinen et al., 2017; Tod & Lavallee, 2013). It is important to acknowledge the ‘ceiling effect’ mentioned in the current literature, which is that individuals with higher scores for general well-being and good cognitive function have little room for improvement and might experience smaller effects in these categories than individuals who begin with lower feelings of general well-being and cognitive function scores (Beard et al., 2016; Tod & Lavallee, 2013).

Older adults are often the focal population in research involving quality of life, given that age-related declines in physical and mental capacity impact functionality, life satisfaction and feelings of self-efficacy (Tod & Lavallee, 2013). Many of the studies that have evaluated the effects of resistance training have been conducted on older people and have mainly studied quality of life and those who are depressed and have sedentary lifestyles (Cassilhas et al., 2007; Chodzko-Zajko et al., 2009; Kekäläinen et al., 2017; Kimura et al., 2010; A. Singh & Misra, 2009; Singh, Clements, & Fiatarone, 1997). These studies have also found that the participants increase their scores in quality of life and that the resistance training has effects on sedentary participants and those not suffering from depression (Tod & Lavallee, 2013). The literature on the effects of resistance training on health is somewhat superficial and a platform is needed for the creation of
guidelines and practical applications that are suitable for a wider population than those with declining- or ill health and have a sedentary lifestyle.

In an attempt to bridge the research gap, the thesis studies participants who are healthy and physically active. The results from paper I also support the hypothesis that, for this sample, resistance training lowers the participants’ negative affect and increases the ratings of hope, defined as motivational state. In relation to the ‘ceiling effect discussion’, the scores point in the right direction. Finding the right balance between recommending resistance training to already healthy and physically active older individuals can be difficult and more studies on the subject are needed.

**Findings related to the theoretical framework**

A study by Wiesmann and Hannich (2008) states that a strong sense of coherence helps to mobilise an individual’s own resources, which also has a positive influence on mental health. Antonovsky (1979, 1996) highlights that people have greater possibilities to “have health” if they see the world as meaningful, manageable and comprehensible. Drawing parallels with other theories, such as social cognitive theory (Bandura, 1989), the importance of beliefs and control are external and confidence in one’s own ability internal. This theory emphasises self-efficacy (Bandura, 1989, 1997) and self-confidence and shows the benefits of health resources like self-worth and the capability in and about physical activity. These resources can also be in parallel with the concept of empowerment, which is defined as the process of becoming stronger and more confident, especially in controlling one’s own life (WHO, 1998).

Another result is the participants’ raised levels of hope after the resistance training. This may say something about the increased motivational state defined as hope (Snyder, 2002; Snyder et al., 1991). In some studies, hope is
equated with a sense of optimism. Individuals with a positive mind-set are optimistic and tackle difficulties or setbacks in life in a constructive way by focusing on solutions rather than problems (Seligman, 2011; Snyder, 2002). Hope involves having the belief that you can achieve your goals (connected to the agency of hope theory) and develop strategies to do this (connected to pathways in hope theory).

An example of this motivational state is making an active choice to apply for the resistance training intervention, which then leads to an enhancement of life by exercising at a gym twice a week with other likeminded women. Social cognitive theory (Bandura, 1989, 1997) and hope theory (Snyder, 2002; Snyder et al., 1991) are related, in that they look at individuals’ abilities to ‘succeed’ and be healthy. It is also important to highlight that not every older person is capable of or motivated enough to respond to an advertisement like this in a newspaper.

Burton et al. (2017) review discusses the barriers and motivators for older adults participating in resistance training. They identify 92 motivators and 24 barriers. Most of the motivators are similar to our explored health resources outlined in paper II. For example, one of the motivator in Burton et al. (2017) is that resistance training leads to the prevention of disability, which is in line with capability in and about physical activity in our findings. Further, the motivator of feeling more alert and concentrated is in line with our finding of positive energy. Finally, building muscle tone is in line with what we describe as womanhood. The barriers in resistance training that Burton et al. (2017) identify are that older people believe that resistance training will make them too muscular or could result in a heart attack, stroke or even death, especially in women. This is in line with Hardcastle and Taylor (2001), who identify the barrier that resistance training is too risky for older people. Some similarities with Burton et al. (2017) are also identified in Dionigi (2007) results on exercise intervention. These findings
show physical changes and psychosocial changes. Body sensations, improved physical functioning, a good feeling, knowing how to do things, sense of accomplishment and control, the social atmosphere and intergenerational interactions are findings from Dionigi (2007) study. Several of these barriers are also expressed by our participants. Dionigi (2007) exercise intervention ‘only’ lasted for 12 weeks and it is positive that so many themes could be identified after such a short period of time. Compared to the results in paper II, it is notable that the experienced positive effects of resistance training are similar after five years and, in a way, are even more enhanced in that the participants have also developed friendships.

Earlier studies have shown that women tend to judge themselves as inexperienced or insufficiently informed about resistance training (Dionigi, 2007; Hardcastle & Taylor, 2001; Terre, 2010). Efforts to boost their knowledge and self-efficacy may be an important part of resistance training interventions for women, especially when discussing recommendations and interpretations for older people.

Despite the promotion of resistance training for older people, many have never had the opportunity to try it and are therefore unaware of the possible benefits to their lives. They are also unsure about using the exercise machines and weights (Dionigi, 2007). Fitness leaders cannot expect older people to walk into a gym and know what to do without any introduction or initial training. In order to reduce any anxiety and uncertainty that older people might have about resistance training, it is important to educate them in the correct training techniques and use of the machines. They should also be told about the potential physical and mental benefits of this type of exercise. Guiding, giving feedback and encouragement are three components Dionigi (2007) concludes are important when older people embark on a resistance training programme. Furthermore, providing opportunities for social interaction has additional effects for people who are retired. These
components are in line with our results in paper II, in terms of the guidance and feedback the participants receive during the supervised sessions in the gym and the encouragement they give each other. Our participants also enjoy the social interaction that is afforded by the training and regard it as an important factor for continuing. If older people feel welcome, comfortable and are not patronised they will enjoy the gym atmosphere and be more likely to undertake or maintain resistance training (Dionigi, 2007). This could be especially important for exercise adherence. Grogan (2016) states that people over 60 years of age tend to care less about body image and more about function and health, which could also be a reason why older women are more positive.

Another important aspect in the gym is the advantage of having a ‘training buddy’ who can help to support and motivate even when the training feels like hard work (Burton et al., 2017; Dionigi & Cannon, 2009). Providing opportunities for older people to try resistance training and having it as an ongoing activity is an ongoing challenge. Here, exercising with a group of peers can help people to stick to the regime.

Methodological limitations and strengths

According to salutogenic theory, sense of coherence is not as stable as (Antonovsky, 1979) it was first assumed. The older the sample is, the higher the SOC score becomes (Eriksson & Lindstrom, 2005). McCuaig and Quennerstedt (2016) highlight that salutogenic theory can be applied at different levels. The first level is health in terms of the river-metaphor as an overall understanding of how to stay healthy, keep your position in the river and not drown. The second level is sense of coherence and people’s health resources. Antonovsky’s (1987) attempts to measure people’s sense of coherence in questionnaires has been criticised. In his search for the mystery of health, Antonovsky (1987) tries to measure health with a number, but is
that even possible? Another criticism that is discussed in the Handbook of Salutogenesis (2017) is that Antonovsky argues that sense of coherence is relatively stable after the age of 30, although other studies show that this develops over the entire life cycle and often increases with age (Mittelmark, Sagy, et al., 2017). This is also in line with our findings in paper I when measuring sense of coherence on two occasions.

The main limitation with paper I is the small sample size and the resulting low statistical power. A dream scenario is always to involve more participants in intervention studies, but reality sometimes gets in the way. The limitations in paper II are the focus group compositions and matching the participants so that everyone feels comfortable in the discussions. A further limitation in paper II is the assumption that a moderator’s will be able to lead the discussions, focus on the interview questions and at the same time maintain a pleasant atmosphere.

The main strength with paper I is the sample selection of older, healthy and physically active women at the start of the intervention. The possibility of collecting data on different health dimensions on a sample of ‘healthy’ individuals is helpful, in that very few studies have been conducted on this population and the knowledge that is gained is therefore valuable. Another strength is the social interaction the participants enjoy twice a week in the gym and the resulting social value of being able to continue to exercise with the same group when the intervention ends. Interactions between people in training situations can raise their quality of life (Ramirez-Campillo et al., 2016).

The strengths in paper II are that we conducted a theoretically driven analysis of older women’s health resources by asking why they continue to engage in resistance training. Windle (2014) points out that this type of research is missing from the research field of qualitative studies. Having good supportive staff and peers in the gym, as is the case in papers I and II, seems
to be in line with Burton et al. (2017) conclusions of motivators for resistance training.

The combination of a quantitative method and a qualitative method with the same participants to answer the questions what is health and how it be understood can also be regarded as a strength.

**Implications for practice**

In terms of the practical implications of the study, health and fitness professionals need to have relevant and useful knowledge of the elements that encourage participants to exercise and to continue exercising over time. This could involve ensuring that the participants’ experiences are positive at several levels, because that would help people to persevere (Egli, Bland, Melton, & Czech, 2011). Also, the social interaction of exercising with a group of peers seems to be meaningful (Antonovsky, 1987), and people become motivated when they feel competent, autonomous and are connected socially or feel that they belong (see e.g. Deci & Ryan, 1980, 2010). These aspects are important when supervising, reducing the barriers and building confidence, in that they are likely to encourage people to continue to exercise over time. Also, creating an identity as an exercising older woman can result in the continuation of exercise as an investment in healthy ageing (Grogan, 2016).

**Future research directions**

One of the priorities for future research in this field, which Dogra et al. (2017) claim is important for health outcomes, is the need to develop strategies for increasing such interventions and reducing the time spent sitting down. There is also a need for interventions that encourage older people to regularly engage in physical activity (Keadle et al., 2016). More evidence of physical activity amongst older people is needed for the formation of public
health strategies that extend the health and quality of life of people in old age (Sun et al., 2013).

Future salutogenic research should focus on the role of other psychological resources, such as social support, optimism, psychological control and goal pursuit (Wiesmann & Hannich, 2014) and also include more theory-driven approaches to behaviour change (Windle, 2014) and the promotion of health in older people.

In the sport and exercise psychology field, very little research has been conducted on older participants who are already healthy and physically active (Tod & Lavallee, 2013). Further work is accordingly needed to achieve a more complete picture and understanding of the continuum of staying healthy as an older person. A salutogenic approach could usefully be used in this respect. Public health initiatives and strategies are also needed that encourage and promote long-term health, especially with regard to functional status, mental health status and personal well-being (Giglio, Rodriguez-Blazquez, de Pedro-Cuesta, & Forjaz, 2015).

Older adults should also be supported by the facilitation of life experiences that strengthen and support their manageability, comprehensibility and meaningfulness (Wiesmann & Hannich, 2014). If resistance training interventions can support longevity and independence and reduce the risk of falls, disability, depression or other negative emotions, then society should invest in this area. Every day of independence and the delay of disease and disability is important for individuals and their families and, in the long-term, also for society. A future that gives older people the freedom to live lives that previous generations might never have imagined (Beard et al., 2016) is worth striving for. To return to the swimmer in the river metaphor, earlier described in salutogenic theory, and the striving towards health, the swimmer can create the river that he or she swims in during life and try to make the best of it.
Conclusions

- Starting resistance training at the age of 65-70 does not appear to negatively affect the psychological health of women in this age range. In fact, the results indicate the reverse.
- Resistance training is linked to a heightened, positive motivational state defined as hope and lower negative affects amongst healthy and physically active women aged 65-70 years.
- Resistance training has positive effects on psychological well-being and is important because it not only benefits those who are physically inactive, but also those who are already physically active and healthy.
- Social relations and care, positive energy, self-worth, capability in and about physical activity, the habit of exercising, identity as an exercising person and womanhood are health resources that a group of healthy, physically active women between the ages of 69-74 years describe as important in their striving towards health in relation to physical activity and resistance training.
- From a salutogenic perspective, physical activity carried out in a stable group of peers provides a meaningful, comprehensible and manageable way for older women to engage in the ongoing process of maintaining health.
Sammanfattning på svenska

Vi blir fler och äldre. Det är en utmaning såväl för samhället som för individen själv då längre liv inte självklart är förknippat med ett hälsosamt längre liv. Åldrandet påverkar oss på olika sätt. I den naturliga åldrandeprocessen är det förekommande med försämringar i kognitiva funktioner såväl som såväl som försämringar i fysiologiska funktioner men också en påverkan på de sociala nätverken kan ses. Samhället kan förebygga och investera i ett hälsosamt åldrande genom att satsa på insatser som kan ge fler år av självständighet och ökad livskvalitet. Detta kan t.ex. göras genom fysisk aktivitet i olika typer av interventioner för äldre. Fysisk aktivitet har visat sig har positiv inverkan på såväl fysiologiska, psykologiska som sociala aspekter hos en åldrande befolkning.

Det övergripande syftet med uppsatsen var att utforska friska och fysiskt aktiva kvinnors hälsa och välmående utifrån olika perspektiv. Dels genom enkäter som skattar subjektivs välmående som livskvalitet, känsla av sammanhang, hoppfullhet samt positiva och negativa känslor. Men också en uppföljande studie hos individer som fortsatt att styrketräna efter att en intervention var avslutad, detta genom fokusgruppsintervjuer. Denna uppsats tar ett salutogent perspektiv på hälsa.

Syftet med studie I var att undersöka om det fanns några skillnader i parametrarna känsla av sammanhang, livskvalitet, hoppfullhet samt positiva och negativa känslor före och efter en styrketräningsintervention som varade i 24 veckor jämfört med en kontrollgrupp.

Syftet med studie II var att utforska vilka hälsoresurser friska äldre kvinnor angav som betydelsefulla för dem för att bibehålla hälsa genom att träna, då specifikt styrketräning.

Enkäter av dessa fyra parametrarna skattades av deltagarna (n=32) före och efter en styrketräningsintervention på 24 veckor. Deltagarna tränade
två gånger i veckan ett ansträngande pass på ett gym. Passet varade i 60 minuter per gång. I studie II så intervjuades de deltagarna \( n=14 \) som fortsatt att träna regelbundet efter att styrketräningsinterventionen var avslutad i fokusgrupper. Fokusgrupperna bestod av tre till fyra deltagare som under nästan fem års tid två gånger i veckan tränu tillsammans. Fyra fokusgrupps intervjuer genomfördes. Frågor om varför de fortsatt att träna samt hur de kan beskriva träningen som meningsfull, hanterbar och begriplig i deras vardagliga liv ställdes. Alla frågor var formulerade utifrån ett salutogent perspektiv på hälsa.

Sammanfattningsvis visar resultat av studie I visar att starta styrketräning vid 65-70 års ålder inte verkar påverka deltagarna negativt, tvärtom. Deltagarna i styrketräningsgruppen hade höjt sina nivåer av hoppfullhet och sänkt sina negativa känslor enligt före och eftermätningen. Det sammanfattande resultatet av studie II var sju stycken hälsoresurser som identifierades. Dessa var sociala relationer och omsorg, positiv energi, självvärde, kunskaper i och om träning, vanan av att träna, identitet som en tränande person och kvinnlighet. Utifrån ett salutogent perspektiv verkar fysisk aktivitet i form av styrketräning i en grupp deltagare som känner varandra väl bidra till en meningsfull, begriplig och hanterbar process i deras strävan mot att bibehålla hälsa.

Licentiatuppsatsen erbjuder därmed en djupare kunskap och förståelse för friska äldre kvinnors strävan mot hälsa utifrån ett salutogent perspektiv i en träningskontext.
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