To do or not to do?
Physical activity in relation to socioeconomic status and health – a salutogenic perspective in the context of targeted health dialogues

Lisbeth Johansson
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Doctoral Thesis in Health and Care Sciences

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Dissertation Series No. 133

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Published by
School of Health and Welfare, Jönköping University
P.O. Box 1026
SE-551 11 Jönköping
Tel. +46 36 10 10 00
www.ju.se

Printed by Stema Specialtryck AB, year 2024

ISSN 1654-3602
ISBN 978-91-88669-42-1 (online version)
Abstract

It is well known that physical activity (PA) has a major positive impact on health and that the performance of PA is lower in low socioeconomic groups. However, more knowledge about the relationship between PA and health is needed especially between and within socioeconomic groups.

This thesis aimed, from a salutogenic perspective, to increase the understanding of the relationship between physical activity and health in the adult population, with a particular focus on people with economic difficulties. A further aim was to validate questions about physical activity and to explore the people’s experiences of PA from a sense of coherence perspective, all in the context of targeted health dialogues.

The first study in this thesis is a validation study. It validates a PA interview form and questions about sedentary time used in the targeted health dialogues. Studies II and III comprise quantitative analyses of PA, health and psychological factors in the population, especially in groups with low socioeconomic status (SES). Study IV is a qualitative deductive study based on interviews with participants with low SES in the targeted health dialogues. The deductive analysis contains the participants’ experiences of PA from a sense of coherence perspective.

The findings in study I showed that the interview form and the single-item question about sedentary time could be considered as acceptable to use in Swedish targeted health dialogues. In study II, physically active people with low SES were shown to have the same odds of reporting good self-rated health compared to those with low PA and high SES. The findings in study III showed that within the group of people with self-reported economic difficulties, higher levels of PA were related to better mastery and more vitality. Study IV showed that it is essential for the participants to have an awareness of the health benefits of PA and their challenges in performing PA. The participants also constructed a plan to follow while utilising their resources, and their intrinsic motivation to achieve the PA recommendations and the PA benefits.
This thesis brings a deeper knowledge and understanding of the health perspective of PA. This knowledge can be used to further develop the targeted health dialogues in a salutogenic way. It will give people, especially those with lower SES, the opportunity to use their resources to increase PA and thereby improve their future health.
This thesis is based on the following studies. In the thesis, they are referred to with their Roman numerals. The studies are enclosed as appendices.

Study I


Study II


Study III


Study IV

Johansson LM, Fransson EI, Lingfors H, Golsäter M: Exploring how people achieve the recommended levels of physical activity despite self-reported economic difficulties: a sense of coherence perspective. *Submitted manuscript.*
Table of Contents

Abbreviations........................................................................................................... 1

1. Preface .............................................................................................................. 2
2. Introduction ...................................................................................................... 3
3. Theoretical framework .................................................................................. 4
   3.1. The Salutogenic theory.............................................................................. 4
       3.1.1. Sense of coherence ........................................................................... 5
       3.1.2. General resistance resources............................................................ 7
   3.2. Health ......................................................................................................... 7
   3.3. Health promotion ..................................................................................... 9
   3.4. Health promotion, salutogenic and disease prevention interventions .......... 10
4. Background .................................................................................................... 12
   4.1. Physical activity. ..................................................................................... 12
   4.2. Socioeconomic status ............................................................................. 15
   4.3. Self-rated health ..................................................................................... 16
   4.4. Quality of Life ......................................................................................... 17
   4.5. Psychological factors and resources......................................................... 17
      4.5.1. Mastery ............................................................................................. 18
      4.5.2. Perception of vitality ......................................................................... 19
   4.6. Targeted health dialogue .......................................................................... 19
5. Rationale ........................................................................................................... 25
6. Aim.................................................................................................................. 26
   6.1. Overall aim .............................................................................................. 26
   6.2. Specific aims ........................................................................................... 26
9.3. Study III.................................................................................. 48
9.4. Study IV .................................................................................. 48

10. Discussion .............................................................................. 51

10.1. General discussion of the results................................. 51
  10.1.1. Underlying mechanisms between PA and health .... 52
  10.1.2. Validation of the PA interview form and the SED-GIH, the
          single-item question ................................................................. 53
  10.1.3. PA and SRH and QoL ................................................. 54
  10.1.4. PA and psychological factors ........................................... 55
  10.1.5. PA and SOC ................................................................. 55
  10.1.6. Summary ................................................................. 57

10.2. Methodological considerations ................................... 57
  10.2.1. Validity and reliability in the quantitative research (studies I-
          III). .......... 57
  10.2.2. Trustworthiness ................................................................. 62

11. Conclusions .......................................................................... 65

12. Clinical implications ............................................................. 66

13. Future research ................................................................. 67

14. Svensk sammanfattning .................................................. 68

15. Acknowledgements ............................................................... 72

References ......................................................................................... 74
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Unstandardised regression coefficient</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>CHD</td>
<td>Coronary Heart Disease</td>
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<td>CI</td>
<td>Confidence Intervals</td>
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<td>CVD</td>
<td>Cardiovascular Disease</td>
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<td>EUHPID</td>
<td>European Health Promotion Indicator Development Model</td>
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<td>GRD</td>
<td>General Resistance Deficit</td>
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<td>General Resistance Recourses</td>
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<td>GRR and GRD together as a continuum</td>
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<td>LOC</td>
<td>Locus of Control</td>
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<td>LSH</td>
<td>Living Condition Stress and Health</td>
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<td>LTPA</td>
<td>Leisure time Physical Activity</td>
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<td>MVPA</td>
<td>Moderate-to-Vigorous Physical Activity</td>
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<td>Activity</td>
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<td>Non-CDC</td>
<td>Non-Communicable Diseases</td>
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<td>OR</td>
<td>Odds Ratio</td>
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<td>PA</td>
<td>Physical Activity</td>
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<td>PHCC</td>
<td>Primary Health Care Centre</td>
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<td>SD</td>
<td>Standard Deviation</td>
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<td>SED-GIH</td>
<td>The Swedish School of Sport and Health Sciences’ single-item question about sitting time</td>
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<td>SES</td>
<td>Socioeconomic Status</td>
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<td>Spearman’s rho</td>
<td>Spearman’s correlation coefficient</td>
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<td>SRH</td>
<td>Self-rated Health</td>
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<td>SOC</td>
<td>Sense of Coherence</td>
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<td>SOC-13</td>
<td>Short version with 13 questions of Sense of Coherence</td>
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<td>QoL</td>
<td>Quality-of-Life</td>
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<td>WHR</td>
<td>Waist-Hip Ratio</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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1. Preface

I worked as a district nurse at a primary health care centre in southern Sweden for many years. One of my primary obligations was to conduct health dialogues targeting cardiovascular diseases. During this period, it became obvious that people had great strength inside themselves to change their lives. They just needed some support to highlight their resources and to support them practice their choice of lifestyle habits. It was encouraging when they came back with changed lifestyle habits, and it was obvious that their health and quality of life were higher than when I met them the first time. These experiences are the background to my interest in health promotion questions.

People’s health and quality of life are important to me, and if something could improve health and quality of life, it is important to do it. People from vulnerable groups also especially touched me.

I have also seen positive effects of PA, both in my work and for myself. It awoke an interest to investigate PA further in research.

From my practical experience, the salutogenic theory seems to be of great importance when meeting people in targeted health dialogues, supporting them to use their resources to change their lifestyle habits to achieve better health and quality of life. Therefore, it has been very interesting and inspiring to have the opportunity to do research in this field. I have had the opportunity to investigate and evaluate how my practical experience corresponds with the research findings.
2. Introduction

In health promotion, it is essential to increase knowledge about health and promote health in a positive way among the population. Primary health care has a crucial role in health promotion work by focusing on people’s health in everyday life and supporting them, enabling them to have responsibility for and control over their health [1]. Furthermore, one health promotion target is to reduce health inequalities [2]. The salutogenic theory became one basis for health promotion work [3]. Salutogenic means the origin of health. According to Antonovsky, this is found in the sense of coherence [4]. In the salutogenic theory, resources or salutary factors directly affect people’s health and position on the health continuum [5].

In Sweden, primary health care is obligated by the Swedish Medical Service Act to promote healthy lifestyle habits in population-based work [6]. For sustainable health and medical care, there is an ongoing transition in Swedish health care towards integrated care, with primary health care as a hub. The transition aims to provide health and medical care coherently based on people’s needs and conditions so that the person’s entire life situation may be considered. Central in the transition is cooperation between the health care system and the municipalities, such as social services and also the civil society. Another central part of the transition is to embrace people’s own preferences and circumstances to promote health and well-being. One ambition of the transition is to even out inequalities in health [7].

One essential part of health promotion work in primary health care in Sweden is the concept of targeted health dialogues. These dialogues are performed in most counties in Sweden and can be included in the work with integrated care [8]. Healthcare professionals find the work with health promotion and the targeted health dialogues essential and stimulating [9]. People that have attended a targeted health dialogue experience that the dialogue was personal and contained important subjects. They also think that the health dialogue will affect their health positively [10]. A dialogue based on people’s life situation and resources can give the participants knowledge about how different factors affect their health and the importance of their commitment to maintaining and improving their health [11].
3. Theoretical framework

3.1. The salutogenic theory

Antonovsky developed the salutogenic theory (salutogenesis means the origin of health) during the 1970s, after interviewing survivors from World War II concentration camps. He discovered that some of these survivors from the concentration camps perceived they had emotional and physical health despite the sufferings they had experienced during their lives [12]. Antonovsky presented the salutogenic theory aiming to strengthen people’s health potential and enable them to handle different situations to improve and maintain good health by means of their resources [3]. Wherever people are on the health continuum, the focus should be on salutary factors to support them to progressing towards better health [13]. The salutogenic theory has often been explained by the metaphor ‘the River of Life’ (Figure 1). All people are born in the River of Life [14]. In the river, there are both risks and resources. Some are born where the river is easy to manage, and the resources and opportunities are plenty (near the ease pole). Others are born near a waterfall where the river is harder to manage, and the river stream has many risks (near the dis-ease pole). The River of Life has both a horizontal and vertical stream. The outcome of the River of Life depends on how people can find and use their resources to improve their possibilities to achieve good health (Figure 1) [3]. The River of Life also illustrates different positions in the health continuum from dis-ease and death in the waterfall, through prevention and promotion, to the ease pole on the health continuum, where people are able to swim healthily in the River of Life (Figure 1) [3].
For research in health and care science, there are some important concepts to reflect this research field [15]. Four of those essential concepts are incorporated in a meta paradigm: person, environment, health and nursing [16]. The paradigm sees every person in their context with family and culture and with their resources in their society and environment. Every person is also seen with their cultural, social and economic conditions in relation to their health, where health is defined as a process. The nursing component contains the nursing practice and profession [17]. The meta paradigm corresponds with the salutogenic theory as described above and aims to meet and support every person in their place in the River of Life with all their circumstances and resources in relation to their health on the health continuum (Figure 1) [3].

3.1.1. Sense of coherence

The salutogenic theory has a core concept sense of coherence (SOC). The model focuses on people’s problem-solving ability, resources and capacity to create health [4]. Their view of life and people’s strong inner trust can help them to find these resources [18]. Antonovsky defined SOC as: ‘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 environment in the course of living are structured, predictable and explicable; (2) the resources are available to one to meet the demands

Figure 1. The River of Life. An illustration of the health continuum from the dis-ease pole to the ease pole, where the salutogenesis strives to the ease pole. Graphics: Lindström, Eriksson & Wikström (The hitchhiker’s guide to salutogenesis: salutogenic pathways to health promotion Lindström & Eriksson, 2010). Republished with permission from the authors.
posed by these stimuli; and (3) these demands are challenges worthy of investment and engagement’ [12 p.19].

SOC consists of three dimensions: Firstly, comprehensibility is the cognitive dimension. In this dimension, problems are understood and clear. People have the resources to make sense of the situation and the stressors even when the situation is hard [4, 12]. To deal with upcoming stressors in life, it is essential to clearly understand the problem or stressor that is occurring [19]. For people with higher comprehension, it is easier to find their role in different parts of society, such as in a workplace [20]. Secondly, manageability is the behavioural dimension. People with strong manageability use their resources to successfully cope with situations that occur [4, 12]. When he created this dimension, Antonovsky was inspired by mastery and locus of control (LOC) [19]. Some of the resources could be formal or informal. Formal resources can be healthcare professionals or social services in public and private organisations. Informal resources can be people’s own resources or for example, family, colleagues, friends and other significant persons [5, 12, 20]. Thirdly, meaningfulness is the motivational dimension. People believe in finding motivation and wish to cope with the situation. People with a high degree of meaningfulness will, even if hard things happen, feel that life is worth living and seek a meaning in the situations that occur and have a desire to overcome them positively [4, 12]. They are also motivated and willing to invest energy to solve different problems and handle situations, and stressors [20]. According to Antonovsky, people seek meaningfulness in a way that also leads them to ‘seek to order the world and to transform resources from potential to actuality’ [5 p.79].

To measure the sense of coherence Antonovsky developed a questionnaire with 29 questions (SOC-29). He also constructed a short version with 13 questions (SOC-13) [20]. SOC reflects the ability to use one’s resources to handle a situation and maintain or improve health on the health continuum and also the ability to cope with stressors [4]. A strong SOC characterises people that can successfully cope with stressors and expect situations to turn out positively. The SOC grade depends on the extent to which people handle life and stressors in a comprehensible, manageable, and meaningful way [12].
3.1.2. General resistance resources

Antonovsky defined general resistant resources (GRRs) as ‘any characteristic of the person, the group, or the environment that can facilitate effective tension management’ [4 p.99]. These coping resources are cornerstones of the salutogenic theory when developing a strong SOC [18]. GRRs could have different characteristics, from physical, biochemical, material, emotional, existential or mental. In more concrete terms, GRRs can include good self-esteem and knowledge, good coping strategies, financial resources, healthy lifestyle habits, life views and religious contexts. It also means having a social network to support life where cultural factors and traditions are important. PA has been shown to be a GRR. These resources can be used to promote health and deal with tension and stressors, but people must also be aware that the GRRs exist to be able to use them positively for health and to cope with different situations [4]. Furthermore, the absence of resources, for example, money, could be a stressor that Antonovsky called a General Resistance Deficit (GRD). Antonovsky saw GRRs and GRDs (all of them together) as a continuum (GRRs-RDs) [12]. The higher someone is on the continuum, the more GRR elements there are. The lower people are on the continuum, the more GRD elements they face. The position on the continuum can affect people’s SOC level. On the other hand, the SOC level can affect how people find and use GRRs in dealing with tension and stressors [21]. Antonovsky also talked about specific resistance resources, which mainly refer to context-bound resources that are available and relevant in specific circumstances and their opposite specific resistance deficits [19].

3.2. Health

The Ottawa Charter for health promotion states, ‘Health is a positive concept emphasising social and personal resources, as well as physical capacities. Good health is a major resource for social, economic and personal development and an important dimension of quality of life’ [2 p.1]. Moreover, the Ottawa Charter states that some basic health prerequisites must be fulfilled to achieve good health, e.g. peace, shelter, education, food, an income, a stable eco-system, sustainable resources, social justice and equity. Health is created in people’s daily life and life conditions in a society that offers opportunities
to attain health for its population [2]. The Bangkok Charter added some critical factors for health, like inequalities between countries, communication and consumption patterns, urbanisation, commercialisation and global environmental changes. Furthermore, health is described as a resource comprising both personal and social resources [22].

According to the salutogenic theory health is a movement on the health continuum between the poles from dis-ease to the ease (Figure 2) [23]. This movement becomes a dynamic interactive process when people’s health promoting salutary factors meet different stressors in life. The health promoting salutary factors may become stronger than before, so that the people come closer to the ease pole of health (Figure 2) [19]. All people are located somewhere between the dis-ease and ease poles. Their position is not static but changes over time. Therefore, it is impossible to identify individuals who are just healthy or just diseased. With this mindset, all people are in focus on the health continuum, because all are somewhere between the poles on this continuum (Figure 2) [18]. When people are confronted with life stressors, and how they view the world around them, this will affect their ability to deal with these stressors [3]. Major life events such as when a relative gets a disease can affect health and move the position on the continuum closer to the dis-ease pole. However, people can use their resources and become strengthened, so they are better able to handle stress and instead come closer to the ease-pole [18]. According to Antonovsky, people handle stress in one of three different ways: 1) being neutral against the stressor, 2) being able to manage stress and progressing towards health, and 3) being unable to manage stress which leads to breakdown expressed in terms of disease and death (Figure 2) [12]. The salutogenic movement and process mobilise people’s resources to deal with the life events and progressing in the direction of the ease pole of the continuum (Figure 2) [18].
3.3. Health promotion

The concept of health promotion started globally with the Canadian report by Marc Lalonde 1974. The report stated that the health care service work with the population’s health could not be concerned only with the quality of the health care service. It must also involve a health promotive strategy of working to improve peoples’ lifestyle habits and the environment along with working with the health care organisations to prevent ill health and to reduce the costs for health care service [24, 25]. According to the Ottawa Charter, health promotion is a ‘process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realise aspiration, to satisfy needs, and to change or cope with the environment.’ [2 p.1]. Health promotion also strives to reduce inequalities in health [2]. Furthermore, the Bangkok Charter states that health promotion is based on the human right to have good health. Moreover, ‘It is a core function of public health and contributes to the work of tackling communicable and non-communicable diseases (NCD) and other threats to health.’ [22 p.25]. Health promotion aims at allowing inhabitants to influence their health in a positive way [3, 26]. One aspect of primary health care’s work with health promotion
is to increase health literacy in the population [27]. According to a European survey including data from 17 countries, nearly 50% of the participants had limited health literacy, i.e. the ability to access, understand, appraise and apply health information [28, 29]. Awareness of health literacy is essential in health care, disease prevention and health promotion and behaviour changes, especially for groups at risk for health inequities, such as non-native speaking people [29-32]. For people visiting primary health care, for example, for a targeted health dialogue, it is important that the healthcare professionals have an awareness of health literacy to be able to support the participants in acquiring a higher understanding of the dialogue about health and motivation to change their behaviour to a healthier lifestyle [27, 33]. According to Aron Antonovsky, the focus for health promotion ought to be on the entire person and the salutary factors on an ease and dis-ease health continuum. Furthermore, health promotion also has to focus on creating health promotion interventions in order to strengthen SOC. Salutogenesis is a part of health promotion research [13].

3.4. Health promotion, salutogenic and disease prevention interventions

From a salutogenic perspective health promotion interventions focus on people’s resources and changes in health over the lifespan on the health continuum [34]. Primary disease prevention can be population- or person-based intervention programmes with their starting point in pathogenesis. The aim of such programmes is to prevent diseases by reducing the risks for disease in the population or for the individual [3]. The prevention paradox states that ‘a large number of people at a small or intermediate risk may give rise to more disease cases than a small number of people at high risk’ [35]. According to the preventive paradox it is better, on a population level, if people at small or intermediate risk for CVD make small lifestyle changes than that people at high risk make large lifestyle changes [36]. However, the health promoting perspective involves the population as a whole and does not focus on people with a risk for disease [1]. The European Health Promotion Indicator Development Model (EUHPID) combines disease prevention and health promotion. The pathogenic side has a starting point in ill health (the pathogenic perspective in the model in Figure 3 aiming to prevent diseases.
The salutogenic perspective has a starting point in positive health utilising people’s individual resources and the environmental health determinants (Figure 3) [37]. Primary prevention relates to different risk factors for diseases on the pathogenic side and complements the salutogenic perspective of health as a continuum (Figure 3). The terms of health promotion and disease prevention overlap and are often used in combination in healthcare. That means that these interventions not only deal with risk factors but also with health factors and people’s resources to achieve the typical health goals for people in their own environment (Figure 3) [34]. Secondary and tertiary disease prevention, on the other hand, reduce the impact from an already occurred chain of abnormalities before a manifest disease diagnosis and also reduce the impact from an already occurred event, for example, a manifest disease, stopping or slowing down the effects from the disease and preventing recurrence [38]. The health promotion, salutogenic side in Figure 3 shows the positive health (the ease pole on the health continuum) where people’s resources have a vital role [18].

Figure 3. An overview of the EUHPID health model showing the combination of a salutogenic and pathogenic perspective. Health Promot Int, Volume 21, Issue 2, June 2006, Pages 153–159, https://doi.org/10.1093/heapro/dak002. Published with permission.
4. Background

4.1. Physical activity.

PA is defined as ‘all bodily movements produced by skeletal muscles that result in energy expenditure’ [39 p.126].

PA could be measured in absolute and relative intensity. Absolute intensity measures the required energy expenditure to perform a physical activity and is not related to people’s maximum capacity of performing PA. In this thesis, kilocalories are used to measure absolute intensity. Another common way of measuring absolute intensity is the metabolic equivalent [40]. The relative intensity of PA is related to people’s maximum capacity to perform an activity and can be measured by the percentage of aerobic capacity or percentage of maximum heart rate [41].

PA can be described in terms of three dimensions: intensity, duration and frequency. Intensity is the energy expenditure of PA in relation to time. Duration is how long time a person spends in physical activities. Frequency is how often a person performs PA. There is a dose-response relationship between the three PA dimensions and the health benefits of PA, where a higher PA amount of each of these dimensions gives more or higher benefits [41, 42]. In this thesis, we used an interview form in all four studies to roughly estimate PA and also accelerometry to objectively calculate PA in study I.

World Health Organisations (WHO)’s recommendation levels of PA for adults are at least 150 to 300 minutes of weekly PA of moderate intensity or at least 75 to 150 minutes of weekly PA of vigorous intensity or a combination of these. PA of moderate intensity of up to 300 minutes weekly could add further health benefits beyond what can be achieved by 150 minutes. Furthermore, two or more days a week of muscle-strengthening activities involving major muscles are recommended [43]. PA is one of the major lifestyle habits that have a great impact on health and NCD, for example, cardiovascular disease (CVD), diabetes and cancer, as well as all-cause mortality [30, 43-47]. The mortality risk from CVD is lower for
physically active people, achieving the goals of WHO [45, 46, 48]. Both mortality risk from CVD and all-cause mortality decrease even more if the WHO goals for PA of 300 minutes of PA per week are exceeded [42]. A meta-analysis revealed a cut point for significantly reduced risk for all-cause mortality at 3967 steps a day, where the risk was reduced by 15% for every 1000 steps per day above this cut-off-point. A significantly reduced risk for cardiovascular death has been observed already at 2337 steps per day, where the risk decreased further by 7% for every 500 steps per day, above this cut-off point. There were no limits to the increased benefits of up to 16 000 steps per day. Therefore, every step is essential for increased health benefits [49].

There is a decreased risk of several somatic diseases and biologic risk markers for physically active people: PA may reduce the risk of dementia, high blood pressure, osteoporosis and fractures. Furthermore, PA is associated with maintenance of weight and prevention and/or attenuation of weight gain [41]. High PA is also associated with better mental health, improved memory functions, creative thinking [50-52], protection against cognitive decline [53], and reduction of the detrimental effects of stress, improved optimism and prevention of depression [54-57]. PA may also reduce anxiety and improve sleep quality [58]. Furthermore, PA can help people to sort out their mind to organise their daily activities, control emotions, increase the ability to take the initiative and keep attention on activities. It has also been shown to increase academic performance. It has also been found that PA increases the quality of life (QoL), vitality and well-being [41, 59, 60].

According to the WHO recommendations, approximately one in four people globally is insufficiently physically active [61, 62]. Interventions supporting counselling that targets increased PA is cost-effective [63]. To facilitate counselling and increase PA support, ‘physical activity on prescription’ can be used [64]. In a recent five-year follow-up study of ‘physical activity on prescription’, a five-year adherence rate of around 50% was shown. The amount of PA improvement was around three hours of moderate intensity PA per week [65].

Sedentary behaviour could be defined as low energy expenditure in waking time in a sitting or lying body position, for example, watching television or
other screen-based activities [66]. The prevalence of sedentary behaviour tends to increase with age and is more common in countries with higher income than in countries with lower income [61, 67]. Some cultural differences in sedentary behaviour can be seen, such as women sometimes having a sedentary life for cultural reasons [47]. The costs for sedentary behaviour-related diseases and complications are high in high-income, as well as in middle-, and low-income countries [67]. Sedentary people have a higher risk for diabetes type 2, CVD and CVD mortality as well as cancer, e.g. endometrial, colon and lung cancer, and all-cause mortality [41]. Furthermore, sedentary behaviour increases the risk for abnormal glucose metabolism [68]. From a health promotive perspective, it is essential to reduce sedentary behaviour and increase PA in all intensities [69].

Interventions with a focus on reducing sedentary behaviour in combination with increased PA are important [70]. It has been shown that PA could reduce the health risks of sedentary behaviour and that less time spent in sedentary behaviour in combination with PA, of any intensity, reduces the risk of premature death [69]. Furthermore, there is an association between climate change and decreasing PA related to factors such as air pollution and extreme weather. PA could also have a mitigation role in climate change related to, for example, less use of cars and increased active and public transport. On the other hand, there is an amplification role mostly related to travel in connection to elite sports [71].

There are different determinants of PA that impact on the time people spend on PA. Determinants of PA can be divided into six groups: 1. Intra personal context and well-being, 2. Family and socioeconomic status (SES), 3. Policy and provision, 4. Cultural context and media, 5. Social support and modelling, and 6. Supportive Environment. Some factors have proven to be more modifiable than others. Most factors in the Intra personal context and well-being group are modifiable. Among these factors are body mass index, actual PA level, beliefs and values, emotions, feelings of inadequacy, health status, intentions and attitudes, perceived barriers, perceived benefits of PA, personal goals and motivation, physical fitness level, self-monitoring and self-perceptions including confidence and efficacy. One factor in the group Family and SES, is reward, including encouragement and support. Furthermore, there are more modifiable factors in the Social support and modelling group than in the others, namely PA behaviour in the group,
including family, peers and partners and health habits in the group [72]. There could be barriers to performing PA, such as lack of time and motivation or lack of social support and limiting health conditions such as pain or different diseases. It is important to overcome barriers, and it is important to choose physical activities that suit the person [73]. PA is related to health promotion and the sense of coherence. Antonovsky stated PA to be GRR, a resource to handle stressors in a way that strengthens health [4]. In a study from Finland, PA turned out to be a GRR where a higher PA was associated with a stronger sense of coherence and good social and psychological health [74].

4.2. Socioeconomic status

Socioeconomic status includes income, education, occupation and occupational prestige. It also includes people’s perceptions of their social status and their opportunities and QoL attributes [75].

Both physical and mental health are associated with SES. People with low SES are more likely to report low physical and mental health levels and a low degree of satisfaction with their situation [76]. There are several indicators of low SES. Two of them are economic difficulties and low education levels. Both have been associated with low levels of self-rated health (SRH) and low QoL [77, 78]. People with higher education had higher life satisfaction and happiness. Middle-aged people with lower income had lower life satisfaction and happiness [79]. Furthermore, those with economic difficulties also rate themselves as having lower vitality [80, 81]. Self-reported economic difficulties have been associated with a higher number of acute coronary heart infarctions [82]. Moreover, other material factors, such as living and working conditions, are associated with health inequalities [83]. Psychological resources could be a pathway between health and SES differences [84]. A higher SES is related to a higher PA [85]. High education is associated with high levels of leisure time physical activity (LTPA) [86]. Higher income is also associated with a higher amount of LTPA [87]. If a habit of PA is established, the negative impact of SES is diminished [88]. Life satisfaction, happiness and a high SES during childhood are also associated with later life higher LTPA [89, 90]. The gap between low and high SES groups for PA
performance is widening, especially for vigorous PA [91]. There is also a
difference between the kinds of PA different SES groups choose. Groups with
high SES are more likely to participate in organised activities and activities
with higher costs, while groups with low SES often choose non-organised PA
with low or no costs. Therefore, the cost of an activity can be a barrier to
participation in PA. The neighbourhood environment also has an impact on to
the extent to which people attend PA activities. People from groups with high
SES often live in environments with more opportunities for PA, such as
different sports facilities [92]. Furthermore, people from groups with high
SES also perceive more health benefits and high self-efficacy [93].

4.3. Self-rated health

There are many ways to measure health. One is SRH, an indicator of the
general state of health and well-being [94, 95]. Even though SRH is a self-
perceived measure, it is a global health measure that can reflect both an
objective measure of health in a general population [95] and people’s
perception of different dimensions of their health, such as physical,
psychological and social dimensions [96, 97]. People with a life-threatening
disease such as cancer can experience health in terms of being fairly happy
and optimistic about the future [98]. Furthermore, SRH is associated with
SES. For example, people with economic difficulties and low education
often report low SRH [77, 94]. Low SRH and inequalities in SRH are
associated with low income, gender and immigration status [99]. Even living
conditions such as family housing and working condition strongly affect
SRH [83]. Interventions aiming to increase SRH should focus on all strata,
not just on one group of people [99]. People with fatalistic thoughts also
scored lower on SRH and lifestyle attitudes [100]. People, who experience a
poor SRH, have an increased risk for both vascular and non-vascular
mortality and future morbidity [101]. SOC is associated with self-reported
emotional mental and physical health [102, 103]. A review article shows
several strong relations between SOC and different instruments estimating
SRH such as, SF 36 and Rand 36, where the mental aspects of health were
more strongly associated with SOC than the physical aspects [104].
4.4. Quality of Life

QoL is a subjective measure both for health status and feelings of well-being [94]. WHO defines QoL as ‘an individual's perception of his or her position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment’ [105 p.11]. Each of these domains of QoL is broad. Physical health/ill health includes energy and fatigue, pain and discomfort, sleep and rest. In psychological health, body image and appearance, negative and positive feelings, self-esteem, thinking, learning, memory, and concentration are incorporated. Furthermore, the environment domain contains several items: financial resources, freedom, physical safety and security, health and social care, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation and leisure, the physical environment and transportation facilities. The domain of personal beliefs comprises religion and spirituality [105]. PA is related to many of these domains. Happiness and life satisfaction are related to the amount of PA people perform [79]. People who experience a low QoL have an increased risk for both vascular and non-vascular mortality [101]. Moreover, SOC is related to QoL. A higher scored SOC is associated with a higher QoL [103]. A review article, including studies of QoL in unselected populations as well as studies of QoL in people with a chronic disease, such as heart disease, found support for the hypothesis that stronger SOC was associated with higher QoL. The study also showed that SOC, could predict the risk for coronary heart diseases (CHD) [106].

4.5. Psychological factors and resources

Psychological factors or resources include positive emotional disposition with positive expectations of a healthy life. They also include the ability to cope with and find meaning in difficult and challenging circumstances, even if they are life-threatening or traumatic [107]. In a systematic review it was shown that SOC is strongly related to psychological aspects [108]. In the salutogenic theory, GRRs represent psychological factors and resources,
making people’s life experience more understandable, structured and consistent. These resources give people the strength to meet life challenges [109]. There are many psychological factors and resources. In this thesis, the focus is on mastery and perception of vitality. Psychological factors and resources are associated with higher physical and psychological health levels. People with high levels of psychological resources also report higher levels of PA [110]. Psychological and intrapersonal resources have a promising role as mediating pathway between health and SES to decrease the inequalities in health [84].

4.5.1. Mastery

Mastery comprises psychological resources to cope with life and the extent to which people have control over their life changes, and whether they are controlled by fatalistic thoughts [111]. Mastery can be estimated using a questionnaire where a high score is associated with higher levels of psychological and physical health. Furthermore, a high score is associated with high levels of PA. It is possible to strengthen psychological resources to get more control over life through building psychological capital through health promotion interventions and thereby increase functional health and health behaviours such as PA [110]. Mastery is also associated with a reduced risk of CHD and with reduced inflammatory disease [112, 113]. Moreover, high mastery is associated with a lower risk for all-cause mortality, CVD and cancer [114]. High SES in terms of a good financial situation is associated with more psychological resources such as high mastery, whereas low SES in terms of economic difficulties indicates low mastery [115]. Antonovsky connected Pearlins’ mastery questions with a similar concept, LOC and included LOC in the salutogenic strengths [116]. Both mastery and LOC are concepts under the umbrella of salutogenesis. Coping strategies such as mastery inspired Antonovsky when he developed the SOC dimension of manageability [19]. He stated that successful coping strategies were a salutogenic strength and resource. Mastery was seen as a GRR [14, 19, 21]. A strong SOC has a relationship with the LOC and mastery but even with optimism, hardiness, learned resourcefulness and acceptance of disability [104].
4.5.2. Perception of vitality

Perception of vitality can be defined as a subjective feeling of energy but contains a multidimensional perspective including emotional, behavioural and cognitive components, with a subjective feeling of having the capacity to complete activities both of a mental and physical character [117]. Perception of vitality can also be defined as people’s subjective experience of energy that contributes to self-control and creativity and also gives life energy and enthusiasm [118]. The importance and benefit of the vitality perception could be of significance for both psychological and physiological outcomes such as energy, happiness, ability to cope with different situations and life satisfaction [119]. To feel alive and full of energy is something universal, not depending on culture, and linked to this is also an experience of health, well-being and positive motivation [120]. Perception of vitality expressed in energy terms increase, while tension and tiredness decrease even with such a small amount of PA such as a 10 minute brisk walk. These effects last for two hours after the activity [121]. PA affects the feeling of energy and vitality perception, where a high level of PA is associated with increased levels of energy and perception of vitality [122]. Vitality is associated with the amount of PA and people’s beliefs in their ability to perform PA [123]. Perception of vitality is also a resource with multiple benefits, where a pathway to higher vitality could be activities with specific goals. Vitality is an indicator both for motivation and health [120]. The financial situation affects vitality, where people with a low income also score lower in vitality compared to those with a middle or high income [80, 81]. From a salutogenic perspective, happiness and feelings of energy in the perception of vitality could also be seen as GRRs [21].

4.6. Targeted health dialogue

A targeted health dialogue aiming to prevent CVD is an important part of health promotion in primary health care [8]. The targeted health dialogue is described in the Swedish national programme for people with unhealthy lifestyle habits. These health dialogues are based on people’s views of their resources and situation and their motivation to change their lifestyle habits [8]. A targeted health dialogue must be well prepared and performed pedagogically with a respectful motivating approach aiming to increase the
chances for a change of lifestyle habits if needed and desired [124]. Healthcare professionals such as district nurses, nurses, physiotherapists and occupational therapists working with targeted health dialogues have been trained in motivational interviewing, the concept of targeted health dialogue and health promotion [8]. A targeted health dialogue is a complex process that claims specialist competence, including the capacity to understand people’s resources and situation to support changes towards a healthier lifestyle. People’s willingness to change lifestyle habits is related to their expectations before the health dialogue and their evaluations during the health dialogue, which can increase or decrease their willingness to change lifestyle habits [125]. In several studies a decreased incidence of CVD and diabetes is described after participation in targeted health dialogues. These studies also show that people get healthier lifestyle habits after a health dialogue [126-130]. A decreased risk for all-cause mortality is also seen for people that have attended a targeted health dialogue [131-133]. Furthermore, according to a Swedish study, targeted health dialogues are not only cost-effective but also cost saving for healthcare services [134]. A Swedish concept for population-based targeted health dialogues is characterised by the following:

- Targeting CVD
- Integrated into primary care as part of the regular work
- Population-based
- Offered to everyone in selected groups in the population
- Combines health promotion and disease prevention with low-risk and high-risk approaches according to the principle of universalism
- Implemented in a context of civil society-oriented interventions, which can make it easier for participants to change their lifestyle habits
- Focuses on the health dialogue based on the person’s preferences, opportunities and resources, lifestyle habits and living conditions as well as cardiovascular risk factors
- Includes support for change and follow-up if needed and desired
- Uses person-centred and motivational interviewing methodology and visual pedagogical tools
- Based on the medical evidence for cardiovascular prevention
• Assured quality through structured competence and method support [133].

In Sweden two different visual pedagogic tools are used, the Health Curve and the Star Profile. [8, 133]. In Region Jönköping County the targeted health dialogue is based on questionnaires and the Health Curve health profile, all developed at the Unit for Development and Research in Region Jönköping County [127, 135]. The health profile visualises different variables of importance for CVD and is structured as a scale with different colours for different degrees of CVD risk, from green, which means low risk, through yellow to red, which means high risk [129] (Figure 4). The Health Curve comprises 13 different risk factors and risk markers, of which four are lifestyle habits, including physical activity, food quality, tobacco use and alcohol use. Life situation, containing loneliness, marital status and SES. Mental distress is also included in the Health Curve as is also heredity for CVD and diabetes. Finally, the four biological risk markers, Body Mass Index (BMI), Waist-Hip Ratio (WHR), blood pressure and cholesterol make the Health Curve complete [136]. Healthcare professionals have stated that the pedagogical visual profile is helpful when supporting people to improve their lifestyle habits [9].
Figure 4. The Health Curve- a visual pedagogic health profile.

The process for a targeted health dialogue is described in Figure 5. To reduce health inequalities, it is essential to follow the recommended process for targeted health dialogues to reach as many inhabitants as possible from all socioeconomic groups. In the invitation part of this process, it is important to
have health literacy in mind. This is especially important, when the aim is to reach groups with low SES. The information and invitation need to be designed so that these inhabitants can embrace it [137]. Studies from the United Kingdom show that the participation rate can increase by 59% if the invitation first contains an informative letter and then an invitation by telephone compared to a letter invitation only [138, 139]. Furthermore, health care professionals in Sweden have stated that people they have invited by telephone more often agree to participate in the targeted health dialogues [9].

*Figure 5. The normal procedure for a targeted health dialogue*

In a questionnaire directed to 1000 persons who had participated in a targeted health dialogue including the Health Curve, it was shown that: 94% thought that the dialogue dealt with issues they experienced as important, 80% believed that the health dialogue would positively influence their health, and 94% would accept an invitation again in five or ten years [10]. A targeted health dialogue about lifestyle habits is one way to increase the motivation to increase PA. After a health dialogue, different kinds of tools and follow-up visits could be relevant [8]. For PA, it might be ‘Physical activity on prescription’ [64], a PA diary, follow-up visits to a sports centre or the primary health care centre, or a recommendation to use a step counter [127]. It has been shown that participants have increased their PA after participation in a targeted health dialogue [127, 131].
Healthcare professionals believe that targeted health dialogues are a well-structured model that gives them hope for a paradigm shift for an increased focus on health promotion in the primary healthcare in Sweden [124]. People whom healthcare professionals have asked about their lifestyle habits have an increased tendency to make changes compared to those who have not had such a dialogue [140]. Previous studies show that elders and people with shorter education more seldom get questions about their lifestyle habits compared to younger people and people with longer education. It is important for equal care that everyone is given an opportunity to talk about lifestyle habits [141].

Targeted health dialogues should not be confused with general health checks. The long-term follow-up results, described above, on a population level have been seen for targeted health dialogues but not for general health checks [142]. General health checks have no targeted disease group and have often focused on blood tests more than lifestyle habits. Not all people in the selected population group are offered general health checks. Instead, this is a high-risk screening concept of value for a few persons only, often conducted on the person’s own initiative, and often paid for by the persons themselves. The general health checks are often conducted in an unfamiliar environment outside primary health care. They do not combine a low- and a high-risk strategy, and there is on population level no evidence for reduced incidence of CVD or all-cause mortality [8, 133]. Targeted health dialogues, on the other hand are targeted towards CVD and are focused on lifestyle habits. All people in an age group are invited and the health dialogue is important for all participants. They will all have a lifestyle-oriented health dialogue according to the principal of proportional universalism. Targeted health dialogues are conducted by primary healthcare professionals in a well-known environment. They take the form of a person-centred motivating health dialogue, including a visual pedagogic health profile. They combine low-risk and high-risk strategies, and there is evidence for reduced risk of CVD and all-cause mortality [8, 133].
5. Rationale

A health promotive, salutogenic perspective is the basis for a fruitful way of supporting people to achieve a better health. Supporting people to utilise their resources and capacity to manage life, aiming to improve health and QoL may facilitate their efforts to reach the ease pole on the health continuum. This support may also decrease the risk of illness such as cardiovascular disease, and premature death. The targeted health dialogues might make it easier for people to better understand their health situation and how different lifestyle habits and biological risk markers interact. In the dialogue, people will get support to help them to become aware of their resources, gain motivation and find it meaningful to change lifestyle habits in a healthier direction.

The health benefits of PA are complex and affect the whole body physically, mentally and emotionally. Regular PA is a resource that prevents many diseases and may help people to reach the ease pole on the health continuum.

It is also known that groups with low SES, to a greater extent, report lower levels of PA and SRH. They also objectively have a greater risk for illness and premature death.

Within the health promotion perspective, there is a knowledge gap between PA and health in groups with low SES, such as those facing economic difficulties. The questions about PA needed to be objectively validated. For quality reasons, it is of interest to compare the self-reported PA with different outcomes. There is a knowledge gap about the associations between PA and outcomes such as SRH, QoL, mastery and vitality in groups with low SES in terms of economic difficulties. There is also a knowledge gap regarding whether PA can compensate for a low SES in terms of economic difficulties and what makes some people adopt a lifestyle that includes recommended levels of PA despite a low SES in terms of economic difficulties. Furthermore, there is a knowledge gap, regarding the experiences of PA in relation to SOC for people achieving the recommended levels of PA despite economic difficulties. All these gaps would be valuable and interesting to explore.
6. Aim

6.1. Overall aim

This thesis aimed, from a salutogenic perspective, to increase the understanding of the relationship between physical activity and health in the adult population, with a particular focus on people with economic difficulties. A further aim was to validate questions about physical activity and to explore the people’s experiences of PA from a sense of coherence perspective, all in the context of targeted health dialogues.

6.2. Specific aims

The specific aims of the different studies are as follows:

- To evaluate the concurrent validity of a structured interview form estimating self-reported PA and a question about sitting time used in Swedish targeted health dialogues in the context of primary health care. (I).

- To investigate whether high levels of PA may compensate for the association between low SES and subjective health outcomes in terms of poorer SRH and lower QoL (II).

- To investigate the associations between PA level and mastery and vitality, respectively, within an adult population with self-reported economic difficulties (III).

- To explore how people, despite self-reported economic difficulties, comprehend, manage and find it meaningful to achieve the level of physical activity recommended by WHO (IV).
7. Materials and method

7.1. Design

This thesis includes four studies (I-IV) to answer the overall aim. An overview of the studies is presented in Table 1.

Table 1.

Overview of the four studies including design, sample, data collection and data analysis.

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Sample</th>
<th>Data collection</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Quantitative validation study</td>
<td>118 participants</td>
<td>PA interview form, SED-GIH single item question for sitting time and ActiGraph GT3X-Bluetooth and activPAL</td>
<td>ActiLife and activPAL professional software for analysis of objective data concerning PA and sitting time. Bland–Altman plots and correlation analysis to compare objective and subjective data</td>
</tr>
<tr>
<td>II</td>
<td>Quantitative cross-sectional</td>
<td>5326 participants</td>
<td>Questionnaires from the Living Condition Stress and Health (LSH) study</td>
<td>Logistic regression analysis</td>
</tr>
<tr>
<td>III</td>
<td>Quantitative cross-sectional</td>
<td>817 participants</td>
<td>Questionnaires from the LSH study</td>
<td>Linear regression analysis</td>
</tr>
<tr>
<td>IV</td>
<td>Qualitative Explorative</td>
<td>17 participants</td>
<td>Individual telephone interviews</td>
<td>Qualitative deductive content analysis</td>
</tr>
</tbody>
</table>
The salutogenic theory is the framework and basis of the thesis. All studies are conducted in the context of targeted health dialogues. Study I is a validation study of the physical activity interview form, which is used in different ways in all the other studies. It also validates the question of sitting time. Study II is a quantitative study about how PA may compensate for low SES concerning the salutogenic outcome variables SRH and QoL. Study III is also a quantitative study exploring the associations between PA and the salutogenic outcome variables mastery and vitality. Study IV, is a qualitative deductive study with sense of coherence as a starting point with the three dimensions: comprehensibility, manageability and meaningfulness as generic categories (Figure 6).

Figure 6. A picture of the thesis.
7.2. Setting

All four studies were conducted in the setting of primary health care in the context of targeted health dialogues. In study IV, both the primary health care and family centres participated. Studies I and IV were performed in the Region Jönköping County. Study II and III were performed in Region Jönköping County and Region Östergötland.

7.3. Participants

7.3.1. Study I

In study I, 118 persons aged 40, 50, 60 or 70 years from 2017 to 2020 invited to a targeted health dialogue in the PHCCs’ ordinary work agreed to participate in this study and 113 of them were included in the study (Figure 7). These participants were from rural and urban areas at six PHCCs in the county.
7.3.2. Study II and III: The LSH study

In the LSH study, people in the southeast part of Sweden were invited to their PHCC for a targeted health dialogue and at the same time to participate in the LSH study during the years 2012-2015. The study population includes a random sample of people aged 40, 45, 50, 55, 60, 65 and 70 years. In the LSH study, 28702 persons were invited, whereof 12164 (42%) agreed to participate in a targeted health dialogue and of these, 6860 (56%) persons (3880 women and 2980 men) also participated in the LSH study (Figure 8). In the study population, the mean age was 54 years (SD 9.9 years). When comparing the LSH participants with data from the general population in the southeast part of Sweden, the LSH study population was representative.
However, there was a slight underrepresentation of men aged 40 years, and immigrants.

Figure 8. Flow chart for participants in the LSH study.

7.3.3. Study II

Study II included participants from the LSH study. Exclusion criteria for this particular study were if the participants had diagnoses that could have some impact on their ability to take part in PA, i.e., the following diagnoses (as given by a physician): myocardial infarction or stroke, angina pectoris, chronic lung disease, rheumatoid arthritis, musculoskeletal disorders, neurological disease and depression. From the original 6860 participants, 1532 had one or more of these diseases. Two other participants had not answered the questions of interest for this study, so they were also excluded. After exclusion, 5326 participants from the LSH study were included in the analytical sample for study II.

7.3.4. Study III

Also in study III, the participants consisted of a subpopulation from the LSH study. In line with study II, participants who had been diagnosed by a physician with: myocardial infarction or stroke, angina pectoris, chronic lung
disease, rheumatoid arthritis, musculoskeletal disorders, neurological disease and depression, were excluded from the study for the same reason as in study II. Other exclusion criteria were if the participants had answered that they had no economic difficulties. After exclusion, an analytical sample of 817 participants (482 women and 335 men) with economic difficulties remained. In the main analyses, a comparison was made between participants with high PA (n=493), intermediate PA (n=147) and low PA (n=177).

7.3.5. Study IV

In study IV, 17 persons participating in targeted health dialogues, both from urban and rural parts of one county in the south of Sweden, participated in an interview after their targeted health dialogue. Inclusion criteria for the study were 1) reporting having or partially having economic difficulties; 2) achieving a PA score of at least 750 points per week on the PA interview form during the health dialogue, corresponding to the lower limit of the WHO guidelines of 150 minutes per week; and 3) speaking Swedish well enough to participate in an interview.

7.4. Data collection

7.4.1. Study I

In study I, six PHCCs were included. The persons at these six PHCCs, who accepted the invitation to a targeted health dialogue, visited the laboratory for the blood test included in the normal concept at least one week before their health dialogue (Figure 5). During their visit at the laboratory, they were invited to this study. To measure PA and sitting time, those who agreed to participate in the study received an ActiGraph GT3X-BT (Figure 9) (ActiGraph LCC Pensacola, FL, USA) and an inclinometer activPAL (figure 10) (PAL Technologies LTD. Glasgow, Scotland). They wore the devices 24 hours a day for seven consecutive days. The ActiGraph GT3X-BT was worn on the right hip and the activPAL on the right thigh. During the week when the participants wore the devices, they also kept a logbook in which they recorded when they got up and went to bed, the time for active transport to work, breaks, working hours, time of returning from work and time for
performing LTPA, and time when the ActiGraph GT3X-BT was removed for a shower or bath. The devices were returned to the PHCC at the targeted health dialogue, when they were also asked about their sitting time and PA.

Accelerometry in Study I
The accelerometer method is used in study I. It is based on the knowledge that energy expenditure in a moving body increases proportionally to the activity of the muscles in the body [143]. The GT3X-BT is a triaxial accelerometer and detects acceleration in vertical, mediolateral and anteroposterior axes [144]. The accelerometer measured acceleration on the wearer, processed the raw data, and transferred it to activity counts and to energy expenditure in kilocalories and time spent in PA of different intensities [145]. An inclinometer activPAL measured the body position. As accelerometers have shown a lower sensitivity to sedentary behaviour, the activPAL was used to measure sedentary time and body position. ActivPAL is sensitive to dynamic acceleration and is a triaxial inclinometer. The ability to detect body position such as standing, lying and sitting also includes registration of movements such as walking [146]. In study I, the activPAL was described as a uniaxial inclinometer, but is in fact triaxial. However, in study I, the activPAL was only used to detect the sitting time where the uniaxial part was involved.
The PA interview form in Study I

The health care professionals used the PA interview form in the ordinary concept for targeted health dialogues. They asked the participant to recall their time spent in different LTPA activities and the kind of active transport during the last year and divided it by the four seasons (Figure 11).

![Figure 11. The PA interview form](image)

SED-GIH questions about sitting time in Study I

The Swedish School of Sport and Health Sciences’ single-item question about sitting time (SED-GIH) was used to measure sitting time. The SED-GIH
single-item question: ‘How much time do you sit during a normal day excluding sleep?’ was asked, with seven categorical answer choices: ‘Virtually all day’, ‘13–15 hours’, ‘10–12 h’, ‘7–9h’, ‘4–6 h’, ‘1–3 hours’ and ‘never’ [147].

7.4.2. Studies II and III: The LSH study

The data collection for the LSH study started in 2012 and continued up to 2015 in southeast Sweden. In the LSH study, people in the southeast part of Sweden were invited to their PHCC for a targeted health dialogue. At the same time, they were invited to participate in the LSH study. All had a targeted health dialogue even if they did not agree to take part in the LSH study. The targeted health dialogue procedure has been described above (Figure 5). The participants in the LSH study answered additional questionnaires and they had to provide additional blood samples and a saliva sample in addition to the normal procedure for the targeted health dialogues.

7.4.3. Study II

In study II, the outcome variables were SRH and QoL. Two combined variables about PA and SES were also created.

SRH and QoL in study II

SRH was measured by a single-item subjective health question indicating general health and well-being [94, 95]. ‘How do you rate your general health status?’ with five response alternatives: ‘very good’, ‘good’, ‘fairly good’, ‘bad’ and ‘very bad’.

There are different ways to measure QoL. One global measure of QoL is Cantril’s Self-Anchorong Scale, ‘The Ladder of Life’, which has steps 0-10. The participants were asked to mark which step of the ladder of life they were standing on at the time of the data collection [148]. The top step (ten) represents the best possible life, and the bottom step (zero) represents the worst possible life [148] (Figure 12).
PA and SES in study II.

In study II, PA was estimated from the PA interview form (Figure 11).

For SES, two questions were asked: 'Is the economy a problem for you?' with three response alternatives ‘no’, ‘partly’ and ‘yes’.

The other question was ‘Highest achieved education’ with the response alternatives ‘Elementary school’, ‘Two-year high-school/vocational school, girls’ school, secondary school or equal’, ‘Three-or-four-year high-school’, and ‘University degree’.

PA, SES, mastery and vitality in study III

In study III, PA was estimated from the PA interview form (Figure 11). For SES in study III, one question was asked, 'Is the economy a problem for you?' with three response alternatives ‘no’, ‘partly’ and ‘yes’.

The outcome variables were mastery and perception of vitality. In a healthy population, the mastery scale has previously been proved to be valid [149]. The mastery items were included in an additional questionnaire besides the ordinary concept of the targeted health dialogue. The mastery scale is an index of six of Pearlin’s mastery items [111]. The mastery scale originally contained seven items. The item ‘Sometimes I feel I’m being pushed around in life’ was excluded due to cultural aspects in Swedish society today. At the group level, the reduced scale did not reduce the validity [150].

Rand 36 measures eight domains of health, including vitality (energy/fatigue) [151]. Rand 36 has been translated into Swedish and has been validated in the Swedish context [152]. Perception of vitality was constructed by summarising the response score from four items in the module for vitality (energy/fatigue) in RAND 36 [152].
7.4.4. Study IV

The data collection in study IV started in 2020 and continued up to 2023. The time for data collection was long due to Covid-19 when several healthcare centres conducted fewer targeted health dialogues. People meeting the inclusion criteria were asked to participate in the study, in conjunction with their ordinary targeted health dialogue at the PHCC. Telephone interviews were conducted after the targeted health dialogue.

Study IV interview guide

The telephone interviews contained questions about the health dialogue, the participants’ perceptions of PA such as motivation, support and challenges to perform PA and benefits from PA, perception of general health and SOC 13.

SOC 13 in study IV

Aaron Antonovsky developed a short version (SOC-13) with 13 items of the original sense of coherence scale, with 29 items [20]. This short version was used in this study with permission from Avishai Antonovsky in the Society for Theory and Research for Salutogenesis. The SOC scales were constructed from a salutogenic perspective with a global orientation. The purpose was to predict and explain people’s movements, how they view their lives, and use their resources to handle stressful situations, from the dis-ease pole to the ease pole on the health continuum [23, 104]. In SOC 13, the three dimensions of sense of coherence are measured. Five items concern comprehensibility, four manageability, and four meaningfulness [20, 23]. The responses to the scale items are rated on a semantic unipolar verbal scale from 1 to 7. The SOC points are converted to SOC score points, where some are reversals. The SOC score points range from 13 to 91, where the SOC score point 13 stands for a weak SOC and 91 stands for a strong SOC [20, 23]. The SOC scale is validated and independent of cultural settings [20, 23]. In this study, the questions were used for background characteristics in telephone interviews, and the SOC scale has previously been used in telephone interviews without problems [23].

37
7.5. Data analysis

7.5.1. Study I

In study I, descriptive analyses were used for the participants’ background characteristics. For the evaluation of agreement between objective and subjective data, Bland–Altman plots [153] (including one sample t-test for the difference) were conducted for moderate-to-vigorous physical activity (MVPA), based on accelerometer data and self-reported data for time spent in MVPA and energy expenditure spent in MVPA. Spearman’s rank correlation coefficient for accelerometer-based MVPA and self-reported MVPA data, and between device-based and self-reported sitting time was also calculated. For the correlations, a p-value less than 0.05 was considered statistically significant. A cross-tabulation with device-based measured and self-reported estimated sitting time was used to calculate the proportion of persons’ over and underestimated sitting time.

IBM SPSS statistic version 27.0 IBM Corp, Armonk, New York, USA) was used for the analysis.

7.5.2. Study II

In study II, descriptive statistics were used for the participants’ background characteristics. Logistic regression was used to estimate OR with 95% confidence intervals (95% CI). Two models were derived, Model I with unadjusted estimates and Model II with estimates adjusted for sex, age, smoking and food quality. Logistic regressions were also used for combined variables for SES (economic situation and educational level) and PA, with the outcome variables SRH and QoL adjusted for sex, age, smoking and food quality.

7.5.3. Study III

In study III, descriptive statistics were used for the participants’ background characteristics and scale scores for mastery and vitality. Linear regression analysis was used to describe associations between PA levels and scale scores of psychological factors, using an unstandardised regression coefficient (B) and 95% confidence intervals (95% CI). Three models with
indicator variables for PA levels were derived for persons with complete data. Dummy variables were used for PA levels and R²-value, and the standardised Beta coefficients were provided for each model. Model I had unadjusted estimates, Model II was adjusted for sex and age and Model III was adjusted for sex, age, smoking and food quality. All models included the outcome variables of mastery and perception of vitality. Scatterplots of standardised residuals were used to check that the residuals approximately followed a normal distribution.

All analyses in studies II and III were performed using SPSS versions 24 and 26 (IBM Corp, Armonk, New York, USA).

7.5.4. Study IV

In study IV, qualitative deductive content analysis based on Elo and Kyngäs was applied [154, 155]. An analysis matrix was developed based on the three dimensions of SOC: comprehensibility, manageability and meaningfulness, which also constituted the generic categories in the deductive analysis [155]. First, an overall reading of all the verbatim-transcribed interviews was conducted several times to establish a sense of the content. During the overall reading notes and headings were written in connection to the generic categories in the analysis matrix. In this process the description of the participants’ experiences of PA were identified, coded, and placed in the belonging generic category in the matrix. After that, came a process of grouping the codes into subcategories in an ongoing inductive process until consensus was established to enhance credibility [154, 156].

Furthermore, the range of SOC-13 was presented in background characteristics.
8. Ethical considerations

All studies in this thesis adhere to the ethical principles and ethical conduct for human research according to the Helsinki Declaration [157]. According to Swedish law on ethical approval regarding human beings, all four studies need ethical approval as all concern sensitive personal data about the participants’ health [158]. Ethical approvals for studies I, II and III were also received from the regional ethical review board in Linköping. Study I (Dnr 2016/367 and Dnr 65-32). For studies II and III, the approval was a part of the larger study LSH (Dnr 2012/336-32). Study IV received ethical approval from the Swedish Ethical Review Authority 2020-01249, with additional approvals 2021-00942 and 2022-06806-02 and 2022-07198-0. All studies were conducted in ordinary work in the primary health care units, and study IV was also conducted in the family centres and is covered by the patient’s insurance.

8.1. Autonomy

The principle of autonomy protects a person’s right to make their own choices and have self-determination [159]. It was addressed in the studies by providing both oral and written information about the purpose of the studies and what knowledge the studies could give. All participants also received information that participation was voluntary, that it was possible to withdraw their participation and that their future care would not be affected whether they agreed to participate or not. The written informed consents were provided in accordance with the method literature and the Helsinki Declaration [157, 160-162].

8.2. Beneficence and non-maleficence

Beneficence and non-maleficence principles involve acting in the participants’ best interests, maximising benefits and doing no harm, and minimising risks [159]. To minimise harm, the invited persons were offered a targeted health dialogue regardless of whether or not they participated in the studies. The method of targeted health dialogues and its benefits to health and potential for saving life long-term are also evaluated and are in
accordance with the principle of beneficence [126, 131, 132]. To minimise the risk of harm to the participants, the collected data and participants’ identities were kept confidential in all studies. A de-identification process was used for the collected data, where the participants were given a personal separated code. The results are presented in a way that ensures the identification of any individual participant is impossible. The results will be reported to the healthcare centres and used in education and training by healthcare professionals who work with targeted health dialogues. The results will also be reported in scientific publications and presentations at scientific conferences. In study I, participants in a telephone follow-up had some personal results presented to them, with the opportunity to ask questions. The research material was archived and screened in accordance with the provisions of the archives law for research [163].

In study I, the participants’ carried an ActiGraph and an activPAL. To minimise the risk of harm, the chosen monitors were small and light: the ActiGraph, weighed 19 grams, and activPAL, 15 grams. The monitors did not greatly influence the people’s freedom of movement but may have caused some discomfort when worn. Participation in the studies can raise questions about physical activity and lifestyle habits and their impact on the participants’ health. During their targeted health dialogue, the participants had the possibility to ask questions that may have arisen in connection with the study. The research person also had the opportunity to contact the health care centre or the researcher in the Unit for Research and Development in Primary Care, Futurum - Academy for Health and Care, for questions or advice if the person experienced any discomfort. The contact address for the Unit for Research and Development in Primary Care, Futurum - Academy for Health and Care, could be found in the invitation letters.

8.3. Justice

The principle of justice deals with the right to fair treatment and equality [159]. To ensure equality, all were offered a targeted health dialogue regardless of their participation in the studies. One aspect of this principle and the principle of the Helsinki Declaration is that research should be conducted according to ethical standards that promote and ensure respect for all people and protect their health and rights concerning the risk of inequality.
in health due to the invitation procedure [157]. To ensure that people who did not have Swedish as their mother tongue and who found it difficult to carry out a health dialogue in Swedish, it was possible to participate with an interpreter in the research in studies I-III. There was an opportunity on the invitation letter to indicate the need for an interpreter and in what language. In study IV, the participants had to speak Swedish so that the telephone interviews could be conducted.

It was also important that the invitation method promoted participants from low socioeconomic groups. According to previous research, the invitation via telephone has proven more effective for reaching these groups. The participants in the targeted health dialogues therefore received a pre-information letter telling them that they would be called by telephone or face-to-face to be offered a time for a health dialogue or that they would receive a pre-booked time for a health dialogue and then a reminder if they did not answer [139].

Generally, there were no major risks for the research persons participate in the studies included in the present thesis. The benefits for the individual participant were limited, but the interest in physical activity could be increased, so a potential health improvement could occur. It was considered that the benefits of the project were greater than the risks that might exist for the research person.
9. Results

The studies in this thesis were conducted in the context of targeted health dialogues. Study I evaluated the validity of the PA interview form and the single-item question of sitting time within the targeted health dialogues. The results showed that the PA interview form and the question about sitting time were valid to use in the health dialogues. The scores from the interview form were also used in the PA variables in studies II-IV. In study II there was a combined PA and SES variable that were compared with SRH and QoL. The results showed that people without economic difficulties and a high PA had the highest SRH. Nevertheless, people with economic difficulties and a high PA had almost the same SRH as those with low PA and no economic problems. This reduces SES related health inequalities regarding SRH for the group with a high PA and economic difficulties. In study III, both mastery and vitality were stronger in the group with self-reported economic difficulties and a high PA compared with those with a low PA. For vitality this was the case even for those with an intermediate PA compared with those with a low PA. In study IV, based on the SOC dimensions of comprehensibility, manageability and meaningfulness, the participants described their awareness of what health benefits PA may have. They were also aware of their personal challenges. They created a PA plan and used their resources and intrinsic motivation to actually perform PA. They also experienced different benefits when they performed PA (Figure 13).
Figure 13. An overview showing the results of the studies and their relation to each other and the overall aim within the context of the targeted health dialogues and the framework of the salutogenic theory. The PA interview form in study one was used in the three other studies in different ways. In the results in study II, those with economic difficulties were a significant group. Therefore, study III and study IV also had participants reporting economic difficulties. In study IV, the findings correspond with the findings in studies II and III.

9.1. Study I

The results regarding agreement between time spent in MVPA in minutes per week during active transport and LTPA measured by ActiGraph GT3X-BT and from the PA interview form are shown in Figure 14. The corresponding results regarding agreement between energy expenditure, in kilocalories per week during active transport and LTPA measured with ActiGraph GT3X-BT and from the interview form are shown in Figure 15. Bland–Altman plots indicated indirect lower absolute variation for people with a lower PA level (Figures 14 and 15). Furthermore, analyses of time in MVPA or energy
expenditure estimated by the structured PA interview form showed no systematic over- or underestimation.

Figure 14. The Bland–Altman plot illustrates the closeness of agreement for time spent in MVPA for active transport and LTPA in weekly minutes measured with the accelerometer and as estimated from the PA interview form. The limits of agreement were within ± 2 standard deviations. Approximately 95% of the cases were between the upper and lower horizontal lines.
The Bland–Altman plot illustrates the closeness of agreement for energy expenditure, in terms of kilocalories per week, for MVPA in active transport and LTPA measured with the accelerometer and as estimated from the PA interview form. The limits of agreement were within ±2 standard deviations. Approximately 95% of the cases were between the upper and lower horizontal lines.

The results concerning sitting time were measured by the inclinometer activPAL and the SED-GIH single item question. Spearman’s correlation coefficient (Spearman’s rho) between time spent in MVPA (minutes per week) and energy expenditure (kilocalories per week) estimated from self-reported data and ActiGraph data is as follows: Spearman’s rho 0.27, p=0.014 and 0.26 p=0.022 respectively. Between self-reported data for sitting time and data from the activPAL, the correlation is Spearman’s rho=0.31, p=0.002. Seventy four percent of the participants underestimated their sitting time analysed with SED-GIH compared to activPAL.

9.2. Study II

This cross-sectional population-based study with middle-aged participants show the association between PA, and SRH and QoL, in combination with the SES variables self-reported economy and education level. The results show that people with a good financial situation and a high PA also have the highest
level of SRH (Figure 16). Furthermore, the results show a negative association between a low SES and SRH, but this could be compensated by a high level of PA. Those with high PA reporting economic problems had nearly the same odds of having a good SRH compared to those with no economic problems and a low level of PA. The odds were respectively OR 1.75 [95% CI 1.20-2.54] and OR 1.81 [95% CI 1.25-2.63] (Figure 16). Concerning education level, the group with short education and high PA had higher odds of good SRH than those with long education and low PA, although the confidence intervals were slightly overlapping. The odds were respectively OR 3.34 [95% CI 2.09-5.34] and OR 1.46 [95% CI 0.89-2.39]. For QoL, the results were not as consistent. Even though the results for education level and QoL were not statistically significant it is interesting that people with a low education and a high PA had a higher OR for a high QoL than those with a high education and a high PA.

![Figure 16. Combinations of the SES variable of financial situation and different levels of PA showing odds ratios (OR) for good SRH with 95% confidence intervals. ORs are adjusted for age, sex, food quality and smoking habits. The LSH study.](image-url)
9.3. Study III

This cross-sectional study with an adult population reporting economic difficulties shows the association between PA and mastery and vitality. High PA was associated with a higher score of mastery $\beta=0.72$ p=0.028 (Table 2) compared to a low PA. Intermediate PA and high PA were associated with higher scores of vitality $\beta=6.7$ p=0.013 and $\beta=9.3$ p=<0.001, respectively (Table 3).

Table 2. The association between PA level and mastery score in a population with economic difficulties is estimated by linear regression analysis adjusted for age, sex, smoking habits and food quality. *=statistically significant. The LSH study.

<table>
<thead>
<tr>
<th></th>
<th>$\beta$ coefficient and 95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate PA</td>
<td>0.62 (-0.20-1.44)</td>
<td>0.135</td>
</tr>
<tr>
<td>High PA</td>
<td>0.72 (0.08-1.37)</td>
<td>0.028*</td>
</tr>
</tbody>
</table>

Table 3. The association between PA level and vitality score in a population with economic difficulties is estimated by linear regression analysis adjusted for age, sex, smoking habits and food quality. *=statistically significant. The LSH study.

<table>
<thead>
<tr>
<th></th>
<th>$\beta$ coefficient and 95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate PA</td>
<td>6.70 (1.40-12.00)</td>
<td>0.013*</td>
</tr>
<tr>
<td>High PA</td>
<td>9.30 (5.20-13.40)</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

9.4. Study IV

The findings in this qualitative deductive study in a group of people with self-reported economic difficulties reflects the participants’ awareness of the importance of PA and the need for a good structure, such as a plan for their physical activities to increase their chances of reaching the ease pole on the health continuum. The awareness and the PA plan, together with their inner trust, seem to help them to identify their resources for performing PA and discover the positive benefits of PA. In the deductive analysis of the three generic categories, comprehensibility, manageability, and meaningfulness with their belonging subcategories (Table 4), participants described how they used their awareness to plan their PA performance. Also, despite their challenges and stressors, they described how they were or became aware of their resources, their intrinsic motivation and the benefits of PA. The findings
show how the three generic categories interacted and helped the participants to achieve the PA recommendations and experience the benefits of PA. The process corresponds with how the dimensions in SOC interact with each other to facilitate movement towards the ease pole on the health continuum. Under the first generic category, *comprehensibility*, the subcategories were *Awareness of the importance of physical activity for health and awareness of the need for a structure* and *Understanding of the challenges of performing physical activity*. Here, the participants explained their awareness of the recommendations of PA and that PA was essential for their health. The participants also explained that despite their challenges, such as their economic situation, diseases, and pain they performed PA and had a structure and a plan for their PA.

*I had a much higher level of physical activity when I was younger, and due to injuries, I have had to ease off a lot, so, under protest, I have had to change my expectations of what I can do now compared to before.* Participant 1

Under the second generic category, *manageability*, the subcategories were *Ability to utilise resources to facilitate performing physical activity* and *Ability to handle stressors that affect the opportunities to perform physical activity*. To facilitate the implementation of PA the participants described different resources, such as support from healthcare professionals, a partner or a group. Other resources could be equipment that helped or for example, a dog to go out with. The participants also described how they handled their stressors and utilised their resources and carried out their PA plan in practice. They mentioned that they brought their training clothes to work to perform PA before returning home or booked a gym workout time in advance as a part of the plan. They pointed out that they were determined people and that only they themselves could get the PA done.

*Instead of taking the car to the store, you can cycle or walk without any major effort. Therefore, I guess that is how the training helps too. Then you kind of get leverage on it. Then you get additional physical activity without feeling that it is difficult.* Participant 15

In the third generic category, *meaningfulness*, the subcategories were; *Experience of intrinsic motivation for performing physical activity* and *Experience of emotional and physical benefits of physical activity*. The
participants described an inner drive motivating them to perform PA. Other motivating factors were overcoming disease symptoms through PA and a wish to have energy in different situations now and in the future. The participants experienced several benefits from PA, such as sleeping well, having a better appetite, having more energy in everyday life, being more creative, having less pain and other physical problems. Furthermore, they felt good mentally and it was easier to keep the mood up. They also experienced being less stressed and felt calmer and in harmony with themselves, etc. when performing PA.

I have ADHD, so it becomes a part of my therapy as well as training Participant 17.

The participants’ SOC-13 questionnaire score was ranging from 42 to 78 points.

Table 4. Overview of the categories showing the participants description of their experiences of PA analysed through comprehensibility, manageability and meaningfulness with their subcategories.

<table>
<thead>
<tr>
<th>Main category</th>
<th>Sense of coherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic category</td>
<td>Comprehensibility</td>
</tr>
<tr>
<td>Subcategories</td>
<td>Awareness of the importance of physical activity for health and awareness of the need for a structure</td>
</tr>
<tr>
<td></td>
<td>Understanding of the challenges of performing physical activity</td>
</tr>
</tbody>
</table>
10. Discussion

10.1. General discussion of the results

The framework for this thesis is the salutogenic theory, and the setting is primary healthcare in the context of targeted health dialogues. In study I, the PA interview form was validated and used in different ways to all the other studies II-IV. The validation showed that the validity of the PA interview form was acceptable for use in targeted health dialogues. It could be especially helpful when supporting people with insufficient PA. The results showed that the agreement between PA estimated with the PA interview form and objectively measured PA was stronger for those with low PA. Study I also showed that self-reporting of PA is rather imprecise, in line with other studies [69, 164].

Therefore, there might be a risk that the results in studies II and III could have been diluted due to the imprecise self-reported PA data. Study II showed that a longer education and a self-reported good financial situation were associated with a higher PA level in terms of active transport and LTPA. In study II, the results also showed that in a middle-aged population, PA regarding SRH could largely compensate for economic difficulties even if the group without economic problems and a high PA had the highest SRH. The result in study II showed that there were more knowledge gaps concerning the group with economic difficulties worth further investigation. This group was therefore also included in studies III and IV, that both had self-reported economic difficulties as inclusion criteria. In the INTERHEART study, self-reported financial difficulties were assessed with a question similar to the question about financial situation used in this thesis. In that study self-reported financial difficulties were associated with a higher incidence of acute coronary heart infarctions [82]. This may be of interest given that the health dialogues, where the question about economic difficulties is used, are targeting CVD.

Study III showed that people with economic difficulties and a high PA also had higher levels of mastery and vitality. Both studies II and III indicate that it is essential to promote PA, especially in groups with economic difficulties, for example, in the context of targeted health dialogues to improve health and
also to compensate for the impact of a lower SES. Study III also shows the importance of strengthening psychological factors such as mastery and vitality to improve people’s health.

In study IV, the findings show a pattern of a process where the participants may comprehend, manage and find it meaningful to achieve the recommended PA levels. They had an awareness that PA is important and good for their health despite their economic difficulties. They also had an awareness of their challenges such as diseases and pain and structured a PA plan. The participants had intrinsic motivation to set their plan in practice, utilising their resources and handling their stressors, thereby receiving many benefits from PA (Figure 13).

10.1.1. Underlying mechanisms between PA and health

All four studies in this thesis were conducted in the context of health dialogues targeting CVD. PA is one of the major lifestyle habits in the targeted health dialogues that have a significant impact on health and NCD, such as CVD, diabetes and cancer, as well as all-cause mortality [42, 165]. The risk for CVD mortality and all-cause mortality decreases even more if the WHO goals for PA are exceeded [42]. PA has a positive effect physically, psychologically and emotionally on health and many different diseases.

Physiologically, aerobic PA decreases low-grade inflammation, lowers the blood pressure, affects blood lipids in a favourable way, and also facilitates achieving lower overweight and maintaining a healthy weight [166]. During aerobic PA the body uses both fat and carbohydrates as energy [167]. Persistent aerobic PA results in enlarging of the ventricles in the heart and increased blood volume. During PA, an increased proportion of the cardiac output goes to the musculature [168]. In addition, aerobic PA leads to reduced arterial stiffness [169]. PA also affects the brain in several ways, where better cognition, intellectual improvements, memory function and processing speed have been observed [170]. There is research explaining the different physiological mechanisms of these associations, for example, the positive effect from increased brain-derived neurotrophic factor. Another effect is that PA promotes neurogenesis in the hippocampus, improving cognitive functions dependent on the hippocampus. Furthermore, through PA the cortical volume
increases, especially in the frontal parietal and temporal cortex. PA has also a positive effect on sleep, and sleep in turn has a restorative effect on the brain [170]. For depression, the deceased symptoms are dose-related to PA [41]. PA muscle-strengthening activities also affect balance and improve physical function. Bone-strengthening activities like stair climbing, jumping, and running with strong muscle contractions provide a muscle force that strengthens the bones [41]. Moreover, aerobic PA improves glucose control [171].

PA is an important factor in health promotion interventions, such as targeted dialogues. With all these known benefits of PA, it is urgent to validate the PA interview form and to investigate PA in relation to the salutogenic outcomes in the context of the targeted health dialogues. The known benefits of the variable strengthen the results of studies II, III and IV.

10.1.2. Validation of the PA interview form and the SED-GIH, the single-item question

The aim of study I was to validate the PA interview form used in the health dialogues. In the concurrent validation of the PA interview form the agreement between the PA interview form and accelerometry was studied for concurrent validity. Concurrent validity refers to the agreement between two measures in the same period [172]. The validation showed no systematic over- or underestimations of self-reported PA. Another study has shown an overestimation of PA [69]. That the participants did not systematically over- or underestimate their PA according to the PA interview form is important in clinical practice when supporting people to improve their PA. The results of the Bland-Altman plot indicated lower absolute variation for those with lower PA, which is also important information in clinical practice as those with low PA may need more support to increase their PA.

The correlations calculated as Spearman’s rho between self-reported and objectively measured PA were modest, in line with other studies [173, 174]. The limits of agreements in the Bland-Altman plots and the modest results of Spearman’s rho correlations indicate that self-reported PA data is rather imprecise, a fact that is also well-known from other studies [69, 164]. It may be considered as strength of study I that the devices were distributed face-to-
face when the participants visited the laboratory. The face-to-face distribution of devices is feasible in smaller studies, which also has been reported in another study [175].

The agreement between the answers to the SED-GIH question and the measures obtained by the activPAL triaxial inclinometer was evaluated concerning the concurrent validity of sitting time in study I. The results of Spearman’s rho in the context of targeted health dialogues were in line with the results in another study [147]. In our study, 74% of the participants underestimated their sitting time and this was also in line with the other study [147]. It is of importance in clinical practice, when supporting people to increase their PA and decrease the sitting time, to know that three out of four people underestimate their sitting time. This question does not seem to capture the sitting time very well. However, the evaluated question used in the targeted health dialogues is currently the only validated and recommended question in the National guidelines in Sweden for sitting time [8].

10.1.3. PA and SRH and QoL

Study II shows the association between PA and SRH, where people with a high PA to a large degree could compensate for a low SES. PA may reduce the SES inequalities in SRH, and as seen in another study, PA is a resource, a GRR, to achieve better health [74].

The findings in study II concerning QoL were less consistent. One reason for this might be that QoL is a broader concept, where SRH is only one component among others. Higher levels of PA were associated with higher levels of mastery and vitality in study III, and both mastery and vitality have previously been associated with better health [110, 120]. Also in study IV, the participants described a feeling of better health in connection with performing PA. Studies II and IV show that promoting PA is an investment for SRH and can be viewed as a means progressing towards the ease pole on the health continuum. PA is essential both for health promotion and to prevent diseases. Therefore, PA can be important both for the salutogenic health promoting side and the pathogenic side of the EUHPID model (Figure 3). The salutogenic side has a starting point in the positive health utilising people’s resources in health promotion for good health. The pathogenic side has its starting point in
ill health, aiming to prevent and reduce disease risk factors [37]. SRH works as an indicator of general health and well-being [94, 95]. The results in study II are in line with another study that shows that higher self-reported LTPA is associated with higher SRH [176]. In the long run, this is also consistent with studies that show the impact PA has on several threats to health and diseases such as CVD, diabetes and cancer, as well as all-cause mortality [42, 165].

10.1.4. PA and psychological factors

Study III showed the association between a high PA and higher scale scores for psychological resources in terms of mastery and vitality for people with self-reported economic difficulties. It is essential when supporting people with a low PA to increase their PA that they may also strengthen their psychological resources of mastery and vitality, which helps them to progressing towards the ease pole at the health continuum. It has previously been found that people with more psychological resources such as mastery and vitality also report higher levels of PA [21, 110]. According to a meta-analysis, psychological factors are GRRs that may help people to gain knowledge about different aspects and challenges of life [109].

In study IV, the findings showed that an awareness of the positive effects of PA helped the participants create a plan, where the participants believed that they could do something about their situation through PA. Furthermore, they also saw the benefits of PA, such as vitality being a meaningful reason for performing PA and striving to reach the ease pole of the health continuum. This is in line with an earlier study showing vitality as an indicator of motivation and health [120]. Mastery can also be seen as a resource to reduce the risk for diseases such as CHD, inflammatory diseases, cancer, and all-cause mortality [112-114].

10.1.5. PA and SOC

Study IV describes PA and its relation to SOC with the three dimensions of comprehensibility (cognitive perspective), manageability (behavioural perspective), and meaningfulness (motivational perspective).
The findings showed that despite self-reported economic difficulties and other challenges such as pain, illnesses, lack of time, etc. in the participants’ lives, these three SOC dimensions reflected the participants’ awareness of the health benefits of PA. Their cognitive, behavioural and motivational characteristics interacted to achieve the recommendations for PA, facilitating a progress towards the ease pole of the health continuum, aligning with the salutogenic theory [13].

The findings showed a process where the participants used their knowledge and awareness of the importance of PA to create a PA plan. The participants also showed awareness of the challenges, utilising their resources and intrinsic motivation to achieve the PA recommendations and benefits from PA. In the health promoting work with the targeted health dialogues, it is important to consider this process, especially for people with a lower SOC, for whom it might be harder to complete this process. If people are to apply their knowledge in their life, healthcare professionals working with health promotion such as targeted health dialogues must be aware that they need to explore people’s level of health literacy to meet them at the right level in the health dialogue [27, 32, 33].

The SOC scores in study IV ranged between 42 and 78 points among the participants, which are relatively strong scores. The findings showed that SOC might be helpful when trying to achieve the PA recommendations in their striving towards the ease pole of health. A high SOC score is associated with lower overall mortality [177]. A low SOC level has previously been associated with a low PA level [178]. Good coping resources on the continuum of GRRs-RDs are essential for people to develop a strong SOC. The SOC level affects person’s ability to find and use GRRs when dealing with stressors and tension to reach the ease pole on the health continuum [12, 18, 21]. A criticism against SOC has been the assumption that SOC only could change at a young age and then be stable. Over the years, studies have shown that a change in SOC is possible even later in life [179].

In study IV, the participants showed that they could, to some degree, overcome their economic difficulties and achieve the recommendations for PA. This finding aligned with another study showing that the GRD economic difficulties on the continuum for GRR-RD are possible to overcome [19]. The
participants in study IV described, how with awareness of the health benefits, they could create a plan to perform PA. They also, in line with studies II and III, which reported a higher level of SRH and quality of life and vitality in the process of progressing towards the ease pole on the health continuum.

10.1.6. Summary

In summary, this thesis reveals that the interview form about PA may have acceptable validity to be used in the targeted health dialogues. Promoting and supporting PA in the context of targeted health dialogues seems to be important to reduce SES inequalities in SRH, and may have potential to enhance QoL, and also to support strengthening psychological resources such as mastery and vitality especially for those with self-reported economic difficulties. Due to the cross-sectional design, no causal relations could be established. Furthermore, there seems to be a salutogenic pattern of a possible process that may be of value when used to support people who do not reach the recommendations for PA.

10.2. Methodological considerations

10.2.1. Validity and reliability in the quantitative research (studies I-III).

External validity

External validity refers to whether the study results can be generalised or applicable to other groups and settings [172].

PA was estimated from the PA interview form in all studies. It was of value to further validate the PA interview form. It is well known from other studies that self-reported PA can be somewhat imprecise [69, 164]. Especially for population-based studies involving many people, self-reported PA has been and still is cost-effective and a valuable source of PA data. The global guidelines and recommendations for PA are supported by self-reported PA.
A strength of the validity study I is that the number of participants was relatively high and exceeded 50 participants in all analysis areas [173]. The study samples in studies II and III, were rather large and are well described in the articles. A well-described study sample can enhance the external validity [180].

In study I, the study population was described and found to be representative of the population in the county regarding BMI, tobacco use and level of education, and came from both rural and urban areas. For studies II and III the study population was also well described and included quite a large number of participants randomly drawn from the general population for inhabitants 40-70 years old. They were representative for the adult population of these ages in study II and for a population of these ages with economic difficulties in study III. For example, in the LSH study, 72% reported a good SRH, 7% were smokers and 64% reported high PA. The corresponding numbers in a national survey of a general population were 73% reporting a good SRH, 10% being smokers and 65% reporting a high PA [181]. In study III, about 60 percent of the participants reported a high PA (just over the WHO recommended levels of 150 minutes per week), which could be compared with the national survey where about one-third of the population did not achieve the WHO recommendation [182]. The study populations are close to the general population and this strengthens the results in the studies. In study IV, the inclusion criteria were both economic difficulties and a PA over 750 points corresponding to the WHO recommendations. In the interviews, the participants in study IV referred to different diseases, impairments and pain. This may indicate that they represent people that find it harder to perform PA. Despite this, they still achieved the recommendations for PA.

Internal validity

Internal validity refers to issues concerning the study construction that can affect whether the results are valid, reliable and relevant with regard to the aim of the study. It also refers to whether issues such as bias in the study could affect the result [172].
To evaluate the validity of the PA interview form, Bland-Altman plots were used in study I, comparing time spent in MVPA and energy expenditure, estimated with the PA interview form and measured with accelerometers, respectively. Bland-Altman plots are often used to show the agreement between two methods to evaluate if there are any biases between mean differences. This method also estimates the 95% limits of agreement intervals [153, 183]. Correlations were also calculated between these two methods and were compared with other studies. However, it has been argued that correlations may not be the best way to reflect the agreement between two measurement methods, as they only evaluate the linear association [183].

In studies II and III, the analyses were adjusted for age, sex, smoking habits and food quality to reduce the risk of confounding in the results. Furthermore, in studies II and III, there were exclusion criteria for diseases that might have an impact on the ability to perform PA. The diseases, diagnosed by a doctor, were myocardial infarction, stroke, angina pectoris, chronic lung disease, rheumatoid arthritis, muscle diseases, neurological diseases and depression. In study III, the results were presented with and without covariates to show the results for each step in the analysis. As expected, the R^2-value in the analyses of PA in relation to mastery and vitality was rather low, indicating that other variables explained the variation in mastery and vitality to a large extent. The models with or without adjustment for covariates showed that the potential confounders included in the models did not affect the association between PA and mastery or vitality in any substantial way. In studies II and III, it is impossible to draw causal relationships due to the cross-sectional design.

**PA, Accelerometry and PA interview form**

In study I, both accelerometers and inclinometers were used, since accelerometers are useful for measuring PA and inclinometers for measuring body position [146, 184]. The accelerometers, ActiGraph GT3X, record the acceleration in three dimensions with a classification of the PA intensity and have previously been validated and shown to have high instrumental reliability for measuring PA [185]. An exemption from this could be activities mainly involving the upper body and strength training which can both affect the agreement [175, 186]. It has also been discovered that accelerometers have
difficulty in detecting activities at high intensity levels with an underestimation of vigorous PA. This is partly related to a band pass filter in the ActiGraph [187]. A validation of the ActiGraph GT3X for predicting energy expenditure has also been conducted previously [188]. In study I, both time spent in PA and energy expenditure in different intensities were derived through established algorithms [145].

The activPAL inclinometer used in study I has previously been validated for body postures such as sitting or lying [146]. The SED-GIH question has been validated before in other settings, where most participants underestimated their sitting time [147].

The PA interview form was used in all four studies: I, II, III and IV. The PA interview form has previously been validated for predictive validity concerning WHR, BMI and total cholesterol [128]. The interview form is used in targeted health dialogues as a basis for the coaching dialogue about PA. The outcomes are time in PA and points estimated as kilocalories per week for active transport and LTPA. For persons attending the health dialogues, it is probably easier to understand these measures than, for example, metabolic equivalents. It is a strength that the PA interview form contains questions both about active transports and LTPA. Swedish targeted health dialogues aim to reduce the risk of CVD [8]. It is therefore of interest to know that several studies have shown that PA, including both LTPA and active transport PA, are associated with a reduced risk of CVD [189-191]. Occupational PA has not been proven to have this impact on CVD, and some studies even show an increased risk [190-193]. An earlier study has shown an overall higher PA level in individuals who over the year engage in regular PA for active transport [194].

SES
There are different ways of measuring SES, and personal finances is just one factor included in SES and cannot give an entire picture of SES. Examples of other aspects of SES are education, occupation, perception of social status and people’s opportunities and QoL attributes [75].

Our studies do not claim to cover all SES attributes. In study II, both self-reported personal finances and education were analysed. A problem with the
education parameter is that different education systems have been used over the years, which could affect the results, and also it is harder to compare different education systems because the length and content of education could be different over the years. Because self-reported personal finances were statistically significant for the results of SRH in study II, this parameter was used as an indicator for SES in studies III and IV. The financial situation can also be measured objectively. It can be discussed which of these two parameters is the best one to use. In a study on self-reported personal finances containing a question similar to the question about personal finances in this thesis it was shown that subjective perceived income better reflected the overall financial well-being than objective measured income, and are also related to their financial frame of life, environment and references [195]. The question about personal finances in this thesis has been used in targeted health dialogues since 1985. This self-reported measure of financial situation was in study II associated with SRH and PA, indicating predictive validity.

It is interesting to consider relative poverty in the context of people’s frame of life, including their environment, situation, well-being, and SRH. The same objective income may be perceived differently by different people related to their financial frame of life, environment and references, which may affect their SRH in different ways.

**SRH and QoL**

The questions in study II have been used in the targeted health dialogues for several years and many of them have been used in other studies before, which facilitates comparability between studies. The question about SRH is a common health question from WHO [196]. The questions have previously been shown to be valid and to have good reliability [197, 198] The question about QoL is from Cantril’s Self-Anchoring Scale, The Ladder of Life [148]. The Ladder of Life has also been used before for measuring the quality of life with satisfactory reliability and validity [199-201].

**Mastery and vitality**

To measure mastery, we used the well-established Perlin’s Mastery Scale [111]. One of the questions was removed from the scale because it could be
hard to understand and answer in a Swedish context today. The group level validity does not seem to have been reduced [149, 150].

Vitality was measured by the Rand-36 module for energy and fatigue with its validated Rand-36 index that also have good reliability [152].

10.2.2. Trustworthiness

Credibility

Credibility refers to whether the data and the analysis process are ethically reliable in terms of the truth and interpretations and whether the analysis is related to the aim of the study [180, 202].

Telephone interviews were conducted to achieve answers to the research question in study IV, a qualitative deductive content study. Trustworthiness is used for evaluating qualitative studies and was presented by Lincoln and Guba 1985 and described by Elo et al. 2014 [156, 202]. Trustworthiness is useful to interpret if a study’s analysed results are reliable from four points of view: credibility, conformability, dependability and transformability [202]. To achieve trustworthiness during the qualitative research process phases, the preparation phase, the organising phase and reporting phase, it is essential that credibility, dependability, conformability and transferability are considered in every phase [156]. In study IV, the data was rich, which increased the trustworthiness [156].

The interview guide in study IV was tested in the research group. Using semi-structured and follow-up questions gave a broad view of participants’ experiences of PA in relation to SOC. The interviews in study IV were transcribed by one author, and the transcribed texts were then read by one of the other researchers to evaluate whether the interviews should be conducted in another way, to critically evaluate the interviewer and achieve self-awareness [156].

The participants were described in article IV in order to increase transparency and credibility [202]. To enhance credibility, the analysis process was ongoing until two of the authors achieved consensus. The analysis was discussed with the rest of the research group to achieve an agreement [202].
During the preparation phase, organising phase and reporting phase the checklist for content analysis, by Elo and Kyngäs, was followed to establish trustworthiness [156].

**Dependability**

Dependability mainly refers to whether the data has stability over time and whether the data could be repeated if participants’ characteristics were similar and whether the data represents the participants’ viewpoints [180, 202]. It is important for increasing the dependability to describe how the study sample was chosen, with the inclusion and exclusion criteria [156]. In study IV, the inclusion criteria were that the participants reported economic difficulties, achieved 750 points or more per week on the PA interview form and spoke the Swedish language well enough to participate in the interview.

One risk concerning dependability is that the interview technique may develop during the project. The interviews in study IV were conducted by one of the researchers and followed a semi-structured interview guide, with follow-up questions to minimise differences in interview technique. In study IV the data collection lasted from 2020 to 2023 because during the Covid-19 pandemic healthcare professionals conducted fewer targeted health dialogues. The long timespan might have had an impact on the interview technique. The first author transcribed the interviews and discussed some of them with a co-author to maintain a good standard for the interviews. [180]. The use of follow-up questions could indicate a difference in the interview technique, and a risk concerning the objectivity of the interviews [202]. The interview questions in study IV were semi-structured and quite open. Also, the follow-up questions were quite open, which facilitated the interviews.

**Confirmability**

Confirmability refers to objectivity, and that the analysis is accurate and grounded in the data [180, 202].

The interviews in study IV were recorded and transcribed verbatim to avoid distorting the data and to increase the confirmability [154]. The result presentation includes several quotations to strengthen the confirmability of study IV. It is essential that the results, including the quotations, mirror the
participants expression to achieve interpretation confirmability [180, 202]. Information from all participants in study IV contributed to the data in the analysis.

Transferability

For transferability, it is essential that the reader can interpret to what extent the analysis in the results is possible to transfer to other settings and groups [180, 202]. The data in study IV was saturated and rich. A well-described context, characteristics of the participants, data collection and data analysis process and rich and saturated data increase the trustworthiness and the conditions for transferability [156]. The transferability of the qualitative study to other contexts is up to the reader to evaluate [202].
11. Conclusions

The studies in this thesis may give healthcare professionals a deeper knowledge about the importance of the experienced benefits of PA in relation to health, especially among those who have economic difficulties. The evaluated PA interview form was shown to have acceptable validity to be used in the targeted health dialogues. It is worth noting that the responses to the evaluated question about sitting time tended to underestimate sitting time. It was also observed that high PA among people with economic difficulties to a large degree compensated for the negative impact of the economic difficulties regarding SRH. Within the group of people with self-reported economic difficulties, higher levels of PA were related to better mastery and more vitality. Furthermore, it is essential for people to have an awareness of the health benefits of PA and their challenges in performing PA and to construct a plan to follow while utilising their resources, and their intrinsic motivation to achieve the PA recommendations and the PA benefits. The salutogenic perspective is essential to use in the targeted health dialogues to increase people’s ability to find their resources, to use them and to construct a plan for changing lifestyle habits such as PA to progressing towards the ease pole on the health continuum, and to achieve the WHO recommendations for PA.

The studies in this thesis support the EUHPID model in Figure 3 in the health promotion work, such as health dialogues to support people to increase their PA. On one side of Figure 3, the health promotion and salutogenic perspective have the starting point in positive health, with a focus on peoples’ resources. On the other side of Figure 3, from the pathogenic and preventive perspective, the starting point is preventing ill health. Both these aspects have the aim to improve people’s health. PA is an investment for SRH, and a way to progressing closer to the ease pole on the health continuum.

This thesis brings a deeper knowledge and understanding of the health perspective of PA. This knowledge can be used to further develop the targeted health dialogues in a salutogenic way. It will give people, especially those with lower SES, the opportunity to use their resources to increase PA and thereby improve their future health.
12. Clinical implications

The studies show the importance of health promoting work on PA and on the outcomes of SRH, QoL, mastery, vitality and SOC to support people to achieve the ease pole on the health continuum. To reduce the negative effects on SRH and QoL of a lower SES in terms of economic difficulties, it is essential in the targeted health dialogues to support people to increase their PA. For this group, support for increased PA also positively affects psychological resources such as mastery and vitality. The first study also showed that the PA interview form could be valuable in the targeted health dialogues supporting people with insufficient PA. According to the Physical Activity Guidelines Advisory committee, there is strong evidence for individual coaching and interventions for PA as a means to promote health and reduce ill health [41].

Knowledge of the importance of SOC and its three dimensions is of great value in the targeted health dialogues, when trying to support people to achieve the recommendations for PA. In this supporting process, it is essential that people become aware of the health benefits of PA, where the information about PA benefits is understandable according to health literacy. It is also important to be aware of the challenges concerning PA and to set up a realistic and feasible plan for the PA performance. With support, people may discover and utilise their resources, and with intrinsic motivation, may be able to overcome the barriers and may increase their PA to achieve the recommended PA level and the benefits from PA. When the described process seems to be a good way to achieve the PA recommendations, it may be tested for other lifestyle habits.
13. Future research

NCD such as CVD, diabetes and cancer are related to lifestyle habits, and the prevalence of these diseases is higher within groups with lower socioeconomic status. Therefore, it is essential to have further research in this area. Adopting a proper approach when encountering people in targeted health dialogue is also essential if people are to achieve a change in their lifestyle habits. Based on the results of this thesis there are opportunities for further research in this area. Concerning sedentary behaviour, it is of interest to find more valid and reliable questions not underestimating sitting time. It may also be of interest to further test the PA interview form for validity and reliability in other contexts and settings. More extensive quantitative longitudinal studies before and after a targeted health dialogue, concerning associations between PA, SOC health, quality of life, and psychological resources in groups with economic difficulties would be interesting. Longitudinal studies might further disentangle the directions of these associations and make it possible to see to what extent lifestyle habits, health, quality of life, psychological factors and SOC are changed in groups with economic difficulties after a targeted health dialogue. It would also be interesting to further observe the association between SOC and PA in a more extensive longitudinal study. It would also be of interest to conduct a more extensive quantitative follow-up study concerning how well people with economic difficulties achieve the recommendations of PA, taking SOC into consideration.
14. Svensk sammanfattning

Från ett hälsofrämjande perspektiv är det viktigt att påverka hälsan i en positiv riktning i befolkningen. Primärvården har en viktig roll i det hälsofrämjande arbetet genom att fokusera på människors hälsa i det dagliga livet och stödja dem till att själva kunna få kontroll över sin hälsa. Ett ytterligare mål med det hälsofrämjande arbetet är att minska ojämlikhet i hälsa i Sverige. Den svenska hälso- och sjukvårdslagen beskriver att primärvården ska arbeta med ett befolkningsbaserat hälsofrämjande arbete.


Ett sätt att arbeta hälsofrämjande inom primärvården är genom riktade hälsov smallestal, som erbjuds till olika åldersgrupper i de flesta regioner i Sverige idag. Riktade hälsov smallestal innebär att befolkningen i de olika åldersgrupperna får svara på frågor som är relaterade till deras hälsa. De får också ta blodprover, blodtryck och en del andra mått i samband med hälsov smallestalet. Den som deltar i hälsov smallestalet får utifrån sina svar i frågeformulären och resultatet av blodprover och mått sedan en hälsos profil, som i studierna i denna avhandling har varit en Hälsokurva där hälsoriskerna markeras från grönt (låg risk) till rött (hög risk). Under hälsov smallestalet samtalar den som deltar tillsammans med hälsok- och sjukvårspersonal om både resurser samt frisk och riskfaktorer utifrån ett motiverande samtal. Riktade hälsov smallestal kan underlätta för människor att förstå sin hälsosituation och hur olika levnadsvanor, friskfaktorer och risker inverkar på varandra. I hälsov smallestalet får människor stöd att upptäcka sina egna resurser, få motivation och finna en mening i att förändra sina levnadsvanor i en mer hälsosam riktning.

Människor med lägre socioekonomi är generellt sett mindre fysiskt aktiva och har ofta sämre hälsa än de som har en högre socioekonomi. Studierna i den här avhandlingen speglar framför allt socioekonomi med utgångspunkt från dem som själva uppgett att de har ekonomiska bekymmer. Det har också visat sig att ekonomiska bekymmer kan ge lägre livstillförsäljning, lycka, självskattad hälsa och skattning av vitalitet samt större risk för ojämlikhet i hälsa.

Det behövs mer kunskap om relationen mellan fysisk aktivitet och hälsa mellan och inom socioekonomiska grupper.

Det övergripande syftet var att från ett salutogent perspektiv öka förståelse för relationen mellan fysisk aktivitet och hälsa i den vuxna befolkningen, med ett särskilt fokus på de som har ekonomiska svårigheter. Syftet var dessutom att validera frågor om fysisk aktivitet och att utforska människors erfarenheter av fysisk aktivitet utifrån ett perspektiv av känsla av sammanhang. Alla studierna har gjorts med riktade hälsoamtal som utgångspunkt.

I studierna i avhandlingen har vi tittat på fysisk aktivitet i förhållande till hälsa, livskvalitet, en känsla av att ha kontroll över sin hälsa och tillvaro samt vitalitet som exempelvis hur pigg någon känner sig.

I den första studien har deltagarna fått använda två apparater, en ActiGraph och en activePAL för att mäta fysisk aktivitet i en vecka före besöket. ActiGraph, mäter personens rörelser och activePAL, registrerar om personen sitter, står eller ligger ned. Resultatet av mätningarna som gjordes jämfördes med vad deltagarna svarat i ett intervjuformulär om hur mycket fysisk aktivitet och hur mycket tid de var stillasittande.

I den andra och tredje studien hade deltagarna i samband med sitt riktade hälsoamtal svarat på frågeformulär, som analyserna utgick ifrån. De som
ingick i den tredje studien hade också svarat att de hade ekonomiska svårigheter.

I den fjärde studien gjordes intervjuer efter hälsovamtälet med personer som hade ekonomiska bekymmer, men som ändå hade minst 750 poäng (motsvarande ca 150 minuter) fysisk aktivitet per vecka. Deltagarna beskrev hur de mådde när de gjort fysisk aktivitet, vad som var hinder för att göra fysisk aktivitet, vad som kunde vara en hjälp för dem att samt vad som motiverade dem att vara fysisk aktiva.

Resultaten i den första studien avhandlingen visar att intervjuformuläret för fysisk aktivitet och formuläret för stillasittande tid kan användas i riktade hälsovamtal, även om personalen får ta med sig i sin rådgivning att det är självskattade vården och att deltagarna generellt hade en tendens att underskatta sin stillasittande tid.

I den andra studien visas att fysiskt aktiva personer med ekonomiska svårigheter hade nästan samma odds för en god självskattad hälsa som den grupp som inte hade ekonomiska svårigheter, men som hade en låg fysisk aktivitet.

I den tredje studien visas också att personerna med ekonomiska svårigheter och en hög fysisk aktivitet oftare beskrev att de hade en högre tilltro till att själv kunna förändra tillvaron och känna att de var piggare och mer energiska än de som hade en lägre fysisk aktivitet.

Resultaten av den sista studien, där intervjuer gjordes, visar att deltagarna var medvetna om många hälsovinsterna som fysisk aktivitet kan ge. Deltagarna var också medvetna om de hinder som de personligen hade för att kunna vara fysiskt aktiva. De gjorde upp en plan för hur de genomförde sin fysiska aktivitet. De använde sina resurser, utifrån sin situation och sin inre motivation och drivkraft, för att nå målen för fysisk aktivitet. Deltagarna beskrev också nyttan de hade av sin fysiska aktivitet, såsom mindre smärta, bättre sömn och aptit, att de kände sig piggare och gladare samt mådde allmänt bättre.

Den här avhandlingen visar att det är viktigt att arbeta för att öka den fysiska aktiviteten hos befolkningen. Avhandlingen kan ge djupare kunskap och förståelse för relationen mellan fysisk aktivitet och hälsa samt för de fördelar
som fysisk aktivitet ger, i förhållande till socioekonomi. Den kan också vara en hjälp i att vidareutveckla riktade hälsosamtal för att på ett salutogent sätt ge, framför allt människor med lägre socioekonomi, möjlighet att använda sina resurser för att öka sin fysiska aktivitet och på så sätt också förbättra sin hälsa nu och i framtiden.
15. Acknowledgements

Many people have supported, encouraged, inspired, and guided me during my PhD studies. I want to express my deepest appreciation and gratitude to all of you who, in different ways, have contributed to this work.

-Eleonor Fransson, my main supervisor, for your invaluable engagement, knowledge, guidance, and support and for always being available when I have needed you. Your friendly way of giving constructive responses, with a sense of the big picture and the details, has contributed to the work and given me motivation.

-Marie Golsäter, my co-supervisor, for your engagement and never-ending support, your insightful comments and criticism, always in a friendly way and your broad knowledge of the qualitative research area, which has contributed to this work. You also were there for me and encouraged me during the hard days.

-Hans Lingfors, my co-supervisor, for you have shared so much of your outstanding knowledge in this area both for this thesis and in the work at Futurum. You have shared your insightful comments in a friendly way to contribute to this thesis. You have also supported me when I have needed it.

-Margareta Kristensson, my co-author, for the permission to use the LSH data for two studies in this thesis. You have also contributed to this work with your great knowledge and insightful comments.

-Bo Rolander, my co-author, for all your help with discussing statistical issues and your insightful comments and encouragement.

-To everyone who has contributed to data and collected data in this work.

-Futurum the Academy for Health and Care for the financial and other support. Especially Boel Andersson Gäre, who gave me the chance to perform this thesis. The present directors of Futurum Staffan Hägg and Margaretha Stenmarker. The medical library for all the help you have given. All my supportive colleagues at Futurum, especially Yvonne Pantzar, Elisabeth
Norén, Emma Bergström, Marit Eriksson, Eva Karin Hultgren, Britta Aldrin, Christina Lannering and Gunnar Albinsson.

-Jönköping University, and the Research School of Health and Welfare and its directors Bengt Fridlund and Jan Mårtensson for advice and support during over the years. Kajsa, Karolina, Minna, Åsa and Cecilia the Research Coordinators for help and support. Stefan Carlstein at Jönköping University Library and. Görgen Ovinder from the IT helpdesk for t always being so service-minded and supportive.

-Jönköping Academy for being my research environment and support and the A.D.U.L.T research group.

-The Research School is a place with a warm atmosphere and supportive collages. Thank you to all my amazing PhD student colleagues and friends, past and present. Anna, Paula and Isabelle for being wise friends in this work and Emelie, Catarina, Kristina, Magdalena, Johanna, Lotta, Malin, Julia, Anette, Andrea, Louise, Elin, Torbjörn, and Annika for all the small and big talks, laughs and support making the path easier to travel.

-The reviewers of my RSP, half- time and final seminars for taking your time to read my work and give valuable feedback and have a good discussion.

-HFS Theme group for Targeted Health Dialogues- thank you for encouraging and inspiring me in this work.

-All my friends for giving me inspiration. Special thanks to Marie, Maria, Ann, Johanna and Karin for sharing the ups and downs in life.

-Thanks to my family, I love you and need you! My husband Mats, our son Daniel and his wife Felicia. Our grandchildren, Junia and Matteo, you two are a big light in my life and remind me of what really is important. Our son David and his fiancée Valentina. I could not have done this without you all.

-Thank God, for keeping me up every day and helping me to climb the mountains and swim in the River of Life.
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To do or not to do?

Physical activity in relation to socioeconomic status and health – a salutogenic perspective in the context of targeted health dialogues

This thesis aimed, from a salutogenic perspective, to increase the understanding of the relationship between physical activity (PA) and health in the adult population, with a particular focus on people with economic difficulties. A further aim was to validate questions about PA and to explore the people’s experiences of PA from a sense of coherence perspective, all in the context of targeted health dialogues.

The findings of this thesis showed that an interview form and a single-item question about sedentary time could be considered as acceptable for use in Swedish targeted health dialogues. Furthermore, people with low SES and high PA were shown to have the same odds of reporting good self-rated health compared to those with low physical activity and high socioeconomic status. The findings also showed that within the group of people with self-reported economic difficulties, higher levels of PA were related to better mastery and more vitality. The findings of the qualitative interviews showed that it is essential for the participants to have an awareness of the health benefits of PA and their challenges in performing PA. The participants also constructed a plan to follow while utilising their resources, and their developed intrinsic motivation to achieve the PA recommendations and gain the PA benefits.

This thesis brings a deeper knowledge and understanding of the health perspective of PA. This knowledge can be used to further develop the targeted health dialogues in a salutogenic way. It will give people, especially those with lower SES, the opportunity to use their resources to increase PA and thereby improve their future health.

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ISSN 1654-3602
ISBN 978-91-88669-42-1 (online version)