

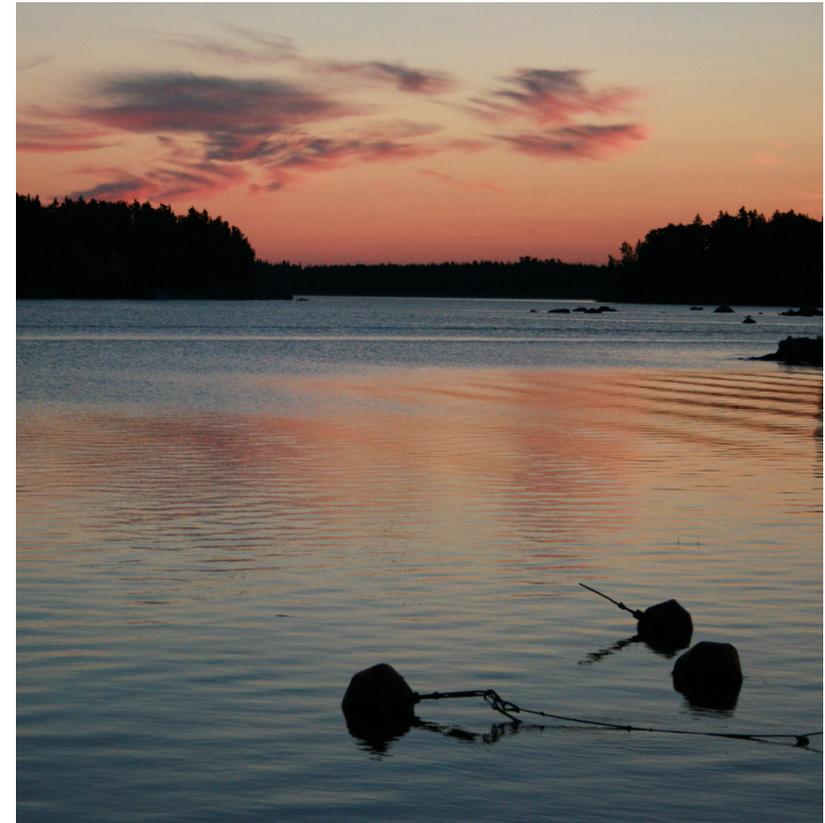
Anna K Forsman

The Importance of Social Capital in Later Life

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Mental Health Promotion and Mental Disorder Prevention among Older Adults



Anna K Forsman

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Anna K Forsman

Doctoral thesis at the Nordic School of Public Health NHV, Gothenburg, Sweden, 2012



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Nordic School of Public Health
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Nordic School of Public Health NHV

Box 121 33

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Sweden

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Abstract

Background Mental health problems among older adults are a central public health problem. Depressive disorders are among the most prevalent mental disorders in later life. Maintaining good health and experiencing well-being in later life are important for the growing population of older adults, enabling them to enjoy life and participate in society for longer.

Aims The overall aim of the thesis is to examine how mental health and mental well-being can be promoted and how the incidence and prevalence of depressive symptoms and disorders can be prevented among older adults. The specific aims of the included studies are to examine the associations between mental ill-health (depression and psychological distress) and social capital among older adults, as well as to collect and evaluate the effect of psychosocial interventions for the primary prevention of depressive disorders. Another specific aim is to provide a better understanding of how social capital influences the experienced mental well-being among older adults.

Methods Population-based survey data collected in Finland and Sweden in 2008 and 2010 were used and logistic regression analyses were conducted to examine the associations between depression and psychological distress among older adults (65+) and various social capital components. A systematic review and meta-analysis were conducted to evaluate the effect of psychosocial interventions on depressive symptoms, functional level and quality of life. Furthermore, two independent sets of qualitative data material – collected through two focus group interviews and an open-ended question included in a Finnish population-based survey from 2008 – were used in order to identify views on the causal mechanisms between mental well-being and social capital in later life (60+).

Results Restricted social networks with regard to both quantity and quality aspects were found to associate with depression and psychological distress in later life as defined in this thesis. Low structural and cognitive social capital are both significant depression covariates in older adults, although the findings were somewhat inconclusive from the association studies. Low frequency of social contacts with friends and neighbours and experienced mistrust in friends were all significantly related to depression, while no statistically significant connection was found between depression and experienced mistrust in neighbours. Further, restricted access to

instrumental social support was statistically significantly associated with depression, while other cognitive components of social capital, such as experienced general mistrust, as well as having a limited number of people to count on or who are concerned about you were significantly associated with psychological distress. In addition, based on both quantitative and qualitative data the findings of this thesis highlight the effectiveness and subjective importance of social activities for the maintenance of mental health and well-being among older adults. The social activities are an important mental health resource among older adults because of the accompanied sense of belonging to a social group, as well as feelings of purpose with regard to everyday life and hope for the future. The social activities evaluated in the systematic review and meta-analysis significantly reduced depressive symptoms when compared to no-intervention controls. However, the systematic review also revealed the scarce research base of psychosocial interventions, as only a small number of studies were included and many were characterised by a small or no effect.

Conclusions The findings illustrate the need to actively maintain the social networks and interactions of older people in order to promote mental health and prevent mental ill-health. Older people experiencing low-level social capital are more likely to suffer from mental ill-health and this risk group should have access to initiatives that empower social networking and a maintained rich social life. In addition, the findings highlight the significant potential of psychosocial interventions as they support active and healthy ageing when appropriately implemented.

Keywords Mental health promotion, mental disorder prevention, older adults, depression, social capital, psychosocial interventions, mental health covariates

Sammanfattning

Bakgrund Psykisk ohälsa hos äldre är ett viktigt folkhälsoproblem. Depressiva syndrom utgör ett av de vanligast förekommande psykiska funktionshindren. Det blir allt viktigare att hälsan och välbefinnandet upprätthålls i den växande äldre befolkningen, eftersom det möjliggör för de äldre att längre upp i åldrarna njuta av livet och att vara delaktiga i samhället.

Syfte Avhandlingens övergripande syfte är att studera hur psykisk hälsa och psykiskt välbefinnande kan befrämjas och hur uppkomsten och förekomsten av depressiva symptom och sjukdomar kan förebyggas hos äldre. De specifika syftena för studierna inkluderade i avhandlingen är att undersöka sambanden mellan psykisk ohälsa (depression och psykisk belastning) och socialt kapital hos äldre personer, samt att samla in och utvärdera effekten av olika psykosociala interventioner för primärprevention av depressiva syndrom. Ett annat specifikt syfte är att ge en bättre förståelse för på vilket sätt socialt kapital påverkar det upplevda psykiska välbefinnandet hos äldre.

Metod Befolkningsbaserade enkätdata insamlade i Finland och i Sverige år 2008 och 2010 användes och logistiska regressionsanalyser utfördes för att undersöka sambanden mellan depression och psykisk belastning hos äldre personer (65+) och olika komponenter av socialt kapital. En systematisk litteraturoversikt och meta-analys sammanställdes för att utvärdera effekten av olika psykosociala interventioner på depressiva symptom, funktionsförmåga och livskvalitet. För att identifiera kausala mekanismer mellan socialt kapital och psykiskt välbefinnande hos äldre (60+) användes dessutom två oberoende kvalitativa datamaterial – insamlade med hjälp av två fokusgruppintervjuer och en öppen fråga som ingick i den finländska befolkningsenkäten från 2008.

Resultat Kvantitativt och kvalitativt begränsade sociala nätverk står i samband med depression och psykisk belastning bland äldre så som dessa definieras i avhandlingen. Lågt strukturellt och kognitivt socialt kapital står båda signifikant i samband med depression hos äldre, även om forskningsresultaten från sambandsstudierna var något osamstämmiga. Låg frekvens av social kontakt med vänner och grannar och upplevd misstro till vänner hade alla ett statistiskt signifikant samband med depression, medan man inte kunde hitta något signifikant samband mellan depression och upplevd misstro till grannar. Dessutom hittades ett statistiskt signifikant

samband mellan begränsad tillgång till instrumentellt socialt stöd och depression, medan andra komponenter av kognitivt social kapital – så som att uppleva generell misstro, att ha få personer man kan lita på, samt att uppleva ett begränsat intresse från omgivningen för vad man gör – kunde kopplas till psykisk belastning. I tillägg betonar avhandlingsresultaten, som är baserade på både kvantitativa och kvalitativa data, effekten och den subjektiva nyttan av sociala aktiviteter för upprätthållandet av den psykiska hälsan och välbefinnandet hos äldre personer. De sociala aktiviteterna är en viktig resurs för den psykiska hälsan bland äldre därför att de ger en känsla av tillhörighet till en social grupp, samtidigt som de ger mening till vardagslivet och en känsla av hopp för framtiden. De sociala aktiviteter som utvärderades i den systematiska översikten och meta-analysen minskade signifikant de depressiva symptomen, jämfört med kontrollgrupperna. Den systematiska översikten pekar emellertid också på bristen på forskning om psykosociala interventioner, eftersom få studier kunde inkluderas och dessa kännetecknades dessutom av en liten eller av avsaknad av effekt.

Slutsatser Avhandlingens resultat illustrerar behovet av att aktivt upprätthålla de äldres sociala nätverk och interaktion för att främja deras psykiska hälsa och förebygga psykisk ohälsa. Äldre som har ett begränsat socialt kapital löper större risk för att lida av psykisk ohälsa och därför bör denna riskgrupp ha tillgång till insatser som stöder uppbyggandet och upprätthållandet av sociala nätverk och ett rikt socialt liv. I tillägg visar avhandlingen på den stora potential som psykosociala interventioner har med tanke på att de kan stödja ett aktivt och hälsosamt åldrande om de används på rätt sätt.

Nyckelord Främjande av psykisk hälsa, förebyggande av psykisk ohälsa, äldre, depression, socialt kapital, psykosociala interventioner, den psykiska hälsans sambandsfaktorer

Tiivistelmä

Tausta Ikäihmisten mielenterveysongelmat ovat keskeisiä kansanterveysongelmia. Masennus on iäkkäiden yleisimpiä mielenterveyden häiriöitä. Hyvän terveyden ja koetun hyvinvoinnin säilyttäminen myöhemmällä iällä ovat tärkeitä yhä suurenevalle ikääntyvälle väestölle, koska ne mahdollistavat elämästä nauttimisen ja yhteiskuntaelämään osallistumisen pidempään.

Tavoitteet Tämän väitöskirjan päätavoitteena on tutkia miten mielenterveyttä ja psyykkistä hyvinvointia voidaan edistää ja miten ikäihmisten masennusoireiden ja -häiriöiden ilmenemistä ja esiintyvyyttä voidaan ehkäistä. Väitöskirjaan sisältyvän tutkimuksen erityinen tavoite on tarkastella iäkkäiden aikuisten mielenterveysongelmien (masennus ja psyykinen kuormittuneisuus) ja sosiaalisen pääoman välistä suhdetta sekä kerätä ja arvioida psykososiaalisten interventioiden vaikutuksia ikääntyneiden masennushäiriöiden primaarissa ehkäisyssä. Toinen tutkimuksen erityinen tavoite on lisätä ymmärrystä siitä, miten sosiaalinen pääoma vaikuttaa ikäihmisten koettuun psyykkiseen hyvinvointiin.

Menetelmät Tutkimuksessa käytettiin Suomessa ja Ruotsissa vuosina 2008 ja 2010 väestökyselyllä kerättyä aineistoa, johon tehtyjen logististen regressioanalyysien tarkoituksena oli tutkia yhteyksiä ikäihmisten (65+) masennuksen ja psyykkisen kuormittuneisuuden ja sosiaalisen pääoman eri komponenttien välillä. Systemaattisella kirjallisuuskatsauksella ja meta-analyysillä arvioitiin psykososiaalisten interventioiden vaikutusta masennusoireisiin, toimintakykyyn ja elämänlaatuun. Tämän lisäksi käytettiin kahta toisistaan riippumatonta laadullista aineistoa, joiden perusteella tunnistettiin sosiaalisen pääoman vaikutuksia psyykkiseen hyvinvointiin vanhuusiässä (60+). Nämä aineistot kerättiin kahdesta fokusryhmähaastattelusta ja Suomessa vuonna 2008 toteutuneen väestökyselyn avoimesta kysymyksestä.

Tulokset Tutkimuksen mukaan myöhemmällä iällä niin määrällisesti kuin laadullisestikin rajalliset sosiaaliset verkostot ovat tässä väitöskirjassa käytetyn määritelmän mukaan voimakkaasti yhteydessä masennukseen ja psyykkiseen kuormittuneisuuteen. Matala rakenteellinen ja kognitiivinen sosiaalinen pääoma ovat molemmat merkittäviä ikäihmisten masennuksen ennustekijöitä, joskaan nämä tulokset eivät ole täysin yhdenmukaisia tutkimuksessa käytettyjen aineistojen perusteella. Ikäihmisten vähäiset sosiaaliset kontaktit

ystäviin ja naapureihin sekä koettu epäluottamus ystäviä kohtaan liittyivät kaikki merkittävästi masennukseen, vaikkakaan tilastollisesti merkitsevää yhteyttä masennuksen ja naapureihin kohdistuvan epäluottamuksen välillä ei löytynyt. Sen sijaan vähäisen käytännössä saadun sosiaalisen tuen ja masennuksen välillä oli tilastollisesti merkitsevä yhteys. Samoin psyykinen kuormittuneisuus oli merkitsevästi yhteydessä sosiaalisen pääoman kognitiivisiin komponentteihin, kuten koettuun yleiseen epäluottamukseen ja myös vain vähäiseen määrään sellaisia ihmisiä, joihin voi luottaa ja jotka välittävät. Tämän lisäksi väitöskirjan määrälliseen ja laadulliseen aineistoon perustuvat tulokset korostavat sitä, että ikäihmisten mielenterveyden ja psyykkisen hyvinvoinnin säilyttämiseksi sosiaaliset aktiviteetit ovat sekä yksilöllisesti merkittäviä että tehokkaita. Sosiaaliset aktiviteetit ovat tärkeä iäkkäiden mielenterveyden resurssi, koska ne luovat tunteen sosiaaliseen ryhmään kuulumisesta, jokapäiväisen elämän merkityksellisyydestä ja toivosta tulevaisuudessa. Systemaattisen kirjallisuuskatsauksen ja meta-analyysin perusteella sosiaaliset aktiviteetit vähensivät merkittävästi masennusoireilua vertailuryhmiin nähden. Systemaattinen katsaus kuitenkin osoittaa, että psykososiaalisista menetelmistä on olemassa vain niukasti näyttöön perustuvaa tutkimusta. Tästä syystä tämä aineisto jäi pieneksi myös tässä tutkimuksessa – lisäksi systemaattisen katsauksen aineisto osoitti psykososiaalisten interventioiden vaikuttavan ikääntyneiden mielenterveyteen vain vähän tai ei lainkaan.

Johtopäätökset Väitöskirjan tulokset osoittavat, että mielenterveyden edistämiseksi ja mielenterveysongelmien ehkäisemiseksi on tarpeellista aktiivisesti ylläpitää ikäihmisten sosiaalisia verkostoja ja vuorovaikutusta. Ne iäkkäät, joilla on vähäinen sosiaalinen pääoma kärsivät muita todennäköisemmin mielenterveysongelmista. Tälle riskiryhmälle tulee löytää keinoja, joilla vahvistetaan sen sosiaalista verkostoitumista ja rikastutetaan sen sosiaalista elämää. Tämän lisäksi tulokset korostavat niitä merkittäviä mahdollisuuksia, joita oikealla tavalla toteutetuilla psykososiaalisilla interventioilla on tukea aktiivista ja tervettä ikääntymistä.

Avainsanat Mielenterveyden edistäminen, mielenterveyden häiriöiden ehkäisy, ikäihmiset, masennus, sosiaalinen pääoma, psykososiaaliset interventiot, mielenterveyteen yhteydessä olevat tekijät

List of original publications

This thesis is based on the following articles, which in the text will be referred to by their Roman numerals:

- I** Forsman, A.K., Nyqvist, F., Schierenbeck, I., Gustafson, Y. & Wahlbeck, K. (2012). Structural and cognitive social capital and depression among older adults in two Nordic regions. *Aging & Mental Health*, doi:10.1080/13607863.2012.667784 (published online ahead of print).
- II** Forsman, A.K., Nyqvist, F. & Wahlbeck, K. (2011). Cognitive components of social capital and mental health status among older adults: A population-based cross-sectional study. *Scandinavian Journal of Public Health*, 39, 757-65.
- III** Forsman, A.K., Schierenbeck, I. & Wahlbeck, K. (2011). Psychosocial interventions for the prevention of depression in older adults: Systematic review and meta-analysis. *Journal of Aging and Health*, 23, 387-416.
- IV** Forsman, A.K., Herberts, C., Nyqvist, F., Wahlbeck, K. & Schierenbeck, I. (2012). Understanding the role of social capital for mental wellbeing among older adults. *Ageing & Society*, doi:10.1017/S0144686X12000256 (published online ahead of print).

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List of abbreviations

ASSIA	Applied Social Sciences Index and Abstracts
CENTRAL	The Cochrane Central Register of Controlled Trials
CI	Confidence interval
CIDI-SF	Composite International Diagnostic Interview Short Form
CINAHL	The Cumulative Index to Nursing & Allied Health Literature
DSM	Diagnostic and Statistical Manual of Mental Disorders
GDS	Geriatric Depression Scale
GERDA	Gerontologisk Regional Databas och Resurscentrum [Gerontological Regional Database and Resource Centre]
GHQ	General Health Questionnaire
ICD	International Classification of Diseases
ICF	International Classification of Functioning, Disability and Health
MDD	Major depressive disorder
OECD	The Organisation for Economic Co-operation and Development
OpenSIGLE	Open System for Information on Grey Literature in Europe
OR	Odds ratio
OSS	Oslo Social Support Scale
SMD	Standardised mean difference
UN	The United Nations
WHO	World Health Organization

1 Introduction

The rapid societal development and related social, environmental, medical and lifestyle changes contribute to people living longer. Maintaining good health and experiencing well-being among the older population is important, enabling older adults to enjoy life and participate in society for longer (Jané-Llopis & Gabilondo, 2008). Many risk factors for mental ill-health are commonly experienced in old age. Thus, mental disorders are an extensive public health problem, with depressive disorders being among the most prevalent in later life. The promotion of mental health and mental well-being, as well as mental disorder prevention in older adults need to be prioritised at all levels of society. Benefits on an individual level relate to healthy ageing and increased experienced well-being (Cattan, 2009) and on a societal level the benefits are linked to decreased burden of disability and related costs (Knapp et al., 2011; Smit et al., 2006).

1.1 Old age

Although there are commonly used definitions of old age and ageing, there is no general agreement on the chronological age at which a person can be defined as old. However, most developed world countries use the chronological age of 65 years and over as a definition of an older person (Giannakouris, 2008). This definition is based on the fact that people become eligible for full pension benefits at this age in most developed countries; however, the eligibility for retirement has been under change and the official retirement age is currently rising due to an ageing population and increased life expectancy (OECD, 2011). The United Nations has agreed on a cut-off of 60 years and over with respect to the older population, while people aged 80 years and over can be referred to as 'very old' (UN Department of Economic and Social Affairs, 2002).

Worldwide, around ten per cent of the population is above 60 years of age, and by 2050 this proportion is expected to have doubled (UN Department of Economic and Social Affairs, 2002). Furthermore, the age group of 80 and over is increasing most rapidly in Europe (Eurostat,

2011b). Consequently, major public health challenges will include provision of social and health-related services and care, as well as adapting other public resources related to the everyday living and functioning of this population.

Considering the Nordic context of this thesis, it is noteworthy that life expectancy in the Nordic countries is among the highest in the world; in 2009, 17 and 18 per cent of the total population in Finland and Sweden respectively was 65 years or older, while around five per cent was 80 years or older (Eurostat, 2011b). In the Nordic countries, the population of 65 years and above is 29 per cent of the working age population (i.e. 20-64 years) and the demographic dependency ratio will further increase (Nordic Council of Ministers, 2011). Therefore, it is thought that the proportion will rise to 42 per cent in 2030 – and even higher when considering the EU member states (Eurostat, 2011b; Nordic Council of Ministers, 2011). In order to balance the consequences of this trend that is apparent in the Western world, policymakers have considered ways of creating more flexible working opportunities that may encourage older people to remain in working life, such as part time work arrangements and benefits upon prolonged working careers. In addition, governmental pension reforms and plans to raise the retirement ages are also on-going across Europe due to increased life expectancy and healthy life years (Eurostat, 2011b; Giannakouris, 2008).

Drawing on the focus of this thesis, it is essential to consider factors other than chronological age when defining who belongs to the older population. These are for example different types of social roles, functions and related expectations (e.g. retirement from work, grandparenthood) constructed in society, which depend on factors related to culture and traditions (Gorman, 1999). In line with this, Bourdieu (1986) defines and uses the term cultural capital, which is a concept that encompasses knowledge, skills, educational level and other similar advantages which raise a person's status in society (Bourdieu, 1986). These are also important factors that influence how ageing people are perceived in their social context. In the developed world the chronological age and milestones usually mark life stages, while in many developing countries old age is considered to begin when active contribution to society is no longer possible and replaced with other social roles and assignments (Freund & Smith, 1997; Gorman, 1999).

1.2 Definitions of mental health and mental well-being

The creation of the United Nation's specialised organisation the *World Health Organization* (WHO) had a significant impact on the field of public health in the late 1940s. In 1946, the World Health Organization defined health as a state of complete physical, mental and social well-being. This definition represented a holistic viewpoint that takes the different dimensions and determinants of health into account, including psychological and social dimensions. Through this statement, the focus shifted from a strict medical orientation on health to the subjective well-being of the population, drawing on physical, mental and social perspectives. Hence, WHO's definition contradicted the biomedical, categorical model of health, which looks at health and ill-health as static opposites where the absence of ill-health equals the presence of health (for example Boorse, 1977). In 1987 a fourth health dimension of spiritual well-being was introduced (Mahler, 1987).

Although the concept of health was expanded during this revolving post-war period, health was still seen as a dichotomy between health and disease and the health definition by WHO was criticised for being a rigid expression of absolute health. It would instead take decades until the introduction of dynamic health theories, which focus on health as a resource for everyday life and on health promotion. This perspective could be seen as the beginning of the post-modern public health arena, with the launch of the first version of the *Health for All* policy document in 1977 (WHO, 1981) and the *Ottawa Charter* (WHO, 1986), as well as the theoretical framework of salutogenesis (Antonovsky, 1979, 1987) being important milestones.

In line with the multidimensional view of health status, health can be defined according to the salutogenetic model, which describes the wide continuum between health and ill-health (Antonovsky, 1979, 1987). Within this perspective, the health status is dynamic and influenced by both dimensions on the continuum. The key concepts of this model are people's health resources and their capacity to both comprehend their situation and use the health resources available in order to cope with ill-health and other stressors in life (Antonovsky, 1979, 1985, 1987; Lindström & Eriksson, 2005).

In 2005, WHO (2005a) defined mental health as a state of well-being in which every individual realises his or her own potential, can cope with normal stresses of life, is capable of working

productively and is able to make a contribution to his or her community. This definition is based on the aim to provide equal prerequisites for an active and productive life. Positive mental health and experienced mental well-being include the individual's ability to perceive, comprehend and interpret the living surroundings, adapt to these and change them if necessary, as well as communicate with other people (Lahtinen et al., 1999). According to these definitions, mental health also contributes to our ability to cope with and manage changes, transitions and stressful life events.

In line with the salutogenetic model and its contribution to the theoretical frameworks of the health concept, Keyes (2003; 2005) outlines the positive, multidimensional perspective by introducing the two-continuum model of mental health. Keyes emphasises that individuals can suffer from symptoms of mental ill-health and simultaneously experience mental well-being. He uses the term flourishing, which is defined as a state of complete mental health in which people feel positive emotions towards life and are emotionally, socially and psychologically functioning well. According to this perspective, the opposite of flourishing is languishing, which is a state of experienced dysfunction despite absence of mental disorders – a state between complete mental health and mental disorders at the other end of the mental health continuum (Keyes, 2002).

Many of the definitions presented above emphasise positive functioning in their descriptions of mental health and well-being. The functional model of mental health (Lahtinen et al., 1999) describes mental health as a foundation for experienced mental well-being and effective functioning in individuals. Further, mental well-being is viewed as part of a process, where positive functioning and social interaction in various social contexts are emphasised for their important impact on mental health and well-being in all ages. According to the functional model, mental health and well-being are defined as a balanced interaction between the individuals and their environment. The model also stresses that mental health is influenced by numerous factors on both individual and societal level (e.g. functional level of the individual, social networks and support and political strategies and cultural values in society).

The definitions of health, mental health and mental-well-being reviewed in this chapter can be applied across the life span, however, some factors are pointed out as being especially relevant to older people's mental health. For example, mental health of older adults is associated with positive and active ageing, where they can remain in control over health determinants and make their own lifestyle choices (Cattan & Tilford, 2006; Swedish National Institute of Public Health,

2007). Additional risk factors for mental ill-health among older people are the loss of social roles (e.g. retirement), changes in lifestyle and physiological and cognitive decline related to the ageing process (Cattan & Tilford, 2006; Swedish National Institute of Public Health, 2007). The present thesis focuses on mental health and ill-health of older people and it uses a theoretical framework which represents the holistic viewpoint, where psychosocial mental health covariates are taken into account and where the importance of positive social and psychological functioning is emphasised.

1.3 Mental health and depression among older adults from a public health perspective

A public health problem is defined as a problem that affects a whole population as opposed to specific individuals (Childress et al., 2002). A public health problem can be associated with several determinants of health, causing a multilevel problem which impacts the individuals affected by the disorder, their families and their social networks, as well as society as a whole (Childress et al., 2002). The overall aim of public health work is to prolong life and improve quality of life among entire populations through health promotion and disease prevention initiatives (WHO, 1998). Health promotion was defined at the first international conference on health promotion in Ottawa in 1986 (WHO, 1986) as a process of enabling people to improve and increase control over their health status. Thus, through the Ottawa Charter policy document, the human rights of active participation and involvement was emphasised as a corner stone of mental health promotion. The Ottawa Charter (1986) has since then been followed by six other health promotion conferences, the latest taking place in Bangkok (2005) and Nairobi (2009). These two conferences emphasised the importance of sustainability, policy coherence and co-operation across world nations (WHO, 2005b), as well as the need to extend health promotion capacity in developing countries (WHO, 2009).

Both the Swedish national public health program (*Health on Equal Terms*, Swedish National Institute of Public Health, 2010) and the Finnish national public health program (*Health 2015*, Finnish Ministry of Social Affairs and Health, 2001) hold health promotion as their main focus and emphasise the importance of intersectorial and multilevel co-operation in society in order to create health-promoting settings. The individual's responsibility for their own health is also underlined in both programmes, stressing the impact of lifestyle choices and actions.

Public mental health, of which mental health promotion is an essential aspect, takes a population-based approach to understand and address risk and protective factors for mental health (Friedli, 2004). Public mental health aims for a strategic framework to address the wide-perspective predictors of mental health; to improve the mental health of the whole population; and to reduce long-term inequalities in the distribution of mental ill-health (Friedli, 2004).

Mental health promotion and the prevention and early detection of depressive symptoms and depressive disorders among older adults are urgent public health issues. This is due to the ageing population constantly growing in the Western World (UN Department of Economic and Social Affairs, 2002) and that depressive symptoms and disorders are among the most common mental health problems among older adults (Luijendijk et al., 2008). The consequences of depressive disorders are notable on many levels of society. For example, on an individual level, older people suffering from depression are at higher risk of decreased functionality and mortality compared to non-depressed older people (Bergdahl et al., 2005; Blazer et al., 2001). On a societal level, depressive disorders are associated with increased resource burden related to increased utilisation of health and social services among older adults (European Commission, 2006; Williams, 2005). Thus, the societal benefits of implemented mental health promotion and early mental ill-health prevention should be noted alongside the beneficial effects on an individual level.

Health equity is a core element of any healthy ageing strategy. Mental health promotion policies and strategies should ensure that all older adults have equal prerequisites for achieving good mental health (Swedish National Institute of Public Health, 2007). Inequalities in mental health and mental health resources are prominent among the older population in Europe, where the prevalence of mental ill-health differs according to gender, age and sociodemographic status (Landesinstitut für den Öffentlichen Gesundheitsdienst NRW, 2003). Older adults are also more exposed to health inequalities due to heightened risks of low socio-economic status compared to younger age groups (Twena & Alaheim, 2005). In addition, inequalities exist regarding access to mental health services, while the psychological resources vary on an individual level (Swedish National Institute of Public Health, 2007).

2 Depression

2.1 Definitions and characteristics of depression

Depression can be defined as a state of mood, as a symptom prevalent in many different mental disorders, as a syndrome measured by depression rating scales or as a clinical diagnosis described in diagnostic classifications (Lehtinen & Joukamaa, 1994). How depression is defined and measured should be adapted to the specific purpose and context (e.g. individual experience or objective measurement; research or practice setting), hence the range of various definitions.

A depressive disorder is a mental disorder often accompanied by a significant impairment of psychological, social and physiological functioning. This should not be confused with occasional depressive mood that can also be a normal reaction to disappointments and difficulties in life (American Psychiatric Association, 2000). The diagnostic manuals used by all mental health professionals for the diagnostic process are the *International Classification of Disorders* (ICD-10, WHO, 2007) or the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition* (DSM IV, American Psychiatric Association, 2000).¹ These manuals provide a list of symptoms and specify 1) how many symptoms, 2) for how long and 3) in which combinations these constitute a specific disorder. It is important to note that both DSM and ICD are instruments developed for diagnoses on an individual level and therefore, cannot be applied on a population-level as such.

According to DSM-IV (American Psychiatric Association, 2000), major depression (also named unipolar depression, depressive episode or clinical depression) is a mental disorder characterised by symptoms such as depressed mood and diminished interest or pleasure in nearly all activities, which have been prominent for a period of at least two weeks. Major depression can also

¹A revised version of the DSM (DSM-5) will be published in May 2013. For more information: <http://www.dsm5.org/Pages/Default.aspx>

include symptoms such as a decrease in the everyday functionality, as well as feelings of agitation, despair, worthlessness or guilt, or thoughts of committing suicide. In addition, insomnia, fatigue, loss of energy and a significant change in appetite are common symptoms. According to DSM-IV, the individual must prominently display five or more symptoms during a two-week time period in order to be diagnosed with major depression. A diagnosis of minor depression requires less than five but a minimum of two of the listed typical symptoms.

According to ICD-10, a depressive episode requires that the individual has experienced at least two out of three core symptoms for most of the day, nearly every day for a minimum of two weeks; low mood, feeling tired or general lack of interest (WHO, 2007). According to ICD-10, a depressive episode may be mild, moderate or severe. The severity of an episode is rated based on the number and intensity of associated symptoms, such as sleep disturbance, appetite and weight change, poor concentration, irritability and anxiety and suicidal thoughts.

Among older people, cognitive symptoms (e.g. disorientation, memory loss) seem to coincide with depressive disorders more frequently than among younger age groups (American Psychiatric Association, 2000). Further, common symptoms of depressive disorders in later life are tiredness, insufficient sleep, agitation, lack of motivation and indeterminable chronic physical conditions and pain (Kivelä, 2009). Older adults also often report physical problems rather than emotional problems, resulting in under-diagnosis of depressive disorders (American Psychiatric Association, 2000; Kivelä, 2009). In addition, co-morbidity with both somatic and other mental disorders is often prevalent among older adults suffering from depressive disorders, making it difficult to both recognise and treat the depression adequately (Blazer, 2000). With regard to gender differences, older women more often report symptoms related to mood, while men more frequently report motivation-related symptoms and agitation (Kockler & Heun, 2002).

Extensive criticism has been directed towards the diagnostic manuals and how they are applied, questioning the validity and usefulness of diagnostic criteria and the related consequences of the medicalisation or pathologisation of various conditions on both societal and individual level (Ben-Zeev et al., 2010; Garand et al., 2009). The use of labels to identify and describe a wide range of different individual experiences and difficulties is argued to contribute to the stigmatisation of mental ill-health, often leading to various forms of discrimination and social exclusion of the concerned individuals (Ben-Zeev et al., 2010; Garand et al., 2009; Kulmala,

2006). Although this is valid criticism, the theories and discussions related to stigmatisation will not be further elaborated in this thesis.

In relation to the discussions on the concept of medicalisation, two opposing views can be distinguished regarding the prevalence and distribution of depression among older adults. On one hand, elements of depression (e.g. low mood and tiredness) are commonly and often falsely attributed to old age, because these symptoms are often seen as closely related to the ageing process. On the other hand, a growing body of literature draws on the perspective of active and healthy ageing, highlighting the importance of enabling older adults to stay active and socially engaged for as long as possible (Burbank, 1986; Cattan, 2009). This perspective opposes the view that typical symptoms of depression are related to the normal ageing process. The perspective used for the work of this thesis is the latter, underlining the importance of prevention and early detection of depression in the older population in order to decrease psychological suffering and enable healthy ageing - characterised by quality of life and dignity (Cattan, 2009; Cattan & Tilford, 2006).

Consequently, contrasting the medical definitions of depression (according to DSM-IV and ICD-10), this thesis draws on the psychosocial perspective of depression. Within this perspective, depression is defined as a social phenomenon that is interactively affected by factors on the individual level, as well as factors related to the societal, environmental and socio-cultural context (Blazer, 2005). By contrast to the medical perspective, which is predominated by bio-medical explanations of the origin and burden of mental disorders, the psychosocial perspective highlights the interaction between the individual and his or her social environment and the stressors that make the individual vulnerable (Blazer, 2005).

In line with this perspective, the *International Classification of Functioning, Disability and Health* (ICF) should be mentioned (WHO, 2001). This is an instrument which classifies health and health-related domains from the perspectives of physical, psychosocial and societal functioning. Since an individual's functioning and disability occurs in a context, the ICF instrument also considers social and environmental factors. Further, it acknowledges that disability is experienced by everybody at some point and it aims to shift the focus from cause to impact of various health conditions, as well as from the medical or biological to a psychosocial perspective of functional limitations.

2.2 Prevalence and distribution of depressive disorders

Within the ageing population, depressive disorders are among the most prevalent mental disorders (Luijendijk et al., 2008; WHO, 2004). Around twelve per cent of adults aged 65 or older are affected by depressive disorders in Europe (Copeland et al., 1999; Copeland et al., 2004). The prevalence figures reported for depressive disorders are, however, always dependent on the applied methods for definition and assessment (Pincus et al., 1999). Similar figures (13 %) are presented for older people in Finland, when taking all forms of depressive disorders into account, while around three per cent of people aged 65 years or older suffer from major depression in Finland (Kivelä, 2009). Given the growth of the older adult population in Europe as well as in the Nordic countries (Eurostat, 2011b), depressive disorders in older adults are set to become an increasingly critical public health issue (Jané-Llopis & Gabilondo, 2008).

The onset of depression and its recurrence are influenced by a wide range of risk and protective factors at different stages of the lifespan, including biological, psychological and social factors (Cuijpers et al., 2008). According to an extensive body of research gender is a prominent risk factor, depressive disorders being more prevalent among women than men throughout the whole life cycle, including the old (Barry et al., 2008; Cole & Dendukuri, 2003; Steffens et al., 2000). The association between poor socio-economic status and the onset of late-life depression has also been highlighted (Smit et al., 2006; Vink et al., 2009).

Despite the fact that age per se is not automatically associated with depressive disorders (Snowdon, 2001), previous research has indicated that the prevalence of depressive symptoms is high among older adults (Harris et al., 2006; Heikkinen & Kauppinen, 2004; Vink et al., 2009). According to this research, depressive disorders and symptoms are more prevalent among the very old than among the younger old. This may be due to the fact that females constitute a higher proportion of the very old and that there is a higher prevalence of various disabilities (i.e. physical or mental) in this group.

Various chronic medical conditions and functional limitations are among the most common risk factors for depressive symptoms (Bisschop et al., 2004) and for the incidence (Heikkinen & Kauppinen, 2004; Smit et al., 2006) and prevalence (Beekman et al., 1995; Beekman et al., 1999) of depressive disorders among older people. Functional limitations often lead to psychosocial consequences such as older people avoiding social activities or activities of daily living due to the fear of falling or hurting themselves (Kempen et al., 2009).

Pain is also significantly associated with the prevalence of depression in older adults (Bonnewyn et al., 2009; Iliffe et al., 2009) and it often has a negative effect on physical performance and activities of daily life. Chronic pain has in previous research been found to increase the risk of depressive symptoms (Chou & Chi, 2005), but the presence of depressive symptoms can also over time heighten the risk of onset of pain (Reid et al., 2003). These reversible associations are typical for a majority of mental health predictors and therefore, more research with a design allowing for causality measurements and targeting the ageing population exclusively are warranted in order to determine the direction of the associations.

3 Mental health, social networks and social roles

As outlined in the following chapters, different mental health promotion approaches are applied in interventions with the aim to promote and support positive mental health or to prevent the occurrence and prevalence of depressive disorders among older adults. In order to plan mental health promotion interventions, knowledge of evidenced psychosocial promoting, protective and risk factors among older adults is needed. Previous research in this field has recognised common mental health promoting factors, as well as protective and risk factors for mental ill-health (such as depressive disorders) among the ageing population (Cattan, 2009; Cattan & Tilford, 2006). However, this thesis focuses specifically on the common psychosocial mental health covariates listed below, which are described from both an individual and a societal perspective.

3.1 Social function and social roles

According to the activity theory (Burbank, 1986; Havighurst & Albrecht, 1953; Lemon et al., 1972), the social context (both on micro and macro level), social interaction and social participation are all key components of mental health and well-being of older people. The theory stresses that maintained social participation and continued social functions and roles from earlier life stages are necessary for mental well-being among ageing individuals (Havighurst & Albrecht, 1953; Lemon et al., 1972). This theoretical framework contradicts the disengagement theory (Cummings et al., 1960; Cummings & Henry, 1961; Havighurst et al., 1968), which perceives disengagement as a natural and unavoidable process that should be accepted in order to maintain mental health and well-being in later life. According to the disengagement theory, older adults will gradually withdraw from their social assignments and roles in society and within their social networks (Cummings et al., 1960; Cummings & Henry, 1961). By contrast, the activity theory highlights that this disengagement process is highly involuntary and unwanted among older adults and is thus a social construction based on cultural values of ageing (Burbank, 1986).

By contrast to the collective perspective, the individual-level perspective on social function and roles focuses on the self-esteem and self-efficacy of the individual. Rogers (1961) proposed that the individual self concept has three different components; self-image based on how you view yourself, self-esteem based on how much you value yourself and your ideal self, which reflects what you wish you were like. According to this theory, our self concept emerges from our interactions with the social environment, our social roles and our capabilities. Also, the work of Rosenberg (1979) emphasises the connection to mental well-being as he stated that self-esteem is a stable sense of personal worth experienced by the individual.

Bandura (1977) developed the concept of self-efficacy, which is similar to the concept of self-esteem, but elaborates on the beliefs of one's own capacity to handle different situations and assignments. Parallels can also be drawn to the theoretical frameworks of mastery (Pearlin & Schooler, 1978) and locus of control (Rotter, 1966), which emphasise the individual's perception and understanding of the possessed abilities and possibilities to manage various life circumstances and expectations encountered.

A major adjustment that is required in later life is the ability to redefine one's self-concept as social roles are removed and replaced by the ageing process (e.g., retirement, functional decline or loss of a life partner). According to previous research, stressful life events and disabilities can impair the self-esteem of older people, risking a decline in mental health (Ryff et al., 2001). On the other hand, social networks and social participation have a positive association with self-esteem (Ryff et al., 2001). Social activities and engagement may enhance the individual's level of self-esteem, as they contribute to the sense of competence in older people (Krause & Shaw, 2000).

Healthy ageing

Healthy ageing or successful ageing is defined as the development and maintenance of optimal mental, social and physical well-being and capacity in older people (Bowling & Iliffe, 2011; Hansen-Kyle, 2005). This is enabled by promoting a healthy lifestyle (Hansen-Kyle, 2005; Sarkisian et al., 2002). Maintaining active roles, engagement and control over one's life can also be related to the principles of activity theory as described above, although the concept of healthy ageing is broader, encompassing other aspects than the psychosocial roles and functions.

The psychological aspects of healthy ageing have, however, not received as much attention as the physical aspects in previous research (Bowling & Iliffe, 2011; Depp & Jeste, 2006). Important psychological aspects related to healthy ageing include mastery, self-efficacy and resilience (Bowling & Iliffe, 2011; Lamond et al., 2008). The connection between consistent social networks and other social aspects and healthy ageing has also been identified (Montross et al., 2006). According to the model of healthy ageing, it is necessary for older people to have an active role in maintaining physical and mental health and optimising their capacity as much as possible until the end of life (Sarkisian et al., 2002). Moreover, depressive symptoms have a significant negative impact on various aspects included in the term healthy ageing, such as physical and emotional functioning, optimism, attitudes towards ageing, sense of mastery and self-efficacy (Vahia et al., 2010).

The European Roadmap for Ageing Research was launched in late 2011, depicting priority themes for future ageing research. This document highlights healthy ageing as one of the core themes that needs to be addressed and aimed for in research in order to increase healthy life expectancy among older people – ‘Healthy ageing for more life in years’ (Futurage, 2011). These statements reflect a research and policy shift from the aim of decreased mortality to the aim of active and healthy ageing. The launched roadmap also emphasises several important principles that are connected both to the healthy ageing concept and to maintaining social roles and engagement in society, such as increased user involvement in research and implementation (Futurage, 2011). In line with these principles, 2012 has been announced as the *European Year for Active Ageing and Solidarity between Generations* (Eurostat, 2011a). This initiative reflects the idea of active ageing; older adults also have the right to fully participate in the activities of their community and in society and to obtain support for independent living. The aim is also to highlight the importance of cooperation and interaction between people of different ages.

3.2 Social networks and interpersonal relationships

Strong and consistent social networks enabling frequent quality social contacts have been found to be associated with positive mental health and resilience in several studies, while the lack of social networks has been related to mental ill-health in later life (e.g. Tiikkainen & Heikkinen, 2005).

By contrast, longitudinal research has reported limited and incoherent social networks as a prominent psychosocial predictor for the incidence and prevalence of depressive symptoms and disorders among older people (Bisschop et al., 2004; Chou & Chi, 2003; Lynch et al., 1999; Steunenbergh et al., 2006). For example, it has been found that low frequency of social contacts and low-level social support are both related to the prevalence of depressive symptoms in older people (Tiikkainen & Heikkinen, 2005). In addition, according to a two-year community-based follow-up study, a lack of consistent social contacts increases the risk of social exclusion and isolation from the social network, which is further associated with depression among people aged 65 years or older (Harris et al., 2003). Previous research has also shown that bereavement, such as losing a life partner or another close family member or long-time friend, is strongly associated with depressive symptoms among older people (Bruce, 2002; Vink et al., 2009).

Loneliness is the subjective and emotional experience of limited social networks and social support (Blazer, 2002). Feelings of loneliness (Alpass & Neville, 2003; Prieto-Flores et al., 2011; Prince et al., 1997) are generally more prevalent among older people suffering from depressive symptoms or depressive disorders, being an essential covariate with mental ill-health.

Interestingly, there are differences in the distribution of psychosocial mental health predictors with respect to gender. For example, feelings of loneliness and poor self-rated health are common risk factors for depressive symptoms among older women, while declining health and social factors such as becoming a widower are more typical risk factors among older men (Heikkinen & Kauppinen, 2004; Kivelä, et al., 1996; McCusker et al., 2005).

On a community or societal level, social participation is regarded as a key mental health resource in the general population including older adults (Almedom, 2005; Kawachi et al., 2008). Furthermore, social cohesion is seen as a valuable mental health predictor (Fujiwara & Kawachi, 2008; Kawachi et al., 2008). Other factors, such as the experienced sense of belonging to a neighbourhood and degree of trust in other people, have been found to be related to mental

health in the general population including older adults (De Silva et al., 2005). There are, however, few studies that have looked at the associations between these indicators among older people exclusively (De Silva et al., 2005). These factors are all significantly related to the social capital concept, which is described in more detail in Chapter 4.

4 Social capital

The term social capital is often used as an umbrella term for the key components social networks, social participation, reciprocity and trust (Almedom, 2005; Baron et al., 2000; Nyqvist, 2005). The concept of social capital is comprehensive, encompassing several directions, levels and aspects (Figure 1). For example, social capital is often divided into two main aspects; structural social capital, which refers to behavioural aspects of social networks; and cognitive social capital, which encompasses perceptual aspects (Islam et al., 2006; van Deth, 2008). Social support, sense of belonging and trust are often considered the most important components of cognitive social capital, while the main structural components are social networks and social participation (e.g. voluntary association activities). The social capital concept can also be defined according to the direction of social ties (i.e. bonding, bridging and linking social capital) or depending on the level at which social capital is operationalised (individual, community or societal level, Putnam, 2000).

4.1 Theoretical frameworks of the social capital concept

Although the origin of the social capital term dates back to the nineteenth century, the concept was made popular a century later through the work of Pierre Bourdieu, James Coleman and Robert Putnam. Social capital as a theoretical concept was introduced into sociology (Bourdieu, 1986; Coleman, 1988, 1990) and political science (Putnam, 1993) in the 1980s and early 1990s. Since then, the theoretical framework of social capital has become widespread and progressively applied in research studying the psychosocial aspects of health and well-being among general populations or specific age groups (Kawachi et al., 2008; Nyqvist, 2009).

Two separate conceptualisations can be identified from the existing literature; on one hand social capital can be viewed as social networks with values exclusively for the network members (Bourdieu, 1986; Coleman, 1988, 1990). On the other hand, social capital can be viewed as a resource available for communities and societies enabling mutual goals (Putnam 1993, 2000).

According to Bourdieu (1986), the concept of social capital is defined as an individual resource and an important means of mobilising resources among network members. Along with cultural (i.e. knowledge, skills, educational level), symbolic (i.e. recognition, prestige) and economic capital (financial assets), social capital forms the theory of Bourdieu's tradition (Bourdieu, 1986). Further, Bourdieu's main interests lie in the examination of dynamics of power, class distinction and domination in social life, as well as in the related roles of economic, cultural and symbolic capital along with the social capital.

Bourdieu's theoretical framework of social capital focuses on informal personal relationships and social networks in individual-level contexts. Within this theory, social capital reflects relationships of individuals and is often measured by interpersonal social contacts and support. Thus, within this theoretical framework, social capital is theorised according to an individual-level approach. In line with this approach, Coleman (1988, 1990) focused on the resources generated from social ties and their impact on family members, especially children.

By contrast, Putnam (1993) defines social capital as networks, norms and trust that facilitate cooperation for mutual benefits within social organisations or communities. According to this view, social capital is developed, used and given value by the interaction between individuals (Putnam, 2000).

In line with Putnam's perspective, social capital can be divided into bonding (informal close ties among groups with homogeneous characteristics, e.g. close friends), bridging social capital (formal connections among heterogeneous groups, e.g. association organisations) and linking social capital (connections between groups with dissimilar status, Woolcock, 2001). According to Putnam's framework, social capital is viewed mainly as a collective concept, often measured by social networks and participation, trust and social cohesion in a neighbourhood or community (Putnam, 2000).

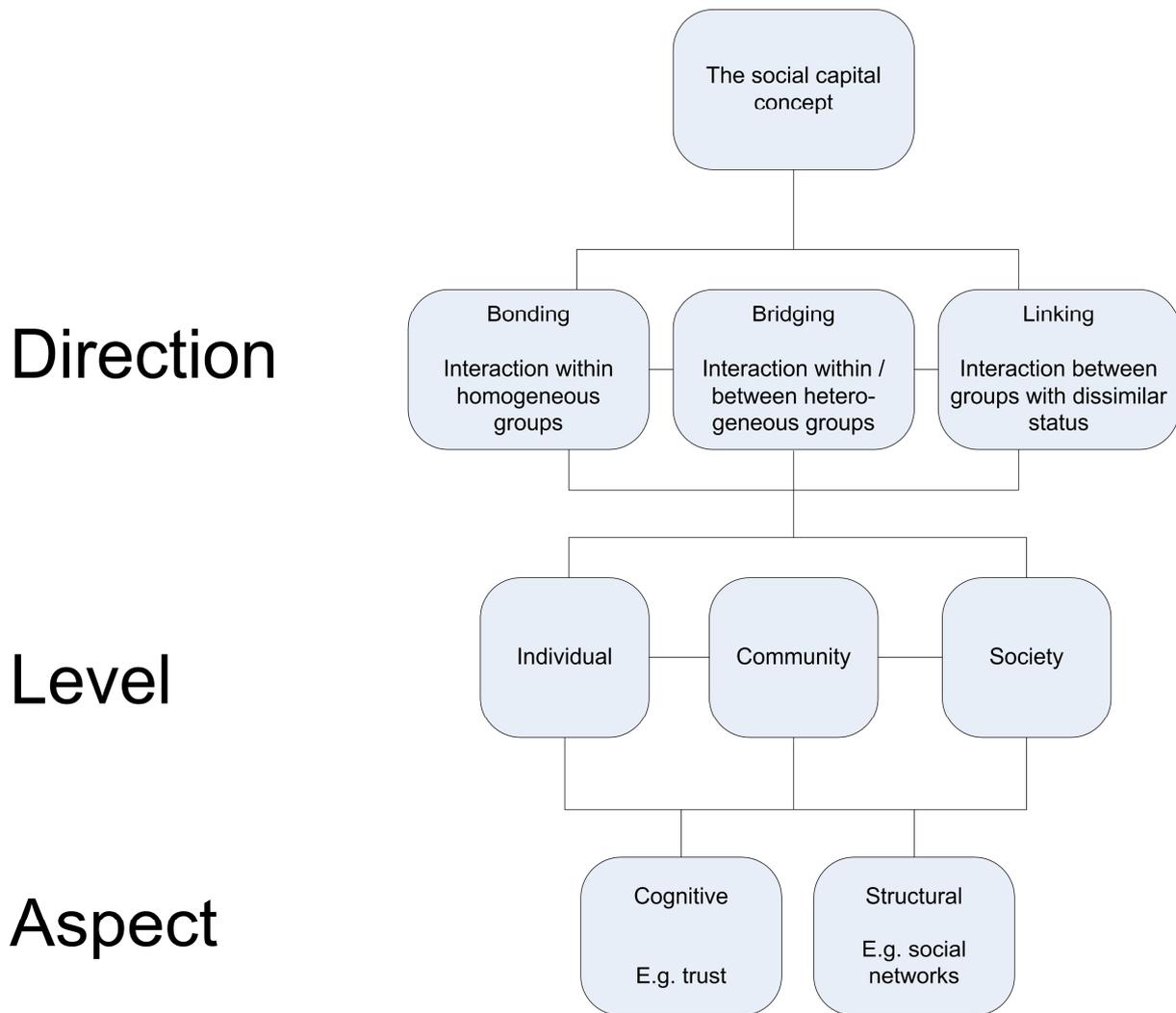


Figure 1. Aspects and dimensions of the social capital concept. *Adapted from Almedom (2005).*

In this thesis, social capital is defined in accordance with the tradition of Putnam (1993, 2000). In line with this framework, we look at the values that the connections and interaction between individuals generate, operationalised by social networks (informal and formal social contacts), social participation and trust. The reason for choosing Putnam’s perspective was because of the different aspects of social interaction and participation that it encompasses, both on an individual (e.g. social contacts) and community or societal (e.g. general trust, social participation) level. Further, Putnam’s theoretical framework (1993, 2000) was chosen due to the fact that it is the most commonly used perspective of social capital in health research (Helliwell & Putnam, 2004; Kawachi et al., 2008; Nyqvist, 2009). The benefits of Putnam’s framework are evident as it adds value to the social network research by recognising the cognitive, as well as structural aspects of the relationships.

4.2 Social capital as a resource for mental health and mental well-being

Important components of the structural social capital concept such as social networks (Forte, 2009; Litwin, 2001) and social participation (e.g. in social activities and voluntary organisations) (Forte 2009; Li & Ferraro 2006) are key mental health resources among older people. Likewise, previous studies have recognised the positive impact of cognitive aspects of social capital on mental health in general populations (De Silva et al., 2005). For example, Nyqvist et al. (2008) found positive correlations between experienced interpersonal trust and sense of security and mental health in the general population including older adults in a Nordic context.

Hence, both individual and collective aspects of social capital and their correlations with mental health and ill-health have been measured in previous research across ages (Almedom 2005; De Silva et al., 2005; McKenzie & Harpham, 2006). Nonetheless, within this growing body of research identifying a positive association between social capital and mental health, only few original prospective studies have looked at social capital and mental health among older adults explicitly (Almedom 2005; De Silva et al., 2005). For example, in a literature review on the connection between mental health and individual-level and collective-level social capital (Almedom, 2005) only one study that targeted older adults was included (Cotterill & Taylor, 2001). Moreover, another literature review analysing studies on the connection between mental ill-health (e.g. depressive disorders) and social capital (De Silva et al., 2005) did not include any studies that focused on older adults explicitly. Thus, these reviews clearly demonstrate the limited research on the connection between mental health and social capital among older adults.

5 Mental health promotion and the prevention of depression

5.1 Promoting and preventive approaches

Mental health promotion plays an important role in ensuring healthy ageing, as it enables older people to remain active and independent (Cattan, 2009). Further, the overall objective of mental health promotion is to strengthen and maintain the environmental, social and individual factors that determine mental health, reaching the target group on macro (societal), meso (community) and micro (individual) levels of society (Lahtinen et al., 1999).

Social participation and action to strengthen people's capabilities are clearly emphasised as an important principle of mental health promotion. On national levels, in Sweden and Finland the principles of mental health promotion are reflected in national public health programs through the emphasis on intersectorial co-operation and interdisciplinary efforts to create and maintain environments that support health and well-being (Swedish National Institute of Public Health, 2010; Finnish Ministry of Social Affairs and Health, 2001). However, it is notable that the promotion of mental health and well-being of older adults specifically is not listed among the overall targets in the national public health programs. Instead, in the Swedish policy document the older population groups are mentioned under the overall aim to enable participation and influence in society. Further, in the Finnish document, an aim to continue to improve the functional capacity among older people is stated, and here the social aspects and increased quality of life are mentioned as essential along with the physical aspects.

Mental health promotion interventions focus on mental health resources and aim to enable optimal health and development among older adults (Jané-Llopis et al., 2007; Cattan & Tilford, 2006). Mental health promotion is a universal approach that requires broad participation and involvement. It consists of actions to address the wide range of determinants of health (WHO, 1998). The interventions can be applied at population, sub-population or individual levels, as well as across settings (Cattan & Tilford, 2006). Interventions with the focus on mental health promotion are theoretically intended to enable optimal mental health by using prevalent mental health resources for older adults.

In contrast, interventions with a mental disorder prevention approach aim to reduce incidence, prevalence and recurrence of mental disorders (WHO, 2004). Interventions with a universal prevention approach are designed to avoid evidenced risk factors of the incidence of mental disorders (Jané-Llopis et al., 2007; WHO, 2004). These universal interventions target larger populations which have not been identified as being at greater risk of mental disorders. On the other hand, selective prevention is usually applied if the interventions target certain evidenced risk groups not yet exhibiting clinical symptoms for a mental disorder. Furthermore, indicated prevention encompasses intervention approaches that target a population with minimal but detectable symptoms or a predisposition for a mental disorder; however, they do not meet the diagnostic criteria.

The preventive approach can also be divided into the categories primary, secondary and tertiary prevention. Here the primary prevention approach encompasses interventions, which aim to decrease the incidence of new cases of a mental disorder in the population, while secondary prevention aims to decrease the prevalence of already established cases of the disorder. The tertiary prevention approach seeks to decrease the extent of disability associated with an existing mental disorder within the population (Jané-Llopis et al., 2007).

The terms promotion and prevention are by some understood as synonymous concepts with both terms stressing the improvement and maintenance of health, while others see them as contrasting concepts as outlined above, representing different perspectives of public health work (Jané-Llopis et al., 2007; WHO, 2005a). Similarly, the interdisciplinary concept of mental health promotion can be viewed from different perspectives (Barry & Jenkins, 2007; Cattan & Tilford, 2006). On one hand, it can be exclusively regarded as the promotion of positive mental health, aiming to achieve optimal mental health by improving the social, physical and economic environments that influence mental health. On the other hand, mental health promotion can be seen as primary, secondary or tertiary prevention of mental ill-health with the main focus to decrease the occurrence, prevalence and re-occurrence of mental disorders (WHO, 2004). In this case, it primarily targets risk and protective factors for mental ill-health. These contradicting and in some cases overlapping definitions of the promotion and prevention concepts may be related to the contradicting concepts of mental health as outlined in Chapter 1.2.

Nevertheless, the mental health promotion concept can be defined as encompassing both positive mental health promotion and disorder prevention (Barry & Jenkins, 2007; Jané-Llopis et al., 2007). This latter definition is used as the theoretical framework of this thesis, looking at

mental health promotion and mental ill-health prevention as two separate theoretical concepts, yet in practice closely entwined in mental health promotion work.

Resilience

The term resilience refers to coping with stressful events in life and it draws on the concepts of mental ill-health risk factors and mental ill-health prevention. Resilience can be viewed as a driving force in old age, a strength that individuals possess to various degrees depending on previous and current life circumstances (Nygren, 2006). There are two conditions related to resilience; exposure to significant risk factors and superior positive adaptation to what would be expected given exposure to significant risks (Ong et al., 2009). A resilient person can control the negative effects of stress when confronted with difficulties in later life.

Previous research has found significant positive associations between resilience in old age and physical health (Adams et al., 2004; Hinck, 2004; Montross et al., 2006; Nygren, 2006), well-being (Lamond et al., 2008) and life satisfaction (Wagnild, 2003). An inverse association between mental disorders and resilience has been identified in previous studies (Hardy et al., 2004; Smith, 2009). Strong resilience also has a negative connection with depressive disorders in older adults (Foster, 1997).

5.2 Psychosocial interventions for promotion and prevention in mental health

In line with the principles of mental health promotion as defined in Chapter 5.1, interventions that focus on mental health outcomes should aim to strengthen knowledge, capabilities and capacity to enhance and tackle the mental health and ill-health determinants respectively, on both individual and collective levels (Barry & Jenkins, 2007). Mental health promotion and mental ill-health prevention interventions include actions to maintain and improve mental health by addressing individual support and risk factors for specific mental health outcomes, as well as by providing the population with universal tools for changing behaviours that are related to increased risk of mental ill-health (Barry & Jenkins, 2007; Jané-Llopis et al., 2007).

Generally, in the planning and implementation of interventions it is first and foremost essential to define the target population and their needs, capabilities and strengths (Barry & Jenkins, 2007). This can be related to the different promoting and preventive approaches described in Chapter 5.1, outlining the importance of defining the target group of the intervention. Furthermore, intervention implementation and delivery encompass the planning and enabling of participation and of the participant's own engagement. Moreover, in the preparation process it is essential to involve suitable actors from different levels of society that together can collaborate in the planning and delivery of the intervention (Barry & Jenkins, 2007).

Different forms of universal, selective and indicated interventions have been successful in promoting and improving mental health in older populations (WHO, 2004). Physical exercise interventions are examples of effective interventions with a universal promoting approach, in addition to improving social support through befriending. Further, health education targeting vulnerable older people such as chronically ill individuals and their caregivers and various forms of reminiscence-based interventions are listed as promising intervention types from the selective and indicated prevention perspectives (WHO, 2004).

However, the body of research on the effects of mental health promotion and mental disorder prevention interventions targeting older adults is narrow and should be expanded to acknowledge the holistic viewpoint of mental health and the wide range of psychosocial evidence-based predictors for mental health and well-being (Cattan, 2009; Cattan & Tilford, 2006). A significant reduction in depressive symptoms through adequate psychosocial prevention programs has been demonstrated in previous research targeting older adults, but the number of mental health promotion (Cattan, 2009) and primary prevention studies targeting the incidence of depressive disorders and its prevention (Cuijpers et al., 2008; Jané-Llopis et al., 2003) is notably limited.

Conducting health promotion work based on a holistic evidence-based perspective of mental health (e.g. by taking social predictors of mental health into account) would significantly contribute to the knowledge and good practice of psychosocial interventions by drawing on positive mental health instead of the mental ill-health perspective (Cattan, 2009). More importantly, mental health promotion should encompass more than a set of initiatives implemented within the health care and social service sectors in society; instead, mental health promotion should be implemented on all societal levels with the main goal to enable social

participation and engagement among all citizens of society – including the older adults themselves (Cattan, 2009; Futurage, 2011).

6 Aims

The overall aim of the thesis is to examine how mental health and mental well-being can be promoted and how the incidence and prevalence of depressive symptoms and disorders can be prevented among older adults. This is conducted by identifying the psychosocial factors related to mental health and the incidence and prevalence of depressive disorders among older adults. The objectives of the studies included in the thesis are summarised as follows (Table 1):

Study I: To study the associations between structural and cognitive aspects of social capital and depression among older adults.

Study II: To study the associations between cognitive aspects of social capital and depression and psychological distress among older adults.

Study III: To collect and evaluate the effect of evidence-based psychosocial interventions for the primary prevention of depressive disorders among older adults.

Study IV: To give a better understanding of how social capital influences the experienced mental well-being among older adults.

7 Overview of study design and methods

Study	Aim	Study population	Measured outcomes	Data sources	Data analyses
I	To study the associations between structural and cognitive aspects of social capital and depression	People aged 65, 70, 75 and 80 years, living in the Österbotten region (Finland) and in the Västerbotten region (Sweden) N= 6838 (3779 from Sweden, 3059 from Finland)	Depression (GDS-4) Structural social capital: Social contacts with friends and neighbours Cognitive social capital: Experienced inter-personal trust in friends and neighbours	GERDA project survey data Collected in 2010 in the Bothnia region	Logistic regression analyses
II	To study the associations between cognitive aspects of social capital and depression and psychological distress	Finnish people 65-81 years of age N=1102	Depression (CIDI-SF) Psychological distress (GHQ-12) Cognitive social capital: Social support (Oslo-3) Sense of belonging General trust	Western Finland Mental Health Survey 2008 Collected in 2008 in Finland	Logistic regression analyses
III	To collect and evaluate the effect of evidence-based psychosocial interventions for the primary prevention of depressive disorders	People aged 65 years or older not suffering from clinical depression	Depression Quality of life Functional level (various instruments used)	Searches in 11 electronic literature databases in October 2009 Handsearches of 2 relevant journals 2006-2009	Systematic literature review and meta-analysis
IV	To give a better understanding of how social capital influences the experienced mental well-being	In the interviews: 11 people aged 73-93 years, living in Vaasa, Finland In the survey: Finnish people aged 60-81 years N=869	Experienced mental well-being Interpersonal relationships: Social contacts Trust Social participation	2 focus group interviews conducted in 2011 in Vaasa, Finland Western Finland Mental Health Survey 2008, open question Collected in 2008 in Finland	Qualitative content analysis

Table 1. Overview of the studies included in the thesis.

7.1 Study design and data collection

This thesis consists of an ensemble of four studies, applying three different methods for data collection and methods of analysis. The four studies were designed to contribute to a common understanding of how mental health can be promoted and mental ill-health prevented among older adults by taking psychosocial covariates into account. Several sets of independent data material and various study designs and methods were used by approaching the overarching research questions from different perspectives.

Triangulation refers to examining issues from multiple angles. There are different types of triangulation (Mikkelsen, 2005), such as data triangulation (using different types of data or different units of analysis); investigator triangulation (several researchers independently studying the same problem); and methodological triangulation (using different methods or the same method over time to study a problem).

There is growing literature on the benefits of using multiple methods or data sources, strengthening the internal and external validity of the research (Bryman, 2006; Hesse-Biber, 2010; Morse & Niehaus, 2009). At the same time, the criteria for valid mixed-method study projects have been critically discussed. For example, it has been emphasised that it is essential to distinguish between study projects with a throughout well-integrated mixed-methods design and those encompassing several separate studies conducted in parallel due to the different study elements being kept separate (Bryman, 2006).

In line with this perspective, it is questionable whether the thesis represents a mixed-method approach, although different data collection and analysis methods have been used. Mixed-method designs are conceptually complex; even though many studies may provide a basis for triangulation, they more often merely represent different ways of conceptualising the problem (Hesse-Biber, 2010). It is further argued that mixed-method designs might set out to look at the same things from different points of view, but it often turns out that the viewpoints of the research problem are so different that the lines of sight do not converge (Morse & Niehaus, 2009). However, even though the thesis might not fulfil the requirements for a mixed-methods approach, Study IV could according to Mikkelsen's (2005) definition of triangulation be classified as such, as it is based on two independent data materials throughout.

Population-based surveys with a cross-sectional design

Postal surveys were used for the data collection in both Study I and II in order to conduct studies with population-representative samples on the connection between mental health status and level of social capital among the ageing population. Study I was based on a cross-regional survey that targeted exclusively older people aged 65, 70, 75 and 80 years living in urban and rural areas in *Västerbotten* in Sweden and in *Österbotten* in Finland. The data collection was part of the Gerontological Regional Database and Resource Centre (GERDA) project.² In order to obtain a representative study sample for the total older population residing in the Bothnia region, a survey questionnaire was posted in 2010 to every 65-, 70-, 75- and 80-year-old living in rural regions and every second or third living in urban areas. Study II was based on a cross-sectional study targeting people aged 15-81 in the Finnish *Österbotten* region and in Southwest Finland (Forsman et al., 2009).

The response rate for the sample used in Study II (65 to 81 years) was 61 per cent, providing a total participant number of 1102. In Study I, the total number of participants aged between 65 and 80 years from Finland and Sweden were over six times higher compared to Study II (N=6838) and the total response rate was also slightly higher (64 %).

The overall limitation of the survey-based studies is the cross-sectional design, which rules out the possibility to assess causality of the association between the social capital factors and depression and psychological distress. However, the balancing strength of the survey studies, from a methodological point of view, is the population-based design, reaching a high number of participants who represent a population residing in a fairly large geographical area. The wide age range of the study participants, providing information on older adults aged between 65 and 81 years should also be noted as a strength of the two survey studies included in the thesis.

² Information about the project is available at www.web.novia.fi/gerda (in Swedish only).

A broad literature review targeting the general older population

Study III consists of a systematic literature review and meta-analysis. A systematic review aims to collect empirical evidence that meet specified eligibility criteria in order to answer a specific research question. Pre-selected systematic methods are used in an effort to minimise bias, thus providing reliable findings from which conclusions can be drawn and decisions made (Higgins & Green, 2011; Oxman & Guyatt, 1993). A meta-analysis is conducted by using statistical methods to quantitatively summarise the results of independent studies included in the review (Glass, 1976). Meta-analyses on intervention effects can provide precise efficacy estimates and they also facilitate investigation of the consistency or the discrepancy of evidence across studies (Higgins & Green, 2011).

Study III evaluated psychosocial interventions for the primary prevention of depressive disorders among older adults aged 65 or over. The design and outline of the study were chosen because no systematic reviews and meta-analyses existed on psychosocial intervention types that use controlled trial designs and investigate primary prevention of depression among the general older population explicitly.

Psychosocial interventions were defined as an intervention that emphasises psychological or social factors rather than biological factors (Ruddy & House, 2005). This definition included psychological therapies and health education, as well as interventions with a focus on social aspects, such as social support and networking. Interventions with a physical exercise content were also included in the review, if the focus was on physiological factors rather than biological and a mental health outcome was measured.

Eleven electronic databases (AgeLine, ASSIA, CENTRAL, CINAHL, Embase, Medline, OpenSIGLE, Sociological Abstracts, Social Services Abstracts, PsycINFO, and Web of Science) were searched for eligible studies up until October 2009, using a wide range of relevant search terms. This selection of databases was chosen because of the aim for an interdisciplinary approach (e.g. medical, sociological, and psychological disciplines). In addition, hand-searching of journals was conducted, covering issues of the *Gerontologist* and *Journal of the American Geriatrics Society* published from 2006 to 2009. The electronic versions of these journals were screened for eligible trials for the mentioned period. These journals were selected for screening based on the fact that they were most frequently represented in the electronic search results retrieved.

Only prospective controlled studies were considered for the systematic review. The trials had to be replicable and encompass a control condition – either usual care, waiting list or no intervention – to be eligible for the review. In addition to the age criteria, the trial participants must not have met the diagnostic criteria for a depressive disorder or any other mental disorder (e.g. dementia) at the time of intervention enrolment. In other words, the evaluated psychosocial interventions targeted the general older adult population aged 65 years and over, as well as older people at risk of depression who did not at the time of enrolment fulfil the diagnostic criteria for a depressive disorder (according to ICD-10 or DSM-IV or depression rating scales if ICD or DSM criteria were not used). Hence, all trials of secondary and tertiary preventive interventions, relapse prevention and pharmacological interventions were excluded from the review.

The participants of the interventions considered in Study III were either living in the community or in an institutional setting. Interventions with organisation of care as their main focus were not included in the review. This was because the aim was to evaluate the benefits of psychosocial content of the interventions for the older participants and thus, care planning and other actions with organisational focus were not considered.

The inclusion criteria of the review study contributed to a wide search approach in order to find as many suitable studies as possible from the body of literature. In the phase of the manual study screening and selection, effort was made to ensure that the main focus was on the primary prevention of depressive symptoms and disorders among older adults. However, a limitation that can be related to the data collection of the systematic review was that a fairly large number of psychosocial intervention studies were excluded from the review due to the age criteria, the mean age of the study participants in these cases being under 70 years.

Focus group interviews and an open-ended survey question

Study IV was based on focus group interviews, as well as open-ended answers to a question on the connection between experienced well-being and other people. The participants were 60 years or older living either in the community or in a nursing home in Western Finland.

Two focus group interviews were conducted; one took place at a nursing home in Vaasa, Finland, while the other interview was arranged within a local retirement association. Focus group interviews are ideal when the aim is to gain insights into the perceptions, opinions and attitudes of the targeted study group on a certain subject (Krueger & Casey, 2009).

In addition, data from the postal survey also used in Study II were included in the analyses. The survey included an open-ended question on thoughts and experiences of the connection between the participants' well-being and other people and the answers of older respondents (60 or older) were included in the study data material. The open-ended question material was transcribed from the returned survey questionnaires. The two sets of data material supplemented each other well and contributed equally to the analyses, even though the interview material provided more in depth answers to the research question. This study is thus based on two independent sources of collected data – a general population-based survey and focus group interviews.

There are several benefits of complementing the survey-based studies (Studies I and II) with Study IV. Firstly, Study IV is based on a qualitative study design, allowing for more in-depth data on the connection between different aspects of social capital and subjective mental well-being. Secondly, the age range was wider in this study compared to the others and the study design gave greater consideration to the participants living at a nursing home. These factors contributed to a study sample that represents the ageing population well. However, a limitation to the study was that only two focus group interviews were conducted to complement the open-ended survey data material. Another limitation relating to focus group interviews in general is that the group element of the interviews may not allow for detailed exploration, because the participants may not want to share personal issues with the other participants. The reason for why focus group interviews were chosen instead of individual interviews was, however, that by using focus group interviews, a wide set of data could be collected to get an overview of the situation alongside the survey-based material. In addition, focus groups enable conversation between the group members in a specific context, which may provide more information compared to individual interviews (Krueger & Casey, 2009).

7.2 Data analyses

Several methods for data analyses were applied due to the various study designs, assessed outcomes and data materials used in this thesis.

Logistic regression analyses

Logistic regression analyses (Pampel, 2000) were the principle analyses used in both Study I and II. In logistic regression analyses, the outcome variable is dichotomous (i.e. it only contains data coded as either 1 or 0). The aim of logistic regression is to find the most suitable model to describe the association between the outcome variable and a set of explanatory variables (Pampel, 2000).

Associations between the distribution of depression - as defined and measured in the studies - and the structural or cognitive social capital variables were assessed with a series of logistic regression analyses calculating the odds ratios (OR) and 95 per cent confidence intervals (CI). The variables for depression (Study I and Study II) and psychological distress (Study II) were tested according to three different models. Model 1 consisted of demographical background variables, while Model 2 and 3 tested the structural or cognitive aspects of social capital. The aspects of social capital were operationalised in different ways in the two studies. The statistical program PASW statistics, version 16 and 18, was used for the analyses. The depression and psychological distress variables, as well as several demographic variables, were dichotomised and the social capital variables were re-categorised for the logistic regression analyses.

Due to the fact that the social capital concept contains several different aspects and components, regression analyses were chosen because of the possibility to test different models of variable sets. Furthermore, the assumptions for conducting logistic regression analyses were met for Studies I and II because many of the applied variables were on an ordinal scale level. Ordinal scale variables are not recommended to be used for e.g. linear regression analyses (Pampel, 2000).

Yet, a major limitation of Studies I and II was that the analyses performed used dichotomised measures of the dependent variables, which resulted in a small number of participants being defined as being depressed or suffering from psychological distress. This might have affected

the interpretation of the results because of the risk of losing data or statistical power in analyses with small numbers of participants in some cells (MacCallum et al., 2002).

Data synthesis and meta-analysis of a systematic literature review

In Study III, all publications retrieved from the eleven searched databases were screened for inclusion and available data were extracted independently by two reviewers for both a narrative data synthesis and a quantitative meta-analysis. The data was analysed by Review Manager 5.0 software (The Nordic Cochrane Centre, 2008) and the methodological quality of the included intervention studies was assessed according to the Cochrane Collaboration Handbook (Higgins & Green, 2011). If measures of variance for outcomes could not be found through publications, through calculations or by contacting the authors, the outcome was excluded from the meta-analysis. Substantially skewed data (where the standard deviation was more than twice the mean value) were not entered in the meta-analysis. Sensitivity analyses were conducted looking only at randomised trials and at studies with low risk of bias (i.e. when at least two out of six domains were rated as low risk of bias for the study).

The main limitation of Study III was that the evaluated interventions were very different from each other in regard to intervention content, leading to difficulties in categorising the interventions. Because of the wide range of measurement instruments used in the trials included in the review, it was only possible to calculate the standardised mean difference for the efficacy estimates of the interventions. The interpretation of the results of the review was therefore clearly limited.

Qualitative content analysis

Qualitative content analysis is a research method frequently used to receive valid findings from text-based data materials, carefully considering the context of the text in the analysis process (Graneheim & Lundman, 2004). It was chosen for Study IV because of its step-by-step methodologically controlled analyses in comparison to other qualitative approaches, hence allowing for replication (Krippendorff, 2004).

By using the approach by Krippendorff (2004), the initial phase of the text analyses involved condensation by identifying the central textual units throughout the data material. The analysis

was further performed by systematically coding the condensed data material into themes or codes based on the textual units. All quotations related to particular categories were inductively grouped together and examined in terms of broader and overarching themes on a higher abstraction level, exploring the latent content in addition to the manifest content. Constant comparisons ensured that similarities and differences between the emerging categories were explored. Quotations typical for each category were thereafter highlighted and described. In order to gain a mutual understanding the researchers discussed the analyses – the coding, categorising and the interpretation of the findings – throughout the work process.

7.3 Measurement instruments

Depression and psychological distress

Depression was measured in Study I, II and III. In Study II, psychological distress was measured alongside depression, using the General Health Questionnaire (GHQ-12) (Goldberg & Hillier, 1979). The GHQ-12 instrument has in previous research been argued to be sensitive and accurate although it is not a diagnostic instrument (Goldberg, 2000). In order to be able to conduct logistic regression analyses, respondents with scores over 3 on the overall scale of 0 to 12 were categorised as suffering from psychological distress. This cut-off has based on previous evaluations been recommended for older adult respondents (Papassotiropoulos et al., 1997). The recommendation is based on the fact that older adult respondents generally score higher on the GHQ scale compared to younger adult respondents, for which a lower cut-off is recommended.

In Study I, depressive symptoms were identified by using questions from the Geriatric Depression Scale 4 (GDS-4). The full-length version of the Geriatric Depression Scale (Yesavage et al., 1983) is a self-report instrument with 30 questions, identifying clinical depression according to DSM-IV. This version of the scale is considered an adequate screening instrument for depression in older people, but shorter versions have been developed and evaluated (D'Ath et al., 1994; Pomeroy et al., 2001; van Marwijk et al., 1995). The version of the GDS-4 instrument used in this study has been developed and used by D'Ath et al. (1994) and contains four questions (yes/no, rated either as 1 or 0).

Depression was dichotomised for the logistic regression analyses in Study I. Scores of two or more were chosen as the cut-off point, defining depression among the respondents in this study. This cut-off has been used and evaluated in previous research (D'Ath et al., 1994). According to D'Ath et al. (1994), the 1/2 cut-off provides a specificity of around 88 per cent and a sensitivity of 61 per cent ($p < 0.0001$).

In Study II, respondents fulfilling selected criteria for major depressive disorder (MDD) according to DSM-IV were identified by using questions from the Composite International Diagnostic Interview Short Form (CIDI-SF) (Kessler et al., 1998; Robins et al., 1988; Wittchen et al., 1991). The CIDI-SF instrument has considerably higher sensitivity compared to the short version of GDS used in Study I, and therefore it was possible to study the aspects of major depression in Study II, while Study I identified depressive symptoms.

On the other hand, the depression rate was under ten per cent in both Study I and II, resulting in small numbers of participants in some cells of the analysis and related problems with the interpretation of the results. Additionally, the measurements of depression or psychological distress were in Studies I and II based on self-reported conditions of which the accuracy has been questioned (O'Brien Cousins, 1997).

In Study III, the primary outcome of the systematic review was the occurrence of depression and depressive symptoms, as measured by depression rating scales (such as various versions of the Geriatric Depression Scale). In addition, secondary outcomes measured were functional level and quality of life. The outcome measures were recorded either immediately after the intervention or at end of follow-up. A major limitation of the review was the lack of reported data on the outcomes due to scarce reporting. This resulted in a small number of studies being evaluated in the meta-analysis and consequently lack of power for the effect estimates.

Positive mental health and experienced mental well-being

In addition to the standardised measurements of depression and psychological distress used in Studies I to III, the mental health outcome measured in Study IV was the participants' own experienced mental well-being. Thus, in Study IV, positive mental health was assessed, capturing the subjective perspectives of mental health. The participants discussed their experienced mental well-being and various factors that according to them were important for maintaining mental well-being at old age. Furthermore, the participants of Study IV described

their interpersonal relationships and related aspects of these, identifying various aspects of social capital (i.e. social contacts, interpersonal trust and social participation) and how these were related to the experienced well-being.

Two indicators of positive mental health were also measured in the systematic review and meta-analysis in parallel with the depression outcome; these were quality of life and functional level. A nuanced evaluation was aimed for by measuring the intervention effects on both depression and selected positive mental health outcomes. The reason why quality of life and functional level were selected as secondary outcome measurements was that these were reported in the screened and analysed publications – at least to some extent.

Social capital

Due to the comprehensive characteristics of the social capital concept, it has been broadly discussed how social capital should be operationalised and measured (Almedom, 2005; De Silva et al., 2005). The main question is if social capital mainly should be measured on a collective level (e.g. community or societal level) due to the resource being available to all members of the collective on this level, or if social capital also can be captured on an individual level (De Silva, 2005). On one hand, previous research suggests that social capital is a concept with its benefits manifested on the community or societal level (Subramanian et al., 2003); but on the other hand, it has been stated that the health-related benefits of social capital can only be seen on an individual level (Kawachi et al., 2004). These contradicting viewpoints in addition to the multicomponent characteristics of the concepts complicate the process of designing the studies.

An overview of the different ways used to measure social capital in Studies I to IV is provided in Figure 2. Social capital was in Studies I and II measured by dividing the different components into structural and cognitive social capital aspects. Study I looked at both aspects, with the structural aspect being measured by questions on the frequency of social contacts with friends and neighbours. The cognitive aspect of social capital was measured with questions on perceptions of interpersonal trust in friends and neighbours.

Study II followed up on the methodological design of Study I, but focused only on the cognitive social capital, which was measured by questions on experienced sense of belonging to the neighbourhood and general trust towards other people, as well as experienced social support. The aspects of cognitive individual social capital were measured with several variables; the

three-item Oslo Social Support Scale (OSS-3) (Brevik & Dalgard, 1996) was used to measure the experience of social support. The standardised instrument targets the quality aspects of the social relationships of the respondent and contains three levels; having people to count on, other people’s concern and practical help from neighbours.

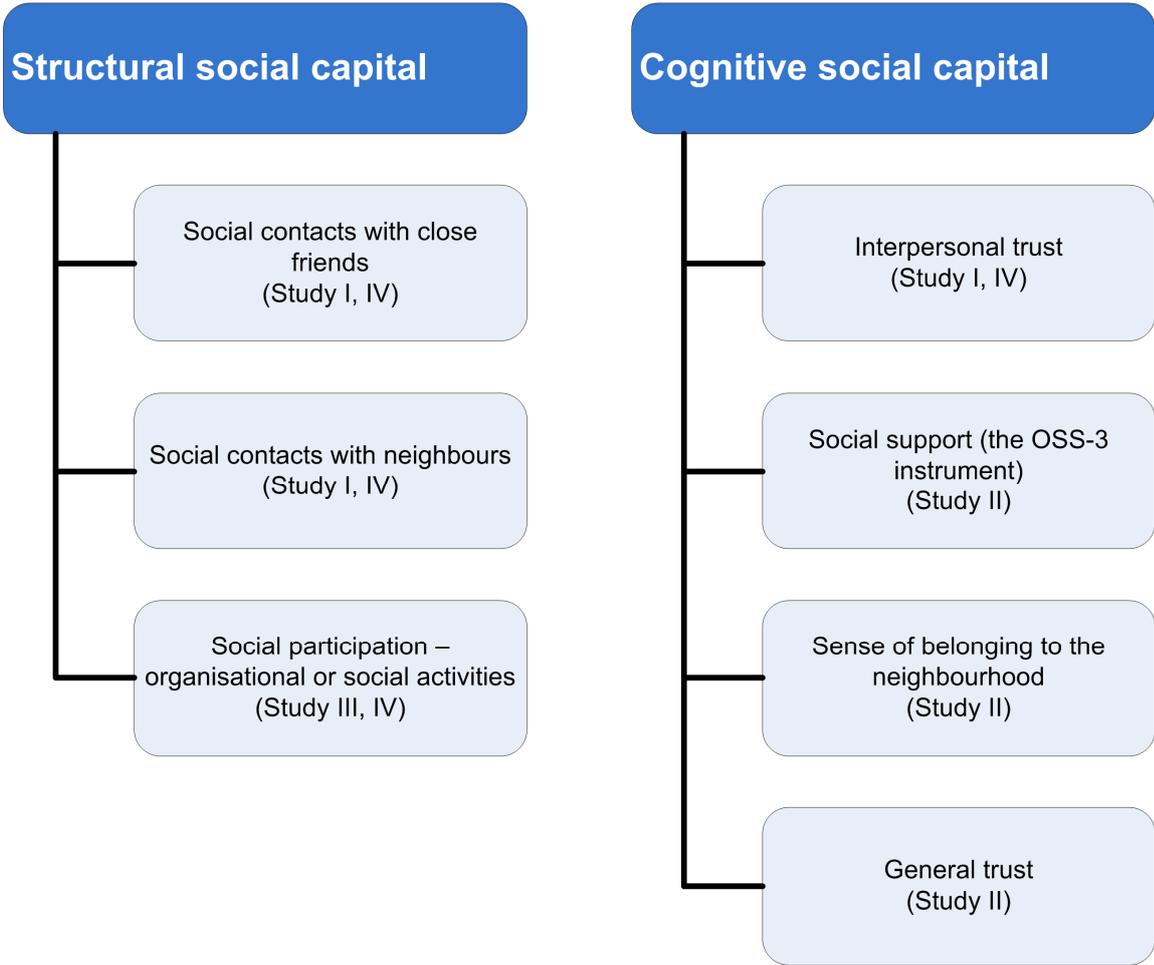


Figure 2. Overview of how social capital was measured in Studies I to IV.

Sense of belonging and trust were also used as variables of community-level cognitive social capital in Study II. Trust was assessed in the questionnaire with one statement previously used in the Finnish Health 2000 Survey (Aromaa & Koskinen, 2004), while sense of belonging was assessed with the statement previously used in the Southeastern Pennsylvania Household Survey (Axler et al., 2003).

Differences between Studies I and II regarding the measurements of cognitive social capital should be noted; for example, in Study I trust was captured on an individual level, while the experienced general trust towards other people was used for the trust indicator in Study II, capturing community-level trust as advocated by Putnam (1993). However, the critical points of the social capital measurements of Study II were that collective-level social capital was measured with individual-level data, as well as the fact that structural components of the theoretical concept were not considered. Thus, there were important components of the multi-dimensional social capital concept that were not examined in both Study I and II, but together the studies form a comprehensive set of social capital measurements.

In Study IV, the interview guide used for the two focus groups contained two main themes, *mental well-being* and *interpersonal relationships*, where the second theme was used to operationalise various aspects and dimensions of the social capital concept. Various factors that the participants found were important for maintaining mental well-being were freely discussed during the interviews and these discussions naturally led to different aspects of social capital. The participants were throughout the interviews encouraged to expand on the other participants' responses on why the different aspects of social capital related to their own mental well-being. The discussions were, however, – on the participants' initiative – centred on social contacts, social participation and interpersonal trust.

Social capital was not an outcome examined in Study III when evaluating the psychosocial interventions, as no eligible data were reported on this outcome among the evaluated intervention trials. However, one of the intervention types evaluated in the review and meta-analysis was social activities, which draws on the social capital aspect of social participation and the related benefits for mental health as measured in the review.

8 Ethical considerations

The ethical principles for research involving human participants and related identifiable data stated in the Declaration of Helsinki (World Medical Association, 2008) were followed in the research project. Among the most important principles are respect for the individual and the individuals' right to make their own decisions regarding participation in research, both prior to enrolment and during the course of the research (World Medical Association, 2008). According to these principles, the research participants' welfare must always take precedence over the interests of science. The principles also state that careful assessment of risks and benefits for the participants is mandatory and the research conducted should have a reasonable likelihood of generating benefit to the population studied (World Medical Association, 2008).

The survey data used in this thesis was anonymous with the researchers not being able to identify the participants' answers in any way. In line with this, the participants of the focus group study were assured that their anonymity and confidentiality would be protected and all participants gave informed consent. In addition, in order to enable informed decisions regarding participation, all necessary information (e.g. aim of the study and research procedure) were provided to the potential participants in the survey studies and the focus group interviews. Furthermore, the direct risks for the individuals participating in population postal surveys or focus groups are minimal due to the unidentifiable and confidential nature of the data.

In the systematic review, ethical considerations were studied as a part of the quality assessment of the intervention trials evaluated. Potentially negative consequences or side effects caused by the intervention participation were noted if reported in the screened publications.

The contribution of this thesis is increased knowledge and understanding of the predictors or consequences of mental ill-health, which additionally may decrease the widespread stigmatisation of mental disorders and thus, benefit the targeted population.

9 Results

9.1 Study I

Study I focused on the associations between structural and cognitive aspects of social capital and depression in later life. The data material was collected in 2010 in Sweden and Finland. The methods used and the study results are described in detail in Article I.

The respondents were 65, 70, 75 or 80 years of age, with the largest cohort represented in the study sample being the 65-year-olds (N=2591, 38 %) and with women being older than men. Fifty-five per cent of the respondents lived in Sweden, while 45 per cent lived in Finland, showing a gender difference with more women representing the Finnish sample compared to the Swedish. Over 70 per cent were married or cohabited, while more women than men were single.

Nine per cent of the study sample was categorised as being depressed as defined by GDS-4. Slightly more women than men suffered from depressive symptoms within the study sample as measured with the GDS-4 instrument, although the gender difference was not statistically significant. Among the four age groups, thirteen and ten per cent of the 80- and 75-year-olds were depressed, while seven per cent was depressed among both of the younger age groups. The differences between the age groups were statistically significant.

There was no significant difference between the distribution of depression as measured by GDS-4 in the two study regions, with about eight per cent being depressed among the participants in the Finnish region and about nine per cent of the participants residing in the Swedish region.

The results from the logistic regression analyses, indicated that lack of structural social capital measured by infrequent contact with friends and neighbours is significantly connected with depression (OR 1.53, 95 % CI 1.16 to 2.01 and OR 1.33, 95 % CI 1.02 to 1.73 respectively, controlling for all the considered variables). Moreover, when controlling for both the demographic and structural social capital variables, a significant association between depression among older adults and experienced low interpersonal trust in friends was found (OR 2.01, 95 % CI 1.56 to 2.58). Experiencing mistrust towards neighbours did not have a statistically

significant association with depression (OR 1.16, 95 % CI 0.89-1.52). Besides the studied structural and cognitive social capital aspects, it was found that being 80 years (OR 1.41, 95 % CI 1.05 to 1.90) and being single (OR 2.51, 95 % CI 2.01 to 3.14) were both significantly associated with depression when controlling for the social capital variables.

Interaction effects between socio-demographic variables and social capital indicators were tested in relation to depression. For study region the interaction effect was significant for both the structural (OR 2.01, 95 % CI 1.22 to 3.31 and OR 2.14, 95 % CI 1.32 to 3.46 for contact with friends and neighbours respectively) and the cognitive (OR 1.78, 95 % CI 1.17 to 2.72 and OR 1.71 95 % CI 1.10 to 2.69 for experienced trust in friends and neighbours respectively) social capital variables. These findings indicate that the relationship between low levels of social capital and depression was more prominent in Sweden than in Finland. In addition, the marital status variable showed a statistically significant interaction effect for the social contact with friends variable (OR 1.70 95 % CI 1.02 to 2.84). The association between infrequent contacts with friends and depression was thus more noticeable among single older people.

9.2 Study II

Study II focuses on the associations between depression and psychological distress and different components of cognitive social capital. The study was based on a postal regional population survey conducted in Finland in 2008. The methods used and the study results are described in detail in Article II.

Six per cent of the respondents were rated as having suffered from depression within the last 12 months as defined in Study II by using the CIDI-SF instrument. Women showed a higher frequency than men. Regarding reported psychological distress, the prevalence among respondents was 15 per cent and women were also here more frequently represented.

The logistic regression analyses showed that respondents experiencing difficult or very difficult access to instrumental social support showed a statistically significantly larger likelihood of being depressed compared to respondents with easily accessed instrumental social support (OR 3.02, 95 % CI 1.21 to 7.56, when controlling for all model variables). Furthermore, having few people to count on was significantly associated with psychological distress compared to having

more than five (OR 2.16, 95 % CI 1.15 to 4.09, when controlling for all model variables). Unlike depression, when controlling for all the demographic and social capital variables, psychological distress showed a significant association with experiencing none, little or being uncertain of other people's concern (OR 2.93, 95 % CI 1.43 to 5.99). Further, respondents experiencing mistrust towards other people were statistically significantly more likely to suffer from psychological distress than respondents with higher levels of trust (OR 2.26, 95 % CI 1.45 to 3.52). No significant association could be found between any of the mental health outcomes and sense of belonging to the neighbourhood.

9.3 Study III

The aim of Study III was to collect and evaluate evidence-based psychosocial interventions and by conducting meta-analyses measure their effect on depressive symptoms and mental health indicators among older adults not suffering from clinical depression. The methods used and the study results are described in detail in Article III.

The searches yielded 3 972 hits (including duplicates from different databases). By screening the retrieved titles and abstracts according to the inclusion criteria, the number of publications was reduced to 790 and after having checked these in detail, the final number of included studies was narrowed to 30. Eleven of the included trials did not provide data suitable for the meta-analysis. Efficacy estimates are thus based on data from 19 trials.

Three types of primary prevention (WHO, 2004) were distinguished among the trials; universal prevention, selective prevention and indicated prevention, with only three trials representing the indicated approach. The prevention interventions included were categorised into one of the following 6 groups; *physical exercise, skill training, group support, reminiscence, social activities* and *multicomponent interventions*.

Overall, in the meta-analysis, psychosocial interventions had a weak but statistically significant pooled effect on depressive symptoms (17 trials, SMD -0.17, 95 % CI -0.31 to -0.03). The pooled results for the dichotomous depression outcome indicated a non-significant reduction of new depression cases (3 trials, OR 0.69, 95 % CI 0.41 to 1.17).

Only four trials reported eligible data on the secondary outcomes quality of life or functional ability. Overall, no statistically significant effect on quality of life was found (3 trials, SMD -0.09, 95 % CI -0.37 to 0.19), nor for the overall functional ability outcome (2 trials, SMD -0.28, 95 % CI -0.70 to 0.13).

When analysing types of interventions separately, social activities significantly reduced depressive symptoms among the participants compared to no intervention controls (2 trials, SMD -0.41, 95 % CI = -0.72 to -0.10). This result should, however, be interpreted with caution as it is based on two trials only. One trial within the multicomponent intervention category reported incidence of depressive disorders (dichotomous data) and showed a significant effect (OR 0.34, 95 % CI = 0.13 to 0.94). For the other intervention categories, no significant effects were found compared to no intervention control trials. No eligible data were retrieved for group support trials.

9.4 Study IV

Study IV looks at how social capital (i.e. social contacts, social participation and trust) affects mental well-being in later life according to older adults' own experiences. The study was based on two focus group interviews in addition to the Finnish postal population survey conducted in 2008, which was also used in Study II. The methods used and the study results are described in detail in Article IV.

Three main categories emerged from the analysed data material. The first category *Meaningful social activities* describes the participants' views on various social activities, how they are related to the experienced mental well-being and what they bring to everyday life of older adults. *Family and good friends* is a category that emerged from the material with vivid descriptions of life-long relationships and their importance for mental well-being, while the category *The residential location* encompasses experiences on what the living situation means for social contacts and interpersonal relationships. Figure 3 provides an overview of the key findings from Study IV, demonstrating the mechanisms between older adults' experienced mental well-being and social capital on both individual (i.e. interpersonal relationships) and community (i.e. social participation) levels.

Meaningful social activities

The participants were to a great extent involved in various forms of association activities and voluntary work. These activities were accessed through the individuals' social networks. When discussing what these activities meant for the participants' mental well-being, it was highlighted that it feels good to be part of a social group with common aims and purposes due to the sense of belonging. Additionally, being able to help other people – through organised voluntary work, but also generally in everyday life – had a positive impact on the older people's mental well-being, because helping other people made the participants feel needed and appreciated.

Furthermore, it was emphasised how important it is to try to maintain the daily life routines and the social network when encountering life changing events, such as retiring from work life or moving into a nursing home. Moreover, something to plan for and look forward to brought joy and life satisfaction and gave purpose to everyday life and feelings of hope for the future. Social activities and related interpersonal relationships had a central role in these future plans.

Family and good friends

The closest family (i.e. spouse, children, grandchildren and/or other close relatives) was described as the most important social contact for mental well-being. They provided various forms of social support and feelings of being loved.

Many of the participants had experienced a nearly life-long close friendship and this was highly praised for being an important part of their lives. These friends had accompanied the participants through their lives, experiencing good and bad events together. Appreciated qualities were mutual trust and the fact that these friends knew the participants better than anybody else. This created a sense of security and confidence, that you could be yourself in their company.

However, while some study participants reported that these long-lasting relationships were very apparent and important in their lives; other participants touched on the difficulties that they had or expected to experience when their close friends pass away. Participants that had lost their friends to death expressed how difficult that was to encounter, especially since it was stated that close friends are very difficult to find when being aged.

The residential location

The residential location and the own home were important to the participants and those who lived in a nursing home reported that they sometimes longed for the homes that they had had to leave for the nursing home.

In order to stay in contact with friends and relatives, the participants emphasised the use of telephones and in some cases, computers and internet. These means were especially important if the geographical distance between residential locations was great, but telecommunication also frequently benefited by maintaining contact with family and friends living close by. Participants who lived in nursing homes and suffered from functional disabilities with restricted possibilities to leave the nursing home facilities to meet up with friends and relatives also explained that they used frequent phone contact to maintain social contacts.

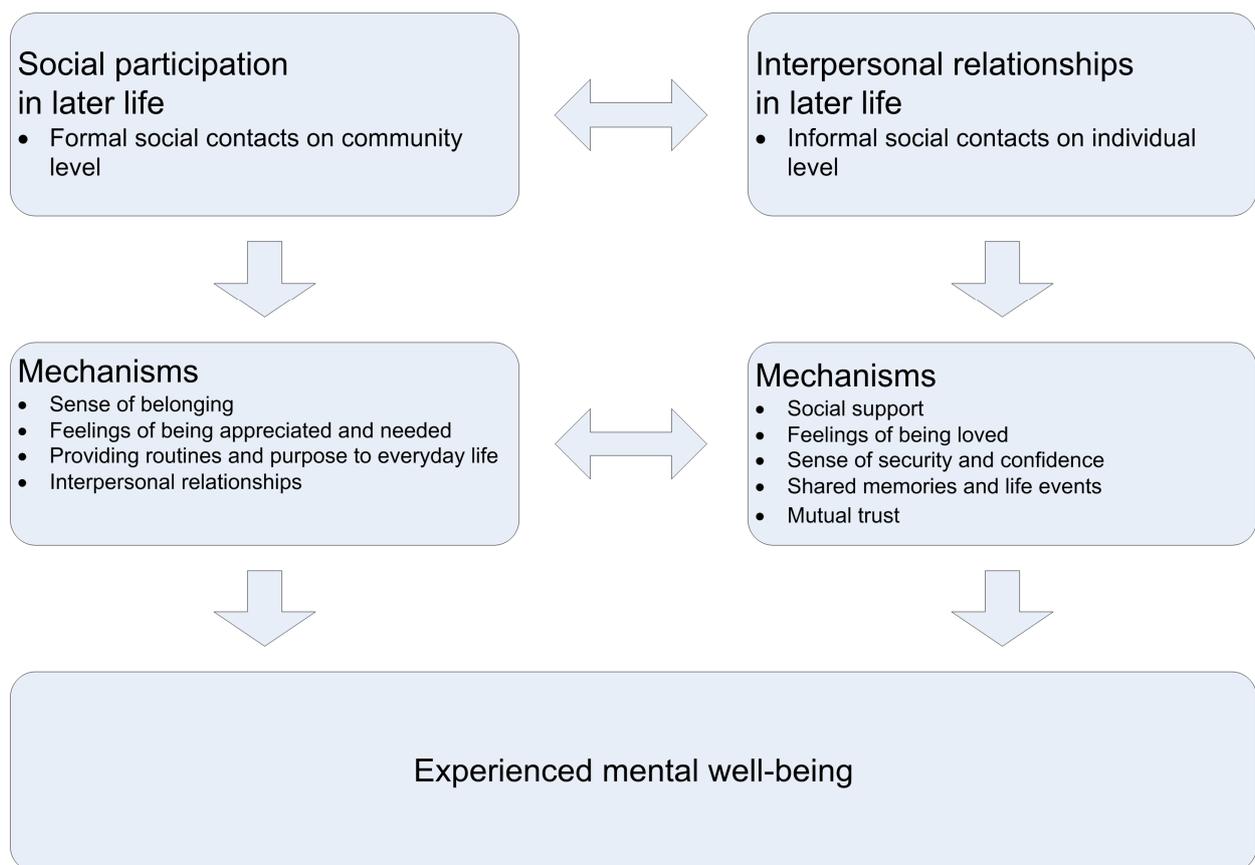


Figure 3. The mechanisms between two levels and components of social capital and the experienced mental well-being of older adults.

10 Discussion

10.1 Key findings

Depression and psychological distress covariates – aspects of social capital

The key findings of the thesis are that low structural and cognitive social capital (defined for example by Almedon, 2005; Harpham et al., 2002) are both significantly associated with depression in older adults. These results are in line with the large body of research emphasising the strong link between various social capital components (e.g. social networks, social participation and trust) and mental health status across ages (Almedon, 2005; De Silva et al., 2005). Importantly, the findings add to the limited previous research on older adults taking both the structural and cognitive aspects of social capital into account.

Both structural and cognitive aspects of social capital considered in the data analyses showed clear statistically significant associations with depression, implying that quantity (i.e. the frequency of contact) and quality (i.e. how the contact is perceived) aspects of interpersonal relationships with for example friends are all significantly related to mental health in older people. However, the results were not completely conclusive; for instance, although the frequency of social contacts with neighbours was significantly related to depression, no statistically significant connection was found between depression and experienced trust in neighbours in Study I. Furthermore, while Study I found significant correlations between both the quantity (frequency of contact) and the quality (interpersonal trust) aspects of interpersonal relationships between friends and depression, Study II did not find the corresponding connection between the quality aspects of close social contacts and depression. It did, however, reveal a relationship with psychological distress. Additionally, components of both interpersonal trust between friends and general trust in other people showed a significant connection with mental health status (i.e. depression or psychological distress in Study I and II respectively), indicating that both individual-level and community-level social capital are relevant mental health predictors (De Silva, 2005).

The discrepancy of the findings are most likely due to the fact that different social capital measurements were applied in the conducted studies, highlighting that variations in results exist depending on assessments and study designs used. Further, the various measurements of mental status in the studies should also be noted, limiting the comparison of the study findings from the independent studies.

Depression and psychological distress covariates – demographical factors

In addition to the social capital aspects, marital status was significantly associated with depression. Being single was significantly connected to depression compared to living with a spouse in both Study I and II and these findings correspond to previous studies that have identified statistically significant associations between depressive disorders and living alone (Adams et al., 2004). A possible explanation for this connection could be that marital status is related to important aspects of the individual's social capital not captured in the measurements in Study I or II, such as close social contacts and social support within family in everyday life.

The older age groups considered in the logistic regression analyses were also significantly associated with depression (among people aged 80 in Study I) or psychological distress (among people aged between 70 and 80 in Study II) These findings are in line with previous research highlighting a higher prevalence of depressive disorders in the older age groups – among women in particular who are the majority in these age groups (Barry et al., 2008). Interestingly, Study I showed contradicting results in this respect, gender not predicting a higher rate of depression, while the association was significant for depression but not for psychological distress in Study II.

The analyses of Study II did not show any significant differences in the distribution of depression between those living in urban and rural areas, indicating that the level of urbanisation was not an important predictor for depression or psychological distress in the data materials used. This is somewhat contradictory to previous research, which has found a higher prevalence of depression among older adults in rural areas compared to urban areas (Mechakra-Tahiri, 2009); although other Nordic studies have not discovered any significant differences in regard to the issue (Bergdahl et al., 2007). It is, however, important to acknowledge that the definitions and classifications of rural and urban areas differ by country and geographical regions, with fairly small structural differences between rural and urban areas within the Bothnia region compared to other settings, which encompass metropolitan areas. The level of urbanisation was

not considered in the analyses in the other studies in the research project, but an overrepresentation of rural-residing participants was found in both Study I and II.

The distribution of depression by study region (Finnish versus Swedish region) was, nonetheless, examined in Study I, although it showed no significant differences. This finding was not very surprising, given the fact that the closely located regions share many characteristics (e.g. sparse population, long geographical distances, traditions and other cultural values). Nevertheless, the conducted interaction effect analyses in Study I showed that the associations between social capital and depression differed in the two study regions; the relationship between low levels of social capital and depression was more prominent in Sweden than in Finland. A plausible explanation for this is factors related to the historical context, such as the older Finnish generations growing up in an agricultural society and the experiences of war or post-war during the 1940s and 1950s, circumstances that were not shared with the Swedish people in the same time period. The varying childhood experiences related to the historical context should also be noted in the interpretation of the findings, which found significant differences by age in both Study I and II.

Distribution of social capital – gender differences

Significant gender differences were found in both Study I and II with regard to the distribution of various social capital components. In Study II, women experienced that they had more people in their social networks that they could count on, as well as more concern shown by other people compared to men. However, no significant gender differences were found regarding sense of belonging and trust in Study II.

In Study I, women reported more frequent contact with and more experienced trust in friends compared to men while no significant differences were found for the corresponding aspects of the relationship between neighbours. Based on these findings from Study I, it could thus be concluded that there are differences between interpersonal relationships with friends and neighbours in old age. The results were also simultaneously in line with previous research as they showed that older women generally tend to have larger social networks and more social contacts outside the family compared to older men (Cornwell, 2011).

The effectiveness of psychosocial interventions for mental health promotion and depression prevention

The findings of this thesis, based on both quantitative and qualitative data, highlight the effectiveness and subjective importance of social activities for the maintenance of mental health and mental well-being among older adults. The evaluated psychosocial interventions were, however, few and in general characterised by a small or no effect. Apart from the effectiveness of social activities, the effect of physical exercise, skill training, reminiscence and multicomponent interventions in reducing depressive symptoms was small and not statistically significant. The social activities evaluated (i.e. activities where the social interaction was the main focus) significantly reduced depressive symptoms when compared to no-intervention controls in the systematic review and meta-analysis. These interventions contained membership in a choir with rehearsal gatherings and occasional public performances (Cohen et al., 2006), as well as social conversations and other activities enhancing social contacts and roles (Yuen, 2002; Yuen et al., 2008). The various benefits of social activities are underlined in all four studies included in the thesis, strengthening the robustness of the review results. The social activities were according to the findings an important mental health resource because of the accompanied sense of belonging to a social group, as well as providing purpose to everyday life and feelings of hope for the future. Further, social contacts and social participation are important mental health protective factors, balancing the negative experiences related to declining physical health. These findings point out that – in order to be effective – interventions with the aim to promote mental health and prevent mental ill-health among older adults should provide activities and content that is conceived as meaningful to the receivers. In addition, social activity interventions should aim to promote and maintain a strong social network and a related sense of belonging to the community.

The findings of this thesis indicate that a focus on enabling participation in social activities is needed in the work to maintain and promote mental health in older adults. These main findings are in line with the theoretical frameworks on activity in later life (Burbank, 1986; Havighurst & Albrecht, 1953) and with the limited previous research on the effect of psychosocial interventions targeting older people and their mental health (Cattan et al., 2005; Masi et al., 2010). The findings are also coherent with previous research presenting a model for successful ageing (Bryant et al., 2001), where meaningful activities were identified as the core component which depend on social resources and abilities.

The connection between experienced mental well-being and social capital

The immediate family and life-long relationships between friends were identified as important factors within the key findings on the mechanisms of older people's social capital and their impact on experienced mental well-being. The findings are in line with previous research identifying family and friends as the most important mental health promoting factor among older adults (NHS Health Scotland, 2004).

The findings of the thesis reveal that close social contacts provide a sense of security and reciprocal love and appreciation, support and trust. To have long life friends was an important resource that generated valuable support in later life. These findings suggest that the characteristics of close interpersonal relationships are different and specific for different age groups. Further, the findings highlight that these relationships are in later life influenced by previous life experiences and events.

10.2 Contribution and theoretical advances

The key findings of this thesis, which identify how and in what way psychosocial factors are connected to mental health and experienced mental well-being in old age, add to the limited empirical knowledge and understanding of older adults' mental health and the association to various social capital components (Almedom, 2005; De Silva et al., 2005).

Social activities have been emphasised for their important function and role in the maintenance and enhancement of older people's mental health and mental well-being (Cattan, 2009; Havighurst & Albrecht, 1953). According to previous studies, these activities enable social contacts and prevent sense of loneliness, as well as give older adults a stronger sense of being appreciated (Bryant et al., 2001). What the current research adds to the body of empirical and theoretical knowledge is the reason why maintaining engaged in various social activities is important for mental health and experienced mental well-being in later life, that is, because of the accompanied sense of belonging to a social context, a purpose in life and social roles.

Putnam's (1993, 2000) theoretical framework of social capital stress the importance of social participation in association activities (formal contacts on community or collective level) and this was also confirmed from the findings of the thesis. However, informal social contacts and

activities between friends and within family (bonding social capital) were identified as the key factors for mental health and the experienced mental well-being in older people, hence adding to the work of Putnam that emphasises the benefits of bridging social capital.

In line with this, it should be noted that interpersonal relationships within the family structure (e.g. spouse, children, grandchildren, other relatives) seemed to be one of the most frequent and important social contacts among older adults, which complicates the connection to the theoretical perspective of Putnam (1993, 2000). This was a challenge encountered during the work of the thesis. The findings suggest that a shortcoming of Putnam's perspective is that it – with its emphasis on formal social contacts – seems to be based mainly on life conditions of the working age population who contributes to and participates in society through their working life. Family ties are thus not considered as the key component of social capital according to Putnam's perspective and, therefore, the applicability to life conditions of other age groups could be questioned. Moreover, it is important to bear in mind that Putnam's traditional focus is not on mental health and well-being, but on community welfare and democratic development. These are some valid arguments for the need to further develop the use of Putnam's (1993, 2000) social capital concept, which is the theoretical framework most widely used within health research (Kawachi et al., 2008).

However, although social ties on the individual level are not traditionally included in the social capital concept as viewed by Putnam (1993, 2000), his work does recognise the benefits of individual-level social capital on subjective well-being, as well as its importance as a prerequisite for the community and society-level social capital (Helliwell & Putnam, 2004). According to the present findings, the bonding social capital is, however, the core component of older adults' mental health.

Consequently, based on the main findings of the thesis on the psychosocial mental health covariates, it is suggested that another theoretical framework should be used alongside the important theory of social capital when aiming to explain the interaction between mental health and psychosocial factors in older adults. For example, an adapted version of Bronfenbrenner's (1979) ecological model could be a useful tool for the theoretical illustration of older people's psychosocial health. The ecological model – emphasising mutual interaction between the individual and various social contexts and levels of society and the connection to mental health – complements the theoretical framework and multi-level concept of social capital well. As a valuable addition to the theory of social capital, the ecological model contributes to the

theoretical understanding by including the individual-level perspective on mental health and well-being.

Figure 4 summarises the key findings of this thesis, outlining identified multi-level psychosocial mental health covariates among older adults. At the same time, the figure illustrates the common, as well as the paralleling or different concepts when comparing the social capital theory (Putnam, 1993, 2000) and the theory of ecological systems for human development and psychological health (Bronfenbrenner, 1979). In addition, it shows the potential of explaining mental health of older adults by combining the essential concepts of these two theoretical frameworks.

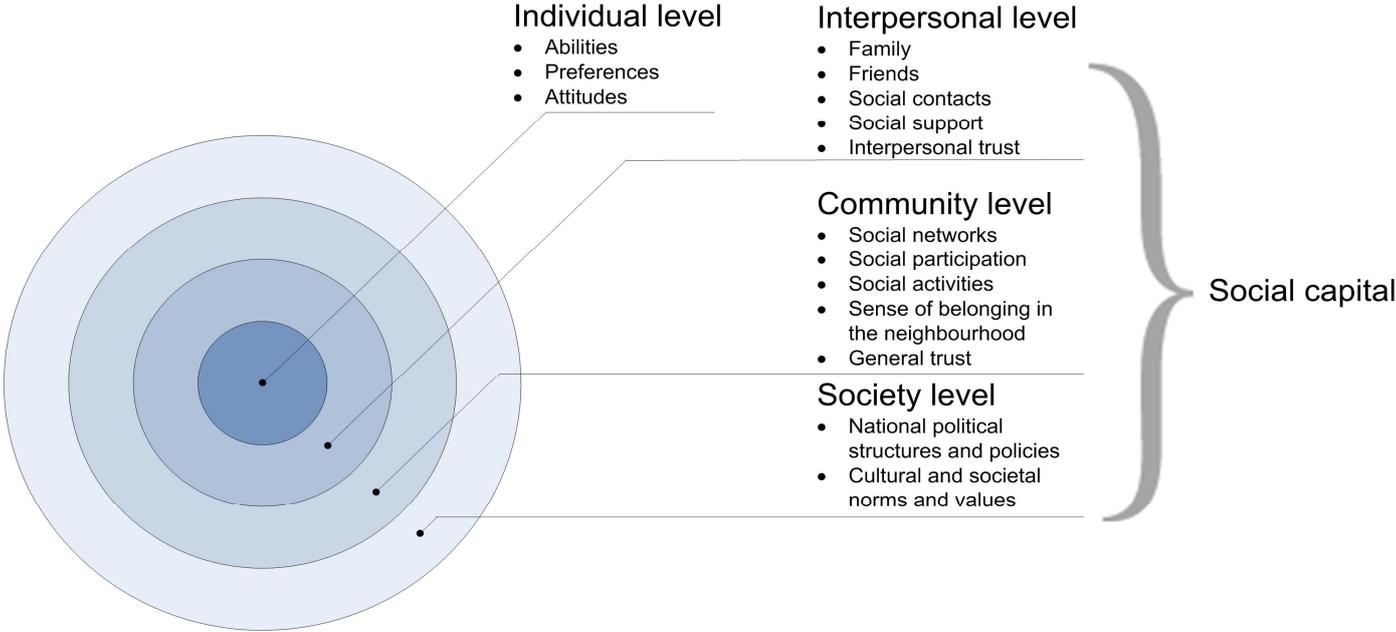


Figure 4. Multilevel model: Psychosocial mental health covariates among older adults and how these can be related to Putnam’s (1993, 2000) theoretical perspective of social capital. *Adapted from Bronfenbrenner’s ecological model (1979).*

These findings call for action to enhance and maintain social networks and social participation among older adults who might be at risk of decreased social interaction and participation. Opportunities for meaningful roles in later life should be created and encouraged at all levels of society, such as the workplace, the community and the neighbourhood. Various forms of volunteering and social engagement and intergenerational support could be mentioned as examples of settings where potential social roles can be provided. Further, the study findings clearly demonstrate that older adults wish to maintain active and socially engaged for as long as possible in late life, while social exclusion and disengagement from the social roles received during one's life course is involuntary and avoided when possible. These findings are clearly in line with the perspective illustrated by the activity theory (Burbank, 1986; Havighurst & Albrecht, 1953).

To summarise, the findings of the thesis add to the limited body of research on psychosocial factors associated with mental health in older people and illustrate how this knowledge can be implemented in the promotion of mental health and depression prevention. Additionally, the mechanisms of older people's social capital and their influence on experienced mental well-being in later life are identified and therefore add to the body of knowledge on the social capital concept among older adults.

10.3 Methodological viewpoints

Various study designs and methods

In the work of this thesis, several methodological approaches were applied in order to answer the research questions linked to the overarching aim of the thesis – to identify important psychosocial factors for mental health promotion and depression prevention in later life.

Both quantitative and qualitative study approaches were used in order to approach the research interests of the thesis. Further, a variety of outcomes were in focus in the four studies, which were assessed in different ways using various indicators and measurement instruments. Because the main results from the four independent studies (Studies I to IV) support each other, the different methodological approaches could be argued to strengthen the validity of the findings (Patton, 2002). However, the variety of designs and defined outcomes can also be claimed to

limit the reliability and generalisability of the findings, due to the lack of stringent study and analysis procedure within the research project (Hesse-Biber, 2010).

The use of several different study designs and methods within the research project was motivated by the fact that social capital is a multi-dimensional concept (Almedom, 2005; Islam et al., 2006), central to mental health and ill-health promotion and prevention strategies that draw on psychosocial factors (Harpham et al., 2002). The social capital concept has in this research project been targeted by both quantitative data analysis methods (such as logistic regression analyses providing numeric values for association measurements) and focus group interviews and related qualitative analyses, mirroring in-depth narrative aspects of the investigated phenomenon.

Mental health status, similarly to the social capital concept being a multi-dimensional concept, was also examined from different perspectives across the research project. Both positive and negative aspects of mental health status were studied, even though the main focus was on negative aspects due to the measurements of depression in three of the four studies.

Sampling and selection bias

The study samples of Studies I and II were selected based on the characteristics of the total population in the study regions, resulting in population-based samples that represented the study regions well. The response rates were over 60 per cent which is considered adequate for postal surveys (Dillman, 2000; Punch, 2003), but the attrition rate was still considerably high and this might have had an impact on the study findings.

Particularly when investigating sensitive topics (such as issues related to the individual mental health status), the risk of high attrition rates is prominent (Dillman, 2000). Related to this, the risk of selection bias within the study sample is notable for the survey-based studies due to the fact that people suffering from mental health problems might be unable or avoid to answer the questions related to these issues, causing a higher internal attrition rate. However, the fact that participation in both postal surveys was anonymous may have had a balancing effect of the overall attrition rate in the present research.

The validity of the findings is decreased by the potential of selection bias related to study samples; for instance, older adults suffering from mental ill-health or cognitive decline (e.g. dementia) may not have been represented among the respondents of the survey study samples,

nor were they represented in the focus group interviews or among the participants in the intervention studies evaluated in the systematic review and meta-analysis. Thus, the representativity of the study samples could be debated. On the other hand, the overarching aim of the research was to look at mental health promotion and early prevention of depression in older populations. This is a broad approach traditionally not focusing on specific groups suffering from ill-health, but on the general healthy population (Barry & Jenkins, 2007; Jané-Llopis et al., 2007).

In Study IV, the sample was intended to be representative through inclusion of both older adults living in nursing homes and independently in the community. In addition, effort was made to include the corresponding proportions of men and women and both younger and older adults. However, the degree of generalisability could, apart from the low number of participants, be discussed because of the fact that only Swedish-speaking Finns participated in the interviews. Swedish-speaking Finns have been described to have a better self-rated health compared to Finnish-speaking Finns (Hyyppä, 2010; Hyyppä & Mäki, 2001). On the other hand, the aim of the focus group interviews and other forms of qualitative research methods is not to objectively generalise the findings to other study populations in different contexts. Instead, the principal aim is to provide an in-depth description of a specific phenomenon or process in its natural context, focusing on subjective experiences (Patton, 2002).

Assessment of mental health status and social capital

The measurement instruments used for the studies were to a large extent standardised and internationally validated (such as GDS-4 and CIDI-SF for depression, GHQ-12 for psychological distress). This strengthens the overall validity of the findings. On the other hand, several of the variables used for the social capital concept were measured by non-standardised instruments; this is an evident risk of bias which will decrease the validity of the study findings (De Silva et al., 2005). However, these instruments were also balanced with for example, the internationally used and evaluated instrument OSS-3 for measuring social support.

In the survey studies aiming to detect associations, the depression variable was defined and dichotomised according to two different rating scales; GDS-4 and CIDI-SF. The CIDI-SF instrument has a notably higher sensitivity than GDS-4 (D'ath, et al., 1994; Kessler et al., 1998). These are factors that most likely had an impact on the study findings, causing inaccurate figures of the distribution of depression in the study population. However, short versions of

assessment instruments have been recommended for use among the older population due to heightened prevalence of various disabilities that might complicate the completion of the instrument compared to younger age groups (Snowden et al., 2009; van Marwijk et al., 1995). Especially in survey questionnaires, the benefits of short measurement instruments have been highlighted (Dillman, 2000).

Another limitation that should be mentioned regarding the assessments and identification of depression in the thesis is the fact that the dichotomisation of the studied variables is a prominent simplification of the real situation. Hence, the dichotomisation of the depression or psychological distress variables should be seen as potential threats to the validity and generalisability of the study findings; due to the heightened risk of loss and manipulation of data (Pampel, 2000).

In summary, with respect to the measurement instruments it could be discussed whether they are relevant for measuring aspects of mental and social health only in research contexts or if they can also be adapted to adequately measure aspects that are directly relevant to the target population. For example, the measurements of levels of depression symptoms by various rating scales (e.g. GDS or CIDI) are interesting for researchers evaluating intervention programs and for clinicians, but on an individual level, it might feel more comprehensible and useful to be questioned about quality of life or other aspects that relate to everyday life.

Lack of evidence versus effect

The systematic review and meta-analysis failed to show any large effects of psychosocial interventions due to lack of eligible data available. The absence of evidence should, however, not be viewed as lack of effect; when urgent issues of public health are concerned we must question whether the absence of evidence is a valid enough justification for inaction (Altman & Bland, 1995). Lack of evidence can in this case be related to the fact that there is relatively little empirical knowledge on the subject of promotion and prevention in mental health focusing on psychosocial predictors among the older adults exclusively.

Further, if there are eligible data we should aim to study the quantifiable association rather than only considering the high p value indicating statistically non-significant effects due to lack of power (Altman & Bland, 1995). Where risks are small (such as in the review measuring primary prevention of depressive symptoms among non-depressed older adults), p values may be

misleading due to the wide confidence intervals. The fact that the review managed to show statistically significant results on the evaluated effects should therefore be considered as guidelines for promising first-step strategies in mental health promotion work targeting older people.

Pre-understanding

In all forms of research we have to be aware of and deal with our pre-assumptions and pre-understanding in order to remain open throughout the whole study process and to decrease the risk of affecting the analysis to our profit (Patton, 2002). This is, however, especially important in research based on qualitative data (such as Study IV of this thesis, Patton, 2002; Polit & Beck, 2004). According to Polit & Beck (2004), conformability is one of four main criteria that should be considered in order to ensure the validity of the study findings. Conformability indicates the researcher's neutrality and refers to whether the data represent the information the study participants provided or if it is influenced by the biases or pre-understanding of the researcher (Polit & Beck, 2004). If the conformability criterion cannot be met, the findings might reflect something already existing in our understanding and not be based on the real situation (Berg, 2009).

As a researcher, it is important to distance oneself in order to avoid influencing the data. At the same time, it may be seen as an asset to be able to maintain closely connected to the field and the knowledge necessary to understand it (Sandelowski et al., 1998). Thus, the researcher's own knowledge and interest in the field of social science research should be mentioned as a potential risk of bias for the present research. The outline of the present studies, as well as the reflections generated are inevitably influenced by the researcher's knowledge and pre-understanding of psychological theories and psychosocial processes. In addition and because of this, it might be seen as a risk of bias that the same researcher has been the principal researcher in all four studies and strongly involved in all parts of the research process (e.g. study design, data collection, data analysis). However, in order to avoid these risks of bias, close collaboration with the co-researchers have occurred throughout the research project – from planning of study design to data analyses and interpretation. In addition, all stages of the research process have been documented and described in detail in order to ensure transparency and study replication (Patton, 2002).

The importance of context

The validity and generalisability of the study findings might be impacted by the geographical context of the studies, which in three out of four studies is Nordic and for the most part Finnish. The results may be context-sensitive, meaning that there is a lack of knowledge on whether the findings are comparative with the situation in other geographical contexts. Further, the study which included two Nordic regions may be argued to represent a more heterogeneous study sample compared to the studies conducted in Finland only, but overall the investigated study populations were homogeneous, which limits the generalisability to other population groups.

Nevertheless, the fact that all studies based on survey and interview data were conducted in Finland (two studies) and in Sweden (one study) increases the possibility of generalising the findings to the Nordic context. The situation is, however, reversed for the systematic review, as the majority of the evaluated intervention studies were American and had not been implemented in the European or the Nordic context for evaluation. This is a major weakness of the results from the systematic review.

Another potential bias related to the study context is the overrepresentation of rural-residing participants in Studies I and II, which could impact on both the validity and the level of generalisability of the findings. This is especially important when measuring the level of social capital and the prevalence of mental ill-health and the association between these factors, as previous research has identified a complex relationship between psychosocial factors and the level of urbanisation (e.g. larger families but long geographical distances between the family members, Bergdahl et al., 2007; Nummela et al., 2008).

The validity of the measurements of social capital should also be mentioned, since previous research has pointed out the existing challenges when applying various measurement instruments of social capital in different settings (De Silva et al., 2005). Another limitation that is related to the measurements of social capital in Studies I, II and IV is that the level of social capital is generally high among the Nordic countries compared to other areas (Iisakka, 2006). The geographical context of the studies might, therefore, generate misleading figures of the level of social capital among the study participants and of the studied associations to mental health, that may not be applicable to other geographical contexts.

Determining causality

A major limitation of this thesis is the cross-sectional study design that precludes causality measurements (MacCallum et al., 2000). Both Study I and II had a cross-sectional design, prohibiting the establishment of causality between the studied variables or various confounding factors. Consequently, these findings are unable to determine the directions of the connection between mental health and the psychosocial factors studied. However, a strength of Study III was that the inclusion criteria of the review required that the evaluated intervention studies had control conditions. For this reason, comparisons and determination of the direction of the effects are enabled – at least to some extent. These factors strengthen the validity of the findings on intervention effectiveness on the mental health outcomes.

10.4 Societal and public health relevance

Mental health promotion and the prevention and early detection of depressive symptoms and disorders, which is one of the most prevalent mental disorders among older people, are of clear relevance both from the individual and the societal perspective. While the wide range of benefits on an individual-level has been broadly determined and discussed in this thesis, it is also important to acknowledge the societal benefits and implication possibilities.

Based on the findings of this thesis, it can be concluded that mental health is strongly correlated with social capital in later life and that interventions that support the individual-level social capital are promising as measures to promote mental health and well-being among older adults. Further, these psychosocial interventions (i.e. non-pharmacological with emphasis on psychological and social aspects) with the aim of promoting mental health among the general population are cost-effective for society. The cost-effectiveness stems from the maintained positive function and early detection of potential mental health problems that will reduce the burden of disease and related costs in the growing older population (Knapp et al., 2011; Smit et al., 2006). This thesis is thus meant to add to the limited knowledge base on the large potentials of non-pharmacological initiatives aiming to enhance mental health and well-being in later life. Equally important, the thesis should be viewed as a critical voice in the debate regarding the misuse of psychotropic drugs among older adults (e.g. Hosia-Randell et al., 2008; Lesén, 2011).

Another important aspect related to the implementation of psychosocial interventions is that the responsibility should not lie merely with the health care sector, but instead mental health promotion and depression prevention initiatives should rely on inter-sectorial co-operation across various community and societal levels (Cuijpers et al., 2012; WHO, 1986). This calls for increased knowledge among the actors on the various levels of society on evidence-based mental health predictors and the potential implications.

Furthermore, the identification of the importance of social contacts with family and close friends for maintaining mental health and well-being among older adults is an important finding that should be acknowledged also in the society context, especially considering the changes in the family structure related to socio-demographic changes of today (e.g. urbanisation, increased number of divorces, decreased number of born children, Eurostat, 2011b). For instance, because of the high level of urbanisation in Europe, older adults often live at a long geographical distance from the younger generations, resulting in a decreased frequency of intergenerational social contacts (Eurostat, 2011a). This should be taken into consideration in the planning of mental health policies and initiatives – to be aware of the consequences of older adults living far away from their extended families, such as social isolation and feelings of loneliness. In addition, older people who do not have a life partner, children or an extended family should also be regarded as a prioritised risk group for mental ill-health and they should have access to initiatives that enable other social contacts or roles.

On the other hand, there is a wide range of technical devices that enable social contacts despite geographical distances. These are for example Internet and the through Internet provided tools of social media, such as virtual social communities and blogs. The potential for Internet as a tool to enable both social contacts and accessibility of various services and interventions among older adults is broad. Simultaneously, there is an evident risk of social exclusion and other inequalities if the older generations are not given the support they need in order to be introduced to these e-resources (Ybarra & Eaton, 2005). This is a challenge that should be given attention and priority.

Finally, it is necessary to remember the fact that the older generations of today are first of all not a homogeneous group, but a population encompassing a wide range of individuals. Secondly, they will differ from the following older generations. For instance, older people of today probably have different needs and expectations of service and care, than what older generations will have in the future. These are facts that are especially important to consider in the planning of interventions, requiring that older adults are given opportunities to be involved in the

planning stage of interventions, community services or national policies (Cattan, 2009; Futurage, 2011).

11 Conclusions

Older people lacking social networks with regard to both quantity (i.e. the frequency of contact) and quality (i.e. how the contact is perceived) aspects are at an enlarged risk of suffering from depression and psychological distress as defined in this thesis. This risk group should therefore have access to initiatives that empower social networking and maintain a rich social life at old age. The findings of this thesis illustrate the need to actively maintain social networks and interactions of older people in order to promote mental health and prevent mental ill-health.

In addition, the findings identify the great potential of psychosocial interventions as cost-effective initiatives that will support active and healthy ageing in older adults when appropriately implemented. The theoretical frameworks of social capital can be of great use in the planning of effective intervention programmes targeting older people's mental health and well-being. Based on the findings of the thesis, it is, however, suggested that the theoretical concepts of social capital should be adapted and further developed in order to more appropriately fit the needs of older people, for example by taking family ties into further consideration.

Consequently, the importance of social capital, e.g. social networks and interpersonal relationships, for the individual's maintained mental health and well-being should be highlighted and taken into consideration in the planning and implementation of elderly care. By making efforts to support the social contacts and relationships already established by the older individual, as well as aiming to enhance the development of new relevant social contacts when possible, important prerequisites for mental health and experienced mental well-being in late life are created and secured.

Additionally, it is vital to involve the older adults themselves in the planning of initiatives aiming to enhance mental health and well-being, especially since the personal needs, preferences and abilities vary to a great extent on an individual level. The effectiveness of psychosocial interventions is, according to the findings of this thesis, connected to the perceived relevance and meaningfulness for the receivers, this being another motivation for involving the target group of the interventions already in the planning stage.

12 Future research

Based on the findings of this thesis, potential areas for future research have been identified. Firstly, few prospective studies exist on the primary prevention of depression and on mental health promotion programs targeting older people exclusively. More large-scale, high-quality controlled trials on psychosocial interventions are needed to assess intervention feasibility and mental health effects in older people. The emphasis should be on social activity interventions, since these types of initiatives were the most promising when compared to other psychosocial intervention types evaluated in the thesis.

Further, in order to determine the effectiveness of psychosocial interventions, a more appropriate approach within the primary prevention research could be to identify and assess the psychosocial predictors for positive mental health, rather than assessing depressive symptoms among non-depressed older populations. Positive mental health outcomes should be prioritised in future research, looking at the resources for positive mental health and well-being and how these could be strengthened and maintained among older adults. Intervention research drawing on the social capital concept and related theories should also be further examined. The importance of understanding the underpinning processes and mechanisms of the implemented interventions should also be underlined and this highlights the need for employing qualitative evaluation methods in parallel with the intervention research that focuses on merely quantifiable effect estimates.

Another intervention focus that should be prioritised due to the fast technological advances in society is various forms of e-learning provided to older adults. There is little research on the use of Internet and related benefits on mental health among older people. It is, however, clear that the older population needs to be included in the technologically advanced society of today and thus the planning, implementation and evaluation of mental health interventions based on e-resources should be a highlighted area of research and development.

Further, an identified area of future research based on the findings from this thesis is the link between mental health and well-being and the interpersonal relationships within the family structure. For instance, because of the identified benefits of family ties for the experienced mental well-being, it should be further investigated how this mental health resource could be

better acknowledged and supported. Within this research area, central themes and concepts are intergenerational relationships (i.e. social contacts across generations), as well as the changing family structure due to socio-demographical changes (e.g. increased number of divorces).

In addition, future research should recognise the multiple dimensions and aspects of social capital in their study designs by looking at the social capital concept and its benefits on several levels (e.g. individual, community and societal). An example of a study design and analysis method for this purpose is statistical multi-level modelling and analyses. Also, it would be advisable to supplement the research of the present thesis with cohort studies based on longitudinal data, enabling the identification of causal relationships between mental health status and various aspects of social capital.

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Vaasa, Finland

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Anna Forsman

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