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LONELINESS OF OLDER PEOPLE AND ELEMENTS OF AN INTERVENTION FOR ITS ALLEVIATION

by

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To my dear family

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ABSTRACT

Loneliness is common among older people and nurses have limited means to alleviate it. The study was in two parts. In phase I, the aim was to acquire information on the concept of loneliness, its relationship with social isolation and a global feeling of insecurity, and to acquire information on the prevalence of community-dwelling older people's (≥75 years) loneliness, its associated characteristics and subjective causes. In phase II, the aim was to identify the essential elements of the psychosocial group rehabilitation (PGR) intervention which was developed to alleviate older people's loneliness and to describe the experiences of the PGR participants.

The data in phase I were gathered using a postal questionnaire sent to a random sample (N=6 786) of older people in various parts of Finland. The number of returned questionnaires was 4 113, and the response rate for community-dwelling older people was 72%. The respondents' mean age was 81 years and 69% were women. The data in phase II consisted of the diaries written by the PGR intervention group leaders (N=14), researchers free observation notes (N=32) on the group activity, and a feedback questionnaire filled in by participants (N=103) after the PGR intervention.

The findings showed that there was a distinction between loneliness, social isolation and a global feeling of insecurity. Of the respondents, 39% suffered from loneliness at least sometimes. Several demographic and health-related factors, dimensions of psychological well-being, as well as expectations related to social contacts were associated with loneliness. Losing one's parents in childhood was not associated with loneliness experienced in old age. Several causes of loneliness were mentioned. Several elements were considered essential in the PGR intervention aimed at alleviating the loneliness of older people. These elements were divided into a) predetermined elements, b) favourable processes between and within the participants, and c) mediating factors. The predetermined elements were further divided into the factors related to the group participants, group leaders, and group activities. The PGR intervention participants found the groups very meaningful, with 95% feeling that their loneliness was alleviated during the PGR intervention.

Recognizing the loneliness of older people poses a challenge for nurses. The detailed description of the PGR intervention helps nurses to identify the elements that may alleviate older people's loneliness.

Keywords: loneliness, older people, psychosocial group rehabilitation intervention, psychological well-being, social isolation, global feeling of insecurity

Niina Savikko, IKÄÄNTYNEIDEN YKSINÄISYYS JA INTERVENTION ELEMENTIT SEN LIEVITTÄMISESSÄ
Hoitotieteen laitos, Lääketieteellinen tiedekunta, Turun yliopisto, Annales Universitatis Turkuensis D 808, Painosalama Oy, Turku 2008

TIIVISTELMÄ

Ikääntyneiden yksinäisyys on yleistä ja hoitotyöntekijöillä on vähän keinoja sen lievittämiseen. Tutkimus oli kaksiosainen. Ensimmäisen osan tavoitteena oli saada tietoa yksinäisyyden käsitteestä, sen yhteydestä sosiaaliseen eristäytyneisyyteen ja yleiseen turvattomuuden tunteeseen sekä kotona asuvien ikääntyneiden (≥75 v.) yksinäisyyden yleisyydestä ja siihen yhteydessä olevista tekijöistä sekä selvittää ikääntyneiden itsensä kokemia yksinäisyyden syitä. Toisessa osassa tavoitteena oli tunnistaa yksinäisyyden lievittämiseen pyrkivän psykososiaalisen ryhmäkuntoutus (PRK) –intervention elementit sekä kuvata ryhmiin osallistuneiden kokemuksia interventiosta. Ensimmäisessä osassa tutkimusaineosto kerättiin postikyselyllä, joka lähetettiin eri puolilla Suomea kotona tai palvelutalossa asuville satunnaisotannalla valituille ikääntyneille henkilöille (N=6 786). Vastausprosentti oli 72 % (n=4113). Vastaajien keski-ikä oli 81 vuotta. Tutkimuksen toisessa osassa aineisto koostui PRK-intervention ryhmänvetäjien (N=14) kirjoittamista päiväkirjoista, tutkijoiden vapaista muistiinpanoista ryhmätoiminnasta (N=32) sekä ryhmäläisten intervention jälkeen täyttämistä palautekyselystä (n=103).

Tulosten mukaan yksinäisyys, sosiaalinen eristäytyneisyys ja yleinen turvattomuuden tunne näyttävät olevan eri asioita. Vastanneista 39 % kärsi yksinäisyydestä vähintään joskus. Useat demografiset ja terveyteen liittyvät tekijät, psyykkisen hyvinvoinnin ulottuvuudet kuten myös sosiaalisiin suhteisiin kohdistetut odotukset olivat yhteydessä yksinäisyyden kokemiseen. Vanhempien menettäminen lapsuudessa ei ollut yhteydessä yksinäisyyden kokemiseen. Yksinäisyyden kokemuksiin oli useita syitä. Aineistosta tunnistettiin elementtejä, joiden katsottiin olevan tärkeitä yksinäisyyden lievittämiseen pyrkivän PRK-intervention toteutuksessa. Nämä voitiin jakaa ennalta määriteltyihin elementteihin, ryhmäläisten sisäisiin ja välisiin suosiollisiin prosesseihin sekä välittäviin tekijöihin. Ennalta määritellyt elementit liittyivät ryhmäläisiin, ryhmän vetäjiin ja ryhmätoimintaan. Ryhmäläiset kokivat ryhmät erittäin merkityksellisiksi, ja 95 % koki, että yksinäisyys oli lievittynyt ryhmän aikana.

Ikääntyneiden henkilöiden yksinäisyys on haaste hoitotyön tekijöille. Tutkimuksessa kuvattu PRK-interventio auttaa hoitajia tunnistamaan ikääntyneiden yksinäisyyden lievittämiseen liittyviä elementtejä.

Avainsanat: yksinäisyys, ikääntyneet ihmiset, psykososiaalinen ryhmäkuntoutus -interventio, psyykkinen hyvinvointi, sosiaalinen eristäytyneisyys, yleinen turvattomuuden tunne

CONTENTS

LIST OF ABBREVIATIONS

ADL	activities of daily living
I	global feeling of insecurity
IADL	instrumental activities of daily living
MMSE	Mini-Mental State Examination
L	loneliness
PRK	psykososiaalinen ryhmäkuntoutus (Finnish translation for PGR)
PGR	psychosocial group rehabilitation
PGR intervention	psychosocial group rehabilitation intervention
RCT	randomized, controlled trial
SD	standard deviation
SI	social isolation
UCLA	University of California at Los Angeles
WHO	World Health Organization

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LIST OF ORIGINAL PUBLICATIONS

The thesis is based on the following publication, which are referred in the text by their Roman numerals from I to V:

I Savikko N, Routasalo P, Tilvis R, Strandberg T, Pitkälä K. Predictors and subjective causes of loneliness in an aged population. Archives of Gerontology and Geriatrics 2005; 41(3): 223-233. Publisher Elsevier.

II Routasalo P, Savikko N, Tilvis RS, Strandberg TE, Pitkälä KH. Social contacts and their relationship to loneliness among aged people – a population-base study. Gerontology 2006; 52 (3): 181-187. Publisher S. Karger AG, Basel.

III Savikko N, Routasalo P, Tilvis R, Pitkälä K. Feeling of insecurity of the elderly and its association with the feeling of loneliness. Sosiaalilääketieteellinen aikakauslehti 2006; 43: 198-206. In Finnish. Publisher Society of Social Medicine in Finland.

IV Savikko N, Routasalo P, Tilvis R, Strandberg TE, Pitkälä K. Loss of parents in childhood – associations with depression, loneliness and attitudes towards life in older Finnish people. International Journal of Older People Nursing 2006; 1: 17-24. Publisher Blackwell Publishing.

V Savikko N, Routasalo P, Tilvis R, Pitkälä K. Psychosocial group rehabilitation for lonely older people: a description of intervention and participants' feedback. Submitted.

 The summary also includes unpublished material.

1 INTRODUCTION

Loneliness is common among older people. It is related to several characteristics that impair the quality of life of older people, like depressive symptoms and decreased subjective health (Tilvis et al. 2000, Victor et al. 2000, Alpass & Neville 2003, Cohen-Mansfield & Parpura-Gill 2007). Loneliness may lead to cognitive decline, increased need of help and use of health services, as well as early institutionalization (Geller et al. 1999, Tilvis et al. 2000, Jylhä 2004).

Loneliness is a multi-faceted concept. In the nursing literature, the terms loneliness, feeling lonely or alone have often been used interchangeably (Karnick 2005). In addition, the concepts of social isolation and living alone have been equated with loneliness (Victor et al. 2000). In this study, loneliness is defined as *an individual's subjective experience of a lack of satisfying human relationships, and thus loneliness is a negative feeling causing distress to an individual*. The expressions "loneliness" and "suffering from loneliness" are used interchangeably because both meet the definition.

In this study, the older people refer to the individuals who are 75 years old or older, and live in their own homes or in a residential home. During the life course of today's older people, Finnish society has changed considerably from the period of four wars (see Salokangas 1997) and the great depression to the urbanization that has led to the disintegration of small rural communities. Urbanization has influenced, for example, the living conditions of older people since living alone has become more common among the older population (see Sundell 1988). These changes may also have influenced the older people's feeling of loneliness. In addition, there has been a change in how older people are viewed in the society. After the wars, aging was viewed as negative and it was mostly examined as a medical problem. Older people were seen as a homogeneous group. The modern view of aging emphasizes individuality, naturalness, dignity and resources of older people. Ageing is seen as a positive period of life that includes experience, wisdom and agency. (Jyrkämä 2003; 2007, Koskinen 2004, Kangasniemi 2005, Ryhänen 2007.)

The growing number of community-dwelling older people is a challenge for social and health care. The primary objective of the care for the older people is to support older people's autonomy, and to help them to live in their own homes as long as possible (Finnish government platform 2003). Loneliness and insecurity have been identified as risks for community-dwelling older people's health and independent living, and as risk factors for disability and dependence (Finnish Ministry of Social Affairs and Health 2003).

The feeling of loneliness is often experienced as shameful, and older people may also fear being or becoming a burden. Thus, they are reluctant to admit their loneliness. (Killeen 1998, McInnis & White 2001.) In addition, some older people may live in their homes with very few contacts with the social and health care services. Therefore, the recognition

of older people who may suffer from loneliness is a great challenge in health and nursing care. Home-care nurses and nurses making preventive home visits or working at health centres are in a key position to identify these older people.

Loneliness has been identified as a significant risk to health. However, our health care system and nursing care have limited means to recognize older people who may suffer from loneliness and to alleviate loneliness with nursing intervention. (Routasalo & Pitkälä 2003a; b.) With timely and effective intervention older people's well-being and functional ability can be supported, and living in their own home may be prolonged. Group interventions aimed at alleviation of loneliness seem to be more promising than interventions targeted at individuals. However, the contents of previously developed interventions have not been described in detail. (Findley 2003, Cattan et al. 2005.)

This study strengthens the knowledge base of nursing science and provides new information on community-dwelling older people's loneliness and on psychosocial group rehabilitation (PGR) for its alleviation. It explores the prevalence of older people's loneliness, its subjective causes and associated characteristics. It also explores the relationship between loneliness, social isolation and a global feeling of insecurity by differentiating them from each other. In addition, this study describes the essential elements of a successful psychosocial group rehabilitation intervention for lonely older people and the experiences of the PGR participants.

2 REVIEW OF THE LITERATURE

Loneliness has gained increasing attention in research during resent decades. A number of researchers refer to Weiss, who conceptualized loneliness and further divided it into the experience of emotional isolation or of social isolation in 1973. Another frequently referred publication is Peplau's and Perlman's (1982) work concerning the theory, research and therapy of loneliness. Otherwise, in the 1970's, loneliness was given fairly little attention in research, but the number of publications has increased when approaching the millennium. In the PubMed, the number of publications with the word loneliness in the title during the 1990's was 184, while the respective number for 2000-2007 was 197, which reflects a growing interest in this issue. Also the number of citations in the title or abstract has increased (Table 1). In the CINAHL database that is a database for nursing and allied health literature, only citations in the title could be reviewed. Loneliness appeared in the title for the first time in 1981. More on loneliness was cited in the CINAHL in the 1990's (111 citations), while the number of articles concerning loneliness from 2000 to 2007 was 113 (Table 2).

Table 1. Concept of loneliness mentioned in "Title" and in "Title or Abstract" in the PubMed.

Decade	Loneliness in Title	Loneliness in Title or Abstract
1960's	31	31
1970's	69	105
1980's	141	304
1990's	184	573
2000-2007	197	778

Table 2. Concept of loneliness mentioned in "Title" in the CINAHL.

Decade	Loneliness in Title
1960's	0
1970's	0
1980's	44
1990's	111
2000-2007	113

For this study, the literature was searched from the Ageline, British Nursing Index and Archive, CINAHL, Cochrane, HELKA, MEDLINE, PubMed, and SocIndex data bases at the end of 2007. First the titles of the articles were reviewed and abstracts of the relevant articles were read. After that the whole article was read and the relevance was assessed. All the articles discussing the concept of loneliness or concerning community-dwelling older people's loneliness were included. In addition, the reference lists of articles were reviewed to find relevant publications.

2.1 Concept of loneliness

Loneliness is a multi-faceted concept. In the nursing literature, the terms loneliness, feeling lonely and alone have often been used interchangeably. (Karnick 2005.) Loneliness is often discussed in conjunction with other phenomena like depression (Karnick 2005) or social isolation (Victor et al. 2000). The concepts of social isolation and living alone have been often equated with loneliness. However, a person may suffer from loneliness even when surrounded by other people. (Victor et al. 2000.) In most studies, loneliness has been considered a negative feeling. However, loneliness may also be voluntary and experienced as a positive and creative solitude (Tornstam 1990, Wenger et al. 1996, Andersson 1998, Killeen 1998, Nilsson et al. 2006). In Finnish there is only one word for both negative and positive loneliness, that is, "yksinäisyys".

In this study, loneliness is defined as an individual's subjective experience of a lack of satisfying human relationships, and thus loneliness is a negative feeling causing distress to an individual. The expressions "loneliness" and "suffering from loneliness" are used interchangeably because both meet the definition.

Emotional isolation, social isolation and living alone

According to Weiss (1973), loneliness can be divided into experience of emotional isolation or of social isolation. Emotional isolation represents the subjective response to the absence of a close and intimate attachment figure, e.g. the lack of a loved one or a spouse. Emotional loneliness is a subjective feeling and it can only be quantified by the individual experiencing it (Andersson 1998). In studies with a subjective perspective of loneliness, the results may reveal the intensity (very lonely – not at all lonely) of loneliness or only the participants' experience of being lonely (feels loneliness – does not feel loneliness).

Weiss (1973) defines social isolation as a situation where a person does not have a social network or is dissatisfied with the present social network (Weiss 1973). Other researchers refer to social isolation by the number of contacts and integration of an individual into the surrounding social environment (Cattan & White 2005). If a person is socially isolated his or her possibilities for social comparison and personal control are diminished. Through social activities, people seek social acceptance and rewards, and long for self-esteem and respect. A socially isolated person may feel socially frustrated. (Perlman & Peplau 1982, p.128.) Thus, the former definition implies that social isolation can be described only by the person him/herself, whereas the latter definition means that social isolation can be objectively measured by an outside observer. A few studies (e.g. van Baarsen 2002, Tiikkainen 2006) have tried to distinguish emotional loneliness from social isolation by measuring them at the same time. In these studies it has been shown that factors determining emotional and social loneliness are partly different and partly the same. They are often related to the changes and losses that older people face in their lives.

Living alone is a straightforward concept, which can be measured by the household size. However, this is not a valid measurement of loneliness since even when living with someone one may feel lonely. (Victor et al. 2000.)

Kangasniemi (2005) adds to the emotional and social isolation a physical loneliness when he discuss loneliness that is related to human relations. Physical loneliness refers to the fact that every human being needs to touch and to be touched (Kangasniemi 2005).

It has been suggested that loneliness with its related concepts may be described in a continuum that includes alienation, loneliness, social isolation, aloneness, solitude and connectedness. This continuum takes into account the human's choice (no choice –total choice) and society's perception of the concepts (negative-positive). (Killeen 1998.)

Summary
There are several ways to define and conceptualize loneliness. In some studies, loneliness has been considered as objectively measured phenomena, such as living conditions or number of friends. In studies where loneliness is considered as a subjective feeling, the findings may reveal the presence or intensity of loneliness. Loneliness may be a negative or positive feeling.

2.2 Theoretical perspectives on loneliness

Several theoretical perspectives have been used to explore the cause of loneliness. However, there are four main perspectives in common use. These are existential, psychodynamic, cognitive and interactionist theories. None of these is specific to old age or later life. (Victor et al. 2000.) In 1996 it was noted that the nursing profession has largely ignored theoretical perspectives on loneliness (Donaldson & Watson 1996).

Existential theory is purportedly the "Christian" perspective on loneliness. It considers loneliness as a positive opportunity, which is compounded by the experience of "love". Loneliness is viewed as a necessary aspect of life, and in life's most intimate moments we are basically "alone". The underlying problem of this theory from the perspective of nurses working with older people is its failure to differentiate between the objective nature of being alone and the subjective feeling of being alone. (See Donaldson & Watson 1996, Victor et al. 2000.)

Psychodynamic theory is based on the Freudian approach. This theory suggests that interpersonal, infant and childhood attachments and dilemmas are considered to provide a personality base which predicts future coping strategies. Some researchers regard loneliness as a state of mind which is symptomatic of neurosis stemming from an earlier life, which makes it difficult for lonely older people to form relationships. The limitation to this theory is that it focuses solely on a pathological explanation and fails to take into account the social world of older people, their culture, and the effect of ageing. (See Donaldson & Watson 1996, Victor et al. 2000.)

Cognitive theory focuses on the response to and experience of loneliness, and it also recognises the contribution of social factors. This theory proposes that it is the way in which people feel about their loneliness that is the determining factor in their experience of loneliness. It is seen that loneliness can be alleviated by supporting self-esteem and social skills. However, this theory fails to recognise the strong link between social networks and loneliness, and to include older people with cognitive impairment. (See Donaldson & Watson 1996, Victor et al. 2000.)

Interactionist theory is based on Bowlby's (1981) (see Donaldson & Watson 1996, Victor et al. 2000) attachment theory that is adopted from Weiss (1973), and refers to the emotional and social nature of loneliness. From the interactionist perspective, individuals evaluate their emotional and social loneliness subjectively in terms not only of its quality but also in terms of quantity. This theory proposes that loneliness is caused by a combination of the lack of an attachment figure and the absence of an adequate social network. It is considered that the experience of loneliness is dependent on the individual's personality type. This has been criticised because of the conditions described as causing loneliness are not necessarily negative, and therefore other factors must be involved in creating the feeling of loneliness. In addition, this theory has been criticised because social loneliness is an objective position which does not necessarily cause loneliness. (See Donaldson & Watson 1996, Victor et al. 2000.)

Few studies had made the ontological basis of their approach to loneliness explicit (Victor et al. 2000). Donaldson and Watson (1996) conclude that any of the perspectives could be used to investigate the extent of loneliness, its correlation with other characteristics, and for testing the effectiveness of therapeutic approaches. They continue that existential and psychodynamic theories of loneliness may have less to offer to nursing practice than cognitive and interactionist theories.

In this study, several elements of these perspectives are used. No single broadly accepted perspective on loneliness is used in previous studies (Donaldson & Watson 1996). In addition, no single perspective covers the definition of loneliness adopted in this study. In this study, loneliness is considered a subjective feeling that may be affected by the social relationships experienced by the individual. However, a lack of social relationships does not necessarily cause loneliness, although they are often associated (Victor et al. 2000). It is also assumed that traumatic life events in childhood may have an impact on older people's loneliness (see Agid et al. 1999). An individual's personality type is not considered as determining the characteristic for a feeling of loneliness. It is considered in this study that loneliness may be alleviated with interventions that aim to empower lonely older people to support their self-esteem and feeling of mastery over their own life. (See Victor et al. 2000.)

Summary

There are several theoretical perspectives to explore the cause of loneliness and the most common perspectives are existential, psychodynamic, cognitive and interactionist

theories. None of these perspectives is more widely used. Elements of several perspectives are used in this study.

2.3 Prevalence of older people's loneliness

The prevalence of loneliness in older populations has varied from 7% (Victor et al. 2000) to 49% (Holmén et al. 1994). The great variance in research findings may be due to several reasons. The research context, the type of question or measurement and the method (survey or interview) may affect the findings. (Victor et al. 2000.) In addition, it has been suggested that it is easier for older people to talk about their previous experiences than their present feelings of loneliness (Rokach & Brock 1997). Loneliness is felt most acutely at specific times, especially during the evenings, weekends and holidays (Victor et al. 2005).

In the early 1990's, when comparing the European countries in relation to feelings of loneliness, it was found that older people in Sweden felt the least lonely (4%), while loneliness was most common in Greece (36%) (Walker 1993). It has been suggested that loneliness depends on cultural context. Loneliness seems to be more common in areas where living alone is unusual. (Jylhä & Jokela 1990.) In the beginning of the 2000's in Great Britain, 7% of 70-79-year-old people were found to feel lonely often or always, and the respective number for 80+ years was 13% (Paul et al. 2006). In a large Swedish study (N=1725, > 75 years), 35% of the older population in Stockholm experienced loneliness (Holmén et al. 1992a). In 1990, of the 80-year-old people living in Jyväskylä, 12% suffered from loneliness often or almost always (Tiikkainen 2006). Of the population-based sample of Finnish older people (> 60 years, N=1037), about one third (36%) experienced loneliness often or sometimes in 1998 (Vaarama et al. 1999).

The findings of four different studies (in 1948, 1957, 1963 and 2001) made in England, suggest that there is no firm evidence that rates of loneliness have increased for either older men or women. However, the questions concerning loneliness and the age of the respondents included in the samples were not identical and the data in the studies were gathered from different parts of England. In addition, the methodology (postal survey vs. direct interviews) used in these four studies was inconsistent. (Victor et al. 2002.) In Sweden, a 13-year follow-up study revealed a relatively stable pattern of loneliness, even when considerable changes (marital status, living conditions) had taken place (Samuelsson et al. 1998). However, two Finnish studies have shown that the feeling of loneliness is not a stable state (Jylhä 2004, Tiikkainen 2006). In a 10-year follow-up study, 13% of older people had "recovered" from loneliness and the respective share for the 20-year follow-up was 7%. Of the respondents, 25% had started to feel loneliness during the 20-year follow-up, and 19% during the 10-year follow-up, respectively. 16% had fluctuating loneliness at three different measurements points during the 20-year follow-up. (Jylhä 2004.) In a five-year follow-up study, some participants had started to suffer from loneliness (19%), while some participants (9%) did report suffering from

loneliness at baseline but not at five-year follow-up. However, 63% felt lonely at both time points. (Tiikkainen 2006.)

Rokach (2000) has studied loneliness and the life cycle. She developed a questionnaire that included five factors: 1) emotional distress, 2) social inadequacy and alienation, 3) growth and discovery, 4) interpersonal isolation, and 5) self-alienation. Participants in her study were 13-80 years old and they were divided into four age groups. She found that seniors (60-80 years old) scored lowest (least loneliness) on emotional distress, social inadequacy and alienation and interpersonal isolation, and highest on growth and discovery compared to the three other age groups. Self-alienation was experienced as second highest by the seniors. (Rokach 2000.) This shows that different aspects of loneliness are experienced differently during the life cycle, and that older people may not be the ones that experience loneliness the most intensely.

Summary

There are great differences in the prevalence of older people's loneliness in different studies, that may be due to different measuring methods. Loneliness may depend on cultural context, it may fluctuate at different time points, and during the life cycle different aspects of loneliness are experienced differently.

2.4 Characteristics associated with loneliness among older people

There are several studies on characteristics associated with loneliness and a variety of methods has been used. In some previous studies, loneliness has been measured with a specific loneliness questionnaire (e.g. UCLA or the scale developed by de Jong-Gierveld et al. (1987)) or with a question concerning loneliness. In some studies both bivariate and logistic regression analysis is utilized. The size and representativeness of the study population varies significantly, and the findings of the previous studies are partly inconsistent. The characteristics associated with loneliness that are of concern in the present study and have been under concern in at least two previous studies are presented in Appendices 1 to 3.

2.4.1 Demographic factors

Ageing has been associated with loneliness (e.g. Jylhä & Jokela 1990, Fees et al. 1999, Tijhus et al. 1999, Jylhä 2004), although the observations have been inconsistent (Appendix 1). According to several studies, loneliness is more common among older than among younger older people (Jylhä & Jokela 1990, Mullins et al. 1988, Barretta et al. 1995, Fees et al. 1999, Jylhä 2004). However, it has been found that those aged 85 or over were at lowest risk of reporting loneliness and advanced age was identified as a "protective factor" of loneliness (Victor et al. 2005). In addition, it has been proposed that loneliness levels off after 90 years of age (Holmén et al. 1992a, Holmén 1994). This may be due to adaptation to loneliness, when it is no longer viewed as a great problem (Holmén et al. 1992a, Holmén 1994), or due to the survivor effect, whereby the lonely

exhibit elevated mortality/morbidity and have low survival in the community (Victor et al. 2005). In some studies, there has not been a direct association between age and loneliness (Creecy et al. 1985, Beck et al. 1990, Holmén et al. 1994, Hector-Taylor & Adams 1996, Mullins et al. 1996, Tilvis et al. 2000). It has been pondered whether age really is connected to loneliness or is the relationship explained through the changes occurring during older people's life, like widowhood or a decrease in functional status (Donaldson & Watson 1996, Tijhuis et al. 1999). Loneliness may increase with age, not because of age per se, but because of increasing disability and decreasing social integration (Jylhä 2004).

Gender has been associated with loneliness. It has been found to be more common among older women that older men (Kivett 1979, Berg et al. 1981, Holmén et al. 1992a, Holmén 1994, Jylhä 2004). There may be several reasons for this. First, women may be allowed to express their feelings more openly than men (Tijhuis et al. 1999). Second, women may value human relationships more than men (Berg et al. 1981). Third, women live longer which exposes them to widowhood and other losses (Tijhuis et al. 1999). It seems that women's loneliness experiences may be more stable during the life cycle (study concerned people aged 13-80 years) and somewhat less influenced by societal and situational factors (Rokach 2000). There are also studies that suggest that older men more often experience loneliness than women (Andersson & Stevens 1993, Mullins et al. 1996). Mullins and colleagues (1996) discuss several reasons for their findings. First, men may not be as outgoing or have more difficulty establishing close social ties than women. Second, they may be less reticent in expressing emotional needs, and thirdly they may be more likely to have no children or friends than women. (Mullins et al. 1996.) Many studies have not found any direct differences between the genders in relation to loneliness (Creecy et al. 1985, Beck et al. 1990, Hector-Taylor & Adams 1996, Tilvis et al. 2000, Tiikkainen 2006). Some of these studies had narrowly selected or small numbers of respondents.

Several studies suggest that widowhood increases the risk of loneliness when compared with those who are married (Kivett 1979, Berg et al. 1981, Creecy et al. 1985, Henderson et al. 1986, Essex & Nam 1987, Jylhä & Jokela 1990, Holmén et al. 1992a, Dugan & Kivett 1994, Hector-Taylor & Adams 1996, Koropeckyj-Cox 1998, Samuelsson et al. 1998, van Baarsen et al. 1999, Costello & Kendrick 2000, Havens & Hall 2001, van Baarsen 2002, Jylhä 2004, Viktor et al. 2005, Tiikkainen 2006). Moreover, previous widowhood may affect loneliness in the next relationship. Loneliness tends to be more common among those divorced or widowed and being at the time in their second or third marriage than among those who have not experienced losses in their earlier life. (Dykstra & de Jong-Gierveld 1999.) However, loneliness seems to be more common if a respondent experiences his/her marriage as being stressful (Essex & Nam 1987). There are only a few studies that suggest that there is no direct relationship between marital status and loneliness, but they may be indirectly related through social support (Barron et al. 1994, Mullins et al. 1996). Barron and colleagues' (1994) study concerned a small sample (N=87) of visually impaired older people and also Mullins and colleagues' (1996) study had a selected sample of older people.

In several studies, living alone has been found to be associated with loneliness (Berg et al. 1981, Henderson et al. 1986, Mullins et al. 1988, Ruth et al. 1988, Jylhä & Jokela 1990, Holmén et al. 1992a, Hector-Taylor & Adams 1996, Samuelsson et al. 1998, Holmén et al. 2000, Havens & Hall 2001, Jylhä 2004, Victor et al. 2005, Tiikkainen 2006). However, not all studies concerning this issue have found an association (Mullins et al. 1996, Cohen-Mansfield & Parpura-Gill 2007). A difference in loneliness among older adults in the Netherlands and Italy in relation to living conditions has been found. While living with children and without a partner was found to be a loneliness-provoking situation in older people in the Netherlands, it was a loneliness-alleviating situation among older people living in Italy. The reason for this may be that in Italy, where institutional arrangements for older adults are virtually absent, many older people move into one of their children's homes once they are widowed. In the Netherlands, living with adult children is much more uncommon and may be a consequence of insufficient economic resources. (van Tilburg et al. 1998, De Jong-Gierveld & van Tilburg 1999.)

Living in an institution seems to be associated with an increased prevalence of loneliness when compared to those living in the community (Jylhä 2004, Parkkila et al. 2000). However, some studies have not found differences in loneliness between older people living in nursing homes and community-dwelling older people (Bondevik & Skogstad 1996), or between older people living alone and those living in residential homes (Broese van Geoenou & Thomése 1996). This may be due to an increased need for help and thus social contacts with residential home staff (Broese van Geoenou & Thomése 1996). In the period prior to admittance, older people who spontaneously mention loneliness as an argument for admittance to a residential home, scored higher on loneliness than older people who did not report loneliness as a reason for their admittance. However, after admittance, no differences in loneliness scores were found between people who had previously mentioned loneliness as an argument and those who had not. (de Jong-Gierveld & Kamphuis 1986.)

Urban and rural area residents have not reported differences in loneliness (Mullins et al. 1996). Loneliness has been found to be more common among those older people not satisfied with their living conditions than among people who are satisfied (Chang & Yang 1999).

A low level of education has been associated with loneliness in some studies (Beck et al. 1990, Hector-Taylor & Adams 1996, Dykstra & de Jong-Gierveld 1999, Chang & Yang 1999, Victor et al. 2005). The reason for this may be the broader social network of people with a longer education (Dykstra & de Jong-Gierveld 1999). One study found only an indirect relation between loneliness and education (Mullins et al. 1996), and another identified "educational qualifications" as a protective factor against loneliness (Victor et al. 2005). In some studies, no association between loneliness and education was found (Kivett 1979, Berg et al. 1981, Tiikkainen 2006).

The association of income with loneliness has received clearly less attention in research compared to, e.g. living conditions (Andersson 1998). In most of the studies, loneliness

has been found to be more common among those dissatisfied with their income than among those who consider their income satisfactory (Creecy et al. 1985, Hector-Taylor & Adams 1996, Mullins et al. 1996, Dykstra & de Jong-Gierveld 1999, Chang & Yang 1999, Victor et al. 2005, Tiikkainen 2006). Some small-size studies have found no association between loneliness and income (Kivett 1979, Berg et al. 1981).

2.4.2 Health and functional status

Poor subjective health (Kivett 1979, Berg et al. 1981, Creecy et al. 1985, Mullins & McNicholas 1986, Jylhä & Aro 1989, Holmén et al. 1992a, Mullins et al. 1988; 1996, van Tilburg et al. 1998, Fees et al. 1999, Tijhuis et al. 1999, Chang & Yang 1999, Tilvis et al. 2000, Victor et al. 2005, Tiikkainen 2006), decreased health status (Kivet 1979, Beck et al. 1990, Mullins et al. 1996, Martin et al. 1997, van Baarsen et al. 1999, Tilvis et al. 2000), or impaired quality of life (Victor et al. 2000) have been found to be associated with loneliness in several studies (Appendix 2). In one study, no association between subjective health and loneliness was found but the study concerned only older people aged 90 years or over (Holmén et al. 1994). In addition, a relationship between loneliness and the presence of health problems (Havens & Hall 2001, McCamish-Svensson et al. 2001), an increased probability of coronary condition (Sorkin et al. 2002), anxiety (Rokach 1999, Fees et al. 1999), increased alcohol consumption (Walker & Beauchene 1991) and fewer outdoor activities (Holmén et al. 1993, Ryan 1998) has been found.

Impairment in vision (Kivett 1979, Holmén 1994, Dykstra & de Jong-Gierveld 1999, Viktor et al. 2005) or hearing (Christian et al. 1989, Beck et al. 1990, Chen 1994, Dugan & Kivett 1994, Dykstra & de Jong-Gierveld 1999, Kramer et al. 2002, Viktor et al. 2005), the presence of chronic diseases or health problems (Havens & Hall 2001, Paul et al. 2006, Tiikkainen 2006) and reduced cognitive function (Holmén et al. 1992a; 1992b, Holmén et al. 1993, Martin et al. 1997, Holmén et al. 2000, Wilson et al. 2007) seem to increase the prevalence of loneliness. In some studies, it has been shown that loneliness predicts cognitive decline (Fratiglioni et al. 2000, Tilvis et al. 2000). However, some studies have found no association between loneliness and impaired hearing (Kivett 1979, Berg et al. 1981, Tiikkainen 2006), vision (Berg et al. 1981, Dugan & Kivett 1994, Tiikkainen 2006) or cognitive status (Holmén et al. 1994, Fees et al. 1999, Tijhuis et al. 1999). In most of these studies, the number of older people with impaired hearing or vision or participants in general has been small (Berg et al. 1981, Dugan & Kivett 1994, Holmén et al. 1994, Fees et al. 1999, Tiikkainen 2006). The study of Tijhuis and colleagues (1999) considered only men and the definition of cognitive decline may be questioned (Mini-Mental State Examination (MMSE) cut-off point 25).

Functional status may be related to loneliness, but the findings concerning this issue are inconsistent. Some studies suggest that loneliness is more common among those needing help with activities of daily living (ADL) functions or those with decreased functional status than among those not needing help (Jylhä & Aro 1989, Jylhä & Jokela 1990, Holmén et al. 1993, Holmén 1994, Martin et al. 1997, Dykstra & de Jong-Gierveld 1999,

Kim 1999, Jylhä 2004). In addition, impairment in instrumental activities of daily living (IADL) function has been shown to be related to loneliness (Jakobsson & Hallberg 2005, Tiikkainen 2006). Also opposite findings exist; the dependency on ADL support may decrease loneliness. This may be due to the fact that those needing help get more social contacts from their helpers than those managing alone. (Bondevik & Skogstad 1998.) One study, concerning only men, did not find any association between ADL-function and loneliness (Tijhuis et al. 1999). However, in this study, a 14-item sum score was computed and then dichotomized into having no limitations and having one or more limitations (see Tijhuis et al. 1999), and this may have been too rough a measurement for examining the relation between the functional status and loneliness.

Loneliness has been found to be associated with increased use of health care and social services (Berg et al. 1981, Ellaway et al. 1999, Tilvis et al. 2000). It has also been associated with increased use of social service home help (Berg et al. 1981), emergency services (Geller et al. 1999) and early institutionalization (Russell et al. 1997, Tijhuis et al. 1999, Tilvis et al. 2000). In addition, lonely older people may express more need for domestic care than the not-lonely. Lonely older people have also been found to be more likely to use a physician's services even when their need for care was the same as the not-lonely people. (Berg et al. 1981.)

Loneliness seems to increase the risk of mortality (Sugisawa et al. 1994, Penninx et al. 1997, Herlitz et al. 1998, Stewart 1998, Kiely et al. 2000, Tilvis et al. 2000, Jylhä 2004). No relationship between social network (number of social contacts with children, siblings and friends) and cardiovascular mortality was found in one study, but there was an association between a feeling of loneliness and cardiovascular mortality, especially among men (Olsen et al. 1991). Suicides or attempted suicides have been found to be related to loneliness among older people (Waern et al. 2003, Lebret et al. 2006).

2.4.3 Social contacts and satisfaction

Low frequency of social contacts with children (Berg et al. 1981), family (Dugan & Kivett 1994, Bondevik & Skogstad 1996; 1998), friends (Berg et al. 1981, Mullins et al. 1987, Holmén et al. 1992a, Bondevik & Skogstad 1998, Mullins & Dugan 1990) or neighbours (Mullins et al. 1987, Jylhä & Jokela 1990, Bondevik & Skogstad 1996; 1998, Mullins & Dugan 1990), or lack of friends (Öberg et al. 1987, Mullins et al. 1996) has been associated with loneliness in several studies (Appendix 3). On the other hand, in some studies, frequency of social contacts with or visits from children (Dugan & Kivett 1994, Tiikkainen 2006), relatives/family (Mullins et al. 1987, Victor et al. 2005, Tiikkainen 2006), neighbours (Berg et al. 1981, Victor et al. 2005, Tiikkainen 2006) or friends (Kivett 1979, Dugan & Kivett 1994, Victor et al. 2005, Tiikkainen 2006) have not been associated with loneliness. One study concerning older people aged 55-89 years found no relation between the lack of friends and loneliness (Van Baarsen 2002). In addition, it has been shown that a low number of telephone contacts is associated with loneliness (Fees et al. 1999, Tiikkainen 2006). In some studies, childlessness has not

been associated with loneliness (Holmén et al. 1992a, Koropeckyj-Cox 1998, Zhang & Hayward 2001), whereas in others an association has been found (Linnemann & Leene 1990, Mullins et al. 1987; 1996).

It has been suggested that older people may place a different value on their relationships with friends and neighbours than with their children and family. This may be due to the difference in the nature of the relationship. Older people may feel that children keep in touch partly because it is obligatory, whereas friends and neighbours may be more sincere in the relationship. In addition, friends of a similar age may share values, culture and past experiences, and older people may not want to be a burden to their children. (Holmén et al. 1992a, Bondevik & Skogstad 1998, McInnis & White 2001, Routasalo & Pitkälä 2003a; 2003b.) It has been suggested that children raised in a socially isolated family may be at increased risk of becoming chronically lonely (Solomon 2000 in Vauras & Junttila 2007). However, no direct association between the parents' and child's loneliness was found in one Finnish study, although especially mother's loneliness was associated with the child's loneliness through the mother's parenting self-efficacy and the child's social competence (Junttila et al. 2007, Vauras & Junttila 2007).

The perceived quality of social relationships seems to be a more important determinant of loneliness than the size of the social network (Victor et al. 2000). The perceived quality of the relationship with children may have more impact on loneliness than the number of contacts with them (Mullins & Dugan 1990). Perceived emotional and social togetherness have also been associated with loneliness (Tiikkainen 2006). Older people's unfulfilled expectations of getting visits from relatives or friends have been found to increase the prevalence of loneliness (Berg et al. 1981, Bondevik & Skogstad 1996), as did dissatisfaction with social contacts (Creecy et al. 1985, Hansson et al. 1986-87, Mullins & Dugan 1990, Holmén et al. 1992a, Holmén 1994, Kim 1999, Cohen-Mansfield & Parpura-Gill 2007). Perceived poor social support or experienced dissatisfaction with social contacts have been found to be more powerful predictors of poor outcome than the actual number of contacts (Fratiglioni 2000).

2.4.4 Psychological well-being

Psychological well-being is considered an important dimension of older people's quality of life (see Felce & Perry 1995). Psychological well-being is generated by several dimensions including absence of depression and emotional loneliness, happiness, life satisfaction, feeling of security, and plans for the future (see Lawton et al. 1982, Ware & Sherbourne 1992, Cummins 1997, Felce & Perry 1997, Parmenter & Donelly 1997, Sintonen 2001, WHO 2003). Depression and its relation to loneliness have been widely studied, and the findings show that they are significantly associated with each other (Berg et al. 1981, Beck et al. 1990, Mullins & Dugan 1990, Prince et al. 1997, Hagerty & Williams 1999, Holmén et al. 1999, Cohen 2000, Tilvis et al. 2000, Alpass & Neville 2003, Adams et al. 2004, Victor et al. 2005, Barg et al. 2006, Tiikkainen 2006, Cohen-Mansfield & Parpura-Gill 2007). The findings of a five-year follow-up study

suggested that depression may lead to loneliness rather than loneliness being the reason for depression. However, it is likely that different kinds of losses experienced in old age may be reflected in negative feelings and experiences like loneliness and depression. (Tiikkainen 2006.) On the other hand, in an interview study, the older participants (N=101) viewed depression as a serious outcome of the feeling of loneliness (Barg et al. 2006). It has been suggested that in the oldest age group (85+ years), depression may be associated with mortality only when feelings of loneliness are present (Stek et al. 2005). Hopelessness (Beck et al. 1990, Walton et al. 1991, Barg et al. 2006) and dissatisfaction with one's life (Schumaker et al. 1993, Tilvis et al. 2000) have been shown to be associated with loneliness.

A global feeling of security is an important factor contributing to psychological well-being and is intertwined with loneliness (Raatikainen 1991, Palkeinen 2005). Security and personal control are close concepts in psychological well-being, which may be included in the construct of safety (Cummings 1997). The alleviation of a global feeling of insecurity in community-dwelling older people has been mentioned as an objective of elderly care since it may prolong living in one's own home and this is what most older people wish (Finnish Ministry of Social Affairs and Health 2003). Insecurity, living alone and loneliness may be related to older people's decline in functional status and cognition that may lead to increased need of help and living in residential homes or institutions (Karjalainen 1999, Tilvis et al. 2000, Vaarama & Kaitsaari 2002). It has been suggested that living alone or in a residential home and loneliness may be associated with the feeling of insecurity (Rautio 1999). In a Finnish study, older people living in their own homes or in residential homes wrote about their loneliness. They did not consider insecurity a cause or a consequence of loneliness. Rather insecurity and loneliness were intertwined. A feeling of insecurity emerged when they wrote about loneliness, living alone, fears of future problems like diseases or becoming dependent on other people's help. (Palkeinen 2005.)

Traumatic life events and losses may have long-term effects on a person's psychological well-being (Parmenter & Donelly 1997). Parental loss in childhood is a traumatic life event and is known to produce lifelong risks for depression, physical illnesses and suicides (Agid et al. 1999). Loss of a parent/parents and its association with depression, loneliness or psychological well-being have been matters of concern in medical, psychological and social science studies (Leaverton et al. 1980, Fristad et al. 1993, Furukawa et al. 1998, McBeth et al. 2001). The relationship between parental loss and depression has been fairly consistent in previous studies (Roy 1981, Bifulco et al. 1987, Patten 1991, Kunugi et al. 1995, Kivelä et al. 1998, Agid et al. 1999). Older adults who have experienced parental loss may have a diminished feeling of personal control (Krause 1993), and they may be less likely to be integrated into family and friendship groups in late life, as well as having fewer social resources in general (Krause 1998). Little is known about the association between loss of a parent/parents in childhood and loneliness or other dimensions of psychological well-being other than depression in old age.

2.4.5 Summary

Loneliness has received much attention in international research. The previous studies have focused on the relation between loneliness and demographic, health-related and social characteristics, but the findings have been partly inconsistent. This may be due to narrowly selected or small sample sizes or differences in methodology or measurements. Less attention has been paid to causes of loneliness: what older people themselves consider as causes of their loneliness. Do traumatic life events such as parental loss causing a decreased sense of personal control, also affect feelings of loneliness in old age? How are loneliness, a global feeling of insecurity and other dimensions of psychological well-being associated with each other?

2.5 Interventions in alleviating loneliness of older people

It has been argued that loneliness cannot be "cured" with interventions; it can only be alleviated and made less painful (Killeen 1998). In relation to the number of large epidemiological surveys and the meaningfulness of the problem, loneliness has received fairly little attention in intervention research. The findings in these intervention studies have been quite modest (Findley 2003), and the methodology used has often been problematic. None of the ways to alleviate loneliness described in previous studies is an actual model.

There are two systematic reviews on studies that have examined interventions aiming to improve older people's health, in which one of the measured factors has been loneliness or social isolation (Findley 2003, Cattan et al. 2005). Cattan and colleagues (2005) found altogether 12 randomized, controlled trials. However, they also included studies that had been made with a case-control design. In addition, in most of the interventions the main objective and target has been something other than loneliness. They also reviewed several studies using baseline follow-up analysis and some that can be classified as case studies. Both individual and group interventions were included in their review, and they found that group interventions where members can influence the content of the intervention are the most effective in alleviating loneliness. They ended up with a rather optimistic conclusion: interventions based on groups may be beneficial for socially activating older people, and the optimal number of participants in the groups seems to be seven to eight. (Cattan et al. 2005.) A similar review carried out by Findley (2003) a couple of years earlier ended with a more pessimistic conclusion: there is very little evidence that interventions can alleviate social isolation.

The studies that have been targeted at groups, and had alleviation of loneliness as their primary objective are shown in Table 3. The most cited intervention study which aims to alleviate the loneliness of older people is a randomized controlled trial made in Sweden in the beginning of the 1980s'. It examined whether the loneliness of older females (N=108) can be alleviated by group activity (Andersson 1984; 1985). Other interventions aiming at alleviation of loneliness have been made using a case-control design. These have consisted of encouragement to participate in activities in senior citizen apartment

building (Arnetz & Theorell 1983), a mutual help network (Baumgarten et al. 1988) and friendship programme (Stevens & van Tilburg 2000). In two studies out of three the findings have been promising (Arnetz & Theorell 1983, Stevens & van Tilburg 2000), but in one study, no positive effect could be detected (Baumgarten et al. 1988).

Table 3. Controlled group interventions that had increase in social activity or alleviation of loneliness as primary objective.

Study / Participants	Intervention	Findings	Strengths /problems of the study	Limitations/strengths of the description of intervention
Andersson 1984; 1985 Sweden (RCT[1]) / N=108 age 60-80 y. women, living alone	I: Four group (3-5 persons) meetings, discussions of health topics (n=68). C: No intervention (n=40). During two months.	Reduced loneliness (UCLA), feeling of meaningless and blood pressure, increased number of social contacts, self-esteem and ability to trust	Randomized design, but the randomization was not described. No intention-to-treat analysis. 49% dropped off from intervention group, 45% of the controls was not analyzed	Only the main topics of discussions are mentioned. The role of the group leader unclear.
Arnetz & Theorell 1983 Sweden / N=60 age 52-91 y. living in senior citizen apartment building	I: Tenants encouragement by the staff to participate in activities arranged in building and outside, staff training on gerontology and attitudes (n=30). C: Social activity on pre-trail level (n=30). 6 months.	Social activity level increased. No effect on visits from children, grandchildren, relatives or neighbours. No effect on depressive mood or complains of cardiac problems.	Not randomized. Selected 30 tenants of two floors were compared. Staff both arranged activities and measured the changes in activity level after their actions. Loneliness was not measured.	Was the encouragement systematic? How many group members were in groups not mentioned. More detailed description of staff's the education needed.
Baumgarten et al. 1988 Canada / N=128 age ≥ 65 y. residential home dwelling people	I: Mutual help network to increase socialization (n=51). C: Controls from other building (n=44). 16 months.	No differences in social ties, support satisfaction decreased between groups. Moderate increase in depressive symptoms in intervention group.	41% dropped off from intervention group. Loneliness was not measured.	More detailed information of the intervention is needed. Lack of description of the amount of participation.
Stevens & van Tilburg 2000 Netherlands / N=64 age 54-80 y. women who were enrolled to the friendship program	I: Friendship program, 12 lessons on friendship using activating methods (n=32). C: Matched controls from longitudinal survey (n=32).	Loneliness was alleviated (de Jong-Gierveld -measurement) more in intervention group than in controls. Quantity and quality of friendships were improved in intervention group in one year follow-up.	Matched pairs, not randomized. Some factors measured only from intervention group. Participants in intervention group were already enrolled to the program, so they are "socially active lonely" not representative sample of older women → generalization?	Duration not mentioned. Only half of the 12 topics are mentioned. Goals and learning methods are well described.

[1] Randomized, controlled trial
I = intervention group
C = control group

The studies that have been targeted at individuals, and that used social activity or alleviation of loneliness as the primary objective are presented in Table 4. A successful intervention study using a randomized, controlled design in Sweden included the use of art experiences and related discussions in alleviating loneliness (Wikström 1993; 2000; 2002). In addition, pet therapy may be a good way to alleviate the loneliness of older people living in institutions (Banks & Banks 2002). Preventive home visits by a public health nurse aimed to increase the health and decrease the use of services of older people were not effective in alleviating loneliness (van Rossum et al. 1993). Besides home visits (Bogat & Janson 1983, Clarke et al. 1992) also phone calls (Evans & Jaureguy 1982, Heller et al. 1991) and the internet (White et al. 2002) have been used in alleviating loneliness with moderate results. Acting as a foster grand-parent may increase social ties but has not been proven to alleviate loneliness (Rook & Sorkin 2003). It seems that alleviation of loneliness is difficult if the intervention is implemented by professionals but targeted only at individuals (Heller et al. 1991, Clarke et al. 1992, van Rossum et al. 1993, White et al. 2002).

Table 4. Controlled individual interventions that had increase in social activity or alleviation of loneliness as primary objective (1/2).

Study / Participants	Intervention	Findings	Strengths /problems of the study	Limitations/strengths of the description of intervention
Banks & Banks 2002 USA (RCT[1]) / N=45 2/3 age ≥ 75 y. elderly in long-term care	I^{I}: Animal assisted therapy 30 min once a week (n=15). I^{II}: Animal assisted therapy 30 min three times a week (n=15). C: No intervention (n=15). Six weeks.	Loneliness (UCLA) decreased in intervention groups compared to controls.	Baseline and randomization are not described in detail.	The description of the intervention is quite general.
Bogat & Jason 1983 USA / N=35 age ≥ 62 y. community-dwelling elderly	I^{I}: Network-building visiting program (n=11). I^{II}: Relationship-oriented visiting program (n=12). C: Non-equivalent control group (n=12). One hour visits weekly for three months by students.	I^{I} and I^{II} showed some positive changes in different measured variables compared to controls, but analysis of covariance did not reach significance.	Not randomized. The same student (n=13) visited both the I^{I} and I^{II} participants. Loneliness was not measured.	Description is focused on the education of the students not what happened during the visits.
Clarke et al. 1992 England (RCT[1]) / N=523 age ≥ 75 y. living alone	I: Individually tailored support package to enhance social contacts (n=261). C: No intervention (n=262). From 1.25 to nearly 2 years, at least three visits.	Improvement in self-perceived health status in intervention group compared to controls. No effect on loneliness (Wenger's scale), morale, functional status, service use or survival.	Randomized. Intention-to-treat analysis. Only 101 intervention group members accepted assistance.	Description of support methods includes domains that probably do not enhance social contacts (e.g. installing safety chains). It is not mentioned what kind of support was needed most.

Table 4. Controlled individual interventions that had increase in social activity or alleviation of loneliness as primary objective (2/2) continue...

Evans & Jaureguy 1982 USA / N=84 mean age 62 y. blind veteran men (n=78) and women (n=6)	I: Conference calls in groups of three and experienced counsellor (n=42). C: Matched controls, no intervention (n=42). One hour call, once a week for eight weeks.	Decrease in loneliness (UCLA) and increase in outside social activity and household management in intervention group compared to controls. No effect on self-care, depression or agitation.	Purpose weighting was used to divide participants in two groups.	Conversation topics are not mentioned.
Heller et al. 1991 USA / N=291 mean age 74 y. women, low-income, living alone, low perceived social support	I^{I}: Friendly staff telephone contact. I^{II}: Friendly staff telephone contact and peer telephone dyad after that. (I^{I}+ I^{II} n=238). C: Assessment only controls (n=53). 20 weeks.	Some improvement in mental health in all groups over time, but no differences between the groups. No effect on perceived social support, morale, depression or loneliness (Scale developed by Paloutzian and Ellison 1982).	Randomized but very complicated design. Participants were randomized / relocated several times to different groups during the study.	The conversation topics for I^{I} are superficially described but not mentioned for I^{II}.
Rook & Sorkin 2003 USA (RCT[1]) / N=180 age 60-92 y. volunteers	I: Foster grand parenting to a developmentally disabled child (n=52). C^{I}: Participants in an alternative group program for older adults (n=69). C^{II}: Community sample (n=59).	Number of new ties formed increased in intervention group. No effect on loneliness (10 items of UCLA), depression or self-esteem.	Randomization was made between the I and C^{I}. C^{II} was not included to the randomization.	The content of the intervention group is roughly described and the content of C^{I} is not mentioned.
van Rossum et al. 1993 Netherlands (RCT[1]) / N=580 age 75-84 y. living at home	I: Preventive home visits by public health nurse and possibility to telephone contacts with a nurse (n=292). C: No home visits (n=288). Four 45-60min visits/ year for three years and extra visits if necessary.	Community care increased in intervention group. No effect on mortality, subjective health, functional status, well-being, loneliness (de Jong-Gierveld measurement) or long-term care.	Randomized, controlled design. Rater was blind to the condition.	The content of the visits is not described in detail and number of the telephone contacts is not mentioned.
White et al. 2002 USA (RCT[1]) / N=100 mean age 71 y. living in congregate housing or nursing facilities	I: Internet training (in groups of 4-6) and -support (n=51). C: Wait list controls (n=49). Nine hours, six sessions during two weeks. Access for five months.	No differences in loneliness (UCLA) or depression between the groups.	Randomized, controlled design. 39% of intervention group participants did not use internet on weekly basis and 40 % dropped out.	The content of the training is not described in detail.
Wikström et al. 1993; 2000; 2002 Sweden (RCT[1]) / N=40 age 70-97 y. women, living alone, intact cognition	I: Art experiences and discussions with the researcher (n=20). C: Discussions on the matter of the participants´ choice with the researcher (n=20). One hour once a week at the participants' home for four months.	Loneliness decreased, social activity and physical health increased and blood pressure decreased in intervention group.	Randomization was made in 20 match pairs. Description of measurements and analysis are insufficient and mainly qualitative.	The selection of the art pieces, conversation topics and role of the leader are well described. Intervention can be repeated according to the description.

[1] Randomized, controlled trial

I = intervention group

C = control group

The studies that used social activity or alleviation of loneliness as one of the measured factors but not as a primary objective are presented in Table 5. An exercise intervention to increase the subjective well-being of formerly sedentary older people, has been used with good results. One of the measured factors was loneliness, measured by the UCLA loneliness scale. In two different kinds of activity groups, loneliness was alleviated during the intervention. However, there was not a "real" control group and differences between the groups were not found. (McAuley et al. 2000.) Cognitive-behavioural individual therapy for daughters has also shown positive effects on loneliness among widowed older mothers (Scharlach 1987). In addition, support groups led by professionals and peer support groups have been shown to increase the size of the support net (Toseland et al. 1989). Computer-based peer support was not able to decrease social isolation (Brennan et al. 1995). However, providing hearing aids for older people with impaired hearing may be beneficial in alleviating loneliness, although this may not be effective in increasing social activity or satisfaction with social relations (Tesch-Römer 1997).

Table 5. Controlled group and individual interventions that had increase in social activity or alleviation of loneliness as one of the measured factors but not as a primary objective (1/2).

Group interventions				
Study / Participants	**Intervention**	**Findings**	**Strengths /problems of the study**	**Limitations/strengths of the description of intervention**
Brennan et al. 1995 USA (RCT[1]) / N=102 median age 64 y. caregivers	I: Use of ComputerLink to keep in touch with peers (n=51). C: No intervention (n=51). Two encounters (average 13 min) per week for one year.	Decision making confidence increased. No effect on decision making skills or social isolation.	Randomized. General exposure to ComputerLink was quite low – no power to make changes.	The content of ComputerLink described quite in detail.
Hopman-Rock & Westhoff 2002 Netherlands / N=498 mean age 72 y. community-dwelling older people	I: Health education by peers and low-intensity exercise in groups (n=193). C: Waiting list controls (n=156). Six sessions with one hour education and one hour exercise.	Physical activity increased, blood pressure and loneliness (I feel lonely) decreased.	Only 50 participants were randomized and findings concerning loneliness are not described from these.	The content of the education and exercise are mentioned.
McAuley et al. 2000 USA (RCT[1]) / N=174 mean age 66 y. formerly sedentary older people	I: Aerobic activity program (n=85). C: Stretching and toning control group (n=89). Both 3 times a week for 6 months.	Subjective well-being, satisfaction with life and happiness increased, loneliness (UCLA) decreased compared to baseline in both groups. No differences between the groups.	The sessions lasted longer in stretching group (40 min) each than in Aerobic group (in the beginning 10-15 minutes to 40 minutes in the end of intervention).	The content of the groups is well described and the intervention can be repeated according to the description.

Table 5. Controlled group and individual interventions that had increase in social activity or alleviation of loneliness as one of the measured factors but not as a primary objective (2/2) continue...

Toseland et al. 1989, USA (RCT[1]) / N=56 mean age 51 y. caregiver women, experiencing high level of stress	I^{I}: Professionally led group (n=18). I^{II}: Peer-led group (n=18). C: Respite-only control condition (n=20). Eight weeks, two hour per session.	No effect on burden. Well-being and social network size increased in both intervention groups over time.	Randomized. Target group is young. Planned to decrease the caregivers' burden.	The topics and the methods of the I^{I} are well described, but description of the methods in I^{II} is lacking.
Interventions targeted on individuals				
Study / Participants	**Intervention**	**Findings**	**Strengths /problems of the study**	**Limitations/strengths of the description of intervention**
Scharlach 1987 USA / N=37 daughters mean age 50 y. N=24 widows mean age 78 y.	I^{I}: Cognitive-behavioural intervention (n=14). I^{II}: Supportive-educational presentation (n=13). C: Waiting list controls (n=10). For daughters two 90 minutes workshops and 10-min phone call for six weeks.	Burden of daughters decreased, relationship quality improved and widowed mothers' loneliness (how frequently you feel lonely) decreased more in I^{I} than in I^{II} or C.	Difference between pre and post measurements? Intervention was for daughters, not for the older people.	Objectives, contents and methods of the intervention groups are well described.
Tesch-Römer 1997 Germany / N=140 mean age 71 y. hearing impairment (I and C^{I})	I: Aural rehabilitation group, received a hearing aid (n=70). C^{I}: Hearing –impaired controls without hearing aid (n=42). C^{II}: Normal hearing, no intervention (n=28). Six months follow-up.	Communication problems decreased in I group compared to two C groups. Loneliness (UCLA) decreased over time in I group. No effect on social activity, satisfaction with social relations, well-being or cognitive capacity.	Case-control design. Participants in I had severe hearing loss and experienced more hearing handicap than C^{I} at baseline.	Intervention is very simple, no complicated description needed.

[1] Randomized, controlled trial
I = intervention group
C = control group

Summary

The international literature covers various ways to alleviate the loneliness of older people, but none of them are actual models. Both individual and group interventions have been used in alleviating loneliness. The group interventions seem to be the most promising. Peer support, professional leaders, participants' opportunity to influence the content of the groups, and objective-oriented activity seem to be features of successful interventions. (Kocken 2001, Cattan et al. 2005.) In addition, two-way communication seems to be important for the participants' satisfaction with the intervention (Kocken 2001). The most promising contents of interventions are exercise (McAuley et al. 2000, Hopman-Rock & Westhoff 2002), art (Wikström et al. 1993; 2000; 2002), group discussions (Andersson 1984; 1985) and pet therapy (Banks & Banks 2002). However, the essential elements of intervention leading to favourable effects have been inadequately described in the earlier

literature (e.g. Andersson 1984, Bogat & Jason 1983, Stevens & van Tilburg 2000). The problems of the previous studies are related to the methodology used in the studies, the rather modest results, and the large number of drop-outs in different phases of the study (Andersson 1984; 1985, Findley 2003, Cattan et al. 2005).

3 AIMS OF THE STUDY AND RESEARCH QUESTIONS

The aim was to acquire information on the relationship between the concepts of loneliness and social isolation and a global feeling of insecurity. The aim was also to acquire information on the prevalence of community-dwelling older people's (≥75 years) loneliness, its associated characteristics and subjective causes. In addition, the aim was to identify the essential elements of the psychosocial group rehabilitation intervention (PGR intervention) which was developed to alleviate older people's loneliness, and to describe the experiences of the PGR participants. The design of the study is presented in Figure 1.

The research questions were:

1. How common is loneliness among community-dwelling older people? (Phase I, Paper I)
2. What are the characteristics associated with community-dwelling older people's loneliness? (Phase I, Papers I-IV)
3. What are the self-reported causes of loneliness among community-dwelling older people? (Phase I, Paper I)
4. Does loss of a parent/parents in childhood predict loneliness or other dimensions of psychological well-being in old age among community-dwelling older people? (Phase I, Papers III and IV)
5. How are the concepts of loneliness and social isolation interrelated, and how they are associated with a global feeling of insecurity? (Phase I, Papers II and III)
6. What are the essential elements of the PGR intervention in alleviating the loneliness of community-dwelling older people? (Phase II, Paper V)
7. How was the PGR intervention experienced by community-dwelling older people suffering from loneliness? (Phase II, Paper V)

This study may promote nurses' and other health care professionals' ability to identify older people who may suffer from loneliness. In addition, the description of a successful PGR intervention provides ways for nurses and other health care professionals to intervene in older people's loneliness.

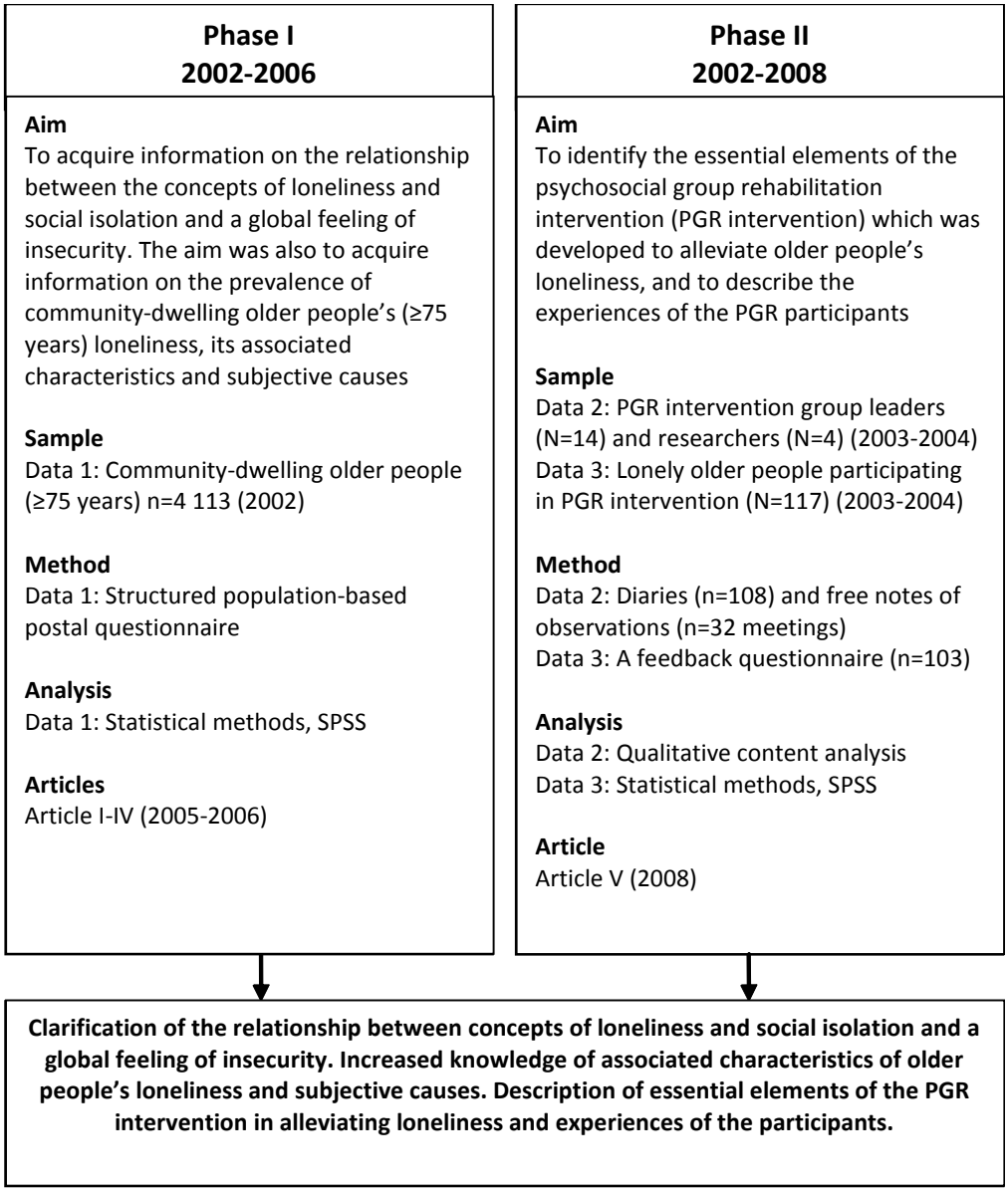


Figure 1. Design of the study.

4 METHODOLOGY

4.1 Sample

In **phase I** (Papers I-IV) the data were gathered with a postal questionnaire in autumn 2002, from community-dwelling older people (Figure 2). The data also included those living in residential homes. Six municipalities were selected representing various parts of Finland, rural areas and small and large cities. After permission was granted from the Coordinating Ethics Committee of the Hospital District of Helsinki and Uusimaa and a pilot study (N=500), a postal questionnaire was sent to a random sample (N=6 786) in these municipalities from The Finnish National Population Register. The questionnaire was re-sent after one month to the non-responders. According to the statistics, 5.1% of the sample (statistical and mailing delay) were dead and 10.5% were in permanent institutional care. In addition, there were 26 persons whose mailing address had changed and could not therefore be reached. Thus, the number of potential community-dwelling respondents was 5 722, of whom 4 113 returned the questionnaire. The response rate for the community-dwelling older people was 71.8%. The non-respondents were somewhat older (mean age 81.9 years, p=0.05). The respondents did not differ from the non-respondents in terms of gender.

In **phase II** (Paper V), to those who reported suffering from loneliness at least sometimes (39%) in phase I, another questionnaire was sent (n=1 541). Now their activities, hobbies, functional ability and health status were more accurately inquired about. In addition, their willingness to participate in the PGR intervention administered by the Central Union for the Welfare of the Aged and their preferences among three different intervention contents (art and inspiring activities, group exercise and discussions or therapeutic writing and group psychotherapy) were asked for.

Lonely older people who were willing to participate (n=746) were contacted by telephone. During the telephone conversation, the participants' willingness and capability to attend the group activity for three months were confirmed, and the contents of the PGR intervention were discussed. The practical arrangements were agreed on and they were asked to meet a research nurse for an interview. After the telephone contact the willing participants met a research nurse. The research nurse once again went through the aspects that were discussed on the phone and the participants' functional and cognitive ability was measured. Of the 746 older people, 522 were excluded from the sample due to refusal (n=295) or to the exclusion criteria (n=227), leaving 224 participants who met the inclusion criteria (described in Paper V). The exclusion criteria included deafness (n=21) or blindness (n=9), moderate or severe dementia defined as a MMSE score < 19 (Folstein et al. 1975) or a Clinical Dementia Rating Scale CDR score > 1 (Hughes et al. 1982) (n=34), and a New York Heart Association Classification NYHA-score of three to four, indicating severe heart or lung disease. In addition, those who

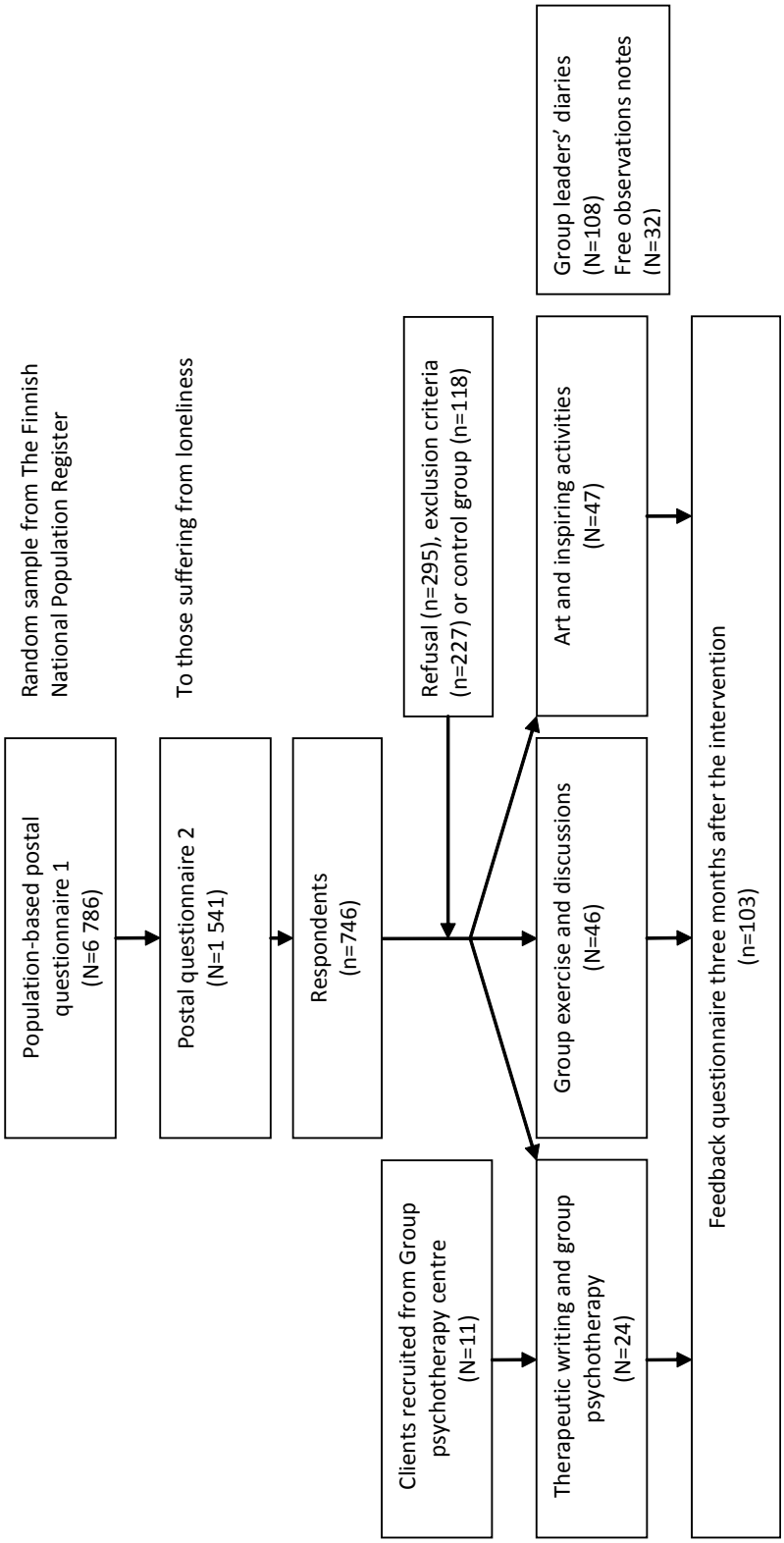


Figure 2. The flow chart of the study

could not be contacted with two telephone call attempts (n=96), those who were unable to move independently (n=61), those who were deceased (n=5) or had moved (n=1) were excluded from the sample. These exclusion criteria were set to ensure the group members' equal participation in the groups, and to support their abilities to find true friends with a similar life situation (see Leneer-Axelson & Thylefors 1998). In addition, 11 new clients were recruited from a group psychotherapy centre. After the meeting with the research nurse, participants (n=235) were randomized into two groups: intervention (n=117) and control (n=118) groups. In phase II of the study, the findings of the intervention group are described.

In **phase II** (Paper V) each group had two group leaders. Those (N=14) were health care professionals of whom one was a specialized registered nurse and the other was an occupational therapist, or a physiotherapist. Leaders had long-term experience of working with older people. Before the groups started they participated in extensive education (see more detailed information in Paper V and Pitkälä et al. 2004a). The education and work tutoring continued alongside the group meetings. Each pair of leaders led two groups and the second started when the first one finished.

4.2 Data collection

The data of **phase I** (Papers I-IV) were gathered using a postal questionnaire. The data of **phase II** (Paper V) consisted of the diaries written by the PGR intervention group leaders, the researchers' free observation notes of the group activity, and a questionnaire filled in by participants three months after the PGR intervention.

4.2.1 Population-based postal questionnaire

The questionnaire (see Appendix 4) that comprised the data in **phase I** consisted of demographic variables (age, gender, marital status, education, former job, living conditions and income; questions 1-4 and 6-8 in Appendix 4) and health-related variables (8 questions; questions 9-15 in Appendix 4). In addition, the social contacts and satisfaction with the contacts were inquired with several questions (questions 30, 32-36, 38-39, 46-48 and 52 in Appendix 4). The number of friends, the frequency of their contacts and the expectations of the frequency of contacts were asked about. One question inquired about satisfaction with relationships with close persons. Social activity was also measured with a sum variable that included four questions (questions 55, 57-59 in Appendix 4). Dimensions of psychological well-being were charted by questions concerning loneliness, depression, life satisfaction, feeling of being needed by someone, having plans for the future, having a zest for life, a global feeling of insecurity, and happiness (questions 19-25 and 27 in Appendix 4). Loneliness was measured with the question: "Do you suffer from loneliness?" (1 = seldom or never, 2 = sometimes and 3 = often or always). The question about loneliness has been identified as easy to answer by older individuals and it has prognostic value (Tilvis et al. 2000). The first six dimensions of psychological well-being have been proved in previous studies to have predictive and

content validity (Tilvis et al. 2000, Pitkälä et al. 2001, Pitkälä et al. 2004b), and to show excellent test-retest reliability when an individual is tested within two weeks (Kappa values 0.80- 1.00) (Pitkälä et al. 2004b). Insecurity was included because it has been identified as a risk for community-dwelling older people's health and independent living (Finnish Ministry of Social Affairs and Health 2003) and suggested to be interrelated with loneliness (Palkeinen 2005). The loss of parent/parents was asked about with one question. It was assumed that parental loss may be a risk factor for loneliness and poor psychological well-being (see Krause 1993; 1998). In addition, the respondents' age was charted at the time of the loss (question 54 in Appendix 4). Self-reported causes of loneliness were examined with seven statements and one open-ended question with a possibility to answer if there were other causes of loneliness (question 53a-h in Appendix 4). Categorizations were made for some of these variables (see Papers I-IV).

4.2.2 Diaries of the psychosocial group rehabilitation leaders

The data in **phase II** (Paper V) were collected using the group leaders' diaries (N=108, about 400 pages) and the free notes on researchers' observations in the group meetings. During the process of their first group, each leader wrote a description of each group meeting. These diaries described in detail the discussions in the groups, what happened in the groups, and how the objectives of the meetings were achieved. In addition, the group leaders wrote reflective considerations of their own role and of the group process. During the process of their second group, the leaders took turns in writing diaries. The group leaders were very precise when they described events and interactions between the participants in their diaries.

The researchers visited 32 group meetings and made free observation notes afterwards. The notes were used to support the group leaders' diary descriptions in the analysis.

4.2.3 Feedback questionnaire for the group participants

A questionnaire eliciting the participants' feedback was used in the data collection in **phase II** (Paper V)**.** The participants (n=103, response rate 88%) completed the questionnaire three months after the last official group meeting. The questionnaire charted several issues concerning the group activity. However, in this study, only questions concerning the meaningfulness and atmosphere of the intervention, what the group meetings meant to the participants (e.g. opportunity to meet other people, gain new friends and to prevent loneliness) and their feelings of loneliness were used.

4.3 Data analysis

The data in **phase I** (Papers I-IV) were examined with statistical variables, such as frequencies and percentages. The Chi-square test was used for categorical variables to compare loneliness groups (1= seldom or never, 2 = sometimes and 3 = often or always, or 1= lonely; those suffering from loneliness always, often or sometimes and 2="not

lonely"; those suffering from loneliness seldom or never). Continuous variables were compared using the non-parametric Kruskal-Wallis test. One-way ANOVA was used to compare the differences in the mean sum of "attitude" between those having lost and those who had not lost their parent/parents (see Paper IV). Logistic regression analysis was used to determine the independent associates of loneliness. $P \leq 0.05$ was considered statistically significant.

In **phase II** (Paper V), the group leaders' diaries were analyzed using content analyses to identify the elements of the PGR intervention. The diaries were read several times to find the essential elements of the PGR intervention: whether the "predetermined elements" of the PGR intervention were present in the groups. After that, favourable group processes contributing to the alleviation of its members' loneliness were examined. In addition, what happened between and within the group members as a consequence of the intervention was explored: Did the intervention alleviate loneliness? The analysis continued until answers to the questions were found. The NVIVO analysing programme was used for coding. Codes were formed on the basis of the data, independently, by three researchers. The formulated codes were discussed with all researchers to ensure agreement on coding. (See Graneheim & Lundman 2004.) Particular attention was paid to deviating cases.

The feedback questionnaire was analyzed using statistical methods (percentages and frequencies) (Paper V).

4.4 Contents and organization of the psychosocial group rehabilitation

Three different group contents were adopted from previous studies (e.g. Andersson 1984; 1985, Wikström et al. 1993; 2000; 2002, McAuley et al. 2000), and tailored according to the participants' interests: 1) art and inspiring activities, 2) group exercise and discussions, or 3) therapeutic writing and group psychotherapy.

The rehabilitation was carried out in six selected rehabilitation centres and one group psychotherapy centre (more detailed information in Paper V). The closed groups of seven to eight people met 12 times, once a week for three months (see Cattan et al. 2005). One day lasted six hours except in the therapeutic writing and group psychotherapy meetings which lasted a shorter time (2-5 hours) because their PGR intervention continued at home where they wrote texts individually. Meals were offered to the participants and transportation to and from the groups was organized.

4.5 Ethical questions

This research has been done according to the recommendations of the National Advisory Board on research ethics (2002). Permission for the study was obtained from the Coordinating Ethics Committee of the Hospital District of Helsinki and Uusimaa. In ethical considerations, the focus was placed on issues of privacy, anonymity,

confidentiality, informed consent and the protection of subjects from discomfort and harm (Polit & Hunglr 1999, Burns & Grove 2001). When developing the questionnaires used in **phases I and II,** the respondents' right to privacy and protection from discomfort and harm were ensured by formulating the questions so that they did not cause offence (see Burns & Grove 2001). In the covering letter sent with the questionnaires it was made clear that the response to this questionnaire was voluntary. In addition, respondents were informed that their answers were confidential and the findings would be reported in such a way that anonymity would be ensured. The returned questionnaire was considered to be informed consent to participate in the study.

The anonymity and confidentiality were also ensured by giving each respondent a personal ID number. In the analyzed data, there was no information through which the respondents could be identified.

In **phase II,** the group members were informed several times that their participation was voluntary. All group members signed the informed consent. Loneliness is often experienced as shameful, and older people may not want to talk about it with other persons (Killeen 1998). The extensive education of the group leaders supported the protection of subjects from discomfort and harm, since they were able to keep the conversations and environment in the groups as safe and confidential.

When the group leaders were recruited, they were informed that they were expected to keep a diary on the group meetings. They were aware that the diaries they wrote were tools for both work tutoring and for research purposes. It was emphasized to the group leaders that their diaries were confidential.

5 FINDINGS

5.1 Description of the respondents

Respondents of the population-based questionnaire. In **phase I** (Papers I-IV), the mean age was 81 ± 4.49 (standard deviation (SD)) years, and women outnumbered men (69% vs. 31%). About half of the respondents were widowed and most of them (78%) had lost their spouse more than five years before. The majority of the population had a low level of education. Almost all (93%) lived in their own home and over half lived alone. Over half were living in a small, and one third in a large city, and 14% in a rural area Almost three in four considered their income moderate (Table 1 in Paper I). Their health was considered good or quite good by 66% of the respondents. Almost 61% of the respondents evaluated that they had handled day-to-day matters outside their home more frequently than once a week, but about one in four needed help daily. Functional status was considered poor among 20% of the individuals, and nine out of ten were able to read and hear normally spoken words; 17% reported having a hearing aid (Table 2 in Paper I).

Group members of the psychosocial group rehabilitation. In **phase II** (Paper V), each PGR intervention group consisted of 7-8 older people. The group members' (N=117) mean age was 80 years (range 75-92, SD 3.46). Of the group members, 74% were women. Less than 5% lived in a residential home, and the rest of the participants lived in their own homes (Table 1 in Paper V). The participants were similar in terms of their functional and cognitive status and were able to move independently with or without aids.

5.2 Prevalence and associated characteristics of loneliness

Prevalence of loneliness

Of the respondents who answered the question concerning loneliness (n=3 915), slightly more than 5% felt lonely often or always, and 39% suffered from loneliness at least sometimes.

Demographic factors

Loneliness was more common in the oldest age groups, among women and widows (see Paper I: Results and Table 1). Loneliness was associated with low level of education, poor income and former physically heavy work. Loneliness was more common among respondents living alone or in a residential home than among those living with someone else or in their own homes. Those living in a large city less often felt lonely than those living in small cities or in rural areas.

Health and functional status

Loneliness was associated with poor subjective health and functional status (see Paper I: Results and Table 2). In addition, few outdoor activities, need of daily help, and handling day-to-day matters less than once a week were related to increased frequency of loneliness. Individuals with poor vision or impaired hearing suffered from loneliness more frequently than those with better senses. The use of a hearing aid was not significantly associated with loneliness.

Independent associates of loneliness were assessed with a logistic regression model that included all the demographic and health-related characteristics significantly associated with loneliness in bivariate analyses. Independent associates were poor functional status, widowhood, poor income, living alone, poor health and female gender. High age (≥ 80 years) lost its statistical significance in the logistic regression model (see Paper I: Results and Table 3).

Social contacts and satisfaction

There were no differences between the lonely respondents (those suffering from loneliness always, often or sometimes) and the "not lonely" (those suffering from loneliness seldom or never) respondents in terms of having children (alive) (in both groups 84% had children, p=0.844). The lonely respondents and the "not lonely" respondents did not differ from each other in relation to the number of contacts with their children or friends (see Paper II: Results and Table 2). The "not lonely" older people had significantly more contacts with their grandchildren than the lonely ones. However, the lonely respondents felt more often than the "not lonely" ones that they did not have contacts with their children, friends or grandchildren as often as they wished. Compared with the "not lonely", fewer lonely participants had more than five friends.

The "not lonely" respondents felt more often that "their close people understood them well", and that they knew better "what was happening in the life of their close people" than the lonely ones (see Paper II: Results and Table 2). They were also more satisfied with the relationships with their close people than the lonely respondents.

Independent associates of loneliness were assessed with a logistic regression model that included the demographic factors, characteristics related to social contacts, and expectations that were significantly associated with loneliness in bivariate analyses (see Paper II: Results and Table 3). According to this logistic regression analysis, the most powerful independent associates of loneliness were living alone, depression, feeling poorly understood by their close people, and unfulfilled expectations of contacts with friends. High age, female gender, low education, low income, rural domicile and low number of friends lost their significance in the logistic regression model.

In the other logistic regression model, the analyses concerning demographic factors, social contacts and expectation and loneliness were rerun separately among those without self-reported depression and among those with depression (see Paper II: Results). In

this analysis among the depressed participants, only widowhood had predictive value for loneliness. The most powerful independent associates of loneliness among the participants without depression were living alone, unfulfilled expectations of contacts with friends, feeling poorly understood by their close people, and poor knowledge of what happens in their close people's life. The number of friends or frequency of contacts with friends or children did not have predictive value for feelings of loneliness.

Psychological well-being

All the measured dimensions of psychological well-being were significantly associated with loneliness ($p \leq 0.001$) (Table 6). Depression was more common among those who suffered from loneliness than among those who were rarely lonely. Those who felt life satisfaction, a zest for life, or being needed by some one suffered more rarely from loneliness than those with a more negative view on these matters. The respondents who had plans for the future or felt themselves happy were less likely to suffer from loneliness than those with no plans for the future or who felt unhappy.

Table 6. The association between the psychological well-being and loneliness (%).

Psychological well-being	All	Suffering from loneliness			Chi-square test
	N=3915	Seldom or never N=2374	Sometimes N=1339	Often or always N=202	p-value
Depression					p≤0.001
seldom or never	51.4	70.0	24.5	8.6	
Satisfied with life	90.5	96.2	85.5	47.6	p≤0.001
Feeling being needed	70.2	79.9	58.3	30.0	p≤0.001
Having plans for the future	29.5	35.5	21.1	14.0	p≤0.001
Having zest for life	89.7	95.7	83.3	60.4	p≤0.001
Feeling happy	91.0	96.5	85.4	34.8	p≤0.001

5.3 Self-reported causes of loneliness

Those feeling lonely reported several causes of their loneliness (see Paper I: Results and Table 4). The most common causes were illnesses, death of a spouse and lack of friends. Meaningless life was an especially common cause among those feeling "often or always lonely", but also the absence of relatives, living conditions and family matters were common causes. In addition, illness of a spouse, ageing, retirement, children's stressful

life, death of a family member or new living environment were mentioned as causes of loneliness.

5.4 Parental loss

Of the respondents who had answered the question concerning the loss of parents (n=3 728), about one third had lost one or both of their parents before they were 18 years old; 9% had lost only their mother, 19% had lost only their father, and 4% had lost both parents (see Paper IV: Results and Table 1). Of the subjects, only 1% had lost both parents before the age of 7.

There was no significant relationship between loneliness and the loss of parent/parents in childhood or between respondents' self-reported depression and parental loss (see Paper IV: Results and Table 3). In addition, there was no statistically significant association between loss of parent/parents and any other dimensions of psychological well-being, such as life satisfaction, feeling of being needed, having plans for the future, having a zest for life, feeling happiness or a global feeling of insecurity. The findings were similar when the loss of parent/parents was examined at age ≤ 6 or at age ≤ 9. There were no statistically significant associations between the loss of parent/parents at age ≤ 6 or at age ≤ 9 and loneliness or other dimensions of psychological well-being.

5.5 Concept of loneliness

5.5.1 Distinction of the concepts of loneliness and social isolation

Social isolation and suffering from loneliness were found to be separate concepts (see Paper II: Discussion). There were several arguments to support this. Firstly, it was shown that the frequency of contacts does not explain the feeling of loneliness since the frequency of contacts with children and friends was similar among the lonely and the "not lonely" respondents. Secondly, the size of the social network (having ≤ 5 friends) did not significantly associate with loneliness in the logistic regression model. Finally, when the independent association of expectations and perceived quality of older people's relationships with loneliness was examined, both showed significant independent associations (see Paper II: Discussion and Table 3). This supports the notion that suffering from loneliness is related more to the emotional aspect of the social contacts than the actual number of contacts (social isolation). Thus, there is a distinction between the concepts of loneliness and social isolation.

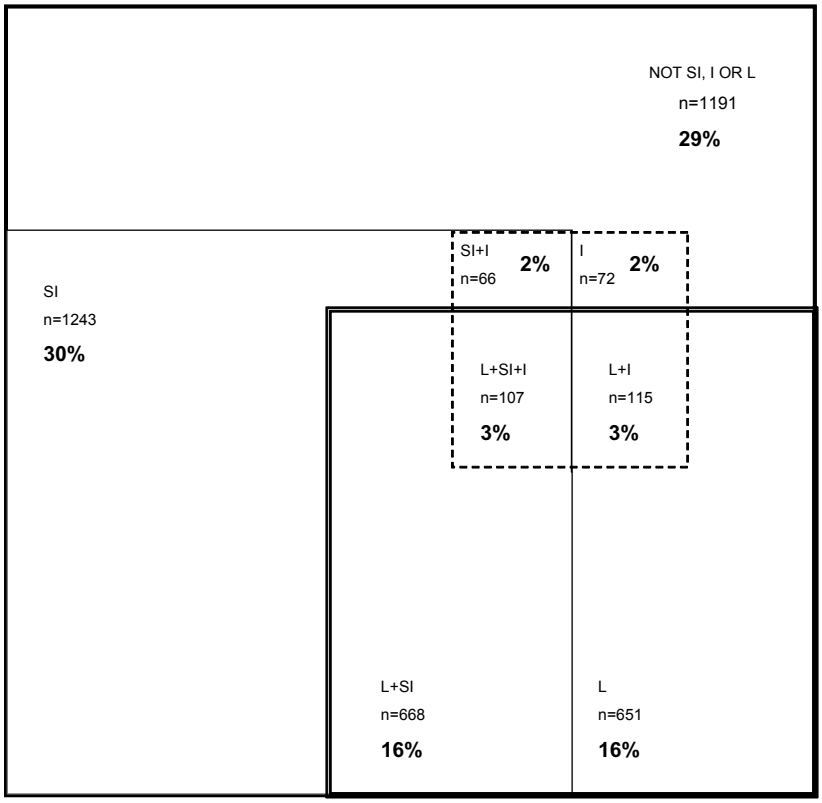
5.5.2 Global feeling of insecurity

Of the respondents who had given their response on the question concerning the global feeling of insecurity (n=4 020), 9% experienced a global feeling of insecurity in their lives. The lonely respondents more often felt insecure than the "not lonely" respondents. Almost all other measured dimensions of psychological well-being were associated

with a global feeling of insecurity (see Paper III: Results and Figure 2 ("Tulokset" and "Kuvio 2")). Among those experiencing a global feeling of insecurity were more respondents who were dissatisfied with their lives and did not feel they were needed than among those experiencing a global feeling of security. Those experiencing a global feeling of security more often experienced a zest for life, and happiness and reported less depression than those with a global feeling of insecurity. Having plans for the future was not associated with a global feeling of insecurity, but was associated with loneliness. Independent associates of a global feeling of insecurity were assessed with a logistic regression model that included all those characteristics that were significantly associated with a global feeling of insecurity in bivariate analyses (see Paper III: Results ("Tulokset")). The analysis showed that dissatisfaction with close relationships (OR 7.87; CI 95% 2.09-29.62; p=0.002) and loneliness (OR 2.04; CI 95% 1.21-3.43; p=0.008) were powerful associates of global feeling of insecurity. Decreased subjective health status (OR 1,84; CI 95% 1.01-3.35, p=0.05) was also significant associate (in the logistic regression analysis following characteristics were added: age ≥85 years, gender, marital status, low education, poor income, living in a residential home, decreased subjective health status, decreased subjective functional status, no children, fewer than five friends, dissatisfaction with close relationships, living alone and loneliness). Other characteristics lost their significance in the logistic regression model.

5.5.3 Interrelation of loneliness, social isolation and global feeling of insecurity

The number of older people who were socially isolated (having < weekly contacts with friends) (N=2 084) was greater than the number who suffered from loneliness (N=1 541) or experienced a global feeling of insecurity (N=360) (Figure 3). Of the lonely respondents, 50% were not socially isolated. Of the respondents experiencing a global feeling of insecurity, 80% were also socially isolated and/or lonely. Of all respondents, 29% did not have any of the three characteristics (loneliness, social isolation or a global feeling of insecurity).



SI = Socially isolated = those having < weekly contacts with friends (N=2 084)
I = Feeling insecurity = those experiencing their lives as quite or extremely insecure (N=360)
L = Suffering from loneliness = those responding to suffer from loneliness at least sometimes (N=1 541)
NOT SI, I OR L = those respondents not having any of the three characteristics (n=1 191)
Note: Due to the rounding, the combined percent is 101

Figure 3. The intertwine of loneliness, social isolation and a global feeling of insecurity in older population (≥75 years). Overlapping of groups which are socially isolated, suffering from loneliness and having a global feeling of insecurity.

5.6 Essential elements of the psychological group rehabilitation in alleviating loneliness

The essential elements of the PGR intervention alleviating loneliness found in the group leaders' diaries and the researchers' free observation notes were divided into a) predetermined elements, b) favourable processes between and within the participants, and c) mediating factors which occurred partly as a consequence of the group process. Predetermined elements were further divided into the factors related to the group participants, group leaders, and group activities. The essential elements are described in detail in the results of Paper V and visualized in Figure 1 in that paper.

a) Predetermined elements

There were several essential predetermined elements related to the *group participants*. The group participants were homogeneous; they all suffered from loneliness and were fully willing to participate to the PGR intervention. They had a common interest in their group's content and they actively participated in developing their group programme. Exclusion criteria ensured that they had fairly good cognitive and physical function.

Several characteristics of the *group leaders* were also predetermined. The group leaders were voluntary professionals, who had several years of experience working with older people and they received special education for these PGR groups. They worked in pairs as facilitators in the groups. Group leaders received work tutoring, and reflective practice was an essential element of their work.

The characteristics of the *group activities* that were predetermined as essential for a successful PGR intervention were the support of the group members' adherence, objective-orientedness, group dynamics and maturation of the group. Adherence was supported, for example, by describing what participation required from the participants and by emphasizing voluntariness beforehand, respecting group members, and giving the group members the possibility to influence the content of the group, as well as by noticing each member individually in the group. Objective-oriented working was achieved by setting goals for each group meeting that were in line with the main objective of the PGR intervention. After every meeting the group leaders discussed whether the groups' objective had been achieved, and they set new objectives for the next meeting. The group dynamics and the natural development of the group were used consciously, and the group leaders were aware of the group dynamics, the different kinds of group roles, and their meanings in a closed group.

b) Favourable processes

Several favourable processes that assisted in achieving the objectives of the PGR intervention could be recognized from the diaries and the free notes of the observers. The three different contents (art and inspiring activities, group exercise and discussions, therapeutic writing and group psychotherapy) ensured that the group members had something that they could use in sharing their feelings of loneliness and doing and experiencing things together in the group. For example, in the art and inspiring activities group, art experiences were related to loneliness and friendships, and in group exercise and discussions groups, the feelings of togetherness were created with different kind of exercises. Sharing experiences in group discussions, gaining peer support from each other, and a feeling of togetherness, as well as overcoming one's own limits (like trying acting for the first time or starting to ride a bike again) were important characteristics of the group rehabilitation. Especially in therapeutic writing and group psychotherapy groups, sharing the past and meanings of life, and daring to trust other group members were elements that supported the groups' objective.

c) Mediating factors for alleviating loneliness

Although the objective of the PGR intervention was to alleviate loneliness by psychosocial group activity, it was obvious from the diaries, free observation notes and participants' feedback that there were several mediating factors taking place between and within the participants which worked in favour of the ultimate goal.

The factors that were recognized as mediating factors between the group activity and alleviation of loneliness were improved empowerment, self-esteem and mastery over one's own life. In addition, active participation in the group meetings and doing things together socially activated the group members and created a ground for friendships. The equality of the group members, group members' participation, empowerment and activation were promoted by the group leaders, and these also encouraged the desire to continue meetings with one's own group after the intervention.

5.7 Participants' experiences of the psychosocial group rehabilitation

The respondents stated that the PGR intervention groups were very meaningful for them, and that the discussions were important and performed in a safe atmosphere (see Paper V: Results). They also felt that it was easy to express their own opinions and that the feeling of loneliness was understood in the group.

The group meetings meant a possibility to meet other older people and to gain variation in one's life (see Paper V: Results). In addition, it meant the joy of waiting for something pleasant, prevention of the feelings of loneliness, an opportunity to try new things (like painting porcelain or senior dance), and to make new friends.

Of the respondents, 95% felt that their loneliness was alleviated during the PGR intervention, and 75% felt it also three months after the intervention (see Paper V: Results). Only some (10%) had considered dropping of the group during different phases of the intervention. Most of the respondents would attend a similar intervention again, if they had the opportunity and would recommend this kind of group to their friends.

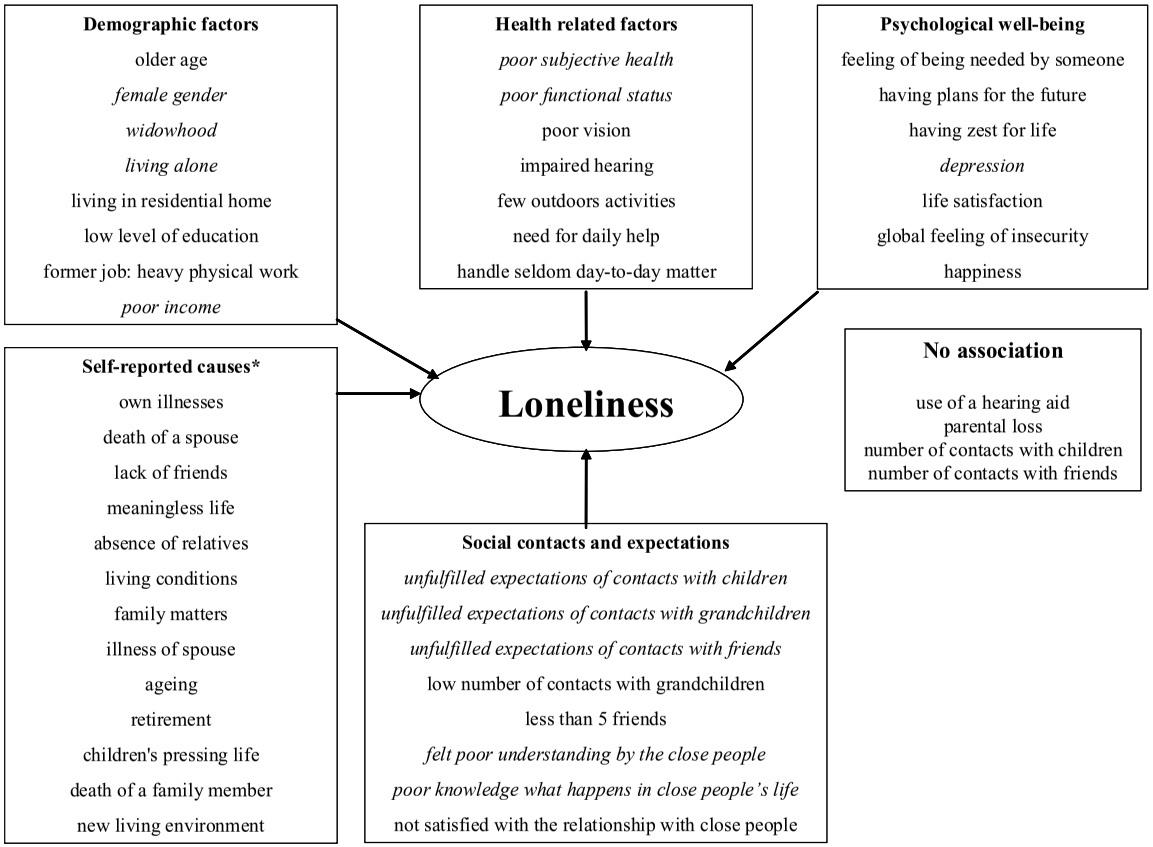
5.8 Summary of findings

The prevalence of loneliness was quite high since 39% of older people suffered from it. Several demographic and health-related factors, as well as expectations related to social contacts, were associated with loneliness. All measured dimensions of psychological well-being were significantly associated with loneliness in older people. Older people mentioned several causes for their loneliness. There was a distinction between the concepts of loneliness and social isolation since the frequency of contacts and the size of the social network were not associated with loneliness. It was also found that loneliness is related more to the emotional aspect of the social contacts than to the actual number of contacts (social isolation). Loneliness, social isolation and a global feeling of insecurity are intertwined, but not a same thing. In Figure 4, all characteristics that were associated

or were not associated with suffering from loneliness are presented. In this figure, the self-reported causes are also included.

There were several elements that were considered essential in an effective PGR intervention aimed at alleviating loneliness in older people. These are presented in Figure 5.

Participants' experiences of the PGR intervention were promising. The groups were very meaningful for them and their loneliness was alleviated during and after the PGR intervention. Most of the respondents would attend a similar intervention again and recommend this kind of group to their friends.



Italic= independent association in at least one of the three logistic regression described in findings
*= not included in any of the logistic regression

Figure 4. Characteristics associated / not associated with loneliness of older people

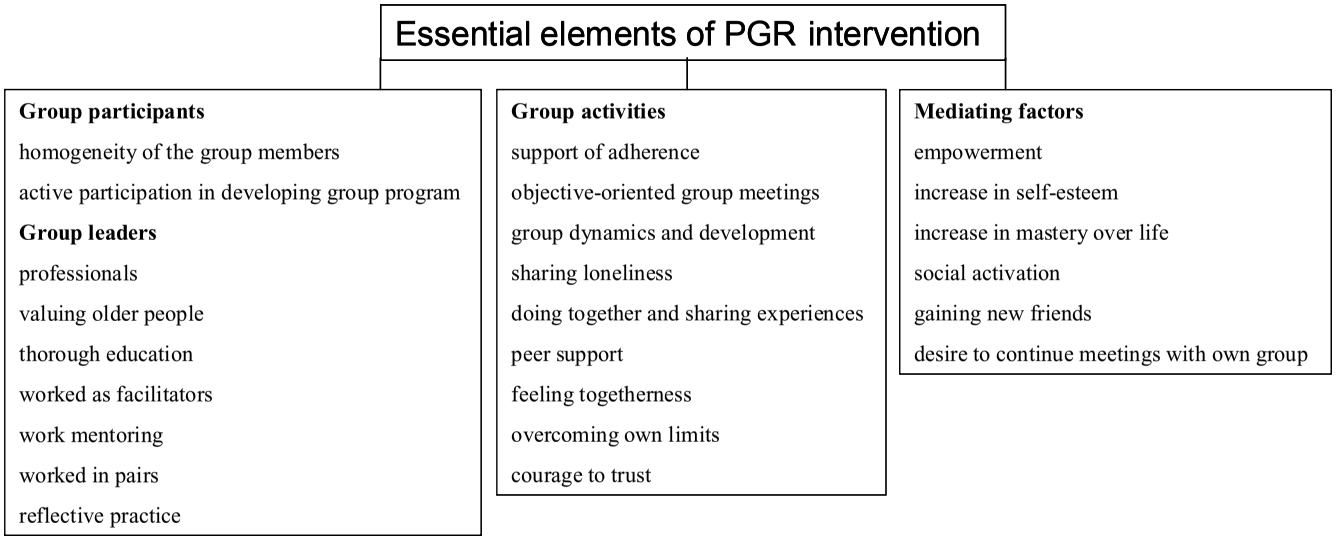


Figure 5. Essential elements of PGR intervention

6 DISCUSSION

6.1 Validity, reliability and trustworthiness of the study

6.1.1 Validity and reliability

Sampling method and sample

In **phase I**, a questionnaire was used because the objective was to get a representative sample of Finnish community-dwelling older people (see Burns & Grove 2001) at reasonable cost, and it was assumed that considering the sensitive nature of the experience of loneliness it would be easier to give an honest answer to the loneliness question by filling in a questionnaire than admitting it face-to-face to an interviewer (e.g. Killeen 1998). The selection of six municipalities was based on the need of the larger study project administered by the Central Union for the Welfare of the Aged (see Pitkälä et al. 2003) (e.g. having voluntary rehabilitation centres to participate in the PGR intervention), of which the present study was one part. It could be argued that the selection of the six municipalities may diminish the generalization of the findings. However, according to the statistics in 2002, for example, 68% of older Finnish people (≥75 years) were women (Statistics Finland 2008), and the respective share in the present study was 69%. In addition, 5% of the older population lived in a residential home (SOTKAnet 2008), while the respective share in the present study was 7%. It has to be noted that the statistics do not cover the private residential home services (SOTKAnet 2008). Thus, it may be concluded that the respondents were a representative sample of older Finnish people, at least in this respect.

The high response rate in **phase I** (72%) supports the reliability of this study. Although a feeling of loneliness is a universally experienced phenomenon (Karnick 2005), it is also dependent on cultural context (Jylhä & Jokela 1990). The findings of this study may be generalized to cover the whole elderly population (≥75 years) in Finland, but should be cautiously interpreted in other countries.

In **phase II**, a questionnaire was selected to explore the PGR intervention participants' experiences. It was assumed that participants would more easily express their true experiences in a questionnaire filled in at home and posted directly to the researchers, not to group leaders, than in an interview. The questionnaire was sent to all participants, thus avoiding selection bias. However, it has to be noted that only a selected sample of older lonely people participated in the groups. It may be that those with more impaired heath and frequent feelings of loneliness may not have been willing to participate in the groups. In addition, several exclusion criteria were used to obtain a homogeneous group of older lonely people. The response rate for the feedback questionnaire was 88%, thus supporting the reliability of the study. The findings of the feedback questionnaire may be generalized to similar PGR groups.

Instruments and analysis

The questionnaire used in **phase I** was developed for a larger study project and not all the questions were used in the present study. A pilot study (N=500) was conducted before the actual study. The wording of some questions was formulated in a simpler and more unambiguous way. The reliability and validity of most of the questions have been tested (Tilvis et al. 2000, Pitkälä et al. 2001). Loneliness was measured with the question: "Do you suffer from loneliness?" (1 = seldom or never, 2 = sometimes and 3 = often or always). The objective was to identify those who view their loneliness as negative feeling, and to exclude those who feel solitude. The question used in the present study is highly acceptable to research participants (Tilvis et al. 2000, Victor et al. 2005) and it has prognostic value (Tilvis et al. 2000). However, the question presumes a common understanding of the concept of loneliness by participants, when it is likely that the nature and meaning of the concept will diverge among different groups of older people (Victor et al. 2005).

A major limitation is the reliability and validity of the questions concerning a global feeling of insecurity and happiness. Many respondents (16%) answered that they found it hard to say whether they felt their life as insecure or secure. However, only 2% left this question unanswered. This, and a pilot study, suggest that the question was easy to understand. With the question used it was possible to differentiate those feeling global insecurity. The questions on a global feeling of insecurity and happiness showed consistent findings with the other questions on the dimensions of psychological well-being.

The feedback questionnaire used in **phase II** was also developed for a larger study project. Only some questions of the developed questionnaire were used in the present study. The questionnaire was based on the activities that were performed in the groups, and on participants' experiences of these activities, and it was posted to the participants in several steps according to the ending of the groups. There was no need to clarify the questions since the returned questionnaires were well filled in.

Both the postal questionnaire and the feedback questionnaire included covering letters emphasising the confidentiality and voluntariness of the respondents. Specific instructions were given on how to answer the questions. Both questionnaires were well filled in, suggesting that the instructions and questions were understood.

Statistical methods were used to analyse the data. The analysis methods were selected according to the categorization or scale used in the questionnaire. In addition, attention was paid to the skewed distribution.

6.1.2 Trustworthiness

Trustworthiness in qualitative research means methodological soundness and adequacy. It can be discussed in terms of transferability, dependability, credibility, and confirmability. (Lincoln & Guba 1985, Polit & Hunger 1999, Holloway & Wheeler 1996.)

Sampling method and sample

The objective was to reach a deeper understanding of what are the essential elements of the PGR intervention. It was assumed that a questionnaire would not give adequate information on what really happened in the groups, while video-taping might have influenced the group members, and thus the diaries were selected as a data collection method. Transferability (parallel to external validity) means that knowledge acquired in one context will be relevant in another (Lincoln & Guba 1985, Holloway & Wheeler 1996). One of the central transferability issues concerns the recruitment of informants (Morse 1991). All group leaders wrote diaries, thus avoiding selection bias. The circumstances in which a study is conducted may influence its validity, and thereby the transferability of the findings (Burns & Grove 2001). When the group leaders were recruited they were informed that keeping a diary was part of the participation. An attempt was made to ensure respondent validation by giving very precise instructions to the group leaders for writing the diaries. Leaders wrote their diaries in a place convenient for them. There should be no reasons why the findings could not be transferable to another context if the elements of the PGR intervention described in the findings are present.

A researcher was present in 32 group meetings which were not randomly selected but were a convenience sample from the PGR group meetings. However, all three group contents were included in the observations. All group participants were informed that the interventions were part of a study and that group leaders' diaries and researchers' observation notes would be used for research purposes. It was assumed that it would be more convenient for the group members, if the researcher did not write her notes during the group meeting but afterwards, thus not giving the group members the feeling that they were under observation. Researchers were very familiar with the objectives of the groups.

Instruments and analysis

Dependability (parallel to reliability) is connected with the possibility to confirm the findings with another researcher (Lincoln & Cuba 1985, Miles & Huberman 2001). This was supported by describing the features that were analyzed from the diaries (predetermined elements, favourable group processes, what happened between and within the group members). In addition, the context of the research was described in detail.

Credibility (parallel to internal validity) deals with the focus of the research and refers to confidence in how well the data and processes of the analysis address the intended focus (Polit & Hunger 1999). Triangulation was used in data collection to obtain a more definite and deep knowledge of the phenomenon under concern (see Patton 1990). In half of the group meetings two diaries were written by two group leaders, so not only were two kinds of diaries included in the data but also two different views of what happened in the groups. Altogether 14 group leaders wrote diaries of the group meetings. This also ensures a wide range of different perspectives (see Mays & Pope 2000). Diaries

give a rather detailed picture of what happened in the groups. However, it is possible that the group leaders may not want or may not remember to describe things that they view as irrelevant, or in which their own role would appear in an unfavourable light. The other problem may be the group leaders' conscious or unconscious need to please the researchers and deliver the kind of data they think would respond to the researchers' assumed needs. In addition, the education of the group leaders' may have focused their descriptions on the issues discussed during the education (see Pitkälä et al. 2004a), thus highlighting the predetermined elements. These may have had an impact on the trustworthiness of the data. The absence of diary writings on discussions of diseases drew attention since it has been argued that such conversations are the most common themes of discussion in groups of older people (see Toseland 1990). It seems that from the diaries it is possible to interpret things that had happened in the groups but it is much more difficult to draw conclusions from a "missing phenomenon". Credibility was also ensured by discussing the findings with group leaders in the tutoring sessions.

Confirmability (parallel to objectivity) refers to neutrality of the data such that there would be agreement between two or more independent persons about the meaning or relevance of the data (Lincoln & Guba 1985, Polit & Hunger 1999). This was supported by the data being coded by three independent researchers. After the first analysis, the confirmability was insured by comparing the codes of different researchers and by discussing the differences in coding. In addition, the researcher's observations from the group meetings were used to confirm the observations from the group leaders' diaries.

6.2 Discussion of the findings

Prevalence of loneliness

Of the respondents (n=4 113), almost two in five suffered from loneliness at least sometimes. In previous studies, the prevalence of loneliness has varied (Holmén et al. 1994, Victor et al. 2000). The present study finding of the prevalence of loneliness is in line with another Finnish population-based study (Vaarama et al. 1999) findings. Of Vaarama and colleagues' (1999) sample, 36% experienced loneliness at least sometimes in 1998. In addition, the findings from previous population-based studies from Scandinavian countries show comparable findings. In a Swedish study with similar age range, 35% of older individuals suffered from loneliness (Holmén et al. 1992a).

In Tiikkainen's (2006) study, 12% were found to suffer from loneliness often or almost always. This is a clearly larger proportion than in the present study, in which the proportion of older people suffering from loneliness often or always was 5%. There may be several reasons for this. Firstly, the sample in Tikkainen's study consisted of 80-year-old older people, being five years older than in the present study. It has been suggested that older people may suffer from loneliness more often than younger people (Jylhä & Jokela 1990, Mullins et al. 1988, Barretta et al. 1995, Fees et al. 1999, Jylhä

2004). In the present study, of those 90 years old or older, 13% suffered from loneliness, but the respective figure for 80-89-year-olds was only 6%. This suggests that loneliness is more common among the oldest old than among younger respondents. Secondly, the scale used in Tiikkainen's study was different from the present study, having four answer options.

Characteristics associated with loneliness

Demographic factors

The findings of the present study mostly support the earlier study findings on associated characteristics of loneliness. Women (as in, e.g. Holmén et al. 1992a, Jylhä 2004), widows (as in, e.g. Creecy et al. 1985, van Baarsen 2002), respondents with a low level of education (as in, e.g. Chang & Yang 1999, Dykstra & de Jong Gierveld 1999) and poor income (as in, e.g. Mullins et al. 1996, Victor et al. 2005), and respondents living alone (as in, e.g. Henderson et al. 1986, Holmén et al. 2000) were found to suffer more often from loneliness than others. The association between the content of the former work and loneliness in older age has not received attention in previous research. Former physically heavy work was found to be associated with loneliness in the present study. Lower income may be the explanation for this.

In the present study, the bivariate analysis showed that loneliness was associated with older age, and this supports most of the earlier study findings (e.g. Jylhä & Jokela 1990, Fees et al. 1999). However, it has been suggested that people aged 85 or over are at lowest risk of reporting loneliness, and they identify advanced age as a "protective factor" against loneliness (Victor et al. 2005). In addition, it has been suggested that loneliness levels off after 90 years of age (Holmén et al. 1992). In the presents study's multivariate analyses high age (≥ 80 years) lost its statistical significance in the logistic regression model. This means that other characteristics than age itself explain the experience of loneliness. These characteristics may be different kinds of losses, like widowhood or a decrease in functional status that older people face as they get older.

Loneliness was found to be more common among respondents living in a residential home than among those living in their own homes. This supports one earlier study finding (Jylhä 2004), but is inconsistent with two other studies that found no association between living in an institution and loneliness (Bondevik & Skogstad 1996, Broese van Geoenou & Thomése 1996). The present study can not answer whether the lonely people are those who move to residential homes or whether older people become lonely in residential homes. The findings of the study of de Jong-Gierveld and Kamphuis (1986) suggest that it may be that older people become lonely after admittance. Older people with decreased functional status and health may be more likely to apply to a residential home than those with better health and functional status, and thus are at greater risk of suffering from loneliness. In addition, it may be that expectations are not fulfilled, although there may be a lot of social activity going on. McInnis and White (2001) argue that unequal allocation of social activities in residential homes may highlight loneliness

during the times when no activities are arranged by the residential home staff, such as evenings and weekends.

The present study findings suggest that those living in a large city are less often lonely than those living in small cities or in rural areas. This finding is inconsistent with one previous study in which there were no differences between city and rural area residents in relation to loneliness (Mullins et al. 1996). One reason why the older people living in the countryside suffer from loneliness more often may be the continuous migration in Finland. This leads to disintegration of small rural communities as the young move to the cities and older people are left behind. This may reduce the satisfying social contacts, especially when a person's functional status is impaired and he or she is no longer able to participate in outdoor activities or visit friends.

Health and functional status

The present study supports the previous study findings on the association between health-related factors, functional status and loneliness. Loneliness was associated with poor subjective health (as in, e.g. Berg et al. 1981, Victor et al. 2005) and functional status (as in, e.g. Jylhä & Jokela 1990, Kim 1999). An obvious reason for this could be the decreasing capacity to keep up with social contacts as health deteriorates. However, Bondevik and Skogstad (1998) found that decreased functional status (dependence on ADL support) might also protect from loneliness, by offering more satisfying social contacts with outside help providers. It should be noted, however, that the instrument (see Cutrona and Russell 1987) used to measure loneliness partly also measured the number of social contacts.

Poor vision and hearing were found to be related to loneliness in the present study, and this supports most of the previous study findings (e.g. Dykstra & de Jong-Gierveld 1999, Dugan & Kivett 1994, Kramer et al. 2002). The use of a hearing aid was not significantly related to loneliness. This may be due to the fact that when using a hearing aid one can participate in conversations normally and thus not feel an outsider in the conversations.

Social contacts and satisfaction

Both the lonely and "not lonely" older people had as many children alive and loneliness was not associated with the frequency of contacts with children or friends. Rather, loneliness was associated with expectations and satisfaction with these contacts. Thus, the present study shows that unfulfilled expectations of social relationships are more important associates of loneliness than the actual number of social contacts. This supports the findings of previous studies in which older people's unfulfilled expectations of visits from relatives or friends (Berg et al. 1981) and dissatisfaction with social contacts (Creecy et al. 1985, Mullins & Dugan 1990, Holmén et al. 1992a, Holmén 1994, Kim 1999) are associated with an increased prevalence of loneliness.

In previous studies, it has been suggested that older people may appreciate their relationships with friends or neighbours differently than with children or family, since they may feel their relationship with friends is more sincere than with children. Older people may also share similar values, culture and past experiences with their own-age friends. (Holmén et al. 1992a, Bondevik & Skogstad 1998, McInnis & White 2001, Routasalo & Pitkälä 2003a; b.) In the present study, there were no differences between the number of social contacts with children or friends in relation to loneliness, and the unfulfilled expectations of social relationships with children, friends and grandchildren were all associated with increased loneliness. However, the low number of social contacts with grandchildren was related to increased loneliness, suggesting that older people really value the time spent with their grandchildren. This may also mean that older people meet their children at the same time, thus increasing their contacts with them, or that they are given the responsibility of nurturing their grandchildren, and thus given a meaning for their lives.

The variables "feeling poorly understood by their close people" and "unfulfilled expectations of contacts with friends" were found to be powerful associates of loneliness. They tended to be more powerful than poor health, poor functional status or widowhood. The findings thus emphasize the significance of the older person's inner expectations in feelings of loneliness. They seem to be more important than the external circumstances and losses related to ageing.

Psychological well-being

Loneliness was significantly associated with all the measured dimensions of psychological well-being (subjective depression, life satisfaction, zest for life, being needed by some one, having plans for future, happiness and a global feeling of insecurity). The present study supports the previous study findings on the association between depression and loneliness (see Berg et al. 1981, Beck et al. 1990, Mullins & Dugan 1990, Prince et al. 1997, Holmén et al. 1999, Tilvis et al. 2000, Victor et al. 2005, Tiikkainen 2006). In a logistic regression model being depressed was the second strongest associate with loneliness after living alone. Among subjects without depression, loneliness was significantly associated with "unfulfilled expectations of contacts with friends" and "feeling poorly understood by their close people", thus suggesting that depression alone does not explain an individual's inner sense of loneliness. The present findings on life satisfaction are in line with one previous study (Tilvis et al. 2000) where dissatisfaction with one's life was shown to be associated with loneliness.

Self-reported causes of loneliness

In previous studies, subjective causes of older people's loneliness have not received much attention. The present study findings are supported by epidemiological studies on the associations with loneliness, but the analyses show that there are many other causes of old-age loneliness than those examined in previous studies. One's own illness and death of a spouse were identified as the most common causes of loneliness, and

this accords with the associations between health status, widowhood and loneliness. A significant finding was the importance that respondents gave to lack of friends and expressing life as meaningless as the causes of their loneliness. The association between the lack of friends and loneliness has been found in one previous study (Mullins et al. 1996). Notable, too, was the significance attached to their living conditions and family matters. In an open-ended question on the causes of loneliness, older people mentioned several other causes. The significance of illness of spouse, retirement, and children's stressful life emerged in an open-ended question on the causes of loneliness of older people. If one's spouse needs a caregiver because of illness it may shrink the caregiver's social network and social contacts (see Shearer & Davidhizar 1993, Haley et al. 1995, Beeson et al. 2000, Eloniemi-Sulkava et al. 2002). Retirement also may diminish social contacts especially in those who had a socially demanding job. Children's stressful life may reflect the relationship with their parents in such a way that older people can not see their children or grandchildren as often as they would wish to. The present study findings on the expectations of social contacts with children support this notion.

Parental loss

Of the respondents, about one third had lost one or both of parents before they were 18 years old. This very large proportion of orphans may be understood when considering the history of Finland. The respondents had experienced three or four wars in their childhood and many people died of tuberculosis (Statistics Finland 2004). Maternal mortality was also high (Forsius 2007), and the life expectancy was much lower in those days (Statistics Finland 2004).

It has been suggested that older adults who had experienced parental loss in childhood may have diminished feeling of personal control (Krause 1993), and may be less likely to be integrated into family and friendship groups in late life, as well as having fewer social resources in general (Krause 1998). It was assumed that this may also have influenced the experience of loneliness of these older people. However, in the present study, an interesting finding was that childhood parental loss did not have an impact on older people's loneliness. It may be that older people who had lost their parent have compensated for the parental loss with other adult relationships. Another explanation for this finding may be the selection of the strongest as those suffering loneliness may have moved to a nursing home or a long-term care unit or may have died.

The relationship between parental loss and depression has been fairly consistent in previous studies concerning adults (Roy 1981, Bifulco et al. 1987, Patten 1991, Kunugi 1995, Agid et al. 1999). In addition, an earlier Finnish study showed that parental loss predicted depression among older people (Kivelä et al. 1998). However, the present study finding is inconsistent with these findings. Loss of parent/parents was not associated with older people's depression or with other characteristics of psychological well-being. The inconsistent findings of the present study and Kivelä's (1998) study may have several explanations. Firstly, those residing in nursing homes or hospitals were included

in Kivelä's study. Secondly, in Kivelä's study, the depression was defined with DSM-III criteria, whereas in the present study depression was the respondents' subjective feeling of being depressed. Thirdly, selection of the fittest may explain the inconsistent findings between these two studies since Kivelä and colleagues (1998) have studied almost the same age cohorts of older people as in the present study but 15 years earlier. Those with severe depression and concomitant frailty may have already died or moved to an institution (Penninx et al. 1997, Tilvis et al. 1998). Finally, these older people may have confronted other losses during the past 15 years such as death of a spouse or other close friends, which have further diluted the effect of losses in early childhood. Therefore, the present study findings may be generalized only to the Finnish population of older people (≥75 years); the findings may be different in a younger population.

Concept of loneliness

Some prior studies have studied social isolation and perceived social support simultaneously, and shown that perceived social support is a more powerful predictor of poor prognosis than social isolation, thus supporting the assumption that they are separate concepts (Blazer 1982, Hanson et al. 1989, Penninx et al. 1997). The present study findings are in line with these studies in showing that of the socially isolated older people, less than 40% also felt lonely and that neither the size of the social network nor the number of contacts was associated with loneliness. In addition, the present study suggests that internal expectations and the perceived quality of relationships are more powerful associates of loneliness than certain external characteristics. If emotional loneliness is a truly separate concept from social isolation, this has implications for the practice and care of older people. It seems that it is useless to aim merely at increasing the number of social contacts of lonely older people in order to relieve their loneliness. It is important to reach the emotional component and inner expectations at the same time. Two reviews on interventions aiming at alleviating loneliness also concluded that interventions targeted only at individuals have less promising results than some group interventions (Findley 2003, Cattan et al. 2005).

It has been suggested that insecurity and loneliness are characteristics that are related to older people's decline in functional status and cognition that may lead to an increased need of help and living in residential homes or institutions (Karjalainen 1999, Tilvis et al. 2000, Vaarama & Kaitsaari 2002). In the present study, 9% of the respondents experienced a global feeling of insecurity. A global feeling of insecurity was significantly associated with loneliness and all other dimensions of psychological well-being, except having plans for the future.

Palkeinen's (2005) study findings suggest that insecurity and loneliness are intertwined. In the present study, several characteristics were related both to loneliness and a global feeling of insecurity (see Papers I-III). The same demographic factors (gender, marital status, low education, poor income, living in a residential home and living alone), health-related factors (decreased subjective health status and decreased subjective functional

status) and characteristics related to social contact and satisfaction (no children, fewer than five friends and dissatisfaction with close relationships) were related both to loneliness and a global feeling of insecurity. The exception was having children (alive) that was not associated with loneliness but increased a global feeling of security. This may mean that children are considered as a safety net that older people feel they can count on if they feel insecure in their lives, but only having children is not enough to alleviate loneliness.

The analysis of the independent associates of a global feeling of insecurity showed that dissatisfaction with close relationships was a more powerful associate than loneliness. Of the lonely respondents, only 14% also experienced a global feeling of insecurity. This supports the view that even if there are several characteristics that are related to both loneliness and a global feeling of insecurity, there is also a distinction between these two phenomena.

Loneliness, social isolation or a global feeling of insecurity have been suggested to be are risk factors, e.g. for dependence (Finnish Ministry of Social Affairs and Health 2003) and mortality (Berkman & Syme 1979, Penninx et al. 1997,Yasuda et al. 1997, Stewart 1998, Kiely et al. 2000, Tilvis et al. 2000, Keller et al. 2003, Jylhä 2004). In the present study, half of the lonely respondents were also socially isolated. An interesting question is whether the risk of social isolation is only a reflection of loneliness, or is it really an independent risk factor for mortality as has been suggested in several studies (e.g. Berkman & Syme 1979, Penninx et al. 1997, Yasuda et al. 1997, Kiely et al. 2000). If social isolation itself is a risk factor, it means that more than 70% of the respondents have one of the studied risk factors (feeling lonely, socially isolated or experiencing a global feeling of insecurity) for dependence or mortality. However, it is not rational to think that only 30% of the older population is "normal" in this respect. It may be that the definition of social isolation used in this analysis (having < weekly contacts with friends) is too broad, thus including many older people. It could be considered that these older people who are socially active, rarely suffer from loneliness and experience a global feeling of security, possess a specific factor that protects their health.

Essential elements of the PGR intervention

The selection of the group intervention was based on previous study findings suggesting that group interventions in which group members could influence the group contents were the most effective in alleviating loneliness (Cattan et al. 2005). It has also been suggested that multi-dimensional interventions focusing not only on friendship but also another personal and situational characteristics contributing to loneliness are effective (Martina & Stevens 2006). Especially art experiences (Wikström 2002), group exercise (McAuley et al. 2000) and group discussions (Andersson 1984; 1985) seemed to be promising contents of loneliness intervention. Although the three multi-dimensional contents of the PGR intervention (art and inspiring activities, group exercise and discussions or therapeutic writing and group psychotherapy) worked well as tools for

sharing experiences of loneliness and for doing things together, it was not necessarily the key issue in the success of the intervention. The data support the importance of *how* the intervention was implemented, not so much *what* its content was. All the elements found in the analysis were expressions of how the intervention was performed, not what its content was.

The predetermined elements adopted from previous studies (e.g. Andersson 1984; 1985, Kocken 2001, Cattan et al. 2005) were well-implemented in the groups and seemed to be essential in achieving the main goal of the intervention. The importance of the participants' homogeneity has been addressed in previous studies (e.g. Andersson 1984; 1985, Cattan et al. 2005). Although the homogeneity of the group members in the present study was less than optimal, it supported the participants' mutual participation in the group activity, peer support and the opportunity for the group members to find friends with similar interests. Participants' opportunity to influence the decision-making and development of the content and activity in the group has been found to be important for a successful intervention (Kocken 2001). In the present study the participants had a chance to select the intervention content that best matched their interests. In addition, they were actively involved in planning the group programme and activities.

Leading groups of lonely, older people is very demanding, particularly in the role of a facilitator rather than a leader. The leaders had to facilitate interaction between the participants and transfer responsibility for the group to them. The training and support of the leaders has been emphasized as one of the most important characteristics underpinning successful interventions (Findlay 2003). In the present study this was well implemented since the leaders received education lasting more than 1.5 years (see Pitkälä et al. 2004a), although they had previously worked with older people. They also received tutoring during the intervention process and reflected on their own actions both in their personal diaries and with their working partners. In this way, they could share their experiences and receive feedback.

Poor adherence to the intervention programme has been a problem in previous intervention studies aimed at alleviating loneliness (e.g. Andersson 1984; 1985, White et al. 2002). This was given special attention in the present study by informing group leaders of this potential risk, ensuring homogeneity, emphasizing voluntariness, respecting group members and listening to their hopes, as well as by paying attention to each member individually in the group. The data suggested that drop-outs threatened the alleviation of loneliness. This may be because the participants continuing in the group may feel that they were not good enough for the participant that dropped out. Drop-outs may also have an influence on the group dynamics and development, hence slowing down the attainment of the primary goal, the alleviation of loneliness. The conscious use of group dynamics, objective-oriented work and normal maturation of a group led to favourable processes between the group members and their social activation.

The complex concept of loneliness and its close association with being alone, depression and social isolation (see Victor et al. 2000, Karnick 2005) raised the question of whether these interventions alone could alleviate the feelings of loneliness. The diaries, observations and feedback from the participant suggest that the intervention worked through several favourable processes occurring in the groups, as well as through mediating factors, which in turn led to the alleviation of participants' loneliness. Similar favourable processes could be observed irrespective of the group contents. Doing things together (see, e.g. McAuley et al. 2000) with people sharing similar interests, and sharing experiences and loneliness (see e.g. Andersson 1984; 1985) with them led to social activation. Engaging in new activities and receiving peer support encouraged the participants to overcome their own limits, which in turn led to empowerment, increased self-esteem and mastery. The lonely older people changed from bystanders to active agents in their own lives. They began to make new friends and to actively promote additional meetings with their groups after the intervention was over. This success seemed to lead to the alleviation of loneliness.

Participants' experience of the PGR intervention

The participants' experiences of the intervention were quite promising: most of the participants felt that their loneliness was alleviated during and after the intervention and found the groups meaningful. The PGR intervention gave the participants something to think about other than their own lonely situation. They also noticed that they were not alone with this uncomfortable feeling; others experience it too. They got a chance to share their feelings in a safe environment with others with similar experiences and they gained peer support from them.

It should be noticed that participants in the PGR intervention were quite a selected sample of the Finnish older population because of several exclusion criteria. The results may have been different if a more heterogeneous group of older people were included. However, the use of exclusion criteria was seen as essential for the success of the PGR intervention.

6.3 Challenges for nursing practice, education and future research

Nursing practice

The terminology concerning the concept of loneliness is a challenge for nurses. Although much have been written on the concept of loneliness (e.g. Weiss 1973, Donaldson & Watson 1996, Victor et al. 2000, Karnick 2005), there is still a need for concept clarification. There are many concepts like social isolation, feeling lonely, alone and living alone that are used interchangeably for the concept of loneliness (Karnick 2005). In addition, the Finnish language adds another challenge since it has only one word for positive and negative loneliness. The present study showed that the concepts of loneliness and social isolation are different. When discussing an individual's subjective experience one should

not refer to it with concepts that mean social isolation. The content of the concepts should be agreed in work places so that nurses and other health care professionals understand the concept in the same way.

The number of community-dwelling older people is increasing creating a challenge for our health care system. Loneliness has been identified as a risk for community-dwelling older people's health and independent living (Finnish Ministry of Social Affairs and Health 2003). In addition, harmful consequences of loneliness, such as depression (Holmén et al. 1999) and an increased need for help (Geller et al. 1999), have been identified. The present study shows that loneliness is a common problem among older people and that several characteristics are associated with it. However, the recognition of loneliness in older people is still a challenge for, e.g. nurses. Awareness of associated characteristics may help the nurses to recognize those who may suffer from loneliness. Nurses should be aware that a feeling of loneliness is often experienced as shameful, and older people may also fear becoming a burden if they complain about their situation (Killeen 1998, McInnis & White 2001). Thus, they are not so willing to speak about their loneliness, which makes it even more challenging for the nurses to recognize it. Loneliness is a subjective feeling so only the older people themselves can say for sure if they are suffering from loneliness. Nurses can encourage older people to talk about loneliness but they should be considerate when asking them about their loneliness.

In nursing care the importance of taking the life history of the clients has been emphasized. It has been suggested that older persons reflect on their life experiences in order to understand their past life and to gain balance in later life. (Tornstam 1994.) It was assumed in the present study that parental loss in childhood would affect older people's loneliness experiences. However, it seems that this traumatic event in childhood no longer has an effect on people's loneliness, depression or other dimensions of psychological well-being. This finding creates a challenge for nurses as to how they interpret the older person's past experiences. Is it necessary to take a life-long history of an older person in order to thoroughly understand him or her? How should older persons' narratives of early parental loss be interpreted in the present time? The present study suggests that early parental loss, besides being a risk factor as earlier studies (e.g. Agid et al. 1999) have suggested, may also be a resource for developing stronger coping skills.

Older people mentioned several causes for their loneliness most of which have not received attention in previous studies. For example, illness of the spouse may keep the carer away from her/his normal social contacts and increase the feeling of loneliness. In such situations, an interval care could be a solution for the carer's loneliness. (See Shearer & Davidhizar 1993, Haley et al. 1995, Beeson et al. 2000, Eloniemi-Sulkava et al. 2002.) In addition, family matters, like alcoholism of the children, may increase dissatisfaction with the relationship, and in that way affect the feeling of loneliness.

Nurses should acknowledge the whole family situation when examining reasons for older people's loneliness.

As the present study is cross-sectional, it does not reveal the changes in loneliness over time. Two Finnish studies concerning citizens of two cities (Tampere and Jyväskylä) have shown that loneliness is not a stable state (Jylhä 2004, Tiikkainen 2006). Nurses should be aware that older people who may have said not to feel lonely at one time, may be in a different situation the next time they meet.

Our health care system and nursing care have had limited means to recognize and intervene in the loneliness of older people (Routasalo & Pitkälä 2003a; b). The intervention studies published earlier have lacked detailed descriptions of effective interventions. The present study findings support the fact that merely increasing the number of social contacts does not necessarily relieve the inner feelings of loneliness among older people. The PGR intervention carefully described in the present study also offers means for nurses and other health care professionals to intervene in older people's loneliness. However, leading a group of lonely older people is very demanding and nurses and other health care professionals need a knowledge of several issues (like goal-oriented perspective, handling sensitive situations in a group, and older people's resources) during the leading process.

Nurses may have to use several methods to find community-dwelling older people for the PGR intervention. Home care nurses and those making preventive home visits or working at health centres are in key positions to recruit participants. It may be that the most lonely ones are reluctant to participate, so nurses need special communication skills to persuade them to take part in the PGR intervention. Nurses should also utilize their multidisciplinary network in recruiting older people.

Education

It is important that health care educators know the differences between concepts of loneliness and social isolation so that they can provide correct information for their students. Educators are in a key position to spread the knowledge of the differences between the concepts. The education of nurses should also include knowledge of the associated characteristics of loneliness so that nurses could be able to identify those being at risk of suffering from loneliness. The challenge for educators is to maintain their knowledge of the findings concerning loneliness since the interest towards it is increasing (see literature review).

There has been a change in how older people are viewed in society. Today being older is seen as a positive part of life that emphasizes older people's recourses and agency (see Jyrkämä 2003; 2007, Koskinen 2004, Ryhänen 2007). In the PGR intervention, essential elements included valuing older people and supporting empowerment, increase in self-esteem and mastery over one's life. By their own example, educators should pass on to their students this appreciative attitude towards older people. Educators

should be aware that how they talk about and act around older people shows how they value them.

Educators have to be aware of the potential misinterpretation of older people's life-long history. In addition, they have to teach nurses to be open-minded when listening to older people in terms of what they consider relevant in their history and what kinds of meanings they give to their losses. Older people may have accepted events that have happened in the past (e.g. loss of parents) and created coping mechanisms to get on with their lives.

The nurses' education should also include knowledge of different kinds of interventions that may alleviate loneliness in older people. Before the PGR intervention can take place, proper special education is needed.

Future research

Since loneliness is often used to describe other phenomena (Karnick 2005), a challenge for future research is to create a common understanding about the difference between emotional and social loneliness. It is important that the researchers share a common view of the content of the examined concepts. Researchers should also use synonyms with care since the meaning may not be the same.

At the moment, there is no strong evidence that loneliness has increased in the older population, although there have been several changes in the Finnish society (e.g. urbanization, older people living alone more often) during the life course of the respondents, that may have influenced their experiences of loneliness. In a future studies, it would be interesting to examine whether there is a changing pattern in loneliness at population level. It would also be interesting to look more carefully at what happens to loneliness when older people move to a residential home. Is it so that lonely people are the ones who move there, or do people get lonely after moving to a residential home? This information would be important for the nurses and other residential home staff. With this information, they could pay more attention to preventing and alleviating the loneliness of their clients.

It would be important to explore in more detail the causes older people themselves give for their loneliness. This could lead to a more profound understanding of the nature of loneliness, and might suggest some new means to alleviate the loneliness of older people. In addition, it may expose some new associated factors that nurses could keep in mind when identifying older people who may be at risk of suffering from loneliness.

The present study showed that PGR intervention is successful and well liked in a rather selected sample of older people. In order to utilise the PGR intervention in other types of older population (e.g. the demented or caregivers) more research is needed. It should be noted that it is likely that the nature and meaning of the concept will diverge

among different groups of older people (Victor et al. 2005). In future research, it would be interesting to not only measure the presence of feelings of loneliness (always-never) but also to evaluate its perceived quality or degree of discomfort (strong-weak).

7 CONCLUSIONS

1. Loneliness is common among community-dwelling older people since almost two out of five experience it. Nurses should be aware of this common problem.

2. Several characteristics are related to older people's loneliness and the findings are supported by previous studies. Such characteristics of older people as female gender, widowhood, living alone or in a residential home, poor income, poor subjective health and functional status or depression may help nurses to identify those at risk of suffering from loneliness. However, loss of parent/parents in childhood is not related to older people's loneliness or other measured dimensions of psychological well-being. Many of the diverse causes of loneliness mentioned by the older people have not yet been addressed in previous studies.

3. Loneliness and social isolation are distinct concepts. This means that older people may feel lonely even when surrounded by other people, and living alone or having few visits does not necessarily indicate that older people feel lonely. Those experiencing a global feeling of insecurity were often socially isolated and/or lonely. There are few older people who do not have any of these three risk factors.

4. A successful PGR intervention for alleviating older people's loneliness consists of several essential elements that can be divided into predetermined elements, favourable processes and mediating factors. It was more important how the intervention was implemented than what its content was. The well planned and carefully executed PGR intervention by trained nurses and other health care professionals was well liked and promised effectiveness in alleviating loneliness.

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APPENDIX 1. THE ASSOCIATIONS BETWEEN DEMOGRAPHIC FACTORS AND LONELINESS IN PREVIOUS STUDIES

Author and year	Age;	Gender; women	Widowhood	Living alone	Living in institution	Low level of education	Poor income (dissatisfaction)
Andersson & Stevens 1993		-					
Barretta et al. 1995	+						
Barron et al. 1994			NS				
Beck et al. 1990	NS	NS				+	
Berg et al. 1981		+	+	+		NS	NS
Bondevik & Skogstad 1996					NS		
Broese van Geoenou & Thomése 1996					NS		
Chang & Yang 1999						+	+
Cohen-Mansfield & Parpura-Gill 2007				NS			
Costello & Kendrick 2000			+				
Creecy et al. 1985	NS	NS	+				+
Dugan & Kivett 1994			+				
Dykstra & de Jong-Gierveld 1999			+			+	+
Essex & Sunghee 1987			+				
Fees et al. 1999	+						
Havens & Hall 2001			+	+			
Hector-Taylor & Adams 1996	NS	NS	+	+		+	+
Henderson et al. 1986			+	+			
Holmen 1994	+	+					
Holmen et al. 1992a	+	+	+	+			
Holmen et al. 1994	NS						
Holmen et al. 2000				+			
Jylhä 2004	+	+	+	+	+		
Jylhä & Jokela 1990	+		+	+			
Kivett 1979		+	+			NS	NS
Koropeckyj-Cox 1998			+				
Mullins et al. 1988	+			+			
Mullins et al. 1996	NS	-	NS	NS			+
Parkkila et al. 2000					+		
Ruth et al. 1988				+			
Samuelsson et al. 1998			+	+			
Tiikkainen 2006		NS	+	+		NS	+
Tijhuis et al. 1999	+						
Tilvis et al. 2000	NS	NS					
van Baarsen 2002			+				
van Baarsen et al. 1999			+				
Viktor et al. 2005	-		+	+		+	+

+ = Positive relation with loneliness NS = Not related to loneliness - = Negative relation with loneliness

APPENDIX 2. THE ASSOCIATIONS BETWEEN HEALTH, FUNCTIONAL STATUS AND LONELINESS IN PREVIOUS STUDIES

(1/2)

Author and year	Poor subjective health	Decreased health status	Fewer outdoors activities	Impaired vision	Hearing loss	Decline in cognitive function	Decline in functional status	Service use / Early institutionalization	Increases the risk of mortality	Depression
Adams et al. 2004										+
Alpass & Neville 2003										+
Barg et al. 2006										+
Beck et al. 1990		+			+					+
Berg et al. 1981	+			NS	NS			+		+
Bondevik & Skogstad 1998							-			
Chang & Yang 1999	+									
Chen 1994					+					
Christian et al. 1989					+					
Cohen 2000										+
Cohen-Mansfield & Parpura-Gill 2007										+
Creecy et al. 1985	+									
Dugan & Kivett 1994				NS	+					
Dykstra & de Jong-Gierveld 1999				+	+		+			
Ellaway et al. 1999								+		
Fees et al. 1999	+					NS				
Fratiglioni et al. 2000						+				
Geller et al. 1999								+		
Hagerty & Williams 1999										+
Herlitz et al. 1998									+	
Holmen 1994				+			+			
Holmen et al. 1992a	+					+				
Holmen et al. 1992b						+				
Holmen et al. 1993			+			+	+			
Holmen et al. 1994	NS					NS				
Holmen et al. 1999										+
Holmen et al. 2000						+				
Jylhä 2004							+		+	
Jylhä & Aro 1989	+						+			
Jylhä & Jokela 1990							+			

+ = Positive relation with loneliness NS = Not related to loneliness - = Negative relation with loneliness

continue…

APPENDIX 2. THE ASSOCIATION BETWEEN HEALTH, FUNCTIONAL STATUS AND LONELINESS IN PREVIOUS STUDIES (2/2) CONTINUES…

Author and year	Poor subjective health	Decreased health status	Fewer outdoors activities	Impaired vision	Hearing loss	Decline in cognitive function	Decline in functional status	Service use / Early institutionalization	Increases the risk of mortality	Depression
Kiely et al. 2000									+	
Kim 1999							+			
Kivett 1979	+	+		+	NS					
Kramer et al. 2002					+					
Martin et al. 1997		+				+	+			
Mullins & Dugan 1990										+
Mullins & McNicholas 1986	+									
Mullins et al. 1988	+									
Mullins et al. 1996	+	+								
Olsen et al. 1991									+	
Penninx et al. 1997									+	
Prince et al. 1997										+
Russell et al. 1998								+		
Ryan 1998			+							
Stewart 1998									+	
Sugisawa et al. 1994									+	
Tiikkainen 2006	+			NS	NS					+
Tijhuis et al. 1999	+					NS	NS	+		
Tilvis et al. 2000	+	+				+		+	+	+
van Baarsen et al. 1999		+								
van Tilburg et al. 1998	+									
Viktor et al. 2005	+			+	+					+
Wilson et al. 2007						+				

+ = Positive relation with loneliness NS = Not related to loneliness

APPENDIX 3. THE ASSOCIATIONS BETWEEN SOCIAL CONTACTS, SATISFACTION AND LONELINESS IN PREVIOUS STUDIES

Author and year	Low frequency of children's visits	Low frequency of social contacts with family	Low frequency of social contacts with neighbours	Low frequency of social contacts with or visits from friends	Lack of friends	Childlessness	Unfulfilled expectations of getting visits from relatives or friends	Dissatisfaction with social contacts
Berg et al. 1981	+		NS	+			+	
Bondevik & Skogstad 1996		+	+				+	
Bondevik & Skogstad 1998		+	+	+				
Cohen-Mansfield & Parpura-Gill 2007								+
Creecy et al. 1985								+
Dugan & Kivett 1994	NS	+		NS				
Hansson et al. 1986-87								+
Holmen 1994								+
Holmen et al. 1992a				+		NS		+
Jylhä & Jokela 1990			+					
Kim 1999								+
Kivett 1979				NS				
Koropeckyj-Cox 1998						NS		
Linnemann & Leene 1990						+		
Mullins & Dugan 1990			+	+				+
Mullins et al. 1987		NS	+	+		+		
Mullins et al. 1996					+	+		
Tiikkainen 2006	NS	NS	NS	NS				
van Baarsen 2002					NS			
Viktor et al. 2005		NS	NS	NS				
Zhang & Hayward 2001						NS		
Öberg et al. 1987					+			

+ = Positive relation with loneliness NS = Not related to loneliness

VANHUSTYÖN KESKUSLIITON KIRJEKYSELY

25.08.2002 Helsinki

Hyvä vastaanottaja!

Teemme tutkimusta ikääntyvien elämänasenteista, yksinäisyyden kokemuksista ja niiden merkityksistä. Tarkoituksenamme on kartoittaa näiden kokemusten yleisyyttä eläkeläisväestössä sekä selvittää yksinäisyyden yhteyttä terveyteen. Tutkimuksen toisessa vaiheessa ensi vuonna (v.2003) on tarkoitus selvittää tätä samaa kysymystä tarkemmin osalle vastanneista terveystarkastuksin ja toimenpitein.

Tutkimukseen osallistuminen on vapaaehtoista. Kerättävät tiedot ovat luottamuksellisia, ja ne julkaistaan niin, ettei yksittäistä vastaajaa pystytä niistä tunnistamaan. Helsingin Yliopistollisen Keskussairaalan eettinen toimikunta on hyväksynyt tutkimuksen. Tutkimuksen kaikissa vaiheissa tullaan noudattamaan potilastietosuojalain säännöksiä. Tutkimukseen osallistuminen ei vaikuta muuhun mahdolliseen hoitoonne.

Lisätietoja tutkimuksesta antaa tutkimushoitajat Tuula Boffour puh. xxx xxx xxxx ja Eeva-Kaisa Nummela puh. xxx xxx xxxx

Ystävällisin terveisin

Reijo Tilvis
Geriatrian professori
HYKS Helsingin
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Tutkimusjohtaja
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VASTAAMISEN OHJEITA

Pyydämme Teitä lukemaan koko kysymyksen ennen vastaamista. Rengastakaa vain yksi vaihtoehto - se joka on mielestänne lähinnä oikea.
Tarvittaessa täyttäkää kysytty tieto sitä varten varattuun tilaan.

ESIMERKKI 1: Mikä on siviilisäätynne?

1. Naimisissa tai avoliitossa
2. Naimaton
3. Asumuserossa tai eronnut
4. Leski (olen ollut leskenä ___ vuotta)

Jos olette menettänyt aviopuolisonne 10 vuotta sitten, rengastakaa kohta 4 ja kirjoittakaa tyhjään tilaan vuosien määrä.

ESIMERKKI 2: Oletteko koskaan käyttänyt verenpainelääkkeitä?
En □ kyllä □ Jos olette, kuinka kauan? _____ v.

Jos olette käyttänyt verenpainelääkkeitä viiden vuoden ajan, rastittakaa 'kyllä'- kohta ja kirjoittakaa tyhjään tilaan vuosien määrä esimerkiksi 5.

Yrittäkää vastata kaikkiin kysymyksiin.
Pyytäkää tarvittaessa apua lähiomaiseltanne tai läheiseltänne.
Vastauksenne ovat ehdottoman luottamuksellisia.
Täytetyn lomakkeen voitte laittaa oheisessa jo valmiiksi maksetussa palautuskirjekuoressa postilaatikkoon.
Osoitelähde: Väestötietojärjestelmä, Väestörekisterikeskus PL 7, 00521 Helsinki

Kysymme nimeänne vain, jotta voisimme tunnistaa vastanneet vastaamattomista. Kaikki tiedot ovat ehdottoman luottamuksellisia.

NIMENNE:_____

ALUKSI KYSYMME TAUSTATIETOJANNE

1. Mikä on siviilisäätynne?
1. naimisissa
2. naimaton
3. asumuserossa tai eronnut
4. leski (olen ollut leskenä ____vuotta)

2. Mikä on sukupuolenne?
1. nainen
2. mies

3a. Koulutuksenne?
1. kansakoulu tai vähemmän
2. ammattikoulu
3. keskikoulu
4. lukio
5. opistoasteen ammattikoulutus
6. korkeakoulu

3b. Ikänne _____

4. Minkälaisessa työssä olette toiminut pääsääntöisesti elämänne aikana?
1. maanviljelys, karjanhoito, metsätyö, emännän työt
2. tehdas-, kaivos-, rakennus-, tai muu vastaava työ
3. toimistotyö, henkinen työ, palvelutyö
4. muu, mikä? _____

5. Missä ammatissa toimitte pääasiallisesti työssäoloaikananne?

_____

6. Missä asutte?
1. kotona
2. pysyvästi kodinomaisissa olosuhteissa, missä _____
3. palvelutalossa
4. pysyvästi vanhainkodissa tai hoivakodissa
5. pysyvästi sairaalassa

7. Jos asutte kotona tai kodinomaisissa olosuhteissa, asutteko
1. yksin
2. puolison kanssa (puolison ikä ___vuotta)
3. lapsen kanssa tai lapsen perheessä
4. sisaruksen kanssa
5. jonkun muun tai muiden kanssa

8. Miten tulette taloudellisesti toimeen?
1. hyvin
2. kohtuullisesti
3. huonosti

SEURAAVAKSI KYSYMME NYKYISESTÄ TERVEYDENTILASTANNE JA TOIMINTAKYVYSTÄNNE

9. Millaisena pidätte terveydentilaanne tällä hetkellä?
1. Pidän itseäni terveenä
2. Pidän itseäni melko terveenä
3. Pidän itseäni sairaana
4. Pidän itseäni hyvin sairaana

10a. Käyttekö päivittäin ulkona?
1. Kyllä
2. En

10b. Tarvitsetteko päivittäin toisen apua?

1. Kyllä
2. En

11. Kuinka usein asioitte kodin ulkopuolella kaupoissa, pankissa, postissa tmv. paikoissa avun kanssa tai ilman?

A. Päivittäin
B. Useita kertoja viikossa
C. Noin kerran viikossa
D. Harvemmin

12. Onko toimintakykynne tai kuntonne yleisesti ottaen tällä hetkellä mielestänne

1. erittäin hyvä
2. hyvä
3. keskinkertainen
4. huono
5. erittäin huono

13. Näettekö lukea? 1. kyllä 2. en

14. Kuuletteko tavallista puhetta? 1. kyllä 2. en

15. Käytättekö kuulokojetta? 1. kyllä 2. en

16. Harjoitatteko päivittäin jotakin hyötyliikuntaa? Esim. kaupassakäynti kävellen tai pyörällä, siivoaminen, marjastus, pihatyöt.

1. Kyllä
2. En

17. Onko Teillä tällä hetkellä jokin liikuntaharrastus, jota toteutatte vähintään kerran viikossa? Esim. kävely, lenkkeily, osallistuminen liikuntaryhmään, oma kotivoimisteluohjelma.

1. Kyllä
2. Ei

18. Mitä liikkuminen ja liikunta merkitsee Teille?

1. Pidän sitä erittäin tärkeänä.
2. Pidän sitä jonkin verran tärkeänä.
3. En ole ajatellut koko asiaa.
4. Se ei ole mielestäni erityisen tärkeää.
5. Se on mielestäni tarpeetonta ja hyödytöntä.

SEURAAVAKSI MUUTAMA KYSYMYS ELÄMÄNASENTEISTANNE

19. Oletteko tyytyväinen elämäänne? kyllä □ en □
20. Tunnetteko itsenne tarpeelliseksi? kyllä □ en □
21. Onko Teillä tulevaisuudensuunnitelmia? kyllä □ ei □
22. Onko Teillä elämänhalua? kyllä □ ei □

23. Oletteko masentunut?

1. harvoin tai ei koskaan
2. toisinaan
3. usein tai aina

24. Kärsittekö yksinäisyydestä?

1. harvoin tai ei koskaan
2. toisinaan
3. usein tai aina

25. Kuinka onnelliseksi tai onnettomaksi tunnette itsenne tällä hetkellä?

1. erittäin onnelliseksi
2. melko onnelliseksi
3. melko onnettomaksi
4. erittäin onnettomaksi
5. en osaa sanoa

26. Miten luonnehtisitte tällä hetkellä yleistä elämänasennettanne?

1. erittäin myönteiseksi
2. melko myönteiseksi
3. melko kielteiseksi
4. erittäin kielteiseksi
5. en osaa sanoa

27. Koetteko elämänne tällä hetkellä turvattomaksi vai turvalliseksi?

1. erittäin turvattomaksi
2. melko turvattomaksi
3. vaikea sanoa
4. melko turvalliseksi
5. erittäin turvalliseksi

SEURAAVAKSI KYSYMME TEILLE TÄRKEISTÄ IHMISISTÄ JA SEURAELÄMÄSTÄNNE

28. Kuinka monta sellaista läheistä ihmistä Teillä on, joiden kanssa Teidän on helppo olla ja joiden kanssa voitte puhua erilaisista Teille tärkeistä asioista?

Minulla on ____näin läheistä ihmistä

29. Kuka Teille on läheisin ihminen?

1. Puoliso
2. Lapsi tai lapset
3. Lapsenlapsi tai lapsenlapset
4. Sukulainen
5. Ystävä
6. Naapuri
7. Joku muu. Kuka?_____

30. Kuinka monta läheistä ihmistä Teillä on, joka pitää Teitä ystävänään?

Minulla on _____tällaista läheistä ihmistä, joka pitää minua ystävänään.

31. Kuinka monta ihmistä tapaatte yleensä viikoittain?

_____

32. Tuntuuko Teistä että läheisenne ymmärtävät Teitä?

1. eivät ymmärrä minua
2. ymmärtävät minua hieman
3. ymmärtävät minua kohtalaisesti
4. ymmärtävät minua melko hyvin
5. ymmärtävät minua erittäin hyvin

33. Tiedättekö mitä omaistenne elämässä tapahtuu tällä hetkellä?

1. tiedän erittäin hyvin
2. tiedän melko hyvin
3. tiedän melko huonosti
4. tiedän erittäin huonosti
5. en tiedä

34. Onko Teillä lapsia (elossa olevia)? 1. Kyllä 2. Ei

35. Kuinka usein tavallisesti tapaatte jotakuta lapsistanne?

1. kerran vuodessa tai harvemmin
2. useita kertoja vuodessa
3. vähintään kerran kuukaudessa
4. noin kerran viikossa
5. useita kertoja viikossa

36. Tapaatteko lapsianne niin usein kuin haluaisitte?
1. Kyllä 2. En

37. Onko Teillä lapsenlapsia (elossa olevia)? 1. Kyllä 2. Ei

38. Kuinka usein tavallisesti tapaatte jotakuta lapsenlapsistanne?
1. kerran vuodessa tai harvemmin
2. useita kertoja vuodessa
3. vähintään kerran kuukaudessa
4. noin kerran viikossa
5. useita kertoja viikossa

39. Tapaatteko lapsenlapsianne niin usein kuin haluaisitte?
1. Kyllä 2. En

40. Onko Teillä elossa olevia sisaruksia? 1. Kyllä 2. Ei

41. Kuinka usein tavallisesti tapaatte jotakuta sisaruksistanne?
1. kerran vuodessa tai harvemmin
2. useita kertoja vuodessa
3. vähintään kerran kuukaudessa
4. noin kerran viikossa
5. useita kertoja viikossa

42. Tapaatteko sisaruksianne niin usein kuin haluaisitte?
1. Kyllä 2. En

43. Onko Teillä muita sukulaisia, joihin pidätte yhteyttä?
1. Kyllä 2. Ei

44. Kuinka usein tavallisesti tapaatte jotakuta sukulaisistanne?
1. kerran vuodessa tai harvemmin
2. useita kertoja vuodessa
3. vähintään kerran kuukaudessa
4. noin kerran viikossa
5. useita kertoja viikossa

45. Tapaatteko sukulaisianne niin usein kuin haluaisitte?
1. Kyllä 2. En

46. Onko Teillä ystäviä, joihin pidätte säännöllisesti yhteyttä?
1. Kyllä 2. Ei

47. Kuinka usein tavallisesti tapaatte jotakuta ystävistänne?
1. kerran vuodessa tai harvemmin
2. useita kertoja vuodessa
3. vähintään kerran kuukaudessa
4. noin kerran viikossa
5. useita kertoja viikossa

48. Tapaatteko ystäviänne niin usein kuin haluaisitte?
1. Kyllä 2. En

49. Onko Teillä muita tuttavia tai naapureita, joihin pidätte säännöllisesti yhteyttä?
1. Kyllä 2. Ei

50. Kuinka usein tavallisesti tapaatte jotakuta tuttavistanne tai naapureistanne?
1. kerran vuodessa tai harvemmin
2. useita kertoja vuodessa
3. vähintään kerran kuukaudessa
4. noin kerran viikossa
5. useita kertoja viikossa

51. Kuinka usein olette puhelinyhteydessä läheisiin ihmisiin?
1. kerran vuodessa tai harvemmin
2. useita kertoja vuodessa
3. vähintään kerran kuukaudessa
4. noin kerran viikossa
5. useita kertoja viikossa
6. päivittäin
7. useita kertoja päivässä

52. Oletteko tyytyväinen läheisiin ihmissuhteisiinne?

1. Erittäin tyytyväinen
2. Melko tyytyväinen
3. En tyytyväinen mutten tyytymätönkään
4. Melko tyytymätön
5. Erittäin tyytymätön

53. Jos koette itsenne yksinäiseksi, minkä koette olevan sen syinä?

a. Puolison kuolema ____ vuotta sitten.	kyllä □	ei □
b. Muiden läheisten omaisten puuttuminen	kyllä □	ei □
c. Ystävien vähäisyys	kyllä □	ei □
d. Oma sairaus ja heikentynyt toimintakyky (esim. vaikeudet liikkua, puhevaikeudet, huono kuulo tai näkö)	kyllä □	ei □
e. Asuinolot (esim. asuminen syrjässä, hankalat kulkuyhteydet jne.)	kyllä □	ei □
f. Perhehuolet (esim. perheenjäsenen työttömyys, vakava sairaus, alkoholismi)	kyllä □	ei □
g. Elämän tarkoituksettomuuden tunne	kyllä □	ei □

h. Jokin muu syy.
Mikä?_____

54. Menetittekö lapsena ollessanne toisen tai molemmat vanhempanne?

1. En
2. Kyllä. Menetin äitini ollessani ____ vuotias.
   Menetin isäni ollessani ____ vuotias.

Kuinka usein olette viimeisen vuoden aikana osallistunut seuraaviin tapahtumiin?

55. Häät, syntymäpäivät, ristiäiset, lakkiaiset ymv. juhlat

A. En kertaakaan
B. Kerran
C. Kaksi- neljä kertaa
D. Viisi kertaa tai enemmän

56. Hautajaiset

A. En kertaakaan
B. Kerran
C. Kaksi- neljä kertaa
D. Viisi kertaa tai enemmän

57. Teatteri, elokuvat, konsertit, taidenäyttelyt, museot

A. En kertaakaan
B. Kerran
C. Kaksi- neljä kertaa
D. Viisi kertaa tai enemmän

58. Kerho- tai seuratoiminta, muut yleisötilaisuudet

A. En kertaakaan
B. Kerran
C. Kaksi- neljä kertaa
D. Viisi kertaa tai enemmän

59. Kirkossakäynnit, muut uskonnolliset tapahtumat

A. En kertaakaan
B. Kerran
C. Kaksi- neljä kertaa
D. Viisi kertaa tai enemmän

60. Oletteko viime vuoden aikana matkustellut?

A. En ole
B. Kyllä kotimaassa.
C. Kyllä ulkomailla(kin)

61. Kuinka usein katselette TV:tä tai kuuntelette radiota?

A. Päivittäin
B. Useita kertoja viikossa
C. Noin kerran viikossa
D. Harvemmin

62. Kuinka paljon arvioisitte käyttävänne aikaa TV:n katseluun tai radion kuunteluun viikossa? _____ tuntia /viikko

63. Kuinka usein luette lehtiä tai kirjoja?

A. Päivittäin
B. Useita kertoja viikossa
C. Noin kerran viikossa
D. Harvemmin

LÄMPIMÄT KIITOKSET VAIVANNÄÖSTÄNNE!

Mitä mieltä olitte kyselystä? Kirjoittakaa mielipiteenne tähän.
Otamme mielellämme palautetta vastaan!