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ORIGINAL RESEARCH

Effects of psychosocial group rehabilitation on social functioning, loneliness and well-being of lonely, older people: randomized controlled trial

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Abstract

Title. Effects of psychosocial group rehabilitation on social functioning, loneliness and well-being of lonely, older people: randomized controlled trial.

Aim. This paper is a report of a study to explore the effects of psychosocial group nursing intervention on older people's feelings of loneliness, social activity and psychological well-being.

Background. Older people's loneliness is associated with low quality of life, and impaired health, increased use of health and social services and increased mortality. Previous intervention studies have achieved quite modest results.

Method. A randomized controlled trial was conducted between 2003 and 2006 using a group intervention aimed at empowering older people, and promoting peer support and social integration. A total of 235 people (>74 years) suffering from loneliness met 12 times with professional leaders in groups. The UCLA Loneliness Scale and Lubben's Social Network Scale were used at entry, after 3 and 6 months. Psychological well-being was charted using a six-dimensional questionnaire at baseline and 12 months later.

Findings. A statistically significantly larger proportion of intervention group participants had found new friends during the follow-up year (45% vs. 32%, $P = 0{\cdot}048$), and 40% of intervention group participants continued their group meetings for 1 year. However, no differences were found in loneliness or social networks between the groups. Psychological well-being score improved statistically significantly in the intervention groups [+0·11, 95% confidence interval (CI): +0·04 to +0·13], compared with the controls (+0·01, 95% CI: −0·05 to +0·07, $P = 0{\cdot}045$). Feeling needed was statistically significantly more common in the intervention groups (66%) than in controls (49%, $P = 0{\cdot}019$).

Conclusion. New sensitive measurements of loneliness and social isolation are needed to measure fluctuations in feelings of loneliness and in social isolation.

Keywords: group rehabilitation, loneliness, older people, psychosocial nursing, randomized controlled trial, social functioning

Introduction

Loneliness is common among older people (Routasalo & Pitkala 2003). It is a distressing feeling leading to impaired quality of life (Jakobsson & Hallberg 2005), cognitive decline (Tilvis *et al.* 2000, Fratiglioni *et al.* 2004), poor subjective health (Tijhuis *et al.* 1999), disability (Bisschop *et al.* 2003), increased use of health and social services (Geller *et al.* 1999, Tilvis *et al.* 2000) and increased mortality (Penninx *et al.* 1997, Herlitz *et al.* 1998, Tilvis *et al.* 2000).

Loneliness has been defined as a subjective experience of a lack of satisfying human relationships (Andersson 1998). The terms 'loneliness' and 'social isolation' are often used interchangeably, although they are distinct but interrelated concepts (Routasalo & Pitkala 2003, Routasalo *et al.* 2006). Social isolation relates to the number of contacts and the integration of an individual into the surrounding social environment (Cattan *et al.* 2005). It has been suggested that an older person's feeling of loneliness is not associated with the frequency of contacts but that expectations of and satisfaction from these contacts predict loneliness (Routasalo *et al.* 2006).

Background

Loneliness has received little attention in intervention research but the results of earlier intervention studies have been quite modest (Findley 2003). Some researchers have performed randomized controlled intervention studies to alleviate older people's loneliness and/or social isolation (Arnetz & Theorell 1983, Andersson 1984, 1985, Stevens & van Tilburg 2000, Wikström 2002). In Sweden, Andersson (1984, 1985) aimed to alleviate loneliness by using group meetings and discussions about health themes for lonely older people. An important problem was the large number of drop-outs. In another Swedish study (Wikström 2002), art experiences and discussions were offered to lonely older people. Social interaction and physical health improved among those who took part in the groups. Results have also been encouraging in studies in which participants are supported to participate in various activities (Arnetz & Theorell 1983, Stevens & van Tilburg 2000), and Cattan *et al.* (2005) found that group-based, goal-oriented interventions in which the participants are allowed to influence the content of the intervention are the most effective in alleviating loneliness.

The theoretical framework of our intervention was based on the Geriatric Rehabilitation Nursing Model (Routasalo *et al.* 2004), in which the aged person and professional actively work in a close, equal interaction. The results of the interaction depend on the person's commitment to the goals and the professional's commitment to support the person to achieve the goals.

The study

Aim

The aim of the study was to explore the effects of psychosocial group nursing intervention on older people's feelings of loneliness, social activity and psychological well-being. We hypothesized that, by including the effective elements from prior intervention studies (group-based intervention, participants influencing the contents of the intervention, goal-oriented work) psychosocial group rehabilitation could alleviate loneliness and improve older people's psychological well-being.

Design

We performed a randomized controlled trial in 2003–2006 with 235 older people suffering from loneliness. The intervention group (n = 117) was offered a 3-month psychosocial rehabilitation group intervention.

Participants

Sample size was based on the feasibility of the postal questionnaire in identifying volunteer participants with an interest in the particular group content available in their community. The participants were recruited using a postal questionnaire, which was sent to randomly selected aged, home-dwelling people [n = 5722, response rate 72% (n = 4113)] in six communities in Finland. The questionnaire enquired about demographic variables, suffering from loneliness, psychological well-being and social interaction (Savikko *et al.* 2005, Routasalo *et al.* 2006). To those respondents who reported suffering from loneliness at least sometimes (n = 1541, 39%), a second postal questionnaire was sent to examine more accurately their interests and activities (Savikko 2008).

The inclusion criteria for the group intervention were age ≥75 years, subjective feeling of loneliness and willingness to participate in the intervention. The exclusion criteria were moderate or severe dementia [Mini Mental State Examination score < 19 points (Folstein *et al.* 1975) or Clinical Dementia Rating Scale score > 1 (Hughes *et al.* 1982)], living permanently in institutional care, blindness, deafness or inability to walk independently. For exercise and discussion groups (see below), New York Heart Association Classification (Fisher 1972) classes three and four constituted additional exclusion criteria. These exclusion criteria were set to ensure group

members' equal participation and to support social activation (Savikko 2008).

Respondents who expressed their willingness to participate in the psychosocial group rehabilitation and who met the inclusion criteria were contacted and invited to an interview with a Registered Nurse. The randomization was performed in blocks of 16 people using a computer-generated random numbers centre. After interviewing and assessing the participants for one week, the study nurse ended up with a list of 16 eligible participants in the order they had been assessed. She telephoned to the randomization centre and read the names from a paper list in the order which they appeared in her list. The person at a randomization centre did not know the identities of potential participants. Participants were then randomly assigned to intervention or control (continuing with usual community care).

Intervention

The intervention was carried out in seven centres and six communities. Each group consisted of 7–8 participants. The groups met once a week for 3 months (12 times). The group meetings were goal-oriented and closed, so that once the group was formed no new member could join even if someone dropped out. Each session included breakfast, lunch, coffee and group activities, and all this was free of charge for the participants. Transport to the group sessions and back was organized using minibuses.

Each group had two professional group leaders (n = 14) who had a long experience of working with older people. One was a specialist Registered Nurse and the other was an occupational therapist or physiotherapist. They were carefully educated about psychosocial group intervention of lonely older people (Pitkala *et al.* 2004a) and were tutored alongside the group meetings.

The principles of psychosocial group intervention were the same in all groups, irrespective of the programme content. This was ensured by the common training of the group leaders, who promoted security and equal communication in the groups. By taking advantage of group dynamics and the normal maturation of group life, they aimed to empower participants and promote friendships, working more as facilitators than as active leaders. The idea of the intervention was that group participants would share their feelings of loneliness with people of their own age who were having similar experiences, receive peer support, and develop feelings of solidarity. This would in turn lead to empowerment, better mastery over their own lives, and support for their self-respect. The details of intervention are described elsewhere (Savikko 2008).

The psychosocial groups consisted of three types of activities, depending on the interests of the participants: art and inspiring activities (AIA), group exercise and discussions (GED), and therapeutic writing and group therapy (TWGT) (Savikko 2008). In the AIA groups, various artists visited the meetings, the participants visited cultural events and also actively produced their own art. In the GED groups, participants performed various exercises (senior dancing, swimming and walking in the countryside), and discussed the health themes that interested them. In the TWGT groups, participants wrote about their own past lives, experiences and loneliness at home and then discussed their writing in the groups. Participants could influence and modify the group programmes according to their interests, which in turn supported their empowerment.

Instruments

The first postal questionnaire consisted of background information, such as age, gender, marital status, education and living conditions. Loneliness was assessed with the question, 'Do you suffer from loneliness?' (1 = seldom or never, 2 = sometimes, and 3 = often or always). The second structured questionnaire was aimed at finding people who would voluntarily participate in the psychological group intervention and inquiring about their interests, with the purpose of placing them in a group with matching content. The survey and recruitment process have been described in other papers (Savikko *et al.* 2005, Savikko 2008).

At baseline assessment, participant demographics were confirmed and health status was assessed. Cognition was assessed using the Mini-Mental State Examination (MMSE) (Folstein *et al.* 1975) and depression was evaluated by Montgomery–Åsberg Depression Scale (Montgomery & Åsberg 1979).

The study nurse interviewed and assessed participants three times, at baseline, 3 and 6 months, using the UCLA Loneliness Scale (Russel 1996), and social network with Lubben's Social Network Scale (LSNS) (Lubben 1988). In addition, participants were assessed using a postal questionnaire at baseline and 12 months. This questionnaire charted psychological well-being using six questions used in our previous studies since 1989 (Tilvis *et al.* 2000). These six questions show good test-retest reliability (Savikko *et al.* 2006) and statistically significant prognostic validity (Pitkala *et al.* 2004a), and inquire about (1) life satisfaction (yes/no), (2) feeling needed (yes/no), (3) having plans for the future (yes/no), (4) having zest for life (yes/no), (5) feeling depressed (seldom or never/sometimes/often or always) and (6) suffering from loneliness (seldom or never/sometimes/often or always). Their content

validity is good because these questions represent areas considered important in psychological well-being (WHO 2003). We created a well-being score from these questions, where each question represented 0 ('no' in questions 1–4, 'often or always' in questions 5 or 6), 0·5 ('sometimes' in questions 5 or 6) or 1 ('yes' in questions 1–4, 'seldom or never' in questions 5 or 6) point. The score has shown good concurrent validity with the RAND-36 instrument (Huusko *et al.* 2006) and was created by dividing the total score by the number of questions the participant had answered. Thus, a score of 1 represented the best well-being and 0 the poorest.

At 1 year, participants received a postal questionnaire, and their social activity and psychological well-being were measured. Whether they had made new friends during the past year, if they had met their group members after the official group meetings had ceased, and whether their group had continued meetings on their own as a group after the official part was over were also assessed by the questionnaire.

Ethical considerations

Approval to conduct the study was obtained from the appropriate ethics committee. Informed consent was obtained from all participants.

Data analysis

For continuous variables, descriptive values were described by mean with standard deviations, interquartile range (IQR) and/or range. For variables with a normal (Gaussian) distribution, statistical comparison between groups was made using the *t*-test or analysis of covariance with baseline scores used as covariates. If the variables had a non-normal distribution or were at ordinal level, statistical comparison between groups was made using the Mann–Whitney test, permutation test with Monte-Carlo *P*-value and Hodges-Lehmann estimate of median difference with 95% confidence interval (CI) to show changes in the outcome variables. Measures with a discrete distribution were expressed as percentages (%) and analysed by chi-square or Fisher's exact test when appropriate. The most important descriptive values were described by 95% CI).

Results

Baseline data

The intervention and control groups were comparable at baseline (Table 1). The participants were old (mean age 80 years), female, widowed, and lived alone, and their physical functioning was fairly good. The proportion with impaired cognition (MMSE-score <24) was 11% in both groups. LSNS scores were fairly low (25–26), and 67% scored <30. On the Loneliness scale all participants scored more than 34, indicating at least a moderate degree of loneliness, and 49% scored 50 or over, indicating a moderately high or high degree of loneliness. The median baseline psychological well-being score (PWS) was 0·56 (IQR: 0·29, 0·67) in the intervention group and 0·56 (IQR: 0·33, 0·67) in the control group.

Table 1 Participant demographics at baseline

Characteristic	Intervention group, $n = 117$	Control group, $n = 118$	*P*-value*
Females, %	74·4	72·9	0·80
Age, years, mean (range)	80 (75–92)	80 (75–90)	0·38
Education <7 years, %	54·0	48·7	0·42
Widowed, %	68·1	68·6	
Living alone, %	80·2	78·8	0·79
Physical functioning good or moderate	85·1	82·3	0·57
Uses walking aid	7·7	5·1	0·64
Mean MMSE† (range)	26·9 (19–30)	26·6 (19–30)	0·51
Mean score on depression scale‡ (range)	9·0 (0–28)	10·0 (0–34)	0·23
UCLA Loneliness Scale,§ mean (range)	49·7 (40–72)	49·7 (39–64)	0·94
Lubben's Social Network Scale,¶ mean (range)	26·1 (4–43)	24·6 (0–41)	0·10

*Differences between the groups were tested with chi-square test for categorical variables and with *t*-test or Mann–Whitney *U*-test for continuous variables.
†Mini-Mental State Examination (Folstein *et al.* 1975).
‡Montgomery–Åsberg Depression Scale (Montgomery & Åsberg 1979).
§Russel 1996.
¶Lubben 1988.

Effects of intervention

Participants in the intervention group had found new friends statistically significantly more often than the controls (45% vs. 32%, chi-square test, $P = 0·048$). Furthermore, 40% of the intervention group members continued their group meetings at 1 year, and 72% had met the members of their own group after the intervention. However, there were no differences in the changes in the UCLA-scale between the groups at 3 or 6 months (Figure 1). Also no differences were

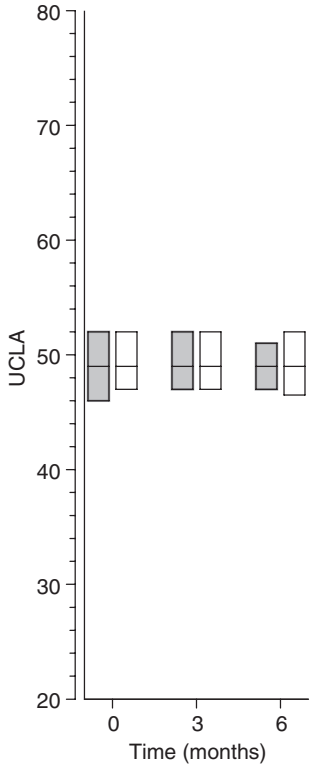

Figure 1 Medians and 25% and 75% interquartiles for the UCLA Loneliness Scale in the intervention (grey) and control groups (white) at baseline, at 3 and 6 months.

found in the changes of LSNS between intervention group [−0·3 (95% CI: −1·7 to 1·1)] and control group [−0·3 (95% CI: −1·6 to 0·9), ANCOVA, $P = 0·50$]. PWS improved in the intervention group (+0·11, 95% CI: +0·04 to +0·13) but remained virtually unchanged in controls (+0·01, 95% CI: −0·05 to +0·07, permutation test, $P = 0·045$). Of the six dimensions of psychological well-being, feeling needed was more common in intervention participants (66%) than in controls (49%, chi-square test, $P = 0·019$).

Discussion

The psychosocial group intervention affected participants' lives in many ways. Several measurements showed that they had become more socially active: 40% continued their meetings throughout the year, 45% had found new friends, and experiences of feeling needed had increased. However, the formal scales indicating loneliness or social isolation did not show any changes. Intervention participants' psychological well-being scale showed improvement at 1 year compared with the controls.

The intervention improved participants' social functioning by increasing their initiative to make new friends and encouraging them to continue their group meetings. In addition, in the previous paper reporting participant feedback (Savikko 2008), it is showed that almost all those in the intervention group said that their loneliness had been alleviated during the intervention. Active social participation and collaboration with people of one's own age group prevent loneliness (Jylhä & Aro 1989, Dugan & Kivett 1994), and peers of the same age group are very important in relieving loneliness (Bondevik & Skogstad 1996). Intervention participants were encouraged to start new friendships with their group members and continue their group meetings on their own.

However, the UCLA Loneliness Scale did not show any effects. This scale has been shown to be a valid measurement tool (Russell 1996) and has been used in several earlier intervention studies (Evans & Jaureguy 1982, Arnetz & Theorell 1983, Andersson 1985, Tesch-Römer 1997, McAuley *et al.* 2000, White *et al.* 2002). However, in none of these studies was it possible to show statistically significant differences in changes in scores between intervention and control groups. The scale may be a good screening measure but is probably insensitive to change.

There may be also other reasons for difficulties in showing the alleviation of loneliness. First, loneliness is a somewhat unstable concept (Jylhä 2004). Second, the response to the question 'Do you suffer from loneliness?' depends on the context in which it is asked, who is asking and how (face-to-face or questionnaire) (Andersson 1998). Third, loneliness is often a shameful thing to expose (Rokach & Brock 1997). It may be that after 3 months of discussing issues related to loneliness, our participants became familiar with it and more willing to acknowledge that they did feel lonely. Control group participants did not have this group experience, and it is possible that they were more reluctant to admit their loneliness.

Neither was a difference found in median changes on the LSNS between the intervention and control groups after the intervention. It seems that this scale is also not very sensitive to change. Half (five) of the items in the LSNS inquire about aspects that were not expected to change in our intervention, such as living alone, relationships with relatives or receiving help with activities of daily living. Only the other five items were potentially sensitive to changes as a result of the intervention.

A statistically significantly larger proportion of the intervention than the control group reported feeling needed after the intervention. In an earlier study, feelings of being needed proved to be a statistically significant prognostic factor for survival in an aged population during 10-year follow-up (Pitkala *et al.* 2004a). Being needed by someone is closely

connected with intimate relationships and gives meaning to life. It may also mean having a meaningful role in life. Our intervention supported participants' mutual relationships and thus feeling needed by each other. It also supported meaningful roles and active agency by giving participants power in decision-making and by listening to their wishes. During the intervention, participants changed from bystanders to active agents in their lives (Savikko 2008).

Social isolation and feelings of loneliness reduce psychological well-being, quality of life and cognition and may lead to deteriorating health, increased use of healthcare services and mortality (Prince *et al.* 1997, Ellaway *et al.* 1999, Tijhuis *et al.* 1999, Savikko *et al.* 2005). It is difficult to show exactly how the intervention affected participants' loneliness or social isolation. It is possible that it actually had an impact on aspects which work as transmitter mechanisms between loneliness and well-being. In other words, empowering older people may not be enough to alleviate deep, existential loneliness but may be enough to improve mastery over their own lives and initiative to break social isolation and improve psychological well-being (Figure 2).

Our results are in line with those of previous intervention studies showing the favorable effects of group intervention on psychological well-being (Toseland *et al.* 1989, White *et al.* 2002). Other researchers have noted that the key point in successful intervention is less its content than the effects of group cohesion and peer support (Toseland 1990), of participants having control over the implementation of the group programme (Cattan *et al.* 2005), and of empowerment and enhanced feelings of mastery (Stevens & van Tilburg 2000). Our intervention principles were in line with these earlier findings. Randomized controlled studies have also shown that interventions based on one-to-one contacts or visits by professionals have been ineffective (Clarke *et al.* 1992, Van Rossum *et al.* 1993, Cattan *et al.* 2005).

The Geriatric Rehabilitation Nursing Model (Routasalo *et al.* 2004) worked well as the theoretical framework. According to this, commitment to action and equal interaction are necessary elements to achieve results. In our study, both the older participants and leaders were very committed to the intervention and its goals, contrary to earlier studies (Andersson 1985, White *et al.* 2002). The leaders' commitment was supported by tutoring them during the whole process, and they supported participants' commitment by giving them opportunities to influence the content and progress of group meetings. Both the leaders and participants knew the aims of the meetings: to empower participants and promote friendships.

The strength of the study lies in the careful selection of the lonely participants, their randomization, and a very carefully planned and implemented intervention. The randomization succeeded, in that the intervention and control groups were very similar at the baseline. The experienced, well-trained professionals (Pitkala *et al.* 2004b) planned and carried out the interventions in cooperation with participants. Their success in this was seen in the commitment of participants. Only 2·5% of intervention participants did not complete the intervention. Several studies with lonely older people have encountered problems with high numbers of drop-outs (Andersson 1985, White *et al.* 2002).

Study limitations

The limitation of this study is the problematic concept of loneliness and its measurements, which did not seem to be sensitive enough to show changes. The participants were

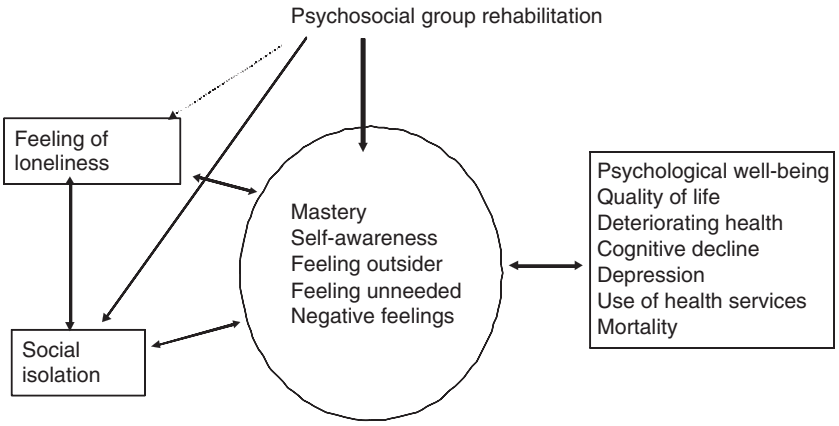

Figure 2 Possible mechanisms behind the positive effects of psychosocial group rehabilitation. Feelings of loneliness and social isolation decrease psychological well-being, quality of life, health and increase use of healthcare services and mortality. The transmitting mechanisms are deteriorating self-awareness, mastery, increasing feelings of being a passive outsider and not having meaningful roles. Psychosocial group rehabilitation may have more effect on these transmitting mechanisms and social isolation and via them on psychological well-being and less on loneliness.

What is already known about this topic

- Loneliness and social isolation are common among older people and reduce their well-being.
- Loneliness has been defined as a subjective experience of a lack of satisfying human relationships.
- Loneliness has received little attention in intervention research, and the results of earlier intervention studies have been quite modest.

What this paper adds

- Well-planned and professionally led psychosocial group rehabilitation intervention activates lonely, older people socially.
- The psychological well-being of older people suffering from loneliness can be improved by client-centred psychosocial group interventions.
- New sensitive measurements of loneliness and social isolation are needed to measure fluctuations in feelings of loneliness and in social isolation.

Implications for practice and/or policy

- The experience of loneliness among older people is common leading to impaired quality of life and weakening their living at home.
- With a well-planned client-centered psychosocial group intervention it is possible to alleviate loneliness and so to improve quality of life of older, home-dwelling people.
- Clinet-centered psychosocial group intervention for lonely older people demands well-educated nurses, who appreciate older people.

selected through a process involving many steps, and such a long procedure cannot take place in real life. The intervention was conducted in ideal circumstances: participants suffered from loneliness, they were willing to participate, and the group leaders were experienced professionals who were trained especially for this intervention.

Conclusion

With a well-planned and professionally led psychosocial group intervention, it is possible to empower and to socially activate lonely, older people and to strengthen their well-being. By using the key elements (taking advantage of group dynamics, goal-oriented working, giving the participants power in decision-making and supporting their commitment), this intervention could be successfully implemented in various settings.

Author contributions

RT and KP were responsible for the study conception and design. PR and KP performed the data collection. PR, RT, HK and KP performed the data analysis. PR, RT, HK and KP were responsible for the drafting of the manuscript. PR, RT, HK and KP made critical revisions to the paper for important intellectual content. HK provided statistical expertise.

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