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Effects on leisure activities and social participation of a case management intervention for frail older people living at home: A randomized controlled trial

RUNNING HEAD: Case management and leisure activities

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Abstract
Frailty causes disability and restrictions on older people's ability to engage in leisure activities and for social participation. The objective of this study was to evaluate the effects of a one-year case management intervention for frail older people living at home in Sweden in terms of social participation and leisure activities. The study was a non-blocked randomised controlled trial with repeated follow-ups. The sample (n = 153) was consecutively and randomly assigned to intervention (n = 80) or control groups (n = 73). The intervention group received monthly home visits over the course of a year by nurses and physiotherapists working as case managers, using a multifactorial preventive approach. Data collections on social participation, leisure activities and rating of important leisure activities were performed at baseline, 3, 6, 9 and 12 months, with recruitment between October 2006 and April 2011. The results did not show any differences in favour of the intervention on social participation. However, the intervention group performed leisure activities in general, and important physical leisure activities, to a greater extent than the control group at the 3-month follow up (median 13 vs. 11, p = 0.034 and median 3 vs. 3, p = 0.031 respectively). A statistically significantly greater proportion of participants from the intervention group had an increased or unchanged number of important social leisure activities that they performed for the periods from baseline to 3 months (93.2 % vs. 75.4 %, OR=4.48, 95 % CI: 1.37–14.58). Even if some statistically significant findings in favour of the intervention were found, more research on activity-focused case management interventions is needed to achieve clear effects on social participation and leisure activities.

Keywords (up to 6)
aged, frailty, community-living, health promotion, case management

What is known about the topic

- Frailty is a process of declining physical ability. It results in disability and limits the possibilities for social participation and to perform leisure activities.
- Case management interventions have been shown to meet the multi-faceted healthcare needs of frail older people.
- It is not known if case management interventions affect social participation and leisure activities.

What this paper adds

- The case management intervention tested did not affect social participation.
- Some statistically significant effects in favour of the intervention were seen on performance of leisure activities.
- More research on activity-focused case management interventions is needed to achieve clear effects on social participation and leisure activities.

Introduction

Participation in social and leisure activities in old age are positively related to health, well-being and survival (Adams *et al*., 2011a, Adams *et al*., 2011b). Frailty is a well-known consequence of age-related decline and a major cause of limiting older people's ability to perform leisure activities and for social participation. It has been suggested that frailty affects 10–14% of people over the age of 65 living in the community, though this depends on the definition of frailty (Collard *et al*., 2012). With growing recognition worldwide for healthy and successful ageing (World Health Organsation, 2015) the importance of leisure activities and active lifestyles have got increasing attention. Research has shown that older people's participation in social and leisure activities is associated with reduced mortality rates and increased self-rated health and quality of life (Silverstein & Parker, 2002, Adams *et al*., 2011a, Agahi *et al*., 2011). Age-related health decline in terms of dependence in Instrumental Activities of Daily Living (IADL), use of mobility devices and fear of falling reduces the possibilities for older people to engage in leisure activities (Nilsson *et al*., 2015). For older people to cope with age-related physical decline and manage day-to-day, the motivational aspect of being able to perform activities is crucial. A growing body of literature has identified that it is not the increased activity level itself that promotes health and well-being, but the possibility of engaging in activities perceived by the individual concerned as important (see, for example, Hammell, 2004, Nilsson *et al*., 2007, Doble & Santha, 2008).

Frailty is a process of declining physical ability and therefore an important cause of disability, dependence on others in ADL and overall activity limitations (Gobbens & van Assen, 2014). The multi-faceted healthcare needs linked to frailty often result in high healthcare utilisation and need for home-based or institutional long-term care. This could also lead to a situation involving several caregivers from different organisations and levels of the healthcare system. This brings a risk of fragmented care because of poor co-ordination of care across the different agencies (Clarfield *et al*., 2001, Åhgren, 2007). It is important that the health system can provide these individuals with high levels of continuity and also preventive interventions. Different case management models have been suggested to better meet the needs of frail people for well-coordinated healthcare than the ordinary healthcare system. Case management has been defined as "*a collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality cost-effective outcomes*" (Case Management Society of America, 2010). Common outcome measures on trials of case management interventions have captured clinical outcomes such as self-rated health, depression, quality of life, cognitive functioning, medical conditions and IADL and ADL ability, or healthcare consumption outcomes such as hospital admissions and costs (Rahm Hallberg & Kristensson, 2004, Gustavsson *et al*., 2009, Eklund & Wilhelmson, 2009, You *et al*. 2012).

Trials on case management interventions for frail older people have shown mixed results when it comes to effects in IADL and personal ADL (i.e. bathing, dressing, toileting, transfer, and feeding). A review of 11 trials in the United Kingdom found two that showed significant improvement in ADL and two that did not (Tappenden *et al*., 2012). You *et al*. (2012) reviewed trials of case management in community-based care of older people.

Out of six trials using ADL as outcome measure, three showed a positive long-term effect on these measures, but the other showed no clear effect. Beswick *et al*. (2008) carried out a meta-analysis on home-based multifactorial interventions, including case management interventions, for people aged 65 and over, using ADL and physical function as outcome measures. In total, 36 trials showed the intervention had an overall benefit. In 30 trials that could not be included in the meta-analysis, two showed that the intervention led to improvements in ADL.

Besides improving ADL, case management interventions for frail older people focusing on improving activity and participation of the participants are rare (Gustavsson *et al.*, 2009). One of the few interventions in the area incorporated social support and leisure activities in case-managed home care interventions for 189 older people in Australia. At the end of the 12-month intervention, the participants showed increased engagement, and decreased dysphoria and agitation (Low *et al*., 2015). Interestingly, although the case management intervention aimed to improve participation in social and leisure activities, this was not used as an outcome measure in the trial.

However, with their person-centred focus and multifactorial design, case management interventions that support increased level of physical activity may have the potential to increase the activity level in social participation and leisure activities. The aim of this study was to evaluate the effects of a one-year case management intervention for frail older people living at home in Sweden in terms of social participation and leisure activities.

Method

Design

This study was designed as an experimental two-armed randomised control trial of a one-year case management intervention, with a one-year waiting list for those in the control group (for details see Kristensson *et al*. 2010 and Sandberg *et al.* 2015b)).

Setting

The study was carried out in a municipality in southern Sweden including a medium sized town (17,000 inhabitants) and 11 villages. The municipality had approximately 30,000 inhabitants at the time of the study and contains both urban and rural areas as well as industrial and agricultural environments.

Sample

The sample was consecutively recruited from three clinics at the nearest university hospital (n = 20), three primary care centres (n = 117) the study municipality's home care services (n = 13) and by participants contacting the research group independently (n = 3).

The inclusion criteria were designed to target frail older people living at home, based on the definition by Woodhouse and colleagues (1988), which include those who are over 65 years of age, dependent on ADLs, and often in need of long-term care. They were that the participants should be 65 years or older, living in ordinary housing in the study municipality, dependent on help in two or more ADLs (cleaning, grocery shopping, transportation, cooking, washing, showering/bathing, dressing, toileting, moving, feeding, drug administration, or "other") and have been admitted to hospital at least twice or had at

least four registered visits to primary care centres during the last 12 months. People were excluded if they had moved to special housing, had a cognitive impairment (< 25 on Mini Mental State Examination) (Folstein et al., 1975) or could not communicate verbally. To measure ADLs, the 10 items in the Katz ADL index (Katz *et al*., 1963) were used, with one additional item on administering pharmaceuticals, and an open question about any other activity in which the participant was dependent on others for help.

In the recruitment process, the staff in the care settings or the nurses from the case management intervention contacted potential participants after different screening procedures. Medical records of people admitted to three clinics at the hospital were screened by age, address and previous admissions in the last year. At the primary care centres, screening was used to identify people with four or more registered visits. Those eligible were contacted directly, by phone or mail, and asked whether they were interested in being approached by the research group to provide information about the study and to assess if they met the remaining inclusion criteria.

Out of 1,079 people contacted, 231 did not meet the inclusion criteria, seven died before randomisation and 688 could not be randomised. The most common reason for this was lack of response to invitation letter from primary care centres (n = 571). Other reasons were unwillingness to participate (n = 71), inability to contact prospective participants (n = 28), or prospective participants feeling too tired or too ill (n = 18) (see Figure. 1).

The non-block randomisation procedure was carried out by the research team and used sealed identical envelopes containing information about the group to which the participants had been assigned. All participants had an equal chance of being allocated to each group. At baseline data collection, a member of the research team provided information about the project again, along with information about the participant's assigned group, before collection of data. Those in the control group were informed about the waiting list and that they would have the possibility to receive the intervention in 12 months. The nature of the intervention did not allow a blinded experiment, because both the case managers and the participants needed to know who members of the intervention group were.

Intervention

Development

This study was developed in accordance with the Medical Research Council's framework on developing and evaluating randomised control trials for complex healthcare interventions (Medical Research Council, 2000). Details of the development of the case management intervention and pilot testing of the trial have been published elsewhere (Kristensson *et al*., 2010) as have those on intervention effects on healthcare utilisation, costs and falls (Olsson Moller *et al*., 2014, Sandberg *et al*., 2015a, Sandberg *et al*., 2015b)

Content

The intervention was carried out during home visits and had four parts: a) traditional case management (e.g., assessment, care plans, implementation, evaluation, care coordination and advocacy); b) general information (e.g., the healthcare system, nutrition and exercise, social activities); c) specific information (e.g., based on the participants' individual needs, health status and medication); and d) safety (case manager being available on the phone during

working hours). The exact content of the intervention was based on these four parts and also on areas identified as problematic by the case manager and considered to be important by the participant. If social or leisure activities were one such area the case manager presented possible solutions or changes and the discussed these with the participant discussed. The intervention only included the case manager and did not cover for any costs related to the actions suggested by the case manager, which means that such practicalities had to be taken into account.

The intervention was carried out by registered nurses employed as case managers. In 2008, the intervention was revised after the pilot testing, to add physiotherapists (PT) as case managers, and focus more on physical activity and risk of falls (Kristensson *et al*., 2010). The case managers made at least one home visit a month (if needed visits were occasionally performed at hospitals or short time accommodations). Based on a comprehensive geriatric assessment an individual care plan was developed for each participant. This was also monitored and followed up at the later visits. The nurse case managers' assessment was based on the Minimum Data Set for Home Care (MDS-HC) (Landi *et al*., 2000; Morris *et al*., 1997) and the PT case managers assessed the participant's physical function/status, activity and balance using different standardised measures (Sandberg *et al.*, 2015b). The case managers employed by nurses made in mean 11 visits for those that completed the intervention and the PT case managers made about 10 visits. Each visit lasted for about 1 hour, but it sometimes took longer time. The exact content of the visit depended on the specific need of the participant and the care plan.

Data collection

Data were collected through structured interviews by a researcher working independently of the case managers, every third month during the one-year study. The interviews were based on a questionnaire covering single-item questions, and using standardised instruments for background data, social aspects, health status, health-related quality of life and life satisfaction, and care and services (such as home care and health services from the county, municipal and next of kin and/or other informal caregivers) (Kristensson *et al*., 2010).

To measure *social participation*, 13 questions developed by Hanson *et al*. (1997) were used. These measured how actively the person was involved in the activities of formal and informal groups, as well as other activities in society. Respondents were asked whether they had participated in particular activities, for example, a study circle/course, going to the theatre/cinema, and a larger family gathering, during the past year. This instrument has been used in previous studies in Sweden (Lindström *et al*., 2003, Ahnquist *et al*., 2012) and has been reported to have high validity (Hanson *et al.*, 1997).

To measure *performance and importance of leisure activities*, 17 questions about *social*, *physically active* and *quiet* leisure activities were used. These were inspired by (Horgas *et al*., 1998) and were used in a previous study in Sweden (Borglin *et al.*, 2006). Social leisure activities (seven items) included, for example, socialising with friends, family and/or relatives and visiting art exhibitions. Physically active leisure activities (four items) included, for instance, spending time outdoors and light exercise. Quiet leisure activities (six items) included, for example, watching television and listening to the radio. Participants rated all activities on a four-point Likert scale of important the participants considered the activity

to be (from Not at all important, to Very important) and to what extent the activity was performed (from Not at all, to Often). This instrument was added after the pilot trial. This meant that 116 individuals (59 in the intervention and 57 in the control group) had valid responses for this instrument at baseline.

Statistical analysis

Power calculations were made a priori (a = 0.05; power 0.80; two-tailed test) with hospital admissions as the primary outcome. A mean difference of one hospital admission (SD 2.1) over 12 months was regarded as clinically relevant and required a total sample size of n = 140.

To analyse social participation, the total number of activities that each participant had participated in during the last 12 months was summarised and then dichotomised into low or high social participation (≤ 3 or > 3 activities). This cutoff has been used in previous studies by (Lindström *et al*., 2003).

To analyse to what extent leisure activities were performed, each of the 17 activities was dichotomised into not performing (those who responded 'Not at all'), or performing the activity (those who responded 'Sometimes', 'Rather often', or 'Often'). The same approach was used analyse to what extent leisure activities were rated as important to the participant, with activities dichotomised into not important (those who responded 'Not important') and important (those who responded 'Somewhat important', 'Rather important' and 'Very important'). To analyse to what extent leisure activities rated as important were actually performed, a merged yes/no variable was constructed for each leisure activity, based on the combination on performing an activity and rating it as important.

Differences in number of activities between intervention and control groups were investigated using a Mann–Whitney U-test for all data points (baseline, 3, 6, 9 and 12 months). Differences in the proportion performing a leisure activity and rating it as important were investigated using a Chi-square test.

The analyses comparing the case management and control groups were performed according to the Intention-To-Treat (ITT) principle (Altman, 1991). Attritions were given their last known value in line with the last observation carried forward (LOCF) principle (Wood *et al*., 2004). A complete case analysis was also conducted (Bennett, 2001). All analyses used IBM SPSS Statistics 23.0 for Windows. All *p*-values < 0.05 were regarded as statistically significant.

Ethical considerations

The study was approved by the regional Ethics Review Board in Lund (LU342/2006 and LU499/2008). Written informed consent was obtained from all participants before data collection, and all data were treated confidentially.

Please insert Figure 1 here

Results

Participants were recruited from October 2006 to April 2010 and a total of 153 participants were randomly allocated to either intervention (n = 80) or control group (n = 73). Forty-five

died or declined to participate further during the 12-month study, leaving a total of 108 who completed the study (see Figure 1). Base line characteristics are presented in table 1.

Social participation

There were no statistically significant differences between the intervention and control groups in the number of social participation activities, the proportion with high social participation, or changes in these measures between data collection points (Table 2).

Please insert Table 2 here.

Number of performed leisure activities and leisure activities rated as important

There were a statistically significant higher total number of performed leisure activities, leisure activities rated as important to do, and also a higher total number of performed important activities in the intervention group compared with the control group at 3 months (Table 3). An additional statistically significant difference was found in the extent to which leisure activities were performed. Quiet leisure activities were performed more in the intervention group than the control group at 3 months (Table 3). The intervention group considered more physically active leisure activities important at 3 and 9 months than the control group, also, more physically leisure activities considered as important were performed at 3 months (Table 3).When investigating changes in performance of leisure activities over time, there were statistically significant higher proportions of participants from the intervention group with increased or unchanged numbers of important social leisure activities for the period baseline to 3 months, and for important activities performed at 9–12 months (Table 4). Otherwise no other statistically significant differences were found.

Please insert Table 3 and 4 here.

Performing specific leisure activities rated as important

Few statistically significant differences were found in the performance of specific leisure activities that participants rated as important. A significantly higher proportion of the intervention group both rated as important and performed hard exercise (OR = 2.90; 95% CI = 1.04-8.11) and some sort of handwork or handicraft (OR = 2.31; 95% CI = 1.07-5.01) at 3 months (supplementary file). A higher proportion of the intervention group rated as important, and participated in, visits to art exhibitions, theatre, or the cinema at six months (OR = 2.37; 95% CI = 1.12-5.03) and at nine months (OR = 2.40; 95% CI =1.13-5.11) (supplementary file).

Few statistically significant changes over time were shown in the proportion of participants who either started or continued to perform specific leisure activities that they rated as important at two consecutive data collection points. Only for visiting art exhibitions, theatre, or the cinema, the intervention group had a statistically significant higher proportion than the control group between 3 and 6 months (OR = 2.37; 95% CI = 1.12-5.03), and between 6 and 9 months (OR = 2.40; 95% CI = 1.13-5.11) (supplementary file).

Complete cases analyses

In general, the results of the complete cases analyses were the same as for the ITT-analyses. However, differences between ITT and complete cases were found for one comparison for Table 2, four for Table 3, and one for Table 4 (in the supplementary file an additional 2 differences were found). In Table 2, with the proportion in the complete cases analysis (intervention group n = 56, and control group n = 52) that attained or maintained high social participation being statistically significantly higher in the intervention group than the control group between 3 and 6 months (53.6% vs. 34.6%, p = 0.049). In Table 3 the complete cases analyses showed statistically significantly higher numbers in the intervention group than the control group, where the ITT showed non-significant results, at the 3-month measurement point (intervention group n = 50, and control group n = 47) for performed physically active leisure activities, median 3.0 (interquartile range (IQR) 3.0–3.3), vs. median 3.0 (IQR 2.0–3.0), p = 0.039); social leisure activities rated as important (median 6.0 (IQR 5.0–7.0), vs. median 5.0 (IQR 4.0–6.0), p = 0.016); and quiet leisure activities rated as important and performed (median 5.0 (IQR 4.0–5.0), vs. median 4.0 (IQR 4.0–5.0), p = 0.012), and at the 12-month measurement point (intervention group n = 41, and control group n = 39) for physically active leisure activities performed (median 3.0 (IQR 3.0–4.0) vs. median 3.0 (IQR 3.0–3.0), p = 0.043). For the proportion with improvements in social leisure activities performed, in Table 4, a statistically significant difference was found in the complete cases analyses between baseline and 3 months in favour for the intervention group (n = 42) compared with the control group (n = 38) (92.9% vs. 76.3%, p = 0.050, OR = 4.03, 95% CI = 1.00–16.23). The complete cases analysis of the proportion starting or maintaining leisure activities rated as important (supplementary file) was different from the ITT analyses in two of the comparisons. Unlike the ITT in the complete cases analysis, there were no statistically significant changes in hard exercise between baseline and 3 months (intervention group n = 42, control group n = 38, 33.3% vs. 15.8%, p = 0.076, OR = 2.67, 95% CI = 0.90–7.87) and there was a statistically significant lower proportion playing cards or board games between 9 and 12 months in the intervention group (n = 40) than the control group (n = 36) (42.5% vs. 66.7%, p = 0.037, OR = 0.37, 95% CI = 0.15–0.94). (For details, please see supplementary file).

Drop out analyses

When looking at those that completed the one-year study with those dropping out there were no significant differences between groups in number of attritions (p=0.546). Neither did the attritions in both groups differ significantly regarding age (p=0.460), gender (p=0.128), municipal care (p=0.711), marital status (p=0.503), having children (p=0.313), or financial status (p=0.316) at baseline. Those who dropped out had a significant higher educational level at baseline (p=0.028). When looking at the outcome variables there were no significant difference in social participation between groups (p=0.114), and leisure activities rated as important (p=0.601) (Table 5). However, for performed leisure activities and performed important activities those who dropped out were significantly less active (p=0.015 and p=0.032 respectively) including the subdomain of social leisure activities (p=0.031 and p=0.043 respectively) (Table 5).

Discussion

The aim of this study was to evaluate the effects of a case management intervention for frail older people on social participation and leisure activities. The intervention has previously been shown to have some effects on healthcare utilisation, informal care and costs of informal care. The results of this study show that the intervention had some statistically significant effects. However, the effects of the case management intervention on leisure activities should be considered with caution. The fact that only a few small effects were seen corresponded to the amount of focus social participation and leisure activities had in the intervention. The primary outcome, for which the power was calculated, was inpatient care, and activities or social participation were not key parts of the intervention. It is therefore not surprising that there were few significant findings. However, it seems possible that a case management intervention could be a potential good way to deliver and improve social participation and involvement in leisure activities among frail older people, although it would need a clearer focus on these aspects. More research is needed to evaluate the effects of such interventions on social participation and leisure activities.

This study shows that a case management intervention promoting physical activity does not automatically increase social participation and leisure activities. However, other similar multifactorial interventions with an explicit team-based approach have shown some good results in both health-related and activity-related outcomes (see e.g., Szanton *et al*., 2015. Previous research suggests that the participant's goals for the intervention should be defined early on in terms of everyday activities and tasks that the frail older person wants or needs to do. The intervention should also be individually tailored, including efforts to promote both health and activity (Doble & Santha, 2008, Szanton *et al.*, 2015). Creating person-centred activity-related goals has been shown to increase older people's motivation and interest in health-promoting interventions. Focusing on activities that the individual values increases both motivation and the person-centeredness of the intervention (Stevens *et al*., 2013).

The participants in this study showed low overall levels of social participation, with a median of three activities for both intervention and control groups. An earlier study by Lindström *et al.* (2003) showed 32% of a total population (age 20–80) having low social participation. It is well known that frailty and disability result in lower social participation (Rosso *et al*., 2013). However, 10–14% of older people living in the community can be considered frail (Collard *et al.*, 2012). The costs and high healthcare consumption related to frailty emphasise the need to target both the physical and disability-related consequences of frailty. Research shows that older people's participation in social and leisure activities is associated with reduced mortality rates and increased self-rated health and quality of life (Silverstein & Parker, 2002, Adams *et al*., 2011a, Agahi *et al*., 2011). This implies that the inclusion of strategic interventions on social participation and leisure activities in case management interventions might provide additional therapeutic benefit.

Methodological strengths and limitations

The study has several methodological strengths, but there are also limitations that pose threats to validity. The randomised controlled design eliminates threats to internal validity in terms of history, maturation, testing and instrumentation. Block randomisation was not performed

resulting in groups of different sizes after randomisation. However, the groups were found to be equal and with enough number of participants in each group according to the power calculation. It may seem that there were more deaths in the case management group compared to the control group (10 vs. 3, Figure 1). This was not due to the intervention. People in the intervention group may have stayed in the study despite of severe illness while people in the control group may have left the study due to severe illness that later lead to death. When looking at total number of participants who dropped out the numbers were more even (25 vs. 21). Some statistically significant differences between those completing the one-year study and those who dropped out were found. This has been experienced by most studies targeting older people due to higher morbidity and mortality compared to younger populations. As this is likely to affect both groups to the same extent this is not considered to be a threat to internal validity and the conservative imputation technique reduces the threats to external validity. An important aspect to consider is the risk of type 2 errors (Altman, 1991). The outcome measure on leisure activities was not included until the study had been in progress for some months, and therefore only 118 participants had baseline data for this measure. In addition, the power calculation was based on continuous data (inpatient admissions). This, together with the attrition that occurred during the study period, there may be a risk of low power (type II error). The ITT analysis used (LOCF) is conservative and strict, and there is a risk that those who dropped out were more frail with low values at baseline. These values would have been carried forward in the ITT. Some criticism has been raised to the use of LOCF-technique among other that it may dampen the effect of any changes among those with complete data (Cook *et al.,* 2004, Molenberghs *et al.,* 2004). However, the assumption that the outcome measures unmanipulated remains relatively stable over time and that it is relatively straightforward and easy to perform, made it judged to be suitable as imputation technique. Based on this, together with the similarities between the sensitivity analysis (with only complete cases) and the results in the ITT it is reasonable to believe that the imputation technique is not a great threat to internal validity in this study. The leisure activities instrument has been used in some earlier studies (Borglin *et al*., 2006). Its psychometric properties, however, do not seem to have been tested, and no previous studies appear to have combined the ratings for performance and importance. These uncertainties could be threats to internal validity. The intervention was complex. It is also important to use a qualitative evaluation to understand the participants' experiences of the intervention, to deepen understanding.

Conclusion

Although the intervention had some statistically significant effects, the effects of the case management intervention on leisure activities among frail older people living in the community should be considered with caution. It seems likely that a case management intervention more focused on these activities would have the potential to improve social participation among frail older people. More research is needed to evaluate the effects of such case management interventions in this area.

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Conflict of interest
The authors declare that they have no conflicting interests.

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Figure and Tables

Table 1. Demographics and socioeconomic status at baseline in case management (CM) and control groups

	CM (n=80)	Control (n=73)
Demographics		
Age, mean (SD)	81.4 (5.9)	81.6 (6.8)
Women, n (%)	52 (65.0)	50 (68.5)
Municipal care at baseline, n (%)	30 (37.5)	24 (32.9)
Marital status, n (%)		
- Married or living together	23 (28.8)	29 (39.7)
- Widow/er	41 (51.3)	34 (46.6)
- Divorced or living apart	8 (10.0)	7 (9.6)
- Other	8 (10.0)	3 (4.1)
Having children, n (%)	67[1] (84.8)	67 (91.8)
Socioeconomics		
Educational level, n (%)		
- Primary <8 years	40 (50.0)	31 (42.5)
- Secondary >8 years	32 (40.0)	35 (47.9)
- Third level/university	8 (10.0)	7 (9.6)
Financial status, n (%)[2]		
- Better than others	16 (21.1)	10 (14.7)
- Same as others	51 (67.1)	50 (73.5)
- Worse than others	9 (11.8)	8 (11.8)
Activities		
Social participation activities		
- Total number (max 13), md (q1-q3)	3.0 (2.0–5.0)	3.0 (2.0–4.0)
- High social participation (>3 activities), %	45.0	37.0
Leisure activities performed, md (q1-q3)		
- Total (max 17)	13.0 (11.0–14.0)	11.0 (10.0–13.0)
- Social (max 7)	5.0 (3.0–6.0)	4.0 (3.0–5.5)
- Physically (max 4)	3.0 (2.0–3.0)	3.0 (2.0–3.0)
- Quiet (max 6)	5.0 (4.0–5.0)	4.0 (4.0–5.0)

Important leisure activities, md (q1-q3)		
- Total (max 17)	15.0 (12.0–16.0)	13.0 (12.0–15.0)
- Social (max 7)	6.0 (5.0–6.0)	5.0 (4.0–6.0)
- Physically (max 4)	4.0 (3.0–4.0)	3.0 (3.0–4.0)
- Quiet (max 6)	5.0 (5.0–6.0)	5.0 (4.5–6.0)
Important leisure activities performed, md (q1-q3)	13.0 (10.0–14.0)	11.0 (10.0–13.0)
- Total (max 17)	5.0 (3.0–6.0)	4.0 (3.0–5.0)
- Social (max 7)	3.0 (2.0–3.0)	3.0 (2.0–3.0)
- Physically (max 4)	5.0 (4.0–5.0)	4.0 (4.0–5.0)
- Quiet (max 6)		

[1)] Missing=1 [2)] Missing: Intervention group=4, Control group=5 [a)]

Table 2. Social participation measured as I) number of activities performed in the last year, II) proportion of participants with increased or unchanged number of activities as well as III) proportion of participants with high social participation and d) proportion of participants maintaining or reaching high levels of social participation during the study period in the case management (CM) intervention (n = 80) and control (n = 73) groups.

	CM	Control	p-value	OR	95% CI
I. Number of social participation activities, Md (q1-q3)					
3 months	3.0 (2.0–5.0)	3.0 (2.0–4.0)	0.129 [a]		
6 months	3.0 (2.0–5.0)	3.0 (2.0–4.0)	0.352 [a]		
9 months	3.0 (2.0–5.0)	3.0 (1.0–4.0)	0.285 [a]		
12 months	3.0 (2.0–5.0)	3.0 (1.0–4.0)	0.294 [a]		
II. Proportion of participants with increased or unchanged number of social participation activities, %					
Baseline-3 months	68.8	71.2	0.738 [b]	0.89	0.44–1.78
3 – 6 months	65.0	68.5	0.647 [b]	0.85	0.44–1.68
6 – 9 months	83.8	80.8	0.635 [b]	1.22	0.53–2.81
9 – 12 months	80.0	78.1	0.771 [b]	1.12	0.51–2.45
Baseline – 12 months	71.3	58.9	0.110 [b]	1.73	0.88–3.39
III. Proportion of participants with high social participation (more than 3 activities), %					
3 months	42.5	35.6	0.384 [b]	1.34	0.70–2.57
6 months	42.5	31.5	0.161 [b]	1.61	0.83–3.12
9 months	38.8	30.1	0.264 [b]	1.47	0.75–2.87
12 months	37.5	34.2	0.675 [b]	1.15	0.59–2.23
IV. Proportion of participants that maintained or got high social participation during the study period (more than 3 activities), %					
Baseline-3 months	42.5	35.6	0.384 [b]	1.34	0.70–2.57
3 – 6 months	42.5	31.5	0.161 [b]	1.61	0.83–3.12
6 – 9 months	38.8	30.1	0.264 [b]	1.47	0.75–2.87
9 – 12 months	37.5	34.2	0.675 [b]	1.15	0.59–2.23
Baseline – 12 months	37.5	34.2	0.675 [b]	1.15	0.59–2.23

[a] Mann–Whitney U-test. [b] Chi-square test

Table 3. Effects of case management intervention on leisure activities in terms of number of activities performed, number of activities rated as important and number of important activities performed in the case management (CM) intervention (n = 59) and control (n = 57) groups.

	Leisure activities performed (in relation to not at all)			Important leisure activities (in relation to not important at all)			Important leisure activities performed		
	CM	Control	p-value[a]	CM	Control	p-value[a]	CM	Control	p-value[a]
Total, md (q1-q3) (max 17)									
3 months	**13.0 (11.0–14.0)**	**11.0 (10.0–13.0)**	**0.042**	**14.0 (13.0–16.0)**	**13.0 (11.0–15.0)**	**0.026**	**13.0 (10.0–14.0)**	**11.0 (9.0–13.0)**	**0.034**
6 months	12.0 (10.0–14.0)	12.0 (10.0–14.0)	0.427	14.0 (13.0–15.0)	14.0 (12.0–16.0)	0.991	13.0 (10.0–14.0)	11.0 (9.0–13.0)	0.450
9 months	12.0 (10.0–14.0)	12.0 (10.0–13.0)	0.460	14.0 (13.0–16.0)	14.0 (12.0–15.0)	0.347	12.0 (10.0–14.0)	11.0 (9.0–13.0)	0.386
12 months	12.0 (10.0–14.0)	12.0 (10.0–13.0)	0.413	15.0 (12.0–16.0)	15.0 (12.5–16.0)	0.937	12.0 (9.0–14.0)	11.0 (9.0–13.0)	0.581
Social leisure activities, md (q1-q3) (max 7)									
3 months	5.0 (3.0–6.0)	4.0 (3.0–5.5)	0.250	6.0 (5.0–6.0)	5.0 (4.0–6.0)	0.093	5.0 (3.0–6.0)	4.0 (3.0–5.0)	0.257
6 months	5.0 (3.0–6.0)	4.0 (3.0–5.5)	0.920	6.0 (4.0–6.0)	6.0 (4.0–6.0)	0.650	4.0 (3.0–6.0)	4.0 (3.0–5.5)	0.980
9 months	5.0 (3.0–5.0)	4.0 (3.0–5.5)	0.749	6.0 (5.0–6.0)	5.0 (4.0–6.0)	0.710	4.0 (3.0–5.0)	4.0 (3.0–5.0)	0.612
12 months	5.0 (3.0–6.0)	4.0 (3.0–6.0)	0.846	6.0 (4.0–6.0)	6.0 (4.0–6.0)	0.923	4.0 (3.0–5.0)	4.0 (3.0–5.5)	0.606
Physically active leisure activities, md (q1-q3) (max 4)									
3 months	3.0 (3.0–3.0)	3.0 (2.0–3.0)	0.132	**4.0 (3.0–4.0)**	**3.0 (3.0–4.0)**	**0.021**	**3.0 (3.0–3.0)**	**3.0 (2.0–3.0)**	**0.031**
6 months	3.0 (2.0–3.0)	3.0 (2.0–3.0)	0.395	4.0 (3.0–4.0)	3.0 (3.0–4.0)	0.199	3.0 (2.0–3.0)	3.0 (2.0–3.0)	0.147
9 months	3.0 (2.0–3.0)	3.0 (2.0–3.0)	0.650	**4.0 (3.0–4.0)**	**3.0 (3.0–4.0)**	**0.026**	3.0 (2.0–3.0)	3.0 (2.0–3.0)	0.632
12 months	3.0 (3.0–3.0)	3.0 (2.0–3.0)	0.106	4.0 (3.0–4.0)	3.0 (3.0–4.0)	0.662	3.0 (3.0–3.0)	3.0 (2.0–3.0)	0.088
Quiet leisure activities, md (q1-q3) (max 6)									
3 months	**5.0 (4.0–5.0)**	**4.0 (4.0–5.0)**	**0.027**	5.0 (5.0–6.0)	5.0 (4.0–6.0)	0.122	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.063
6 months	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.224	5.0 (5.0–6.0)	5.0 (5.0–6.0)	0.886	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.575
9 months	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.532	5.0 (5.0–6.0)	5.0 (5.0–6.0)	0.993	4.0 (4.0–5.0)	4.0 (4.0–5.0)	0.687
12 months	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.133	6.0 (5.0–6.0)	5.0 (5.0–6.0)	0.732	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.258

[a] Mann–Whitney U-test. Statistically significant in bold.

Table 4. Effects of case management intervention on leisure activities in terms of proportion of participants performing activities, rating activities as important and performing activities they rated as important in the case management (CM) intervention (n = 59) and control (n = 57) groups.

	Leisure activities performed (in relation to not at all)					Important leisure activities (in relation to not important at all)					Important leisure activities performed				
	CM	Control	p-value[a]	OR	95% CI	CM	Control	p-value[a]	OR	95% CI	CM	Control	p-value[a]	OR	95% CI
Total, md (q1-q3) (max 17)															
Baseline-3 months	81.4	75.4	0.440	1.42	0.58–3.46	83.1	71.9	0.155	1.91	0.78–4.67	78.0	71.9	0.454	1.38	0.59–3.21
3 – 6 months	67.8	75.4	0.363	0.69	0.30–1.55	71.2	86.0	0.057	0.40	0.16–1.03	62.7	73.7	0.207	0.60	0.27–1.33
6 – 9 months	66.1	70.2	0.638	0.83	0.38–1.81	86.4	77.2	0.200	1.88	0.71–4.96	69.5	71.9	0.773	0.89	0.40–1.98
9 – 12 months	81.4	75.4	0.440	1.42	0.58–3.46	71.2	84.2	0.097	0.46	0.19–1.15	71.2	78.9	0.336	0.66	0.28–1.54
Baseline – 12 months	59.3	66.7	0.413	0.73	0.34–1.55	78.0	77.2	0.920	1.05	0.44–2.50	61.0	70.2	0.301	0.67	0.31–1.44
Social leisure activities, md (q1-q3) (max 7)															
Baseline-3 months	93.2	84.2	0.134	2.58	0.75–8.91	86.4	75.4	0.135	2.08	0.80–5.41	**93.2**	**75.4**	**0.013**	**4.48**	**1.37–14.58**
3 – 6 months	72.9	84.2	0.142	0.50	0.20–1.26	72.9	86.0	0.087	0.44	0.17–1.13	69.5	80.7	0.166	0.54	0.23–1.29
6 – 9 months	76.3	71.9	0.594	1.25	0.55–2.88	84.7	78.9	0.419	1.48	0.57–3.84	83.1	70.2	0.105	2.08	0.86–5.05
9 – 12 months	86.4	86.0	0.941	1.04	0.36–2.99	**72.9**	**91.2**	**0.014**	**0.26**	**0.09–0.76**	81.4	87.7	0.347	0.61	0.22–1.71
Baseline – 12 months	71.2	75.4	0.605	0.80	0.35–1.84	74.6	73.7	0.913	1.05	0.46–2.41	66.1	71.9	0.498	0.76	0.35–1.68
Physically active leisure activities, md (q1-q3) (max 4)															
Baseline-3 months	91.5	89.5	0.707	1.27	0.37–4.42	91.5	87.7	0.503	1.51	0.45–5.07	93.2	89.5	0.476	1.62	0.43–6.06
3 – 6 months	83.1	87.7	0.479	0.69	0.24–1.95	86.4	87.7	0.837	0.89	0.30–2.65	81.4	87.7	0.347	0.61	0.22–1.71
6 – 9 months	84.7	87.7	0.643	0.78	0.27–2.25	93.2	86.0	0.209	2.24	0.64–7.92	83.1	91.2	0.197	0.47	0.15–1.48
9 – 12 months	93.2	87.7	0.318	1.93	0.53–6.97	83.1	87.7	0.479	0.69	0.24–1.95	89.8	87.7	0.719	1.24	0.39–3.93
Baseline – 12 months	83.1	86.0	0.665	0.80	0.29–2.20	78.0	87.7	0.170	0.50	0.18–1.35	79.7	86.0	0.371	0.64	0.24–1.70
Quiet leisure activities, md (q1-q3) (max 6)															
Baseline-3 months	84.7	78.9	0.419	1.48	0.57–3.84	89.8	80.7	0.171	2.11	0.72–6.16	79.7	78.9	0.924	1.04	0.43–2.57
3 – 6 months	83.1	87.7	0.479	0.69	0.24–1.95	83.1	89.5	0.320	0.58	0.19–1.71	84.7	89.5	0.450	0.65	0.22–1.97
6 – 9 months	84.7	89.5	0.450	0.65	0.22–1.97	86.4	87.7	0.837	0.89	0.30–2.65	84.7	87.7	0.643	0.78	0.27–2.25
9 – 12 months	86.4	86.0	0.941	1.04	0.36–2.99	86.4	96.5	0.073	0.23	0.05–1.14	86.4	87.7	0.837	0.89	0.30–2.65
Baseline – 12 months	72.9	78.9	0.446	0.72	0.30–1.69	83.1	89.5	0.320	0.58	0.19–1.71	72.9	84.2	0.142	0.50	0.20–1.26

[a] Chi-square test. Statistically significant in bold.

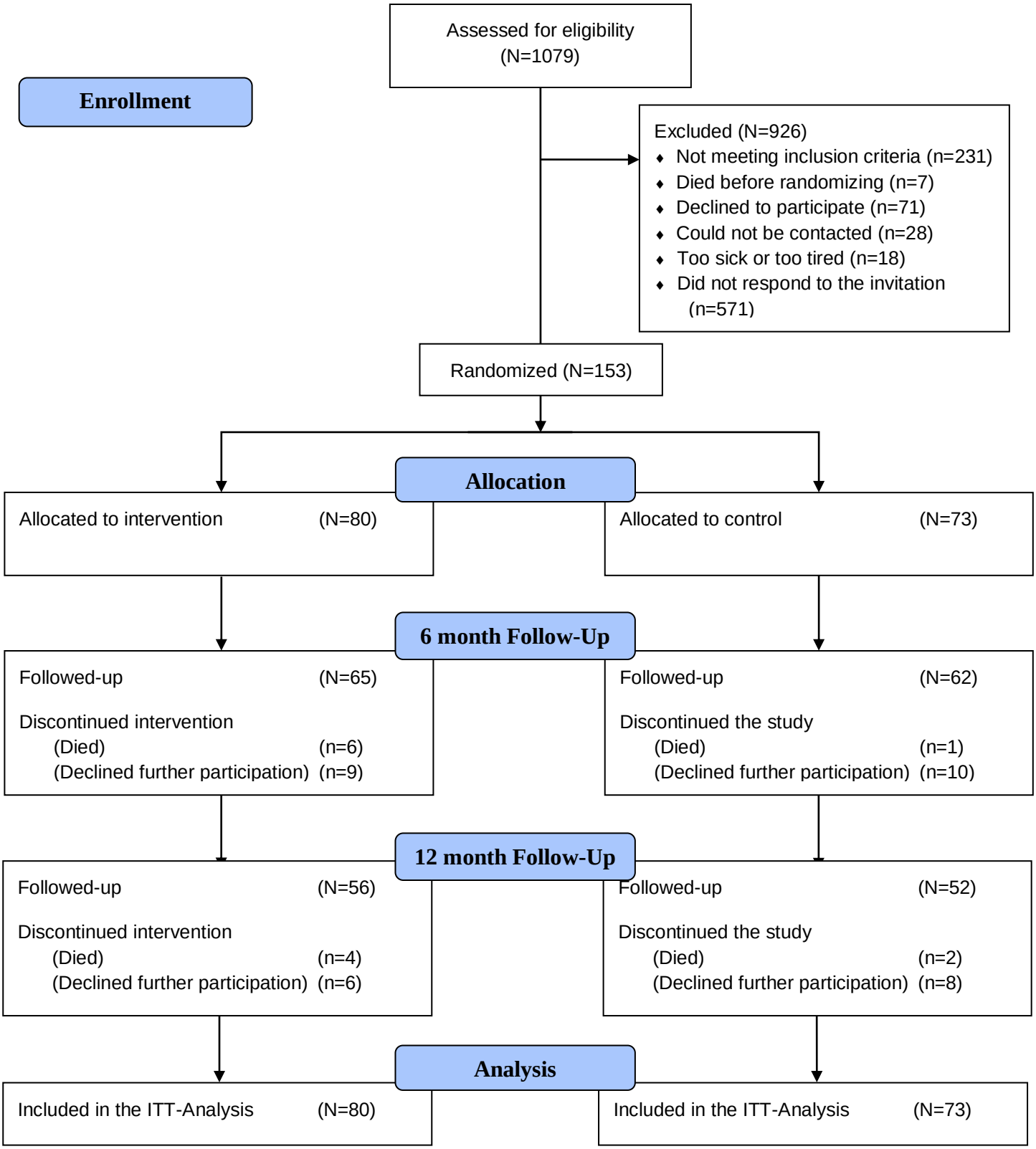
Table 5. Drop out analyses between those that completed the one-year case management intervention (n=108) and those who dropped out (n=45)

Activities	Complete cases (n=108)	Dropped out (n=45)	p-value
Social participation activities			
- Total number (max 13), md (q1-q3)	3.0 (2.0–5.0)	3.0 (2.0–4.0)	0.114[a]
- High social participation (>3 activities), %	44.4	33.3	0.203[b]
Leisure activities performed, md (q1-q3) *			
- Total (max 17)	13.0 (11.0–14.0)	11.0 (9.3–13.0)	**0.015[a]**
- Social (max 7)	5.0 (3.5–6.0)	4.0 (3.0–5.0)	**0.031[a]**
- Physically (max 4)	3.0 (3.0–3.0)	3.0 (2.0–3.0)	0.100[a]
- Quiet (max 6)	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.135[a]
Important leisure activities, md (q1-q3) *			
- Total (max 17)	15.0 (13.0–16.0)	14.0 (12.0–16.0)	0.601[a]
- Social (max 7)	6.0 (5.0–6.0)	6.0 (4.3–6.8)	0.807[a]
- Physically (max 4)	4.0 (3.0–4.0)	3.0 (3.0–4.0)	0.851[a]
- Quiet (max 6)	5.0 (5.0–6.0)	5.0 (4.3–6.0)	0.471[a]
Important leisure activities performed, md (q1-q3) *			
- Total (max 17)	12.0 (10.5–14.0)	11.0 (9.0–13.0)	**0.032[a]**
- Social (max 7)	5.0 (3.0–6.0)	4.0 (3.0–5.0)	**0.043[a]**
- Physically (max 4)	3.0 (2.0–3.0)	3.0 (2.0–3.0)	0.156[a]
- Quiet (max 6)	5.0 (4.0–5.0)	4.0 (4.0–5.0)	0.239[a]

* Complete cases n=65, dropped out n=2

[a] Mann–Whitney U-test. [b] Chi-square test. Statistically significant in bold.

Figure 1: CONSORT Flow Diagram



PART A. Proportion of participants performing specific leisure activities they rated as important in the case management (CM) intervention (n = 59) and control (n = 57) groups.

	3 months					6 months					9 months					12 months				
Activity	CM	C	p-value	OR	95% CI	CM	C	p-value	OR	95% CI	CM	C	p-value	OR	95% CI	CM	C	p-value	OR	95% CI
Social leisure activities																				
Socialising with friends, family and/ or relatives	96.6	100	-	-	-	100	100	-	-	-	94.9	96.5	0.678	0.68	0.11-4.22	94.9	100	-	-	-
Helping my children/ grandchildren with various chores [a]	65.5	72.2	0.446	0.73	0.32–1.65	61.8	72.2	0.250	0.62	0.28–1.39	63.6	72.2	0.338	0.67	0.30–1.51	61.8	77.8	0.072	0.46	0.20–1.07
Going on parties, café, restaurant etc.	74.6	77.2	0.742	0.87	0.37–2.03	64.4	80.7	0.052	0.43	0.19–1.01	67.8	71.9	0.628	0.82	0.37–1.82	69.5	77.2	0.350	0.67	0.29–1.54
Visiting art exhibitions, theatre, cinema etc.	54.2	42.1	0.192	1.63	0.78–3.40	**54.2**	**33.3**	**0.024**	**2.37**	**1.12–5.03**	**52.5**	**31.6**	**0.023**	**2.40**	**1.13–5.11**	45.8	33.3	0.173	1.69	0.80–3.58
Playing cards or board games	52.5	52.6	0.992	1.00	0.48–2.07	49.2	54.4	0.573	0.81	0.39–1.68	47.5	47.4	0.992	1.00	0.48–2.08	44.1	54.4	0.267	0.66	0.32–1.37
Participate in any type of association	54.2	38.6	0.093	1.87	0.90–3.95	54.2	49.1	0.582	1.23	0.59–2.55	54.2	45.6	0.354	1.41	0.68–2.93	52.5	40.4	0.189	1.64	0.78–3.42
Participate in religious activities	39.0	31.6	0.405	1.38	0.64–2.98	30.5	31.6	0.901	0.95	0.43–2.09	22.0	28.1	0.454	0.72	0.31–1.68	28.8	38.6	0.266	0.64	0.30–1.40
Physically active leisure activities																				
Spending time outdoors, travel and/or outings	84.7	73.7	0.146	1.98	0.79–4.99	81.4	75.4	0.440	1.42	0.58–3.46	79.7	78.9	0.924	1.04	0.43–2.57	83.1	78.9	0.574	1.31	0.51–3.32
Easy exercise	89.8	86.0	0.524	1.44	0.47–4.45	91.5	84.2	0.233	2.03	0.63–6.46	88.1	82.5	0.390	1.58	0.56–4.49	91.5	82.5	0.154	2.30	0.73–7.20
Hard exercise	**25.4**	**10.5**	**0.043**	**2.90**	**1.04–8.11**	20.3	8.8	0.086	2.66	0.87–8.10	20.3	14.0	0.371	1.56	0.59–4.17	22.0	15.8	0.393	1.51	0.59–3.86
Housekeeping and/or housework	88.1	82.5	0.390	1.58	0.56–4.49	86.4	87.7	0.837	0.89	0.30–2.65	88.1	87.2	0.945	1.04	0.34–3.18	84.7	84.2	0.937	1.04	0.38–2.85
Quiet leisure activities																				
Listening to music	91.5	91.2	0.955	1.04	0.28–3.80	93.2	93.0	0.960	1.04	0.25–4.36	88.1	94.7	0.217	0.41	0.10–1.68	94.9	94.7	0.965	1.04	0.20–5.36
Singing/playing	37.3	26.3	0.207	1.66	0.75–3.67	35.6	24.6	0.198	1.70	0.76–3.80	35.6	26.3	0.282	1.55	0.70–3.43	33.9	24.6	0.271	1.58	0.70–3.54
Handicraft and/or needlework	**47.5**	**28.1**	**0.033**	**2.31**	**1.07–5.01**	45.8	36.8	0.330	1.45	0.69–3.04	44.1	35.1	0.324	1.46	0.69–3.08	42.4	29.8	0.161	1.73	0.80–3.73
Watching television and/ or listening to the radio	98.3	100	-	-	-	98.3	100	-	-	-	100	100	-	-	-	100	100	-	-	-
Being by oneself 'quietly meditating/contemplating'	91.5	93.0	0.770	0.82	0.21–3.20	88.1	96.5	0.113	0.27	0.05–1.36	89.8	98.2	0.092	0.16	0.02–1.35	91.5	96.5	0.276	0.39	0.07–2.11
Reading newspaper and/or books	98.3	94.7	0.317	3.22	0.33–31.93	96.6	96.5	0.972	1.04	0.14–7.62	96.6	94.7	0.622	1.58	0.25–9.85	96.6	94.7	0.622	1.58	0.25–9.85

[a] Due to internal missing, CM group n=56. Control group n=54. Statistically significant in bold.

PART B. Proportion of participants that started or continued to perform leisure activities they rated as important in the case management (CM) intervention (n = 59) and control (n = 57) groups.

	Between baseline and 3 months					Between 3 and 6 months					Between 6 and 9 months					Between 9 and 12 months					Between baseline and 12 months				
Activity	CM	C	p-value	OR	95% CI	CM	C	p-value	OR	95% CI	CM	C	p-value	OR	95% CI	CM	C	p-value	OR	95% CI	CM	C	p-value	OR	95% CI
Social leisure activities																									
Socialising with friends, family and/ or relatives	96.6	100	-	-	-	100	100	-	-	-	94.9	96.5	0.678	0.68	0.11-4.22	94.9	100	-	-	-	94.9	100	-	-	-
Helping my children/ grandchildren with various chores [a]	65.5	72.2	0.446	0.73	0.32–1.65	61.8	72.2	0.250	0.62	0.28–1.39	63.6	72.2	0.338	0.67	0.30–1.51	61.8	77.8	0.072	0.46	0.20–1.07	61.8	77.8	0.072	0.46	0.20–1.07
Going on parties, café, restaurant etc.	74.6	77.2	0.742	0.87	0.37–2.03	64.4	80.7	0.052	0.43	0.17–1.01	67.8	71.9	0.628	0.82	0.37–1.82	69.5	77.2	0.350	0.67	0.29–1.54	69.5	77.2	0.350	0.67	0.29–1.54
Visiting art exhibitions, theatre, cinema etc.	54.2	42.1	0.192	1.63	0.78–3.40	**54.2**	**33.3**	**0.024**	**2.37**	**1.12–5.03**	**52.5**	**31.6**	**0.023**	**2.40**	**1.13–5.11**	45.8	33.3	0.173	1.69	0.80–3.58	45.8	33.3	0.173	1.69	0.80–3.58
Playing cards or board games	52.5	52.6	0.992	1.00	0.48–2.07	49.2	54.4	0.573	0.81	0.39–1.68	47.5	47.4	0.992	1.00	0.48–2.08	44.1	54.4	0.267	0.66	0.32–1.37	44.1	54.4	0.267	0.66	0.32–1.37
Participate in any type of association	54.2	38.6	0.093	1.89	0.90–3.95	54.2	49.1	0.582	1.23	0.59–2.55	54.2	45.6	0.354	1.41	0.68–2.93	52.5	40.4	0.189	1.64	0.78–3.42	52.5	40.4	0.189	1.64	0.78–3.42
Participate in religious activities	39.0	31.6	0.405	1.38	0.64–2.98	30.5	31.6	0.901	0.95	0.43–2.09	22.0	28.1	0.454	0.72	0.31–1.68	28.8	38.6	0.266	0.64	0.30–1.40	28.8	38.6	0.266	0.64	0.30–1.40
Physically active leisure activities																									
Spending time outdoors, travel and/or outings	84.7	73.7	0.146	1.98	0.79–4.99	81.4	75.4	0.440	1.42	0.58–3.46	79.7	78.9	0.924	1.04	0.43–2.57	83.1	78.9	0.574	1.31	0.51–3.32	83.1	78.9	0.574	1.31	0.51–3.32
Easy exercise	89.8	86.0	0.524	1.44	0.47–4.45	91.5	84.2	0.233	2.03	0.63–6.46	88.1	82.5	0.390	1.58	0.56–4.49	91.5	82.5	0.154	2.30	0.73–7.20	91.5	82.5	0.154	2.30	0.73–7.20
Hard exercise	**25.4**	**10.5**	**0.043**	**2.90**	**1.04–8.11**	20.3	8.8	0.086	2.66	0.87–8.10	20.3	14.0	0.371	1.56	0.59–4.17	22.0	15.8	0.393	1.51	0.59–3.86	22.0	15.8	0.393	1.51	0.59–3.86
Housekeeping and/or housework	88.1	82.5	0.390	1.58	0.56–4.49	86.4	87.7	0.837	0.89	0.30–2.65	88.1	87.7	0.945	1.04	0.34–3.18	84.7	84.2	0.937	1.04	0.38–2.85	84.7	84.2	0.937	1.04	0.38–2.85
Quiet leisure activities																									
Listening to music	91.5	91.2	0.955	1.04	0.28–3.80	93.2	93.0	0.960	1.04	0.25–4.36	88.1	94.7	0.217	0.41	0.10–1.68	94.9	94.7	0.965	1.04	0.20–5.36	94.9	94.7	0.965	1.04	0.20–5.36
Singing/playing	37.3	26.3	0.207	1.66	0.75–3.67	35.6	24.6	0.198	1.70	0.76–3.80	35.6	26.3	0.282	1.55	0.70–3.43	33.9	24.6	0.271	1.58	0.70–3.54	33.9	24.6	0.271	1.58	0.70–3.54
Handicraft and/or needlework	**47.5**	**28.1**	**0.033**	**2.31**	**1.07–5.01**	45.8	36.8	0.330	1.45	0.69–3.04	44.1	35.1	0.324	1.46	0.69–3.08	42.4	29.8	0.161	1.73	0.80–3.73	42.4	29.8	0.161	1.73	0.80–3.73
Watching television and/ or listening to the radio	98.3	100	-	-	-	98.3	100	-	-	-	100	100	-	-	-	100	100	-	-	-	100	100	-	-	-
Being by oneself 'quietly meditating/contemplating'	91.5	93.0	0.770	0.82	0.21–3.20	88.1	96.5	0.113	0.27	0.05–1.36	89.8	98.2	0.092	0.16	0.02–1.35	91.5	96.5	0.276	0.39	0.07–2.11	91.5	96.5	0.276	0.39	0.07–2.11
Reading newspaper and/or books	98.3	94.7	0.317	3.22	0.33–91.93	96.6	96.5	0.972	1.04	0.14–7.62	96.6	94.7	0.622	1.58	0.25–9.85	96.6	94.7	0.622	1.58	0.25–9.85	96.6	94.7	0.622	1.58	0.25–9.85

[a] CM group n=56. Control group n=54. Statistically significant in bold.