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## Effect of Physical Activity Counseling on Home Care Use among Older People

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**To the Editor:**

The high prevalence of disability among older sedentary people increases the need for home care services,<sup>1-3</sup> thus interventions for postponing disability and related service use are urgently needed.<sup>4</sup> A recent randomized controlled trial (RCT) showed that physical activity counseling decreased functional limitations among older people.<sup>5</sup> In addition, subgroup analyses showed a reduction in the incidence of instrumental activities of daily living (IADL) disability for those without IADL disability at baseline.<sup>6</sup> This paper presents results on the effect of physical activity counseling on formal home care use among older community-dwelling sedentary persons.

## **METHODS**

The design and methodology of the Screening and Counseling for Physical Activity and Mobility (SCAMOB) project have been reported in detail elsewhere.<sup>7</sup> SCAMOB was a 2-year, single-blinded, randomized controlled trial with 1.5-year follow-up on the effects of individualized physical activity counseling for older sedentary people. The target population consisted of all 75-81-year-old registered residents of the City of Jyväskylä, Finland living in the city centre area in March 2003 (N=1310). After a four-phased screening and data collection process, 632 persons were found to be eligible for the study. The Ethical Committee of the Central Finland Health Care District approved the study, ISRCTN is 07330512.

The intervention group received one individual motivational face-to-face physical activity counseling session by one physiotherapist specifically trained for the task.<sup>7</sup> This was followed up by telephone contact every four months for two years and two annual lectures on physical activity to support compliance and behavior change. Control group received no intervention.

Home care was defined as using publicly subsidized formal home help or home nursing for various activities at least once a month for at least three months. Home care activities included e.g. help in IADL and self-care tasks such as bathing, shopping, and preparing food. Hazard ratios (HR) and 95% confidence intervals (CI) on home care use were estimated using Cox proportional hazards model. Statistical significance was set at  $P < 0.05$ .

## RESULTS

632 persons were randomized into an intervention (n=318) or control group (n=314). Of these, 567 (90%) persons gave written consent to collect data from the City of Jyväskylä health and social service register on home care use during the 2-year trial and 1.5-year follow-up. We excluded 3 persons, who used formal home care at baseline. Of these 564 (intervention n=290 and control group n=274) persons, 59% managed self-care tasks such as bathing, getting out of bed and toileting without difficulty whereas of those RCT participants that we did not investigate (n=68), 42% managed the tasks without difficulty (p=0.01).

Baseline characteristics of the intervention and control groups were comparable, except that in the intervention group 61% and control group 51% lived alone (p=0.01). In both groups the majority of participants were women (76%), mean age was 77.6 (SD 1.95) years, they had on average three chronic diseases, and 68% were able to walk 2 km without difficulties. In the intervention group 15% and in the control group 18% received informal care from a spouse, child or relative. The risk for home care use was about 50% lower for the intervention group compared to the control group (see Figure 1).

## DISCUSSION

The current secondary analyses of the RCT data suggest that physical activity counseling may help reduce the need for home care in the long term. It was hypothesized that physical activity counseling increases physical activity, which in turn, decreases mobility difficulties, postpones disability, and consequently decrease the need for home care. The current results complement the earlier findings on reduced mobility limitation<sup>5</sup> and the subgroup finding on reduced incident IADL disability<sup>6</sup> and indicate that the trial benefits may extend the entire length of the hypothesized pathway.

The use of other forms of care did not explain the treatment effect. At baseline and follow-up, about 10% of the participants in both trial groups reported using private home care services. Informal care did not differ significantly between the groups at baseline or in follow-up. None of the participants were institutionalized at baseline and during the 3.5-year period only one person from the control group was institutionalized without prior home care use.

Register-based data was used for investigating the use of publicly subsidized home care, which eliminated the effect of reporting bias.<sup>8</sup> Home care data were available for 90% of the RCT participants, which is why the effect of randomization is uncertain. However, the findings indicate that there is a growing need for interventions aiming to increase physical activity for older people with follow-up on the need of health and social services.

**Conflicts of interest:**

All authors declare no interest of conflict.

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**Role of the sponsor:**

The funding sources of the study had no role in the design, implementation or analyses of the data or in the preparation of the manuscript for publication.

**Author Contributions:**

E. Heikkinen, T. Rantanen, R. Leinonen originated the study and obtained the funding. M.B. von Bonsdorff and T. Rantanen analyzed and interpreted the data. M.B. von Bonsdorff drafted the paper. T.Rantanen, U.M. Kujala, E. Heikkinen critically revised the paper. M. Hirvensalo and M. Rasinaho were responsible for the physical activity counseling intervention. R. Leinonen, M.B. von Bonsdorff, M. Mänty, and S. Karhula participated in data collection. T. Törmäkangas was the statistical expert. All authors contributed to the intellectual content of the paper and approved the final version.

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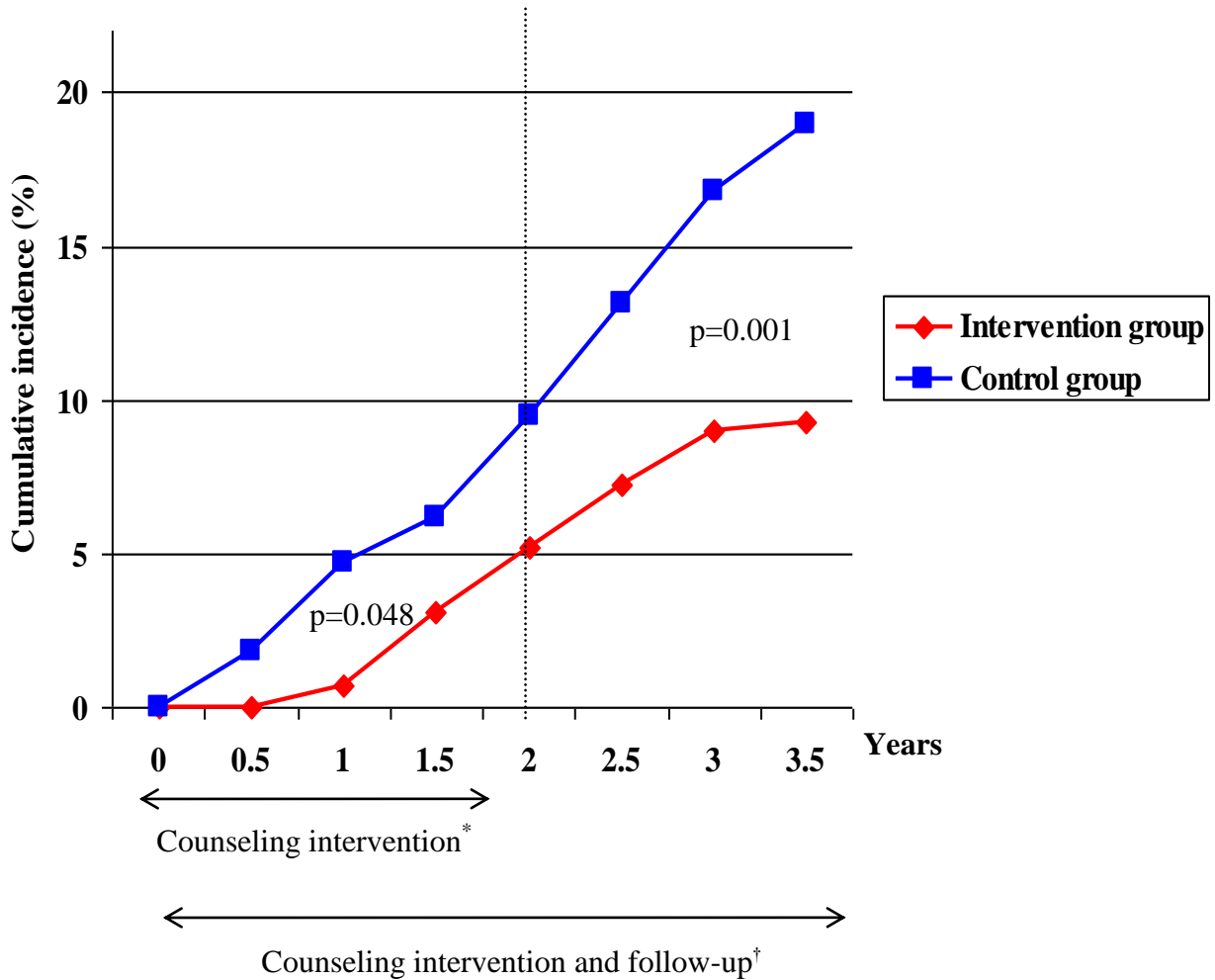


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Legend for Figure 1:

Cumulative incidences, person-years, hazard ratios (HR) and 95% confidence intervals (CI) for home care use during the 2-year intervention and 3.5 intervention and follow-up time among the intervention and control group

Figure 1:



Comparisons made with chi-square test

\* 2-year intervention: in intervention group 15 persons (2.6/100 person-years) and in control group 26 persons (5.0/100 person-years) started using home care, HR=0.51, 95% CI 0.27-0.97. The model was adjusted with age, gender and living alone.

†3.5-year period: in intervention group 27 persons (2.8/100 person-years) and in control group 52 persons (6.0/100 person-years) started using home care, HR=0.51, 95% CI 0.27-0.97. The model was adjusted with age, gender and living alone.