# Urban participants in an exercise intervention for older women were healthier than others

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Urban participants in an exercise intervention for older women in Kuopio, eastern Finland, were healthier and had better functional

capability at baseline than non-participants and uninvited rural women, according to new findings from the Kuopio Fall Prevention Study. The participants were also better off than women of the same age group living in rural areas. These observations are indicative of selection bias, which may affect the generalisability of results. Selection bias has never been studied so comprehensively in this type of a setting before.

A randomized controlled exercise intervention to prevent falls and fractures in older women was carried out within the Kuopio Fall Prevention Study. Nearly 5,500 women living in Kuopio were invited to participate in the study, of whom more than 900 eventually participated. The sub-study published now sought to explore differences between women who participated in the study and other women from the same age group. The participants were compared with some 4,500 women from the Kuopio urban area who were invited to participate, but chose not to, as well as with approximately 7,100 women of the same age group living in the surrounding rural area who were not invited to participate in the study.

Researchers found that the participants were younger, better educated, physically more active and functionally capable, and they had better physical and mental health than non-participants and non-invited rural women. In addition, they performed better in clinical tests measuring their functional capability. The participants had more previous falls and fractures, but their fear of falling was nevertheless lower than in other groups. Differences in the prevalence of different diseases were also observed between urban and rural participants. For example, cardiovascular diseases and many musculoskeletal disorders were more common among women in rural areas.

"In population-based physical exercise and lifestyle interventions, participants are more likely to be better off in terms of both physical and mental health, functional capability and socio-demographic status. For

practical reasons, randomized controlled trials are often limited to urban populations, which inevitably causes selection bias due to health inequalities between urban and rural areas. These factors may affect the generalisability of results," says Doctoral Researcher, lead author Tommi Vilpunaho from the University of Eastern Finland.

Published in the *Journal of Clinical Epidemiology*, the results have wider significance for health-related clinical trials. The Kuopio Fall Prevention Study constitutes part of the wider Kuopio Osteoporosis Risk Factor and Prevention (OSTPRE) Study, which has been monitoring the health of older women for over 30 years.

**More information:** Tommi Vilpunaho et al, Urban RCT participants were healthier than non-participants or rural women, *Journal of Clinical Epidemiology* (2021). DOI: 10.1016/j.jclinepi.2021.08.032

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