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Published in:
British Journal of Occupational Therapy

DOI:
[10.1177/0308022616681795](https://doi.org/10.1177/0308022616681795)

2017

Document Version:
Peer reviewed version (aka post-print)

[Link to publication](#)

Citation for published version (APA):
Kylberg, M., Löfqvist, C., Horstmann, V., & Iwarsson, S. (2017). Leisure activities and mobility device use among very old people in Latvia and in Sweden. *British Journal of Occupational Therapy*, 80(4), 250-258.
<https://doi.org/10.1177/0308022616681795>

Total number of authors:
4

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Manuscript title: Leisure Activities and Mobility Device Use among Very Old People in Latvia and in Sweden

Short title: Mobility devices for leisure activities

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Research ethics: The Swedish part of ENABLE-AGE Survey Study was approved by the local Ethics Committee (Lund University LU 324, 2002), and the Latvian part was approved by Riga Stradin University and the State Data Inspection in 2002.

Declaration of interest: The authors declare that there is no conflict of interest

Funding: This study was based on data from the Swedish part of the project Enabling Autonomy, Participation, and Well-Being in Old Age: The Home Environment as a Determinant for Healthy Ageing, ENABLE-AGE (QLRT-2001-00334), originally funded by the European Commission. This specific study was supported by the Swedish Research

Council (902 39 201) and a donation for research on ageing to Lund University from the Ribbing Foundation, Lund, Sweden. The study was accomplished within the context of the Centre for Ageing and Supportive Environments (CASE), Lund University, funded by the Swedish Research Council for Health, Working Life and Welfare (Forte) (206-1613). We thank all the consortia and national team members for their contributions”

Abstract max 200 ord

Opportunities for leisure activities and physical mobility are important for the ageing population. Therefore we aim to describe leisure activities outside the home among very old users and non-users of mobility devices in two European countries. Methods: Survey data on mobility device use, self-rated physical mobility and leisure activities outside the home were utilized for a Latvian (n=225) and Swedish (n=314) sample. Differences in type and number of leisure activities were studied between the countries and for four groups of participants according to use/non-use of and level of physical mobility. Results: Significant differences in type and number of leisure activities were seen between the national samples and among the participant groups. In general each participant group in the Swedish sample reported more leisure activities than did those in the Latvian sample. Non-users with good physical mobility reported significantly more leisure activities than all other participant groups. Conclusion: There are differences between the two national contexts in the type and number of leisure activities reported. To support very old people's participation in outdoor leisure activities, we need more knowledge as to how the physical, institutional and sociocultural environments affect very old people's opportunities to engage in and perform such activities.

Introduction

Engaging in leisure activities is an important factor in the maintenance of health and well-being. Among older people leisure activities are often connected to activities outside the home, such as taking walks, and activities that include social contact, such as visiting friends or attending meetings (Gagliardi et al., 2007; Silverstein and Parker, 2002). To underscore the importance of older people's having opportunities for activity and participation; public policy documents often make use of the term 'active aging', to foster the inclusion of older people in society. The World Health Organization (WHO, 2002) has defined active ageing in a broad sense, taking into consideration older people's opportunities for physical health, mental health and social well-being, and for participation in an array of activities in safe and secure physical and social environments. With ageing, physical decline becomes apparent for most people and the use of mobility devices to facilitate activity and participation increases (Löfqvist et al., 2007). The extent to which difficulties such as reduced mobility challenge the individual's engagement in leisure activities outside the home is, however, largely unknown, particularly with respect to very old people in different countries across Europe.

Literature review

Overall, most of the literature on activity and participation has addressed older people in general, with few studies focusing on the situation of very old people, that is, those 80 years old or more. It is well known that people's well-being in old age demands opportunities for them to perform not only everyday activities but also leisure activities, and to be physically active. This gives older people opportunities to participate in society (Nilsson et al., 2011; Townsend and Polatajko, 2007). Leisure activities are often chosen by interest or for amusement. The opportunity to participate in leisure activities is one way for older people to maintain continuity in their everyday lives (Agahi et al., 2006) and reduce social isolation

(Toepoel, 2013). Also, engaging in social and productive activities, such as visiting friends or taking part in volunteer activities, has beneficial effects on older people's well-being (Menec, 2003; Nilsson et al., 2011). However, as to the situation of very old people and their leisure activities, our knowledge is limited, and cross-national research is very rare.

Mobility is an important precondition of older people's ability to nurture their relationships and participate in different kinds of activities (Satariano et al., 2012; Webber et al., 2010), but as people advance into very old age their mobility is often compromised. Mobility devices (MD) such as canes and wheeled walking frames can compensate for the decline in physical mobility, but these are seldom a focus of research on leisure activities. Moreover, previous research on MD use has often focused on specific diagnosis groups (see e.g., Bryant et al., 2012; Finlayson et al., 2014; Spiliotopoulou et al., 2012) and whether MD use has positive effects on independence in personal and instrumental activities of daily living (Salminen et al., 2009). The provision of MDs represents one way in which a society can support individuals' levels of activity and participation throughout the process of ageing, but studies on MD use in that respect among members of the ageing population in general are scarce. Among the few studies published, occupational therapy researchers in the Nordic countries reported that crutches, wheeled walking frames and wheelchairs were commonly used by older people (Dahlin-Ivanoff and Sonn, 2005; Hägglom-Kronlöf and Sonn, 2007, Brandt et al., 2003) and that their use increases during the ageing process. The situation in new EU member states such as Latvia is, however, largely unknown.

In previous studies focusing on MD use among very old people in Latvia and Sweden, we have shown that almost half of the participants in our Swedish sample used some kind of MD when walking outdoors, while the corresponding proportion in the Latvian sample was less than one-third (Löfqvist et al., 2005). In Latvia, however, the use of wheeled walking frames and wheelchairs is not common among very old community-living people (Löfqvist et al.,

2005). Given the demographic changes most European countries are facing, with increasing numbers of very old inhabitants, the numbers of MD users can be expected to increase. This situation calls for more knowledge about MD use in relation to different aspects of active ageing in different European countries, such as very old people's participation in leisure activities outside the home. There is little knowledge on MD use among very old community-living people in general, and to the best of our knowledge no attention has been paid to the participation of members of this segment of the population in leisure activities as related to their MD use. Accordingly, the aim of this study was to describe leisure activities outside the home among very old people in Latvia and Sweden, taking MD use and physical mobility into account. The specific research questions were:

What are the types and numbers of leisure activities outside the home reported by very old users and non-users of MDs?

Do the numbers of leisure activities outside the home reported by very old people differ between users and non-users of MDs within and between the countries?

Methods

This study was based on cross-sectional data from the ENABLE-AGE Survey Study (Iwarsson et al., 2007). The data collection in 2002–2003 involved 1,918 very old people in Germany, Hungary, Latvia, Sweden and the UK. One year later, 1,356 participants were followed up. The overarching aim for the ENABLE-AGE project was to examine the subjective and objective aspects of housing and their impact on autonomy, participation and well-being in very old age. For the present study, the one-year follow-up survey data from Latvia and Sweden, representing two different European countries (i.e., one new EU member state and one Nordic welfare state), were used. The reason for using data from the one-year follow-up was that the study-specific questions on MD use had been optimized in order to

validly collect more detailed data – that is, to capture the actual use of a particular MD, the participants were asked to report not only if they owned the particular MD but also if they used it. Data were collected by experienced occupational therapists during home visits.

Sample description

The sampling strategy was to include very old people living alone in ordinary housing. In the Swedish sample participants were randomly drawn from national population databases (Iwarsson et al., 2007). It was not possible, however, to use this sampling strategy in Latvia due to the restricted availability of national public databases for research. Therefore, the Latvian sample was recruited through day care centres and older people's volunteer organisations. The significant differences in life expectancy between Latvia and Sweden resulted in differences in the age composition when recruiting the participants: ages 75–84 in the Latvian sample and ages 80–89 in the Swedish sample. For the present study, the 225 people in Latvia and 314 in Sweden who participated in the one-year follow-up data collection were included (see Table 1).

Insert Table 1 about here

Instruments

For the present study, in addition to data on sample characteristics, a subset of the ENABLE-AGE Survey Study data was used – that is, data on leisure activities outside the home, MD use and non-use, and self-rated physical mobility.

Leisure activities outside the home

A study-specific question on leisure activities outside the home (Iwarsson et al., 2007) was used. The question was posed to the participants in two steps: 'Do you perform any leisure activities outside the home nowadays?' If the answer was 'Yes', the participant was asked to name a maximum of three activities in response to the question. Thus, the number of possible

activities reported varied from 0–3 for each participant, resulting in a maximum of 675 (3x225) possible activities for the Latvian sample and 942 (3x314) for the Swedish sample. In addition, the participants were asked how often they went outdoors and given the response alternatives ‘Everyday’, ‘Once/twice a week’, ‘Once/twice a month’, ‘Almost never’ or ‘Never’.

To organise the data on leisure activities outside the home and to capture the variation of activities reported, the responses were categorised according to six domains established by Silverstein and Parker (2002): culture/entertainment, productive/personal growth, outdoor physical, relaxation/expressive, friendship, and formal group. Examples of the types of activities given by Silverstein and Parker for each of the six domains were used to guide the categorisation. The responses in which no activity was mentioned were categorised in a seventh domain; no response.

For validation, the reported activities were categorised by both the first and second authors independently. In a subsequent step their categorisations were compared and jointly discussed in order to finalise the categorisation. Examples of activities requiring discussion were: sitting on a bench, eating ice cream in the park, window-shopping, and car trips. All of these activities involve some type of mobility, such as going to the park, going downtown, or going to the parking lot. After careful consideration, they were therefore categorised in the outdoor physical domain.

Mobility device use and self-rated physical mobility

Data on assistive devices recognized by the International Organisation for Standardisation (ISO) in its publication ‘Technical aids for persons with disabilities – Classification and terminology’ (ISO, 2002) were collected using study-specific questions. The outdoor use of a cane, the use of crutches, and the use of a wheeled walking frame were combined and then

dichotomised as non-use and use of at least one of these devices. Further, self-rated physical mobility (ranging from 1, 'excellent', to 5, 'poor') (Ware et al., 1993) was dichotomised, as excellent/very-good/good and fair/poor.

The dichotomized data on MD use and self-rated physical mobility were cross-tabulated to achieve the following four groups of participants: a) *Non-users with good physical mobility*, b) *Users with good physical mobility*, c) *Non-users with poor physical mobility* and d) *Users with poor physical mobility*.

There were significant differences in self-rated physical mobility between the four participant groups in the Latvian ($p < 0.001$) and the Swedish ($p < 0.001$) samples. In Latvia the *Non-users with good physical mobility* ($n=57$) and the *Users with good physical mobility* ($n=3$) rated their own physical mobility as 3.0, while the *Non-users with poor physical mobility* ($n=108$) and the *Users with poor physical mobility* ($n=55$) rated their physical mobility as 4.0 and 5.0, respectively (range 1, 'excellent', to 5, 'poor'). For the participant groups in the Swedish samples, the *Non-users with good physical mobility* ($n=123$) and the *Users with good physical mobility* ($n=59$) rated their physical mobility as 3.0, while the *Non-users with poor physical mobility* ($n=32$) and the *Users with poor physical mobility* ($n=100$) rated their physical mobility as 4.0. In the Swedish sample no significant differences between the participant groups as regards type of MD used were seen. In the Latvian sample cane and/or crutches were the only types of MD used.

Data analysis

Frequencies were used to describe the types of leisure activities outside the home reported by the participants in the Latvian and Swedish samples. Differences between the two samples regarding the distribution of activities over the seven domains were evaluated using the Chi-square test. Further, for each activity domain, differences between the two samples regarding the number of leisure activities in that activity domain against the remaining domains

combined were evaluated using the Chi-square test. P-values ≤ 0.05 were considered to be statistically significant, Bonferroni correction was applied.

Bar charts were used to describe the number of leisure activities outside the home reported by the participants, within the four groups and nationally. For each national sample, the number of activities reported was compared among the four groups using the one-way ANOVA test (Altman 1999), and a post-hoc analysis was applied to study where differences occurred. For each participant group, the numbers of leisure activities were compared between the national samples using t-tests. Further, in order to compare the number of leisure activities among the four groups as well as between the two national samples a two-way ANOVA test was used. P-values < 0.05 were considered to be statistically significant.

Ethics

The Swedish part of the ENABLE-AGE Survey Study was approved by the local Ethics Committee (Lund University LU 324, 2002), and the Latvian part was approved by Riga Stradin University and the State Data Inspection. The study was conducted according to the guidelines for good scientific and clinical practice laid down by the Declaration of Helsinki. Participants were informed about the study and written informed consent was signed by all participants.

Results

The categorisation of leisure activities showed that the distribution of activities over the six activity domains differed significantly between the two national samples (p-value ≤ 0.007).

The outdoor physical domain was the largest in both countries, followed by friendship and the formal group domains for the Latvian sample, and the recreation/expressive domain for the

Swedish sample. In both national samples, walking and gardening were commonly reported in the outdoor physical domain. Moreover, for the Swedish sample, excursions, sport activities, and cycling were frequently reported, while the participants in the Latvian sample more frequently reported taking care of the grave. Activities in the friendship (inviting friends to your home or to be invited to the home of others) and formal group (belonging to an association or church, being engaged in voluntary work) domains were more commonly reported by the Latvian sample, while activities in the recreation/expressive domain (sitting outdoors, participating in card games) were more commonly reported by the Swedish. The Latvian sample had a significantly higher proportion of non-responses ($p\text{-value} \leq 0.001$).

The participants in the Latvian sample reported an average of 1.42 leisure activities outside the home, varying from 0.82–2.07 for the participant groups. Sixty-six participants (30%) did not report any leisure activities outside the home. Almost all of them rated their physical mobility as poor, and half of them did not use MDs. Out of the 49 participants (21%) who reported three leisure activities outside the home, 41 did not use MDs; of them, half rated their physical mobility as poor (see Figure 1).

In the Swedish sample, an average of 1.78 leisure activities outside the home was reported. The mean number of leisure activities for the participant groups varied from 1.42–2.16. Forty participants (13%) did not report any leisure activities outside the home; almost two-thirds of them were *Users with poor physical mobility*. Approximately one-third of the sample ($n=99$) reported three leisure activities outside the home; around half of them were *Non-users with good physical mobility* and almost a quarter were *Users with poor physical mobility* (see Figure 2).

Figures 1 and 2 here

In the Swedish sample, *Non-users with good physical mobility* reported significantly more leisure activities than did all other participant groups (p-values ranging from 0.001-0.031). This was also the case in the Latvian sample (p-values=0.001), except for the comparison with *Users with good physical mobility* (p-value=0.635). *Non-users with poor physical mobility* in Latvia reported significantly more leisure activities outside the home compared to *Users with poor physical mobility* (p-value=0.008). For each participant group the participants in the Swedish sample generally reported more activities than did the participants in the Latvian sample; however, the only significant difference between the two national samples occurred for *Users with poor physical mobility* (p-value=0.001). Comparing the number of reported leisure activities outside the home among the participant groups and between the national samples (Latvian, mean=1.42; Swedish, mean=1.78) significant differences were seen (p-value=0.002). No interaction was seen between the national sample and participant groups (see Figure 3).

Figure 3 here

Discussion

With the present study we explored leisure activities outside the home as reported by very old users and non-users of MDs in two European countries – a new EU member state and a Nordic welfare state – namely Latvia and Sweden. In both national contexts, most people report at least one leisure activity outside the home irrespective of whether or not they use MDs. It is noteworthy that the numbers of activities reported by the four participant groups in the two samples had a similar pattern (Figure 3), namely that – not surprisingly – the highest number of leisure activities outside the home was reported by *Non-users with good physical mobility*. However, the fact that *Non-users with poor physical mobility* reported more leisure activities outside the home than did *Users with poor physical mobility* indicates that MD use

for activity and participation is complex and is not a straightforward intervention to support active ageing.

As shown by the results of the analyses on the use and non-use of MDs in relation to self-rated physical mobility, MD use is not only a matter of whether there are efficient services to provide the devices in place or if the devices are affordable and easy to obtain. As to the provision of MDs, and consequently to societal support for opportunities for active ageing, there are differences between countries (Zaidi, 2014). In Sweden, as in many European countries such services are often included in the national health or social service delivery systems. However, how these systems are framed and implemented differs among countries (Estreen, 2010; Kylberg et al., 2015; Ripat and Booth, 2005). In Latvia, MD supply for very old people is not a prioritized matter (Kylberg et al., 2015). Since *Non-users with poor physical mobility* in Latvia and *Users with poor physical mobility* in Sweden engage in similar numbers of leisure activities outside the home, there is also a need to understand MD use as an individual decision process whereby individuals adapt differently to physical mobility decline in order to perform leisure activities outside the home. It is a decision process that encompasses negotiating whether or not to start to use MD, and that also is influenced by personal factors such as previous experience of, attitudes to, and self-image in relation to MD use (Brännström et al., 2013; Gramstad et al., 2013). If the MD does not meet the user's expectations or specific needs, or if the device is too unattractive or too awkward to use, the user is likely to ignore the device and instead continue struggling to manage his or her everyday life activities – or, in a worst-case scenario, to give up certain activities.

Latvia and Sweden represent different societal contexts, Latvia having undergone huge political and financial changes in the past few decades, changes that have also had an impact on health services (Löfqvist et al. 2016). Still, very old people in Latvia and Sweden live

under very different circumstances and have probably developed different beliefs and values in relation to leisure activities, disability and the use of MDs. In particular, when interpreting the findings we must bear the use of MDs in mind. Townsend and Polatajko (2007) argued for the importance of recognizing that contextual beliefs and values are shaped in the lives of a collective and thus influence the ways people think, live and act. Walking and gardening, the two activities within the outdoor physical domain that were the most commonly reported by both the Latvian and the Swedish samples, are examples of activities that can be performed near to one's home affording you the convenience of staying near your well-known surroundings: you decide if and when to take a walk and there is no need for advance planning. It is important to also consider older people's need to participate in, or at least have the opportunity to choose to participate in, an array of activities outside the home, particularly least leisure activities. Latvia was recently ranked number 21 out of the 28 EU countries in the Active Ageing Index 2014 (Zaidi, 2014) for its support capacity and provision of an enabling environment for active ageing. Latvian people's attitudes to ageing and opportunities for older people's everyday activities need to be discussed on a societal level.

According to Beard and Bloom (2015), in order to promote good health in old age changes in behaviour need to be highlighted, as one way to handle the challenges of providing for an ageing population. Such changes in behaviour may be supported by opportunities for activity and participation. Therefore, Ripat and Woodgate (2011) called for increased attention to the cultural dimensions affecting the use of assistive devices in the performance of everyday activities. In the present study we see differences between the two national contexts studied regarding both the type and number of activities very old people report and the use of MDs among those with various levels of physical mobility. Some of the differences in MD use may be due to the differences in the service delivery systems for assistive technologies as shown by Kylberg et al. (2015). If policymakers, providers and health-care professionals do not pay

attention to cultural and contextual aspects when targeting the needs of very old users and non-users of MDs, the provision of such devices may not have the expected effect – and the opportunities for active ageing will not be strengthened.

It might seem surprising that in the Latvian sample the highest number of people who did not report any leisure activities outside the home was found among the *Users with poor physical mobility*. As to the reason for this, we can only speculate, but from previous research we know that the physical environment does influence MD use (Brännström et al., 2013; Iwarsson et al., 2013). Also, the reasons why older people might be less likely to participate in activities outside the home are often connected to physical and social environmental issues (Kielhofner, 2008; Townsend and Polatajko, 2007). When features in the outdoor physical environment, such as a lack of handrails, uneven surfaces and steps obstruct people's mobility, the use of MDs may introduce mobility challenges not foreseen by the user. The fact that the number of environmental barriers affecting people's ability to leave their home – for example, 'In the entrance' – was significantly higher in the Latvian sample (Table 1) indicates that the MD as such has become an additional component that the user must manage when interacting with the challenging outdoor physical environment. Accordingly, the provision of MDs is a multifaceted task that requires skilled professionals who understand the complex interaction between the person, the activity and the MD, in the context of the physical, social, cultural environment.

As regards the methods, survey studies encompass considerable amounts of data based on many types of variables, providing opportunities for studies not originally planned for. The questions from the ENABLE-AGE Survey Study did capture aspects of MD use as well as physical mobility levels and leisure activities outside the home, but they were not originally intended to be used in joint analyses to answer the type of research questions posed by the

present study. However, since this kind of data is unique and research concerning very old people in Latvia is scarce, we consider the study important.

One limitation is that the participants were restricted to reporting three activities. As only a few took advantage of the possibility to report three activities, we considered this a minor problem. Another limitation of the data on leisure activities outside the home was that the participants did not give any information concerning the physical and social aspects – for example, where, when or how often they engaged in the activities. Moreover, the way the questions were formulated could have affected the activities reported – that is, the reliability could have been affected by the extent to which the interviewer encouraged the participant to report a second and third activity, or whether she did or did not ask the participant to then name additional activities. Still, we do know that most of the participants went outside at least twice a week.

Furthermore, it should be noted that the comparison of the number of leisure activities outside the home could have been biased by the fact that the two national samples were recruited in different ways due to national circumstances. That is, turning to day care centres and older people's volunteer organisations using a consecutive sampling strategy, the Latvian sample may have included participants who were more active outside home, than had the recruitment been based on a selection from the population database as was possible with the Swedish sample. This is important to bear in mind when interpreting the results and points to a need for further studies based on samples recruited using identical procedures.

When interpreting the results, it is imperative to keep in mind that the data used were already collected by 2003. In both countries, the demographic and overall societal changes since this time period imply that today's situation for very old community-living people might have changed in some aspects. Due to the unique quality and detailed data regarding self-reported

leisure activities and MD use we had access to, we still considered it important to report these findings. We do have access to longitudinal data up to 9 years after inclusion, but since the participants were very old already at baseline considerable proportions were lost to follow-up.

As to the statistical analyses, the uneven group sizes represent a challenge, and one could rightfully question whether the two-way ANOVA adds meaningfully to the interpretation. Nevertheless, we believe that comparing leisure activities among users and non-users of mobility devices in Latvia and Sweden gives an overall picture of the situation of very old people and opportunities for leisure activities outside the home. This is an important insight toward our ability to better understand the complexity of everyday life for the ageing population in Europe and for further research.

Conclusion

Even though very old people in Latvia and Sweden do perform leisure activities outside the home, there are differences between the two national contexts in the type and number of leisure activities reported. To support very old people's participation in outdoor leisure activities, we need more knowledge as to how the physical, institutional and sociocultural environments affect very old people's opportunities to engage in and perform such activities.

Key findings

- There were differences between the national samples in the number of leisure activities outside the home regardless of MD use.
- The number of leisure activities outside the home decreased with self-reported poor physical mobility.

Clinical implications

Opportunities to pursue leisure activities outside the home, such as walking and gardening, need to be recognized by occupational therapists working with very old people living in the community.

To support very old people's engagement in leisure activities outside the home, occupational therapists need to take the impact of environmental barriers into account and not focus only on the individual's level of physical mobility when providing MDs.

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Table 1. Socio-demographics, housing, outdoor mobility device use, and health characteristics in the Latvian (n=225) and Swedish (n=314) samples.

	Latvian	Swedish	
	sample	sample	
	n=225	n=314	
Characteristics			p-value < 0.05
Socio-demographics			
Age, Md. (q1-q3)	80 (78-82)	86 (82-88)	*
Women, n (%)	201 (89)	232 (74)	*
Disposable income in 100 €, Md. (q1-q3)	1 (1-1)	9,5 (8,5-13)	*
Occasions for going outdoors, n (%)			*
Every day	144 (64)	224 (71.5)	
Once/twice a week	43 (19)	73 (23)	
Once/twice a month	10 (4)	7 (2)	
Nearly never/never	27 (12)	9 (0.5)	
Housing			
Living area, n (%)			*
Highly urban	129 (57)	267 (85)	
Semi-urban/rural	96 (43)	47 (15)	
Type of housing, n (%)			ns
Multi-dwelling block	194 (86)	263 (84)	
One/two family houses	31 (14)	51 (16)	
Environmental barriers ¹ , Md. (q1-q3)			
Entrance	20 (9-14)	13 (10-16)	*

Outdoor	13 (11-15)	14 (12-16)	*
Outdoor mobility device use, n (%)			
Cane and/or crutches	59 (26.2)	108 (34.4)	ns
Wheeled walking frame	0 (0.0)	103 (32.8)	*
Health, Md. (q1-q3)			
Cognitive status ²	3 (2-3)	3 (3-4)	*
Perceived health ³	4 (4-5)	3 (2-4)	*
Perceived physical mobility ³	4 (3-5)	3 (3-4)	*

Due to internal missing n varied between 207-225 for the Latvian and 305-314 for the Swedish sample.

¹ According to the Housing Enabler (Iwarsson and Slaug 2001). Higher score indicate more barriers, range 0-49 (entrance) and 0-33 (outdoor).

² Assessed by four questions as a indication of cognitive dysfunction (Eccles et al. 1998).

³ Perceived health/physical mobility on scales ranging from 1”excellent” to 5”poor” (Ware et al. 1993).

Figure 1. Frequency of leisure activities outside the home reported by four participant groups in the Latvian sample (n=223).

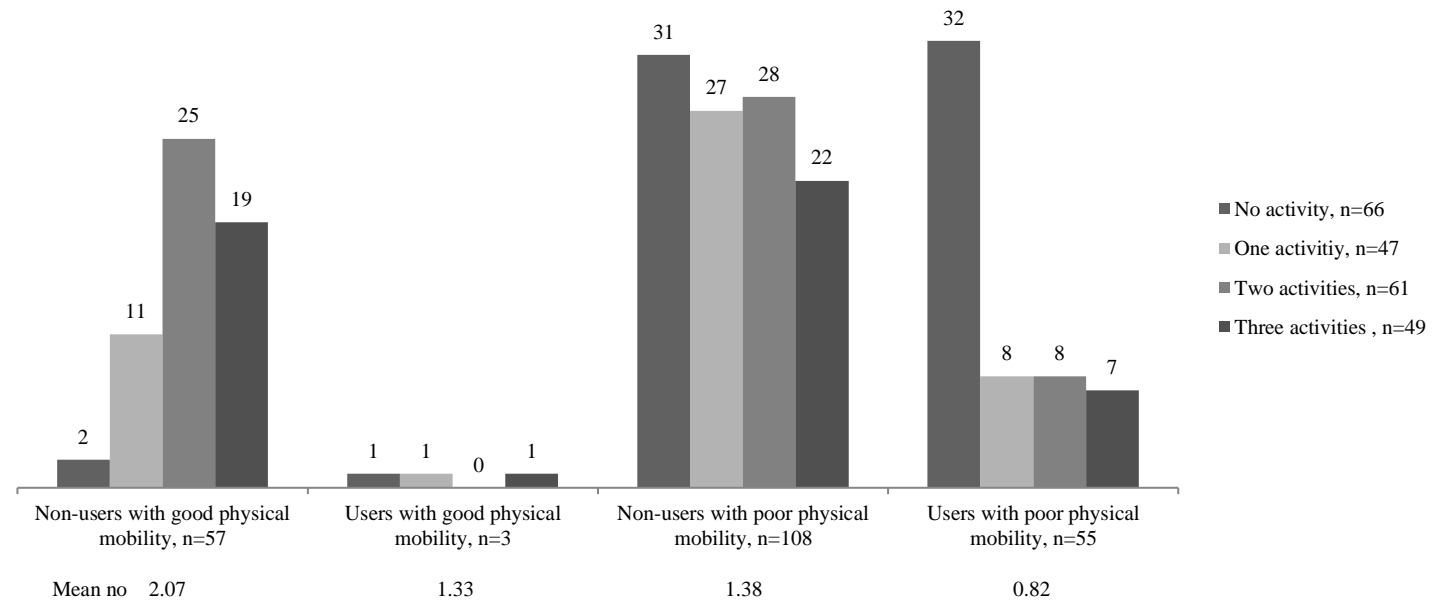


Figure 2. Frequency of leisure activities outside the home reported by four participant groups in the Swedish sample (n=314).

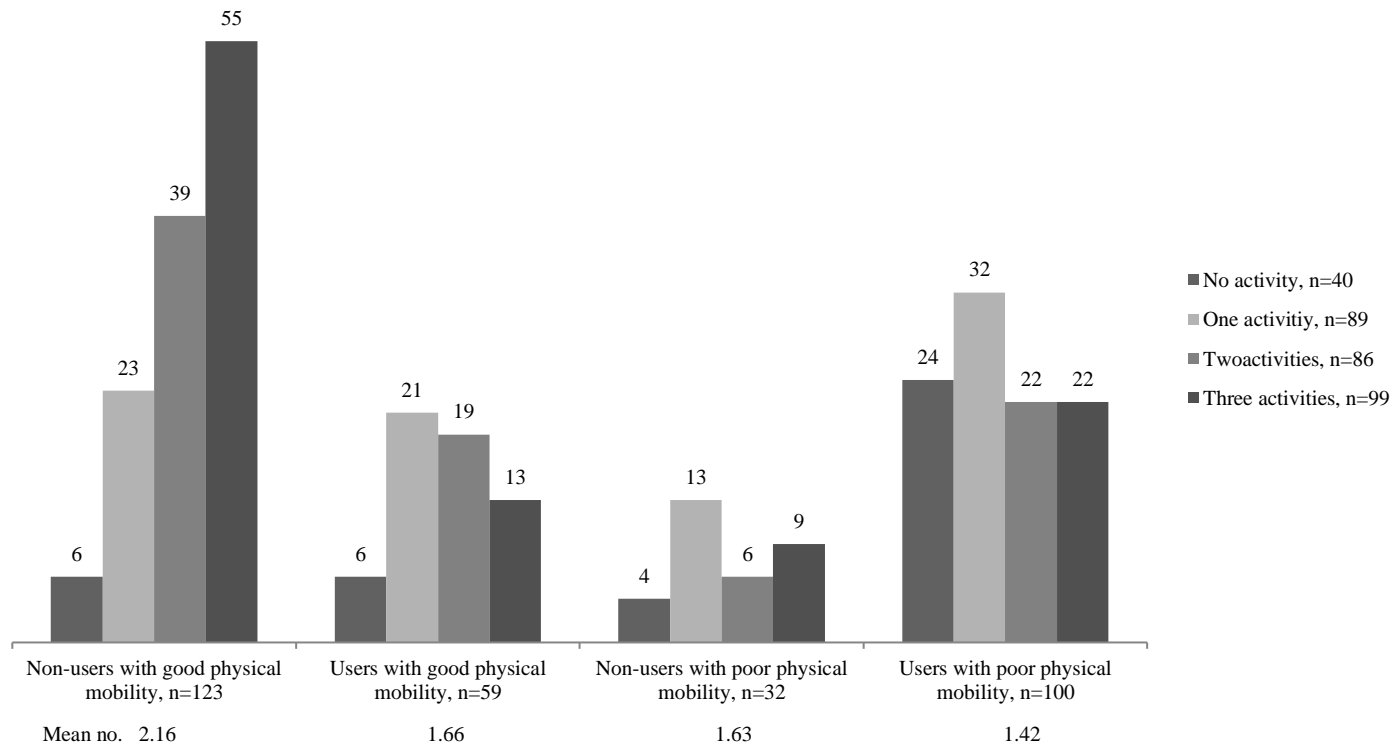
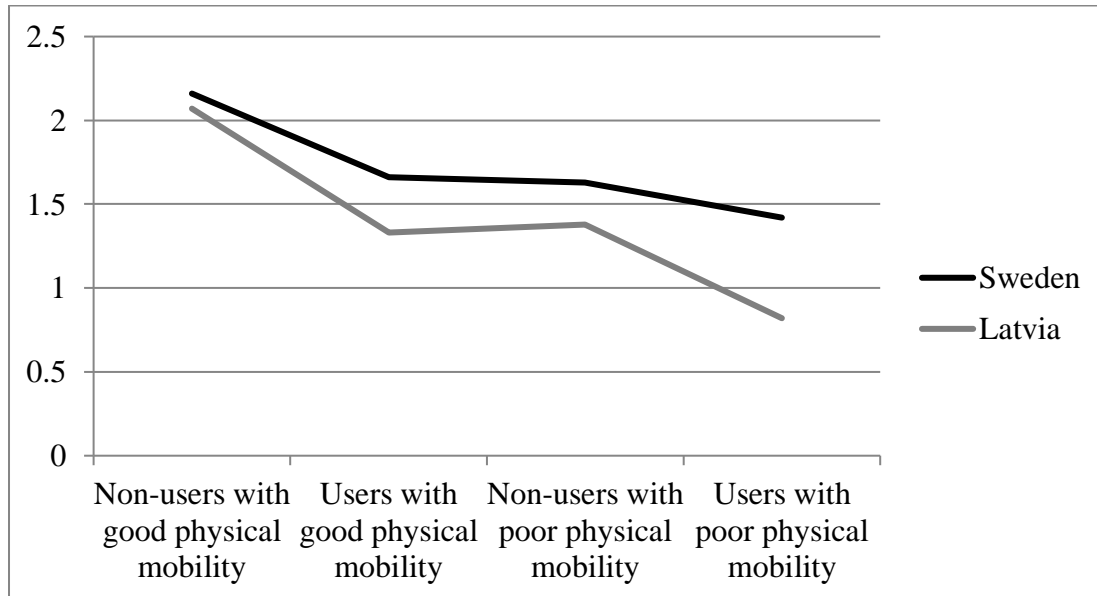


Figure 3. Mean number of leisure activities outside the home reported by the four participant groups in the Latvian (n=223) and Swedish (n=314) samples.



Note: Differences between the two national samples were evaluated with the two-way ANOVA, $P=0.002$