



Winter weather – an obstacle to older people's activities?

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ABSTRACT

In countries with winter weather characterised by low temperatures, snowfall and icy roads and pavements, getting out of the home to carry out everyday activities can be a challenge for many older people in cities and beyond. Inadequate clearance of snow and poor gritting of pavements prevent people with even slightly reduced motion capacity from going outdoors, while those who use a walking-stick or a rolling walker are even more vulnerable to the weather. How much does winter weather impact on the activity levels of older people, and what activities are affected? The empirical analysis in this paper is based on results from focus groups of participants carried out in five different communities in Norway and on data from the Norwegian National Travel Survey (NTS) of 2005. The study is concentrated on the daily activities of the groups, especially out-of-home activities, i.e. what these older people do, where their activities take place, with whom they interact, the types of transport mode they use, and the barriers they meet. Winter conditions are mentioned by all groups as one of the barriers they have to contend with. The NTS includes data on transport mode, travel purpose, distance, time-use, date for the interview and socio-demographic data. The results point to lower activity – measured in number of trips taken and kilometres travelled in winter (November–March) compared to summer (April–October) among the older groups. The oldest use the car less in the winter than in the summer, and have fewer trips to the shops and to friends and relatives.

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1. Introduction and previous research

Similar to other northern settings (e.g. other Scandinavian countries, Canada, northern parts of the USA, Russia and Japan), the winter in Norway is characterised by temperatures below freezing and by the accumulation of snow. Depending on the region in the country, the average temperature in January and February is usually below zero, and lowest in northern and inner regions. In some of these areas the minimum temperature can drop below -30°C in January and February. In many parts of the country, snowfall starting in November and continuing until March/April often presents a challenge to people and their outdoors mobility as pedestrians and drivers. Ungritted pavements and roads and piles of snow (often on walking areas) are barriers to moving around, especially for those with reduced motion and dependent on roller walkers or walking-sticks. Access to out-of-home activities can be seen as a relationship between the physical capacities of older people (including transport resources) and environmental demands such as distance, walking conditions, and the public transport system. Conditions in winter related to older people's mobility are the focus of this paper. The overall question is to what degree the environmental conditions in the winter hamper older

people's mobility and the aim is to specify the problematic factors that interfere with the ability to move about out-of-home.

The consequences of winter weather conditions are at least threefold for older people: these can be (1) a hindrance to fulfilling everyday activities such as shopping and service, visiting friends and others, and various leisure activities; (2) a reduction in activity in general, leading to deteriorating physical and psychological health; and (3) a feeling of social isolation through not being able to get out inducing negative psychological conditions.

Outdoor activities are beneficial for quality of life in many different ways, e.g. physiological advantages in relation to health and functioning and psychological benefits such as stress reduction and satisfaction with life. The favourable effects of a physically active lifestyle on a variety of physical and psychological outcomes are well established (Morris et al., 2008). Morris et al. found that individual perceptions of both the environment and functional status have positive effects on physical activity behaviour (Morris et al., 2008). A negative perception of walking and of driving conditions in winter can prevent older people from going outdoors.

Empirical analyses on how winter weather influences activities and mobility among older groups are few (e.g. Sumukadas et al., 2009; Wennberg et al., 2009) and others on the impact of winter conditions on welfare and well-being almost non-existent as will be demonstrated in the succeeding review.

A study of 127 people 65 years and older in Scotland indicates that physical activity level is much higher in summer than in

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winter (Sumukadas et al., 2009). It was found that day length, duration of sunshine and maximum temperature all had a significant influence on physical activity levels. Snowfall or icy conditions were not mentioned in this study.

A Swedish study on barriers to accessing the outdoor environment points to the fact that previous research has focused primarily on bare-ground conditions, with winter conditions given very little attention (Wennberg et al., 2009). This study found that ice-free pavements and gritted surfaces were two of the most important factors regarding older people's perceived needs as pedestrians in winter. Among other factors, snow clearing was mentioned as important, the more so with increasing age of the respondents. In order to better understand how older adults perceive the effect winter has on their lives, semi-structured interviews were carried out with ten older adults during winter in Toronto, Canada (Row et al., 2004). The interviewees reported leaving home less often during winter than at other times of the year. More than they wished, many were unhappy with being indoors, feeling that this led to 'getting old' and that 'going out' and getting fresh air was psychologically and physically necessary. This group also expressed a fear of falling as a concern that affected their daily activities.

When conditions are slippery, the fear of falling preventing older people from going outdoors is not unconnected with reality. For example, falling on ice or snow during winter is the cause of 3.5 injuries per 1000 inhabitants per year in a town in northern Sweden (Björnstig et al., 1997). Most injured are women 50 years of age and older, and most occur when out walking.

Studies on how winter weather affects the mobility and daily lives of older people are not many, and, as indicated in the previous review, most are based on only a few respondents or have limited objectives or perspectives. The aim of this paper is to provide more information of older people's mobility during the winter season building on existing knowledge. The intention is to examine whether the winter period restricts daily activities and mobility in general, and to find out the extent to which winter conditions restrict special activities and how this is experienced by different groups of older people living in urban and rural areas of Norway. Is the welfare and well-being of older people affected?

This paper contribute to this special topic by using a mixed methods approach; quantitative methods to examine the extent of the problem of winter conditions for older people and qualitative methods to understand the phenomenon and illustrate it with examples. The analysis is based on data from the Norwegian National Travel Survey (NTS) 2005 and focus group interviews from both urban and rural districts in different municipalities in Norway. The results from the analysis of the focus groups are used to detail and enrich the statistical findings from the NTS. The paper comprises the following sections: frame of reference, methods and data, results and discussion.

2. Frame of reference

The basic understanding of mobility relates to movement, i.e. the ability to move, and mobility has a positive connotation related to freedom, independence and control. In transport research there are two main uses of the concept: First, *actual movement*, measured as the way the action or behaviour is carried out, e.g. mode of transport, purpose of the journey, trip length, time-use, etc. Second, *ability to move*, measured as *individual* or *personal* resources such as access to means of transport, health, and available time, and *societal characteristics* such as temporal and spatial organisation of service and activities, supply of public transport, special transport services, and other infrastructural adjustments.

In the transport research tradition, mobility or travelling is seen primarily as a derived demand (Mokhtarian and Salomon, 2001), a manifestation of travel activity derived from people's activity patterns or lifestyle. But mobility can also be a goal in itself. These trips often relate to the sphere of leisure, which for many older people is an important part of their lives after retirement from paid work. The desire to engage in activities located at different places underlies a major aspect of the demand for travel. The primary purpose of travelling is to satisfy needs in what can be called welfare arenas (terminology used in the research tradition of 'level of living' (Ringen, 1995)), these being leisure activities, education, work, etc., with mobility seen as a tool or a resource used to this end. Resources can be used in different arenas (education, work, and so on) and manifest in the form of competence and income increasing the person's welfare and well-being.

Erik Allardt (1975) defined welfare or well-being as satisfaction of needs related to three aspects of life – *to have*, *to love* and *to be*. In a Nordic survey carried out by Allardt, income, housing standard, employment, health and education are classified as *having*; relationships with family, friends and others are connected with the dimension of *loving*; while self-esteem, leisure activities, social reputation, political resources are aspects of *being*. These components are partly values in themselves, partly resources (Allardt, 1975, p. 37). They are important both as input in a welfare arena and as results. Employment, i.e. having a job, provides income and at the same time is often an important aspect of self-realisation. Thus employment belongs to both *having* and *being*.

If we connect mobility to this way of considering welfare and well-being, mobility and transport resources will be remedies and tools satisfying needs in these three arenas. Access to transport resources contributes to attendance at different welfare arenas, and mobility and travel are rough estimates of participation. In simple terms, we can say that shopping trips, service trips (also medical purposes), commuting, and access to transport resources are indicators of *having*; visiting trips and driving are expressions of social interaction, i.e. of *loving*; while trips connected with different types of leisure activities can be seen as indicators of *being*.

The different dimensions of mobility and the relationship between mobility and welfare and well-being form the frame of reference for the presentation of data and discussion of results in this paper.

3. Method and data

The analysis in this paper was based on two data sources; the national travel survey of Norway 2005 (NTS 2005) and of focus groups carried out in five municipalities of Norway.

The survey covers personal travel of all types, including short trips taken on a daily basis and longer journeys less frequently, as well as all modes of transport, including walking.

In NTS 2005, 17,514 persons over the age of 12 were interviewed. In this study answers from about 2800 respondents aged 67 years or older will be employed. For further details about NTS 2005 see Denstadli et al., 2006).

In the analysis season is used as a variable. It is divided into summer (April–October) and winter (November–March). This is a rather simple indicator of weather conditions which imply limitations of the analysis and possible conclusions and generalizations.

In addition to the data from NTS 2005 the results from focus groups in five municipalities were used: Oslo, Stjørdal, Nes, Vågå and Ørje, the last four all representing rural areas. The number of participants in these groups varied from four to eight.

Focus group discussion or interview is a qualitative method well suited to deciphering experiences, meanings, wishes and

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