

Nature for physical activity promotion –role of green infrastructure in Finland

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The role of physical activity (PA) in promoting health and preventing diseases is scientifically well documented and therefore, improving ways to improve and maintain participation in PA are most welcome (WHO 2009). Nature areas offer attractive and cost-effective opportunities for PA when compared to built exercise facilities and thus offer an economically sustainable approach for enhancing physical activity policies. In Finland green infrastructure, ranging from neighbourhood parks to peri-urban forests and protected areas, creates an important resource for recreational activities that contribute to people's health, well-being and quality of life (Korpela et al. 2014, Pietilä et al. 2015). Nature is the most important environment for PA, as around one third of all leisure time physical activity among adult Finns takes place in natural environment (Borodulin et al., 2011).

Today there is only limited amount of research exploring green infrastructure's role in PA promotion (de Vries et al. 2011, Mytton et al. 2012), in particular, compared to sport sector where most funding is often currently allocated. More information is needed how the accessibility and quality of green areas is related to residents' physical activity. This presentation discusses first results from an ongoing NatureMove -study funded by Ministry of Culture and Education investigating i) to what extent accessibility of close-to-home recreation areas affects physical activity and ii) how individuals differ in their relationship with and perception of nature that might motivate residents being physically active outdoors.

Population study data in Helsinki

The study data was collected in Helsinki, a city of 620,000 inhabitants, the capital of Finland. Approximately 40% of Helsinki consists of various types of green areas. Most of the green areas are located in the suburbs, while the majority of indoor sports facilities are located in core urban areas. The data (Environmental Health Survey) was collected in 2015 using both mailed and electronic questionnaires. A random sample of 8,000 Helsinki residents aged 25 years or more was drawn from the Population Register. Of these, 3,730 (47 %) people participated in this survey.

The amount of green exercise and leisure time physical activity were self-reported. Participants reported how often they exercised outdoors during the warm season (May to September) and in the cold season (October to April). The amount of LTPA was obtained via the question: How often do you practice physical leisure time activity for a minimum of 20 minutes at a time so that you get at least slightly winded and that you sweat. The participants also reported whether they walked or cycled to work or school in warm and cold seasons. Moreover, respondents were asked information linked to their socio-demographic and personal-level variables including their health status. To measure the connection the respondent had to nature, the brief measure of nature relatedness (NR6), was used.

To calculate the supply of green areas in Helsinki, spatial data of green areas was constructed using the green area database of the City of Helsinki, aerial photographs of the city and annually published SeutuCD. The green areas were classified into small (< 25 ha), middle-sized (25 to 150 ha) and large (> 150ha) green areas to reflect their qualities and the opportunities they provide for

various types of uses. The distances to the closest small, middle-sized and large green areas from the participant's home address were calculated mainly using walkways and cycle paths with the ESRI ArcGIS software package.

In addition, distances to the nearest cluster of built outdoor and indoor sports facilities were measured. The outdoor and indoor facilities for the 20 most popular Finnish types of sports were selected from the spatial data for national sports facilities. These included various types of indoor sports and outdoor sport facilities such as gyms, sports halls, swimming pools, skating parks, golf courses, and outdoor pools. Clusters were formed by creating a 150-meter buffer zone around each sports facility. The residential areas of the participants were divided into core urban and suburban areas according to the postal code areas.

The association between GE and different sizes of green areas were analysed with a Pearson correlation. The statistical significance of the differences between the low and high LTPA group was analyzed using a chi-square and T-tests. The factors associated with GE separately for all, low, and high LTPA groups were studied using multinomial logistic regression analysis. Socio-economic and personal-level variables associated with GE were also included in the regression analysis.

Results and discussion

A short distance to at least a middle-sized green area was associated with green exercise, both in the core urban area and suburban area. This association, however, was found only in the suburban area after the participants were divided into low and high LTPA groups. More factors were found to be related to GE in the suburban area compared to the core urban area as well as for the low LTPA compared to the high LTPA group. A short distance to built outdoor sports facilities was related to higher levels of GE only among core urban residents. Nature relatedness was directly associated with GE despite the LTPA level or the living environment. In addition, a good level of perceived health and the quality of the green area as well as a high degree of active commuting were associated with GE.

The results are in line with previous studies suggesting that there is strong evidence of a positive association between the availability and proximity of green areas and GE (e.g. Pietilä et al. 2015). The quality of nature areas including the size and the type of the green area seem to be good indicators for predicting the usability of green areas for PA. The green environment may provide an inspiring opportunity to engage in physical activity especially for suburban residents and those who are not physically active.

More information, however, is needed to find out what kind of environments provided for PA are encouraging the most inactive groups to increase their physical activity levels. Therefore, site specific data regarding experiential knowledge on green area qualities will be collected in 2018 from residents by using Public Participatory tool (PPGIS). The respondents are asked to mark spaces in Helsinki (specific locations, routes and areas), which they e.g. use for physical activity.

References

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