Well-being effects of nature-based physical activity

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Objectives of the study

• to explore the perceived well-being effects of different forms of nature-based activities in comparison to the benefits of indoor exercise
• to examine the differences between restorative outcomes in various types of natural environments, and to explore which environmental qualities generate positive and which negative effects on human well-being

Preliminary results of the nationwide survey

Distribution of physical activity between different settings

Men performed about 40% of their leisure time physical activity in nature, 37% outdoors in the built environment or outdoors at home, and 23% indoors. The physical leisure time activity of women was more evenly distributed between various settings. Women performed about 34% of their leisure time physical activity in nature, another 34% outdoors in the built environment or outdoors at home, and 32% indoors.

Restorative outcomes of physical activity indoors and outdoors

The restorative experience (measured by ROS) differed according to the latest setting for freetime physical activity (F(3, 2555) = 7.8, p < .001). However, the setting explained only 1.1% of the variance in restorative experiences. Differences between the settings in restorative experiences were small in magnitude (.10 -.20); there was a statistically significant difference between physical activity performed outdoors in the built environment and indoors (p < .001) and that performed outdoors elsewhere in nature (p < .001) (Figure 2).

Restorative outcomes of different types of green outdoor settings

The restorative outcomes measured by ROS registered a difference between the latest green outdoor settings for leisure time physical activity (F=7.763, p<0.001). Forests or fields with water elements (sea, lake, pond, river, creek) differed statistically significantly from forests or fields without water (p<0.01) and from other green environment (p<0.01) (Figure 3).

Summary

Finns performed most of their physical activity in nature or outdoors in the built environment. Preliminary analyses showed that various settings for physical activity differed in their restorative outcomes, even though the differences were small and the analyses included no controls for determinants of restorative experiences, such as frequency of visits. Physical activity indoors and outdoors in nature produced almost equal restorative outcomes, while physical activity outdoors in the built environment was not as restorative as activities performed indoors or in nature further from home. Water elements increased the restorative outcomes of green outdoor settings. Further analyses of the data will seek a more detailed evaluation of the effect of environmental qualities on restorative outcomes.

Material and methods

• a nationwide survey performed in Finland: 3,060 respondents
• a follow-up survey for those who volunteered for a further enquiry: 565 respondents

The questionnaires measured e.g. the type and frequency of nature-based activities, self-rated health and mood, the restorative experiences of the last outdoor recreation visit, qualities and types of outdoor recreation environment, and the quality of a respondent’s residential environment.

The restorative outcomes of the latest bout of physical activity were measured using the Restorative Outcome Scale (ROS), that consists of 9 items (Cronbach alpha = .94). Respondents evaluated each statement on a scale of 1–7.

Means of the ROS scale (ROS) by the latest setting for freetime physical activity (scale 1–7)

Type of outdoor environment

The setting for leisure time physical activity

Means of the Restorative Outcome Scale (ROS) by the latest green outdoor settings for physical activity (scale 1–7)

Figure 1. Framework for the study.

Figure 2. The strength of restorative experiences (ROS) by the latest setting for freetime physical activity. ‘Outdoors in the built environment’ includes streets, roads, cycleways, sports grounds and playgrounds. ‘In nature in the vicinity of home’ consists of parks and neighbouring forests. ‘Indoors’ includes physical activities e.g. in gyms and swimming pools.

Figure 3. The strength of restorative experiences (ROS) by the latest green outdoor setting for leisure time physical activity. ‘Other green environment’ consisted of hills, fells and special attractions.

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