ABSTRAKTI

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The association between everyday health information literacy and fitness among young men

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Introduction

The concept of *everyday health information literacy* refers to competencies to find, evaluate and understand health-related information in everyday life situations (Niemelä et al. 2012; see also MLA, 2003). Based on earlier studies, the level of basic *health literacy,* that is*,* the ability to read and understand health texts (see Chinn, 2011), is positively associated with physical health at least among the elderly and in specific patient populations (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011). However, so far there are little empirical studies on the connection between health information literacy and health. This study seeks to investigate how everyday health information literacy is associated with physical fitness among young men.

Methods and material

The empirical data of this study were collected with a questionnaire survey and anthropometric, aerobic fitness and muscle strength measurements administered at the Finnish Defence Forces' call-ups in the city of Oulu, Finland, in September 2012. The *everyday health information literacy* of the participants was assessed with a screening tool developed by Niemelä and colleagues (2012). The tool was designed by applying the Medical Library Association's (2003) definition of health information literacy, and meant to detect individuals with problems related to their interest and motivation, finding, understanding, evaluating and use of health information. It consists of ten tasks to which the participants were instructed to respond on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*) (see Niemelä et al. 2012). The height, weight, waist circumference, body composition (percentage body fat and muscle mass), aerobic fitness and muscle strength of the participants were measured to assess their fitness. Body mass index (BMI) was calculated from height and body weight. For further details on the measurements, see Ahola et al. (2013).

Statistical analyses were performed using the IBM SPSS Statistics for Windows, Version 19.0 (IBM Corp, 2010). The individual statements of the everyday health information literacy screening tool were summed to form a sum variable. Variables 4, 5, 8 and 10 were reversed. For further analysis, the everyday health information literacy sum variable was divided into three categories: poor (20 to 30 points), basic (31 to 38 points) and high (39 to 50 points) everyday health information literacy. The

ANOVA one-way analysis of variance was used to analyze the statistical significance of the differences between the groups. Non-normally distributed data were analyzed following logarithmic transformation. Level of significance for all tests was set at $p<0.05$.

All 1242 men present at the call-ups were invited to participate in the study, and 819 (65.9%) did so. Of them, 466 (56.9%) participated in the physiological measurements and answered to each statement concerning everyday health information literacy.

Results

Most of the men were 18 years old, studied currently in either general or vocational track of upper secondary school, and lived with one or both parents. The majority of the men were categorized as normal weight, had either good or excellent body fat percentage, moderate aerobic fitness and at least moderate grip strength. The total scores of the everyday health information literacy sum variable ranged from 20 to 50. The sample followed a normal distribution where the mean value was 34.5, the median value 34.0 and the standard deviation 4.7. Based on the scores of the sum variable, 20.2% (n=94) of the men were classified into poor, 47.6% (n=222) into basic, and 32.2% (n=150) into high everyday health information literacy category.

Table 1. Mean (SD) values of anthropometric, aerobic fitness and muscle strength measurements of young Finnish men (n=466) across the different categories of everyday health information literacy

	EHIL scores			
Variable	**Poor** Mean (SD) N=94	**Basic** Mean (SD) N=222	**High** Mean (SD) N=150	P*
BMI	23.2 (5.2)	23.2 (4.4)	22.5 (3.8)	Ns.
Aerobic fitness (VO_{2max}, ml/kg/min)	51.3 (6.9)	52.9 (7.6)	54.5 (7.3)	0.004
Muscle mass (%)	46.6 (5.7)	46.9 (4.8)	48.4 (4.2)	0.006
Body fat (%)	17.2 (10.1)	16.7 (8.5)	14.3 (7.3)	0.022
Waist (cm)	82.7 (12.9)	82.5 (10.7)	80.2 (8.7)	Ns.
Grip strength (kg)	66.6 (11.1)	67.8 (12.1)	69.2 (12.3)	Ns.

*ANOVA

Men with high everyday health information literacy were more likely to have better aerobic performance, lower body fat and higher muscle mass percentage than those with poor or basic everyday health information literacy (see Table 1). No significant differences were found between the groups in their body mass index, waist circumference or grip strength.

Conclusions

This study shows that poor everyday health information literacy is related to poorer aerobic fitness and body composition among young men. These results reaffirm previous findings of the association between competencies related to health information and health (see e.g., Eriksson-Backa et al. 2012). The study makes a novel contribution to the existing literature by providing information on everyday health information literacy of generally healthy individuals and in relation to objectively measured indicators of fitness. The underpinnings of these connections are

not clear, however. Especially the role of socioeconomic factors should be taken into account when investigating the relationship between health information literacy and health, since socioeconomic factors are key determinants of health (e.g., Marmot et al. 2012) and are also associated with health information literacy (e.g., Hirvonen et al. in press). This study relies on a self-reported measure of everyday health information literacy which may not accurately reflect competencies. Future studies should investigate how the everyday health information literacy screening tool reflects measurable health information literacy skills such as the abilities to find relevant health information or evaluate the credibility of health information sources.

Lähteet

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