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ABSTRAKTI

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Health information literacy and demographic background in relation to health risks, diabetes and heart disease among older Finnish adults

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Introduction

Already at the turn of the century as many as two-thirds of the men and half of the women in Finland were calculated to be overweight (Body Mass Index over 25 kg/m²), and nearly one-fifth of both men and women were obese (BMI≥30 kg/m²) (Valtion ravitsemusneuvottelukunta 2005, 9). Obesity could be a risk factor for, among others, metabolic syndrome and type 2 diabetes (ibid., 13). Metabolic syndrome has been defined as a combination of abdominal obesity and two additional risk factors such as: raised triglycerides, reduced HDL cholesterol, raised blood pressure, and raised fasting plasma glucose, or diagnosed type 2 diabetes (International Diabetes Federation 2006, 10). These kinds of risk factors are fairly prevalent among Finns aged 65 years or older (Aromaa & Koskinen 2002, 32).

Studies have shown relationships between people's understanding of health information, that is, their level of health literacy (e.g. Parker & Schwarzberg 2001) measured through standardized tests, and the prevalence of diabetes and hypertension (Schillinger et al. 2002, Schillinger et al. 2004). Health literacy has, furthermore, been linked to age and education level (Baker et al. 2000, Gazmararian et al. 1999). The related concept *health information literacy* includes both health literacy and information literacy and can be defined as abilities required to recognize a need for health information, to know how and where to find information about health, and how to evaluate and use this information in everyday life to make good health decisions (Medical Library Association 2003).

This exploratory study aims to test one possible way to measure health information literacy (HIL) and to see if relationships can be detected between the calculated level of everyday HIL among Finns aged 65-79 years, and self-reported risk factors for metabolic syndrome, as well as the prevalence of diabetes type 2 and heart disease. Demographic background variables (gender, age, and education level) are also tested against both the risk factors and the HIL level. Separate dimensions of HIL (information need, source selection, finding information, evaluation, learning, information use, and understanding) have previously been shown to be related to education level and self-rated current health (Eriksson-Backa et al. 2012).

Methods and material

The study was conducted by distributing questionnaires to 1000 Finns aged 65-79 years, who were randomly selected from the Population Register. 281 completed questionnaires (28%) were returned by mail. HIL was assessed by a test containing eight statements to be answered on a five-grade Likert-type scale ranging from "totally disagree" to "totally agree" (cf. Norman & Skinner 2006). The statements were:

1) "It is easy for me to decide in which kinds of situations I need health-related information";
2) "I know which sources to turn to in order to obtain health-related information";
3) "It is easy for me to find the health information I need from the information sources I use";
4) "I obtain too much health-related information";
5) "It is easy for me to determine whether health information is trustworthy or not";
6) "I learn many new things from the health-related information I obtain";
7) "I know how to use the health information I obtain to take care of my health"; and
8) "I often have difficulties to understand words or sentences used in health-related information".

"Totally disagree" was equivalent to 1 point and "totally agree" to 5 points, except for the negative statements 4 and 8 where the points were assigned the opposite way. The points were summed up and the minimum possible number of points were hence 8 and the maximum possible points 40 (cf. Niemelä et al. 2012). Four levels of HIL were assigned for 273 respondents based on the total points; low (11-20 pts, n=31), low average (21-25 pts, n=81), high average (26-30 pts, n=92), and high (31-40 pts, n=69). Health risk factors were measured by inquiring the respondents whether they had been told or diagnosed by a health professional that they have the listed risk factors or illnesses. BMI was calculated based on self-reported height and weight. Cross-tabulation and chi-square analysis were used to detect possible relationships between the HIL level or the demographic variables and the risk factors and illnesses. The significance level was $p \leq 0.05$.

Results

The chi-square analysis showed some statistically significant relationships. The risk factor that was most strongly connected to the HIL level was the level of good cholesterol, HDL. As many as 67% of the respondents in the low HIL level group had answered that they had a low level of HDL cholesterol, compared to 29% in the high HIL level group (χ^2=12,380, p=.006). The prevalence of metabolic syndrome and HIL level were connected, as well, but in this case metabolic syndrome was most prevalent among those with either low average or high points (χ^2=8,127, p=.043). HIL level was also connected to BMI, only 21% of those with low HIL points had a normal BMI, compared to over 40% in all other HIL level groups (χ^2=13,412, p=.037).

Of the background variables, gender was related to blood glucose level, the male respondents more often answered that they have raised blood glucose levels (χ^2=5,169, p=.023). Age was related to several variables; of the oldest respondents (75-79 years), one-third reported having high blood glucose levels (χ^2=11,218, p=.004), and this group, furthermore, contained most respondents with diagnosed heart disease (χ^2=15,715, p=.000), and medication for risk factors or diagnosed illnesses (χ^2=12,064, p=.002). The lowest, basic level of education was connected to high levels of triglycerids (χ^2=8,481, p=.014), and body mass index, as those with only a basic education level tended to be most overweight and obese (χ^2=11,414, p=.022). When the HIL level was tested against the demographic variables, a very strong relationship was found between education level and HIL level (χ^2=30,965, p=.000). Whereas nearly 60% of the respondents with a basic education were among those with low or average

low HIL points, as many as 87% of those with the highest education level achieved average high or high points.

Conclusions

The study intended to test if HIL as measured by a test containing eight statements can be connected to certain health risk factors and illnesses. HIL levels were, in fact, found to be related to some risk factors, although several background variables showed significant relationships as well, and some illnesses are often naturally more prevalent especially among people of higher age. Noteworthy – and worrisome – is, furthermore, that persons with the lowest level of education were often more overweight or obese than others. No clear relationship was, however, found between HIL level and diabetes and hypertension, as was shown in studies about health literacy. No strong comparisons can, however, be done with those studies, as health literacy is measured in quite a different way. The strong relationship between education level and HIL level was, however, similar to that in the studies on health literacy, and was not entirely surprising considering the strong connections previously shown between separate dimensions of HIL and education level. A different type of HIL test, different limits for the HIL level groups, or a larger population might have shown different results, as well. Further studies are needed to test if the used HIL tool is valid in other contexts, as well. It is, furthermore, necessary to be cautious about the occurrence of self-reported risk factors and diagnoses, as some people might not have understood properly what was meant by, for example, triglycerids, low HDL level, or metabolic syndrome.

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