SHORT REPORT

Feasibility and yield of a self-administered questionnaire for health risk appraisal in older people in three European countries

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Abstract

Objective: to test the feasibility of a self-administered questionnaire for health risk appraisal in older people.

Methods: a scientifically updated and culturally adapted English and German language version of the Health Risk Appraisal for Older Persons self-administered questionnaire identifying risk factors for functional impairment in older people was administered to three samples of older people (UK: Urban-based general practitioner list, n=348; Switzerland: Community-based lists in rural/suburban area, n=213; Germany: Occupants of residential care facilities, n=149).

Results: the majority of people judged the questionnaire as easy to comprehend (UK 81.4%; Switzerland 97.2%; Germany 93.1%) and to complete (83.2%, 95.8%, 91.4%). Prevalence of risk factors was higher than 10% at each site for excessive fat intake (25–54%), lack of social activity (15–47%), low physical activity (28–46%), impaired vision (17–38%), impaired hearing (23–25%), and urinary incontinence (13–37%). Uptake of recommended preventive health measures, including screening and vaccination was below 50% in more than half of recommended items, with large variations between sites.

Discussion: acceptance of the adapted Health Risk Appraisal for Older Persons questionnaire was high and its feasibility supported. The findings identified a high prevalence of potentially modifiable risk factors for ill health and disability in older people with large variations in prevalence rates and awareness between sites. The yield supports the further development and evaluation of the approach.

Keywords: aged, prevention, health promotion, health risk appraisal, risk factor

Introduction

Health and social care services required by older people are a growing burden and a major societal challenge for this century. Developing methods for cost-effective prevention of disability among older people has therefore a high priority [1–4]. There is promising evidence of the effects of health risk appraisal in older people.
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A longitudinal cohort study revealed a beneficial impact of a mailed health risk appraisal programme on self-reported health risk behaviour in older people, over 30 months [5]. A randomized study revealed favourable effects on health behaviour in older people and a decrease of health care costs with an intervention programme consisting of health habit questionnaires, personal recommendation letters and self-management material over a one-year follow-up period [6]. Furthermore, none of the previous studies was conducted in Europe, [5–8], and little is known about the feasibility of conducting health risk appraisal in a European context.

The aims of the present study, as part of a longer-term investigation, were (i) to test the feasibility of a self-administered health risk appraisal questionnaire for older people in Europe and (ii) to determine whether the prevalence of the selected risk factors for functional impairment is sufficiently high to justify inclusion of the multiple domains.

Methods

Health Risk Appraisal for Older People questionnaire

The Health Risk Appraisal for Older People (HRA-O) instrument used in this study is an updated and regionally adapted version of an instrument that was initially developed by University of California researchers [9]. In summary, the original development was based on a systematic literature search, focus group sessions, and pilot testing of several prototype versions. Criteria for selection of risk factor domains in the questionnaire included: (1) magnitude of effect and potential impact on functional impairment; (2) validity and generalizability of results; (3) potential for risk reduction; and (4) feasibility of assessment. For each selected risk factor, a self-administered instrument was selected based on the following instrument criteria: (1) reliability; (2) validity; (3) feasibility; and (4) use of the instrument in other large databases. The HRA-O instrument consists of three components: (i) a 32-page self-administered questionnaire; (ii) a personalised feedback report to the older person; and (iii) a personal summary report for the health care provider of the older person. For generating the feedback reports, a software system was developed that provides individual feedback statements.

The HRA-O questionnaire contains the following sections: administrative information (name, address, date of birth, date of completion, duration for completion); self-reported chronic conditions, preventive care use [9], medication use, signs and symptoms [10, 11], self-perceived health [9], physical activity [12], nutrition [13], injury prevention [14], tobacco use [9], alcohol use [15], eyesight [16], hearing [17], depressive symptoms [18], self-reported memory [19], social network [20], social support [21], basic and instrumental activities of daily living [22, 23], socio-economic information (education, professional activity), health measurements (weight, height, blood pressure, cholesterol), and feed-back questions to the HRA-O questionnaire.

Update, translation, and adaptation of questionnaire

The update and cultural adaptation was conducted in four steps. In Step 1, the questionnaire and feedback reports were updated to correspond to the most recent evidence, and the software programme was modified to facilitate handling multiple languages. In Step 2, the questionnaire and the feedback statements were translated into the German language by a professional translator, then translated back to the English language by a second translator who was blinded for the original version. The back-translation was compared with the original version, and discrepancies were resolved by a third independent translator. In Step 3, for each region, the questions and statements were regionally adapted by focus groups of professionals and older people. In the final Step 4, the resulting prototype version of HRA-O was pilot tested in 20 people in each site and again discussed in focus group meetings.

Recruitment of the three study samples

The study was approved by the local institutional ethical committees. To assess feasibility in different subgroups of older people, each site chose a different source population to administer the field test. The primary purpose of the study was to evaluate the acceptance and yield of the instrument in a broad range of older people rather than to collect representative samples from three countries for cross-national comparison. In the UK, the sample was drawn from urban-based general practitioner list; in Switzerland, from community-based lists in a mixed rural and suburban area; and in Germany from a list of occupants of residential care facilities. The proportion of subjects agreeing to complete the HRA-O questionnaire was 58% in London, UK, 51% in Switzerland, and 57% in Germany. Details of the recruitment process are available on the Website (www.ageing.oupjournals.org).

Data collection and analysis

Participants were asked to complete the self-administered HRA-O questionnaire and to return it to the regional study centre. They were advised that they could ask a family member or another proxy for help to fill out the questionnaire, if needed. All participants received an individualized health report from the study centre. Data were analysed using the SAS programme [24].
Results

In each sample, more than 80% rated the questionnaire as somewhat easy or very easy to comprehend and to complete. In the UK practice-based sample, 27.3% stated they completed the questionnaire with the assistance of another person, compared to 9.4% in Switzerland or 8.4% in Germany. The mean self-reported time to complete the questionnaire was longest in Switzerland (75.5 ± 34.1 minutes) and shortest in the UK sample (50.6 ± 33.0 minutes).

Table 1 shows the prevalence of risk factors related to health behaviour, social network, social support, and functional impairment. The prevalence for each of the listed risk factors was higher than 5% in at least one sample. In the UK sample the prevalence rate was greater than 20% for ten risk factors, 10–20% for five risk factors and 5–10% for three risk factors. The Table also shows the large differences in prevalence rates between samples.

Table 2 summarizes the self-reported information on use of recommended preventive care services. There was a low prevalence of use for most screening or vaccination recommendations. There were large differences in uptake of preventive care in the three samples. For example, in the UK sample, 94.1% reported they

Table 1. Prevalence of possible risk factors for functional impairment in three samples of persons aged 65 years and older (in order of risk factor prevalence in the UK sample)a

<table>
<thead>
<tr>
<th>Questionnaire or instrument [Reference]</th>
<th>Definition of risk factor</th>
<th>Urban primary care practice registry (London, UK)</th>
<th>Community-based registry (Thal/Muri, Switzerland)</th>
<th>Residential care registry (Hamburg, Germany)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholesterol Reduction in Seniors Program Fat Food Screening Questionnaire [13]</td>
<td>Consumption of foods with high fat contentb</td>
<td>54.0%</td>
<td>45.1%</td>
<td>25.2%</td>
</tr>
<tr>
<td>Lubben Social Network Scale [20]</td>
<td>Not engaged in social activities (groups/organizations)</td>
<td>47.0%</td>
<td>18.9%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Physical Activity Scale for the Elderly [12]</td>
<td>Low physical activityc</td>
<td>37.7%</td>
<td>27.7%</td>
<td>46.3%</td>
</tr>
<tr>
<td>Visual Functioning Questionnaire [16]</td>
<td>Impaired visiond</td>
<td>32.3%</td>
<td>17.0%</td>
<td>37.8%</td>
</tr>
<tr>
<td>5-item Mental Health Inventory Screening Test [18]</td>
<td>Depressive mood</td>
<td>31.2%</td>
<td>8.6%</td>
<td>28.0%</td>
</tr>
<tr>
<td>Health Risk Appraisal for the Elderly [9]</td>
<td>Self-reported limitation of activities due to fear of falling</td>
<td>29.4%</td>
<td>22.2%</td>
<td>45.3%</td>
</tr>
<tr>
<td>Cholesterol Reduction in Seniors Program Plant Food Screening Questionnaire [13]</td>
<td>Low fibre diete</td>
<td>26.5%</td>
<td>6.6%</td>
<td>30.1%</td>
</tr>
<tr>
<td>Lubben Social Network Scale [20]</td>
<td>High risk of social isolation</td>
<td>26.1%</td>
<td>2.9%</td>
<td>27.2%</td>
</tr>
<tr>
<td>Health Risk Appraisal for the Elderly [9]</td>
<td>Driving without seat belt</td>
<td>25.8%</td>
<td>10.8%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Hearing Handicap Inventory for the Elderly [17]</td>
<td>Impaired hearing</td>
<td>23.1%</td>
<td>24.1%</td>
<td>25.4%</td>
</tr>
<tr>
<td>Memory Self Report [19]</td>
<td>Memory problems</td>
<td>19.5%</td>
<td>3.8%</td>
<td>10.4%</td>
</tr>
<tr>
<td>The WHO Alcohol Use Disorders Identification Test [15]</td>
<td>Possible hazardous alcohol usef</td>
<td>17.3%</td>
<td>9.4%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Study of Osteoporotic Fractures Research Group Survey [14]</td>
<td>History of repeated falls in previous 12 months</td>
<td>15.0%</td>
<td>5.7%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Partners in Prevention Tobacco Use Questionnaire [9]</td>
<td>Current tobacco use</td>
<td>14.6%</td>
<td>10.8%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Medical, Epidemiological and Social Aspects of Aging Project Questionnaire [11]</td>
<td>Urinary incontinence on &gt; 5 days during the last year</td>
<td>12.6%</td>
<td>25.8%</td>
<td>37.1%</td>
</tr>
<tr>
<td>Medical Outcomes Study Social Support Survey [21]</td>
<td>Low level of emotional support</td>
<td>9.2%</td>
<td>5.2%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

aDenominators vary due to missing values (London 295–335; Switzerland 210–213; Hamburg 124–148).
bDefined as average consumption of more than 2 high-fat food items a day.
cDefined as PASE-score ≤ 70 [12].
dDefined as a problem in ≥ 1 subdomain of the Visual Functioning Questionnaire.
eDefined as average consumption of less than 3 high-fibre food items a day.
fBased on age- and gender-specific limits of quantity and frequency of self-reported alcohol use [15].
had not had colon cancer screening (blood stool test within past year or colonoscopy or sigmoidoscopy over past 5 years), compared with 47.6% in Hamburg. In the German and Swiss samples, more than 90% of subjects reported they had no pneumococcal vaccination coverage.

**Discussion**

The results support the feasibility of this approach in three European countries and indicate a substantial yield in terms of risk appraisal. First, a high acceptance rate of this multidimensional health risk appraisal questionnaire was found in three diverse samples of older people of different nationalities. Second, prevalence rates for risk factors included in the HRA-O questionnaire were high.

The limitations of the data in size and scope are acknowledged. The three samples are in no way representative of each of the three regions. Therefore, the observed differences in prevalence rates of risk factors included in the HRA-O questionnaire were high.

The prevalence findings support the relevance of further developing and implementing risk factor modification programmes in Europe, with further development and testing of the health risk assessment method.

**Key points**

- Health risk appraisal combined with reinforcement of recommendations has been shown to reduce risk factors for functional decline in older people.
- This article describes an updated and regionally adapted version of a multidimensional health risk appraisal instrument consisting of self-administered questionnaires.
questionnaire and computer-generated reports for older people and their general practitioners.

- Acceptance of this instrument was high among older people, and it identified a high number of potentially modifiable risk factors for functional status decline.

- The effects of this approach are being evaluated in an ongoing multi-site randomized controlled study (PRO-AGE) in Hamburg, London, and Switzerland.

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References


Feasibility and yield of health risk appraisal


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