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COMPARISON OF THREE MEASURES TO IDENTIFY OLDER PERSONS WITH PROBLEMS ON MULTIPLE HEALTH DOMAINS IN PRIMARY CARE

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Submitted
ABSTRACT

General practitioners are increasingly involved with older people with problems in multiple health domains, but validated measures designed to identify these older persons in primary care are scarce. In this cross-sectional study, we compared three measures to identify this group of older people in primary care: the GP's clinical intuition on vulnerability, the Fried frailty phenotype criteria (frailty; ≥3 frailty criteria), and the ISCOPE-screening questionnaire (complex problems; problems on 3-4 health domains).

Our study population consisted of 823 participants who participated in the Integrated Systematic Care for Older PEople (ISCOPE) study (69% women, median age 83 years). During home visits, data on indicators of health were gathered; chronic diseases, disability (GARS), depressive symptoms (GDS-15), cognitive function (MMSE), loneliness (De Jong Gierveld Loneliness Scale) and life satisfaction (Cantril’s ladder).

Overall, 27% of the older persons were vulnerable according to the GP, 34% was frail according to the Fried criteria and 51% had complex problems according to the ISCOPE-screening questionnaire. Older persons identified by one of these measures had, regardless of the measure, more chronic diseases, more disability, more cognitive impairment, more depressive symptoms and poorer life satisfaction. Compared with the other measures, the Fried frailty criteria were most strongly associated with disability and the ISCOPE-screening questionnaire most strongly with loneliness. All three measures identified older people with problems in multiple health domains. Since the patterns of poorer scores on health indicators varied between the three measures, the choice of a measure should depend on the intended intervention of the GP.
INTRODUCTION

Because of the ageing population, general practitioners (GPs) are increasingly involved with older people with problems in multiple health domains, i.e. combinations of somatic, functional, mental and social problems. GPs are increasingly interested and motivated to implement proactive care interventions to prevent functional decline in these older persons. Before such interventions can be accomplished, measures are needed to identify older persons with problems in multiple health domains in primary care.

There are various measures to identify these older persons, but most of these measures are seldom used in, or not validated for primary care. Therefore, the aim of this paper was to investigate three measures in primary care by comparing their yield on health indicators (chronic disease, disability, cognitive functioning, depressive symptoms, feelings of loneliness and GP healthcare use). These three measures were: the clinical intuition of the GP, the Fried frailty phenotype and the ISCOPE screening questionnaire.

We selected the clinical intuition of the GP, because most GPs are intuitively aware of vulnerability in older people. No studies have investigated this intuition on vulnerability as a measure to identify older people for proactive care interventions in primary care.

The Fried frailty phenotype was selected, because it is an internationally recognised and validated measure for frailty. Frailty describes the interrelation of multiple health domains in older people. It is unknown if the Fried frailty phenotype can be used as a measure to identify older people for proactive interventions in primary care.

The ISCOPE screening questionnaire was selected because it was developed to identify older people with complex problems in primary care. This new questionnaire is a self-report instrument that defines complex problems as facing problems in 3 or 4 health domains (i.e. functional, somatic, mental, and social).

METHODS

Study population

The study population consisted of older adults aged 75 years and over who participated in the Integrated Systematic Care for Older People (ISCOPE) study. The ISCOPE study is a pragmatic cluster randomized controlled trial to investigate whether a proactive approach by the GP is effective to prevent deterioration in functional status and quality of life of older people with complex problems. Complex problems were defined as having problems in at least three of four predefined domains: functional, somatic, mental and...
social and was assessed by the ISCOPE screening questionnaire (Appendix 1) (Poot et al., 2014).

The ISCOPE study population was recruited from 59 participating primary care practices (30 intervention practices, 29 control practices). All older adults aged 75 years and over enlisted in these practices were targeted (n=12,066). The GPs excluded people who were deceased, too ill, non-Dutch speaking, admitted to a nursing home, or judged unsuitable to participate (n=590). The remaining 11,476 eligible individuals were sent a written screening questionnaire. A total of 7285 older persons responded by sending in the complete screening questionnaire. Of these 7285 older persons, a random sample was visited at home. During these visits, research nurses collected additional data. Based on the outcomes of the screening questionnaire, all participants with problems on 3 or 4 domains were visited. Of the participants with problems on 0 or 1 domain, 15% was visited and of those with problems on 2 domains, 60% was visited. In total, 2713 participants were visited at home to obtain data on socio-demographic characteristics, residency, functional status and the presence of disease.

In the ISCOPE study, GPs in the intervention practices provided proactive care to older people with complex health problems. In the control practices, GPs provided usual care for older people with complex health problems.

For the present analyses, a subgroup of 823 participants was randomly selected from 22 of the 59 practices (both control- and intervention practices). Participants with complex problems according to the ISCOPE screening questionnaire were oversampled. These 823 participants received an additional questionnaire and additional measurements on handgrip strength and gait speed during the home visits.

Written informed consent was obtained from all participants, or, in case of severe cognitive impairment, from a proxy. The Medical Ethics Committee of Leiden University Medical Center approved the study.

**Study parameters**

**Measures to identify older people with problems in multiple domains**

**GP's clinical intuition**

Prior to randomization of their practices, GPs reviewed a list of their patients aged ≥75 years, who were eligible for the ISCOPE study and indicated which patients they considered to be vulnerable (i.e. classification into not vulnerable, possibly vulnerable, and vulnerable for certain). Individuals who were labelled vulnerable for certain by their GP were considered to be at highest risk for problems in multiple domains, these older persons were considered identified by the GP. The GPs were not provided with a specific definition of ‘vulnerability’.
Three measures to identify older people with multiple problems

Fried frailty phenotype criteria

This phenotype classifies older people as frail if they meet ≥3 of the following criteria\(^5\):

- Unintentional weight loss (≥5% of body weight in the last year)
- Exhaustion (positive response to questions regarding effort required for activity)
- Weakness (decreased grip strength)
- Slow walking speed (gait speed)
- Decreased physical activity (males expending <383 kcal and females <270 kcal per week)

In the present study, we slightly modified the original Fried frailty criteria for practical reasons\(^5\). Unintentional weight loss was defined as the self-reported unintentional loss of ≥5 kg or 5.0% of the current weight in the previous year. We used the relevant Center for Epidemiologic Studies Depression Scale (CES-D) items to measure exhaustion\(^5\). Hand grip strength was measured with a Jamar hand dynamometer (Sammibs Preston Inc. Bolingbrook, IL, USA). The participant was asked to stand up and hold the dynamometer in the dominant hand with the arm parallel to the body without squeezing the arm against the body. The width of the handle was adjusted to the size of the participant's hand to ensure that the middle phalanx rested on the inner handle. After one test trial, three trials followed and the best score was used for analysis. Cut-off points were defined as (<29 kg for men and <17 kg for women)\(^5\). Subjects who were unable to complete the hand grip strength test were considered to have weak hand grip strength.

Research nurses assessed gait speed with a 12-m walking test. First, they denoted a 3-meter course using a tape measurement; then, participants were asked to walk back and forth as quickly as possible from a standing start position. Use of a walking aid was allowed. We considered gait speed ≤0.76 m/s to be slow\(^5\). Subjects who were unable to complete the gait speed test were considered to have a slow gait speed.

We based the decreased physical activity criterion on the self-reported level of physical activity. This criterion was met if a participant responded affirmatively to the question ‘Do you sit more than 4 hours a day?’ and additionally indicated that he/she walked or was otherwise physically active less than once a month.

ISCOPE screening questionnaire

The ISCOPE screening questionnaire (Appendix 1) is a self-report short assessment instrument that aims to identify subjects with complex problems among older people in the general population. It consists of 21 questions divided into 4 domains of health. Problems on a domain were considered present when ≥2 domain-specific questions were answered affirmatively. Complex problems were considered to be present when a participant had problems in ≥3 domains. The research nurses offered help to participants who could not/had difficulty with filling out the questionnaire.
Health indicators

Chronic diseases
During the interviews the research nurses obtained self-reported data on the presence of common chronic diseases (self-reported diabetes, heart failure, malignancy, chronic obstructive pulmonary disease, incontinence, arthritis, osteoporosis, dizziness, lower urinary tract symptoms, depression, anxiety, dementia, vision, deafness, fracture, stroke/transient ischemic attack, and myocardial infarction)\textsuperscript{17}.

Disability
The Groningen Activities Restriction Scale (GARS) was used to measure disability to perform nine basic and nine instrumental activities of daily living (BADL and IADL, respectively)\textsuperscript{18}. Sum scores for BADL and IADL were calculated separately; each sum score ranged from 9 (competent in all activities) to 36 (unable to perform any activity without help).

Cognitive function
Global cognitive function was assessed with the Mini-Mental State Examination (MMSE) with scores ranging from 0 (very severe cognitive impairment) to 30 points (optimal cognitive function)\textsuperscript{19, 20}.

Depressive symptoms
Depressive symptoms were assessed with the Geriatric Depression Scale-15 (GDS-15)\textsuperscript{21}. The GDS-15 was only administered in participants with an MMSE score $\geq$19\textsuperscript{22}.

Loneliness
Feelings of loneliness were evaluated with the De Jong Gierveld Loneliness Scale, an 11-item questionnaire developed for use in older populations\textsuperscript{23}; scores range from 0 (absence of loneliness) to 11 (severe loneliness). Administration of this loneliness scale was also restricted to participants with an MMSE score of $\geq$19.

Life satisfaction
Perceived life satisfaction was assessed by means of Cantril's ladder\textsuperscript{24}; this is a visual analogue scale ranging from 1 (very unsatisfied) to 10 (very satisfied).

GP contact time
Data on GP contacts were derived from the electronic records of the participating GPs. The total number of contacts was defined as the sum of home visits and consultations in the year before the ISCOPE study was conducted. Since some electronic systems did
not allow data extraction, these data were available for 394 participants. To estimate the duration of GP contact time, a GP consultation was considered to last 10 minutes and a home visit (including traveling time) 30 minutes.

**Statistical analyses**
Scores on each of the three measures were dichotomized into two categories: identified as vulnerable/frail/complex or not identified.

Descriptive statistics were calculated for the total study population, and for the participants who were identified and who were not identified, separately. Since the continuous parameters were not normally distributed, differences between groups were compared with Mann-Whitney U tests. Chi-square tests were used to test differences in dichotomous data.

We compared the health indicators between older people who were identified by 1, 2 or 3 measures (8 combinations) with older persons who were not identified by all of the measures (the reference group) with Mann-Whitney U tests.

Data were analysed with SPSS 20.0 Windows; a p-value <0.05 was taken to be statistically significant.

**RESULTS**

Table 1 lists the sociodemographic and clinical characteristics. The participants had a median age of 83 (interquartile range [IQR] 79-87) years, 68.6% was female and 10.6% was living in a care home.

In our sample, the proportions of the participants identified according to the three measures were: 26.7% was identified as vulnerable according to the GP’s intuition (n=219), 33.5% was frail according to Fried’s frailty criteria (n=276), and 50.8% had complex problems according to the ISCOPE questionnaire (n=418) (Table 2).

Figure 1 shows the identified proportion according to the three measures. Of the total group, 10% (n=80) was vulnerable according to the GP, frail according to Fried’s frailty phenotype, and had complex problems according to the ISCOPE questionnaire and 30% (n=247) was not identified by all three measures.

Vulnerability according to the GP, frailty according to Fried’s frailty phenotype and complex problems according to the ISCOPE screening questionnaire were all related to the presence of more chronic diseases, higher GARS scores, lower MMSE scores, higher GDS-15 scores and lower scores on Cantril’s ladder (all p<0.001) (Table 3). Complex problems according to the ISCOPE screening questionnaire and frailty according to the Fried frailty phenotype were also related to higher scores on the De Jong Gierveld Loneliness scale (p<0.001) (Table 3). The GP’s intuition was not related to higher scores on this scale (Table 3).
Table 1. Characteristics of the study population.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total study population n=823</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years (years)</td>
<td>83 (79-87)</td>
</tr>
<tr>
<td>Female (n, %)</td>
<td>564 (68.5)</td>
</tr>
<tr>
<td>Care home (n, %)</td>
<td>87 (10.6)</td>
</tr>
<tr>
<td>Low income (n, %)</td>
<td>112 (13.6)</td>
</tr>
<tr>
<td>Low education (n, %)</td>
<td>289 (35.1)</td>
</tr>
<tr>
<td>Number of diseases*</td>
<td>4 (3-6)</td>
</tr>
<tr>
<td>GARS (n, %)</td>
<td>31 (24-40)</td>
</tr>
<tr>
<td>IADL (n, %)</td>
<td>21 (15-28)</td>
</tr>
<tr>
<td>BADL (n, %)</td>
<td>9 (9-12)</td>
</tr>
<tr>
<td>MMSE (n, %)</td>
<td>28 (26-29)</td>
</tr>
<tr>
<td>GDS-15 (n, %)</td>
<td>1 (0-3)</td>
</tr>
<tr>
<td>De Jong Gierveld (n, %)</td>
<td>2 (0-4)</td>
</tr>
<tr>
<td>Cantril’s ladder (n, %)</td>
<td>7 (7-8)</td>
</tr>
<tr>
<td>GP contact time during last year (min)</td>
<td>110 (50-250)</td>
</tr>
</tbody>
</table>

Data are presented as medians (IQR) or absolute numbers (%).
*Self-reported diabetes, heart failure, malignancy, chronic obstructive pulmonary disease, incontinence, arthritis, osteoporosis, dizziness, lower urinary tract symptoms, depression, anxiety, dementia, vision, deafness, fracture, stroke/transient ischemic attack, myocardial infarction.

GARS=Groningen Activities Restriction Scale; IADL=Instrumental Activities of Daily Living; BADL=Basic Activities of Daily Living; MMSE=Mini-Mental State Examination; GDS-15=Geriatric Depression Scale-15; GP=general practitioner

Table 2. Definition and prevalence of the three identification measures (including subdomains) in participants of the ISCOPE study aged 75 years and over.*

<table>
<thead>
<tr>
<th>Identification measure</th>
<th>Definition</th>
<th>Prevalence (n=823)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP’s clinical intuition</td>
<td>Vulnerable for certain</td>
<td>219 (26.6)</td>
</tr>
<tr>
<td>Fried frailty criteria</td>
<td>≥ 3 Fried frailty criteria</td>
<td>276 (33.5)</td>
</tr>
<tr>
<td>Unintentional weight loss</td>
<td></td>
<td>127 (15.4)</td>
</tr>
<tr>
<td>Self-reported exhaustion</td>
<td></td>
<td>263 (32.0)</td>
</tr>
<tr>
<td>Low energy consumption</td>
<td></td>
<td>211 (25.6)</td>
</tr>
<tr>
<td>Slow gait speed</td>
<td></td>
<td>677 (82.3)</td>
</tr>
<tr>
<td>Weak grip strength</td>
<td></td>
<td>376 (45.7)</td>
</tr>
<tr>
<td>ISCOPE screening questionnaire</td>
<td>≥ 3 domains with problems</td>
<td>418 (50.8)</td>
</tr>
<tr>
<td>Functional domain</td>
<td></td>
<td>327 (39.7)</td>
</tr>
<tr>
<td>Somatic domain</td>
<td></td>
<td>574 (69.7)</td>
</tr>
<tr>
<td>Mental domain</td>
<td></td>
<td>569 (69.1)</td>
</tr>
<tr>
<td>Social domain</td>
<td></td>
<td>441 (53.7)</td>
</tr>
</tbody>
</table>

Data are presented as absolute numbers (%).
*Older people with problems on 3 or 4 domains on the screening questionnaire were oversampled.
GP=general practitioner
Three measures to identify older people with multiple problems

Table 3. Cross-sectional analyses of the identified older persons by one of the three measures (n=823)

<table>
<thead>
<tr>
<th></th>
<th>GP¹</th>
<th>Fried’s frailty phenotype¹</th>
<th>ISCOPE screening questionnaire¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vulnerable</td>
<td>Not vulnerable</td>
<td>p</td>
</tr>
<tr>
<td></td>
<td>n=219</td>
<td>n=559</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>83 (80-88)</td>
<td>82 (78-86)</td>
<td>0.001</td>
</tr>
<tr>
<td>Female</td>
<td>150 (68.5)</td>
<td>383 (68.5)</td>
<td>0.983</td>
</tr>
<tr>
<td>Institutionalized</td>
<td>32 (14.6)</td>
<td>46 (8.2)</td>
<td>0.008</td>
</tr>
<tr>
<td>Number of diseases²</td>
<td>5 (3-6)</td>
<td>4 (2-5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GARS</td>
<td>37 (29-49)</td>
<td>29 (23-37)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>IADL</td>
<td>27 (19-33)</td>
<td>19 (14-26)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>BADL</td>
<td>11 (9-17)</td>
<td>9 (9-11)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MMSE</td>
<td>27 (24-29)</td>
<td>28 (26-28)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GDS-15</td>
<td>2 (1-4)</td>
<td>1 (0-3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>De Jong Gierveld</td>
<td>3 (0-5)</td>
<td>2 (1-4)</td>
<td>0.228</td>
</tr>
<tr>
<td>Cantrill’s ladder</td>
<td>7 (6-8)</td>
<td>7 (7-8)</td>
<td>0.001</td>
</tr>
<tr>
<td>GP contact time during last year (min)</td>
<td>220 (100-360)</td>
<td>90 (40-170)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Data are medians (IQR) or number (%); p-values were obtained by chi-square tests (categorical data) or Mann Witney U tests (continuous data)

¹ 44 participants had missing values for the GP’s intuition; 2 participants had missing values for Fried’s frailty phenotype; 1 participant had missing values for the ISCOPE screening questionnaire, 1 participant had missing values for the GP’s intuition and the ISCOPE screening questionnaire

² including self-reported diabetes, heart failure, malignancy, COPD, incontinence, arthritis, osteoporosis, dizziness, LUTS, depression, anxiety, dementia, vision, deafness, fracture, stroke/TIA, myocardial infarction.

Abbreviations: GP=general practitioner; GARS=Groningen Activities Restriction Scale; IADL=Instrumental Activities of Daily living; BADL=Basic Activities of daily living; MMSE=Mini-Mental State Examination; GDS-15=Geriatric Depression Scale-15
Table 4 shows the median scores on various health indicators for each of the 8 combinations of the measures. Older people classified as vulnerable according to the GP’s clinical intuition had more contact time with the GP compared with the reference group (not identified by all three measures, n=247). For the other health indicators, no significant differences were found between older persons identified by the GP’s clinical intuition and the reference group.

Compared with the reference group, older people with frailty according to Fried’s frailty criteria had a higher GARS score, higher GDS score and had more contact time with their GP, but no higher scores on the MMSE and the De Jong Gierveld Loneliness scale compared to the reference group (Table 4).

People with complex problems according to the ISCOPE screening questionnaire had higher scores on the GARS, GDS-15, the De Jong Gierveld Loneliness scale and more GP-contact time compared with the reference group (Table 4).

In general, the Fried frailty phenotype was most strongly associated with disability and the ISCOPE screening questionnaire most strongly with loneliness. Compared with the reference group, participants who were identified by two or three of the three measures generally had more chronic diseases, higher scores on the GARS, lower scores on the MMSE, higher scores on the GDS-15 and more GP contact time.

**Figure 1.** Venn diagram depicting proportion (number of participants) identified by the three measures (GP’s intuition, Fried frailty phenotype criteria, and the ISCOPE screening questionnaire). Of the total study population, 48 participants had missing values on one of the measures and 247 participants had no problems according to all three; these latter groups of older persons are not included in the diagram.
Table 4. Cross-sectional comparison of older persons with and without complex health problems according to the three identification measures (n=823)

<table>
<thead>
<tr>
<th>Identification measure</th>
<th>GP’s clinical intuition</th>
<th>Fried frailty phenotype criteria</th>
<th>ISCOPE screening questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Number of diseases</td>
<td>2 (3-4)</td>
<td>2 (3-5)</td>
<td>4 (2-5)</td>
</tr>
<tr>
<td>GARS (points)</td>
<td>24 (21-30)</td>
<td>27 (22-34)</td>
<td>0.117</td>
</tr>
<tr>
<td>MMSE (points)</td>
<td>28 (27-29)</td>
<td>28 (26-29)</td>
<td>0.150</td>
</tr>
<tr>
<td>GDS-15 (points)</td>
<td>1 (0-1)</td>
<td>1 (0-1)</td>
<td>0.620</td>
</tr>
<tr>
<td>De Jong Gierveld (points)</td>
<td>1 (0-3)</td>
<td>1 (0-3)</td>
<td>0.352</td>
</tr>
<tr>
<td>GP contact time during last year (min)</td>
<td>70 (30-110)</td>
<td>160 (92-277)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

* 44 participants had missing values for the GP’s intuition; 2 participants had missing values for Fried’s frailty phenotype; 1 participant had missing values for the ISCOPE screening questionnaire, 1 participant had missing values for the GP’s intuition and the ISCOPE screening questionnaire these participants were not included.

** Mann-Whitney U test compared to no complex health problems according to all concepts (reference group, first column)

Data are presented as medians (IQR)

GP=general practitioner; ISCOPE=Integrated Systematic Care for Older People; GARS=Groningen Activities Restriction Scale; MMSE=Mini-mental state examination; GDS=Geriatric Depression Scale
DISCUSSION

In this study, three measures (i.e. the GP’s clinical intuition, the Fried frailty criteria and the ISCOPE screening questionnaire) were selected for a comparison to identify problems in multiple health domains in a primary care population of older people. These three measures differed substantially with regard to the number of older people identified; however, irrespective of the measure used, identified older people had more disability, poorer cognition, more depressive symptoms, more feelings of loneliness and poorer life satisfaction.

Comparison with other studies

The first measure, the GP’s intuition, was selected because most GPs have a clear image of vulnerable older people in mind based on ‘gut feeling’. The question was if this intuition on vulnerability is an identification measure to identify older persons with problems in multiple health domains. With the GPs intuition, older people with multiple functional, somatic and mental problems were identified. However, no differences were found for the De Jong Gierveld Loneliness Scale between participants classified as vulnerable according to the GP’s intuition and participants who were not vulnerable. This suggests that the GPs intuition might not be an identification measure for loneliness. This is in line with another study concluding that GPs rarely ask about loneliness.

The second measure, the Fried frailty phenotype, was selected because it is an internationally recognised and validated measure for frailty. The results of the present study imply that the Fried frailty phenotype could also be considered as a measure to identify older people with problems in multiple health domains in primary care, because it is associated with disability, depressive symptoms and more GP contact time. However, the Fried frailty criteria did not show a strong association with loneliness.

The ISCOPE screening questionnaire covers four health domains that measure functional, somatic, mental and social problems. In this study, the ISCOPE screening questionnaire was associated with both disability and depressive symptoms, and was the only measure that had a strong association with loneliness. Therefore, the ISCOPE screening questionnaire can be considered as an identification measure for problems in multiple health domains in primary care.

In the present study, the proportion of participants identified ranged from about 25% (GP’s intuition) to about 50% of the study population (ISCOPE screening questionnaire). The prevalence of the frailty phenotype was substantially higher than in other studies investigating this measure conducted in both primary care and in research settings. These differences can be explained by our relatively older population.
Strengths and weaknesses
The present study has several strengths. First, being population-based with few exclusion criteria this increases the external validity of our results. Second, the health indicators that were used as outcomes in this study were measured with validated questionnaires by research nurses during home visits, thereby increasing the reliability and completeness of the measurements.

A major limitation of this study is its cross-sectional design. Therefore, we could not compare the predictive value of the three measures on future relevant health indicators, such as incident disease and mortality.

Implications for primary care
The three measures included in this study are all appropriate for identification of older people with problems in multiple health domains in primary care. None of these measures can be recommended as the most appropriate measure, because the population identified differs for each of the three measures. The choice of a measure should depend on the intended intervention of the GP. For example, if a GP is planning an intervention for disability, the Fried frailty criteria might be the most appropriate measure. In contrast, if the intervention aims at loneliness, then the ISCOPE screening questionnaire might be the best choice. However, before these interventions can be conducted, the cost-effectiveness of such interventions remains to be proven.

Moreover, when selecting a measure, GPs should also consider the relative workload involved with each measure. For example, the administration of the Fried frailty measure is difficult because of the performance tests involved. In contrast, the ISCOPE screening questionnaire can be sent by post, and is easy to administer. The GP’s intuition about vulnerability does not require additional workload as it is readily available.

Conclusion
This study compared three measures to identify problems in multiple health domains in older people in primary care. Older people identified by any of the three measures are at increased risk for poor health. Therefore, each instrument might be appropriate for identification of older people with problems in multiple health domains for proactive interventions to prevent poor health outcomes, although the cost-effectiveness of such interventions remains to be proven. A decision about an appropriate measure should take into account the aims of the GP in relation to the identification of older patients with problems in multiple health domains.
REFERENCES


Three measures to identify older people with multiple problems


