

A brief assessment unravels unmet needs of older people in primary care: a mixed-methods evaluation of the SPICE tool in Portugal*

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Assessments of need may contribute to identifying health problems associated with functional deterioration in older people. A shorter version of the Camberwell Assessment of Need for the Elderly was developed for routine use in primary care, focusing on five domains: Senses, Physical ability, Incontinence, Cognition, and Emotional distress (SPICE). We aimed to explore its usefulness and feasibility in primary care.

We selected a consecutive sample of 51 community-dwelling older adults. The SPICE interview was completed by GPs and patients, with perceptions about its use in primary care being explored.

Needs were identified in 38 patients. Unmet needs corresponded to 7% of needs overall. 'Emotional distress' was the most frequent unmet need. SPICE helped to identify undisclosed needs, was well accepted and its importance in clinical evaluation recognised by GPs and patients, despite concerns about time constraints. Facilitating strategies are needed to improve the feasibility of these assessments in primary care.

Key words: primary care; needs assessment; ageing

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Background

The clinical evaluation of older people in primary care remains a challenging field. Comprehensive assessments combined with action on agreed problems can improve survival and function (Reuben *et al.*, 1999; Harari *et al.*, 2008; Ward and Reuben, 2012) but we still lack feasible approaches in general practice (Freer, 1985).

(Semi)structured assessments of need may identify health problems leading to functional deterioration. This patient-centred methodology allows the definition of health priorities and suitable interventions to address them (Wright *et al.*, 1998). Unmet needs have been associated with low quality of life which calls for proactive needs assessments in clinical practice (Slade *et al.*, 2005).

The Camberwell Assessment of Need for Elderly (CANE) (Reynolds *et al.*, 2000; Orrell and Hancock, 2004) has been validated in different countries and settings (Walters *et al.*, 2000; Ybarzabal Mesa *et al.*, 2002; Kaiser *et al.*, 2005). Being perhaps too lengthy for routine clinical use in primary care, a shorter version with five priority domains was developed (SPICE): Senses, Physical ability, Incontinence, Cognition and Emotional distress (Iliffe *et al.*, 2004).

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Assessing needs in primary care entails a change in usual clinical practice. To our best knowledge, the use of brief needs assessments such as SPICE have never been tested in routine consultations. Our study aimed to explore the usefulness and feasibility of the SPICE assessment tool taking into account the perspectives of both GPs and patients.

Methods

Design and participants

This cross-sectional study was conducted in 2014, in one family health unit near Lisbon, with 11 GPs and 10 nurses responsible for 17 800 registered patients (3692 aged 65+ years). GPs approached all patients aged 65+ years who attended the first scheduled appointment of the day, for six consecutive days. Patients on emergency visits were excluded, resulting in a sample of 51 patients.

Needs assessment

The SPICE interview was used, assessing: senses (vision and hearing), physical ability (mobility and falls), incontinence, cognition and emotional distress (Iliffe *et al.*, 2004). These five items were extracted from the Portuguese translation of the CANE (Gonçalves-Pereira *et al.*, 2007). In Portugal, the CANE was validated in a sample of older people with neuropsychiatric disorders (Fernandes *et al.*, 2008) and used to interview nursing home residents (Ferreira *et al.*, 2016), people with dementia (Kerpershoek *et al.*, 2017) and people with psychiatric disorders (Passos *et al.*, 2017).

According to the CANE instruction manual (Orrell and Hancock, 2004) and the literature (Reynolds *et al.*, 2000; Walters *et al.*, 2000), a trained rater provides a separate judgement for the patient and their carer, along with key-staff views on each domain and a fourth overall assessment (the rater's view). However, in order to study this assessment's feasibility in routine consultations, the obvious rater would be the GP, accumulating the role of 'key-staff'. To further document the usefulness of a proactive assessment in practice, we explored discrepancies between GPs' assumptions about users' needs (as based on previous consultations) and GPs' direct needs assessments in current consultations. Thus, in the present study, GPs provided three separate scores: (1) immediately before the consultation (GP-T0), using all available

information in medical records; (2) scoring the patient's perspective during the consultation; and finally, (3) reporting again their own perspective after having interviewed the patients (GP-T1).

A 'met' need was recorded when a problem was identified and there was sufficient support to meet the need. An 'unmet' need was recorded when a problem was identified but there was either no support or insufficient support to meet the need (Orrell and Hancock, 2004). We did not consider interviewing the carers systematically because most patients would not have an informal carer, and the advantage of systematically doing this in clinical practice is still unknown (Walters *et al.*, 2000).

All GPs were trained in the administration of SPICE, including through rehearsal in role-play scenarios. Pilot interviews were video-recorded and reliability training conducted.

Additional feasibility data collection

To address feasibility issues at different levels, we adopted a sequential explanatory mixed-methods design (Creswell, 2014) and complemented quantitative data with qualitative explorations of GPs' and patients' perceptions about the use of SPICE.

GPs' perceptions were assessed with a self-report questionnaire, including four multiple-choice items (on GPs' reactions, patients' reactions, perceived usefulness, and intentions regarding future use of the questionnaire) and two open-ended questions (further exploring advantages and difficulties).

Patients' perceptions were explored in individual interviews. While all the Unit's GPs were interviewed, we decided to randomise only five patients (10% of the sample) due to operational constraints. These assessments took place at home or at the primary care facility as convenient, one week after each SPICE interview.

Ethical issues

Approval was obtained from *ARS Lisboa e Vale do Tejo* ethics committee. Participants and GPs gave their written informed consent.

Data analysis

Quantitative analysis was performed using IBM SPSS Statistics 21 (Mac Version). Cronbach's α was used to analyse SPICE internal consistency and K tests to analyse levels of agreement between

patients' and GPs' assessments of need. The significance level of $\alpha = 5\%$ was considered.

In the questionnaire for GPs, responses to multiple-choice items were analysed using absolute frequencies. Open-ended questions were subjected to content analysis, identifying ranges of responses organised according to predefined themes (advantages and difficulties). Additional thematic units derived from content analysis (11 sub-categories and 12 indicators).

The qualitative interviews with patients were conducted semi-structuredly, audio-taped and transcribed. Content analysis using a directed approach (Hsieh and Shannon, 2005) was employed to code the records into four predetermined categories (opportunity, advantages, difficulties, acceptability) or into new categories. Two researchers independently analysed and coded the transcripts, to improve data trustworthiness.

Results

SPICE interviews were completed for all eligible patients ($n = 51$). Demographic characteristics of the sample are illustrated in Table 1.

Table 1 Demographic characteristics of the sample ($n = 51$)

Age (years)	
Mean (DP)	74.9 (7.3)
Age groups [n (%)]	
65–74 years	25 (49%)
75–84 years	21 (41%)
85 or more years	5 (10%)
Education level [n (%)]	
Low education	37 (72%)
Medium education	7 (14%)
High education	7 (14%)
Gender [n (%)]	
Female	31 (61%)
Male	20 (39%)
Civil status [n (%)]	
Single	1 (2%)
Married	27 (53%)
Divorced	4 (8%)
Widowed	19 (37%)
Living arrangements [n (%)]	
Lives alone	15 (29%)
Lives with a spouse	28 (55%)
Lives with relatives	8 (16%)
Have a carer? [n (%)]	
Yes	6 (12%)
No	45 (88%)

Patients participating in individual interviews ($n = 5$) had a median age of 79.5 (range 66–88), and four were women. Two asked for the presence of a companion during the interview.

Needs assessment: SPICE results

All patients completed SPICE assessments. Median time taken for interviews was 8 min (range 3–23). In 11 (22%) appointments there were other people present at the interview (two carers, nine relatives with no caring role).

Needs were identified by patients and their GPs (Table 2). Needs for care were reported by 38 (75%) patients, reporting on average 1.6 needs each, 0.3 of which were, on average, unmet. Unmet needs ($n = 17$) corresponded to 7% of total needs ($n = 255$). 'Emotional distress' was the most frequent unmet need ($n = 5$).

Of 17 unmet needs identified by patients, six were unknown to GPs before consultations using SPICE.

According to Fleiss' (1981) criteria, k tests between patients' and GPs'-T0 assessments showed fair agreement regarding senses ($k = 0.59$), incontinence ($k = 0.56$) and cognition ($k = 0.58$); and good agreement in physical ability ($k = 0.68$) and emotional distress ($k = 0.71$). k tests between patients' and GPs'-T1 assessments showed excellent agreement in all domains (senses, $k = 0.79$; physical ability, $k = 0.79$; incontinence, $k = 0.87$; cognition, $k = 0.95$; emotional distress, $k = 0.88$).

GPs' and patients' perceptions about the use of SPICE

The majority of GPs ($n = 9$) found that the information obtained from SPICE was quite useful or very useful, but only three intended to continue using SPICE in routine consultations (Table 3).

Regarding qualitative analysis, 'gaining knowledge' stood out of the five sub-categories of 'advantages' (Table 4).

Citing a GP, '... my views don't always correspond to the reality of older people'. SPICE allowed GPs to address key issues concerning older people's health and well-being: 'It allows preventive approaches towards wellbeing issues, usually forgotten by doctors'. Using SPICE also prompted inquiries about sensitive issues related with intimacy.

Concerning 'difficulties', six sub-categories emerged (Table 5). Time spent in assessments

Table 2 Frequencies of needs identified using the SPICE by patients and general practitioners

	Met needs			Unmet needs		
	Patients (n=51)	GP-T0 ^a (n=51)	GP-T1 ^b (n=51)	Patients (n=51)	GP-T0 ^a (n=51)	GP-T1 ^b (n=51)
Senses	24 (47%)	23 (45%)	24 (47%)	4 (8%)	4 (8%)	4 (8%)
Physical ability	12 (24%)	10 (20%)	10 (20%)	1 (2%)	1 (2%)	2 (4%)
Incontinence	6 (12%)	4 (8%)	5 (10%)	4 (8%)	3 (6%)	3 (6%)
Cognition	12 (24%)	14 (28%)	13 (26%)	3 (6%)	0 (0%)	2 (4%)
Emotional distress	12 (24%)	13 (26%)	13 (26%)	5 (10%)	2 (4%)	5 (10%)

^a GP assessment before consultation.^b GP assessment after consultation.**Table 3** General practitioners' questionnaire multiple-choice questions results (n = 11)

How do you describe your reaction to using SPICE?					
Very bad	Bad	Reasonable	Good	Very good	
0	0	3	4	4	
How do you describe your patients' reaction to using SPICE?					
Very bad	Bad	Reasonable	Good	Very good	
0	0	1	6	4	
To what extent has the information obtained from SPICE been useful for the improvement of health care to your patients?					
Not at all useful	Not very useful	Somewhat useful	Quite useful	Very useful	
0	0	2	7	2	
How often will you continue to use SPICE on routine consultation with older patients?					
Never	Seldom	Sometimes	Very often	Always	
1	1	6	3	0	

Table 4 Advantages identified by general practitioners on the use of the SPICE interview (n = 11)

Sub-categories	Indicators
Gain knowledge of patients (n = 10)	Doctor learns about their patient (eg, the support the person is already receiving; ideas; worries and beliefs; needs) Raise patients' awareness of their own health issues Doctor learns about heterogeneity of older people Giving voice to the patient
Address key issues concerning health and well-being of the elderly (n = 8)	Forgotten issues
Promote a health/functionality centred approach (n = 3)	Undervalued issue
Address potentially sensitive issues in a structured and well-accepted manner (n = 2)	Personal experience of ageing Meaning of life Sexuality
Improve care (n = 2)	

was the major one. To overcome time constraints, two GPs suggested that SPICE assessments should be completed throughout consecutive consultations. Despite previous training, distinguishing

'met' from 'unmet' need was deemed difficult in a few situations.

Regarding individual patient interviews, content analysis of the 'advantages' category identified

Table 5 Difficulties identified by general practitioners on the use of SPICE interview ($n = 11$)

Sub-categories	Indicators
Time spent in SPICE assessment given the duration of consultation ($n = 11$)	
Scoring SPICE interview ($n = 7$)	Unable to discriminate scores of eyesight, hearing and communication in the item 'senses' Underlying concepts Lack of training
Assess the five areas in a single consultation ($n = 3$)	
Understand patients' responses ($n = 2$)	
Separately interviewing carer and patient ($n = 1$)	
Absence of medical responses to certain problems presented ($n = 1$)	

four sub-categories. Patients recognised that SPICE may improve the GP-patient relationship ($n = 2$), value issues important to patients ($n = 2$) and improve doctors' knowledge about patients ($n = 2$). Quoting a patient: 'I think that this consultation was clearly better, different from the others'. No patient reported discomfort about the issues addressed. In fact, all showed willingness to be questioned on these in future consultations and two even mentioned never having had previous opportunities to talk about some of them.

Discussion

Main findings

In this Portuguese primary care sample of older participants, SPICE disclosed information that was new to GPs. Furthermore, SPICE was well accepted and its importance recognised by GPs and patients alike.

To our knowledge, needs assessment of older patients in primary care had only been studied in the United Kingdom (Walters *et al.*, 2000) and in Holland (Hoogendijk *et al.*, 2014). Nevertheless, these studies differed from ours in important aspects: different versions of CANE used (24-item, Walters *et al.*, 2000; 13-item, Hoogendijk *et al.*, 2014); frail patients selected (Hoogendijk *et al.*, 2014); interviews performed at home by trained interviewers, not by GPs themselves (Walters *et al.*, 2000; Hoogendijk *et al.*, 2014).

Exploring a routine scenario, GPs were the raters in our study and, despite small sample size, there were interesting findings. Better agreement in patient/GP post-assessment scores highlights the importance of GPs proactively asking

about SPICE domains and not merely relying on their assumptions about their older patients. In fact, some unmet needs were unknown to GPs before SPICE assessments and this patient-centred approach helped to identify undisclosed needs, improving satisfaction in both patients and GPs.

Feasibility

All selected patients were interviewed ($n = 51$) and all SPICE items were completed ($n = 255$). The analysis of GPs' questionnaires showed that the majority of professionals accepted the SPICE interview well and valued the disclosed information. However, they were cautious regarding their intentions to use the interview in the future, probably because of the time needed to do so.

Strengths and limitations

Our study documented, for the first time, the usefulness and feasibility of a brief needs assessment designed for primary care but never actually tested. However, it was conducted in a single, local setting, with a small non-randomized sample, and a major limitation is lack of generalisability.

Using mixed methods allowed us to explore patients' and professionals' perceptions, expanding the analysis of the SPICE assessment's feasibility. However, pragmatic reasons limited the number of patient interviews, whose findings were mainly about SPICE use advantages. Further probing and additional interviews would have been needed to explore patients' views more fully.

Although the CANE interview was validated in Portugal (Fernandes *et al.*, 2008), this SPICE version was used for the first time in Portuguese primary care. Indeed, its psychometric properties should be further evaluated internationally as only the full CANE has been applied in primary care in other countries (Walters *et al.*, 2000).

The triangulation of perspectives is an asset of CANE (Orrell and Hancock, 2004); however, some argue that its usefulness in clinical practice is not yet established (Walters *et al.*, 2000). Although we have not interviewed carers in this study, it might have been important in some cases.

Implications for clinical practice and policy

SPICE can unravel unexpressed needs for care, although the extended length of consultations may be a source of concern. Its practical implementation should be further evaluated, probably requiring top-down and bottom-up strategies altogether. Being well accepted overall by physicians and patients, perhaps its use by primary care nurses could contribute to overcoming GPs' time constraints.

Although SPICE domains relate to older people's functionality (Stuck *et al.*, 1999), we lack direct evidence that the routine use of this interview specifically builds effective strategies for improving clinical outcomes.

Conclusions

SPICE interviewing may yield new valuable information about unmet needs of older people in primary care, but its implementation may not be straightforward and requires facilitating strategies.

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Conflicts of Interest

None.

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