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Fear of falling limiting activity in young-old women is associated with reduced functional mobility rather than psychological factors

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Abstract

Background: many older people experience fear of falling. This is sometimes associated with activity limitation, with potential adverse health implications. The explanatory contributions of physical and psychosocial factors to this syndrome are unclear.
Objectives: to examine the associations between fear of falling limiting activity (FoF-LA) among young-old women with (i) functional capacity and (ii) psychological factors.
Subjects and methods: FoF-LA, functional difficulty and dependency, psychological factors, previous falls, visual and hearing handicap, memory, pain, and habitual physical activity were assessed using standard questionnaires in 713 community-dwelling London women, mean age 64.2 years.
Results: 70 women (10.1%) reported FoF-LA, of whom 21 had fallen in the previous year. Women reporting FoF-LA had higher prevalence of adverse functional and clinical characteristics. Multiple logistic regression analyses showed that both mild ('changes in the way walk half a mile') and moderate ('difficulty standing from armless chair') reduction in functional capacity were independently associated with FoF-LA (odds ratios 4.02 (95% CI 1.5–10.7) and 5.07 (CI 2.0–13.0) respectively) after adjustment for age, falls and clinical factors. Psychological factors and perceived fair/poor health were bivariately but not independently associated with FoF-LA; after adjustment for them, mild and moderate reductions in functional capacity remained strongly associated with FoF-LA (OR 4.02 (CI 1.5–10.7) and 3.83 (CI 1.4–10.5) respectively), along with visual handicap and increased health service use.
Conclusions: among young-old women, FoF-LA is related to early reduction of mobility function rather than psychological factors. It may identify individuals at risk of subsequent functional decline.

Keywords: *activities of daily living, accidental falls, psychological factors, fear of falling, activity limitation, elderly*

Introduction

Over the past decade, fear of falling has emerged as an important and common syndrome affecting older people [1], more commonly but not only among those with a history of falls [2]. Fear of falling may be associated with activity restriction even in non-fallers [3] and with reduced levels of recreational activity in healthy, independent older women [4]. The risk of future falls of individuals with a fear of falling is most marked when it is linked to restriction of activity [5].

In both fallers and non-fallers, poor mental and poor physical health have been associated with this phenomenon of fear of falling associated with limiting activity [6, 7]. Regarding psychological factors, depression was independently associated with poorer balance-related confidence in a cohort of older Americans transitioning to frailty [8], but other investigations of the associations between falls-related activity restriction and psychosocial factors have produced inconsistent results [3, 6]. In terms of physical health, significant deficits in lower limb strength were observed in independent living older people with falls-related activity restriction in a case-controlled study [9] and, in a prospective community-based cohort study, it correlated with poorer physical performance and reduced maximal muscle strength [10]. The restriction of activity at an early stage of physical decline may be a maladaptive behavioural response in that it

might contribute to further disuse-related impairment, this then resulting subsequently in more falls and disability.

This paper reports an investigation intended to untangle the physical and psychological factors associated with fear of falling with activity limitation. In order to investigate these relationships further, we studied a cohort of women just entering old age, with a low prevalence of dependency or previous falls, and at the milder end of the disability continuum. We selected this cohort because the associations of falls-related activity restriction were unlikely to be appreciably confounded by the secondary psychosocial effects of established disability. The aims of the study were to examine among young-old women the associations of falls-related activity restriction with (i) various degrees of functional capacity [11], and (ii) prevalent psychological factors.

Methods

Subjects and setting

During 1988–1989, all women aged between 45 and 64 years who were registered with a large primary care practice (>11,000 patients) in the London suburb of Chingford (UK) were invited to participate in an ongoing longitudinal database (The Chingford 1000 Women study). The primary aim of the ongoing annual survey was to assess musculoskeletal and other diseases in women as they progressed into early old age [12].

A total of 1,003 out of 1,353 approached (78%) agreed to participate, and each woman was examined at enrolment. The population was similar to the contemporaneous UK population in terms of height, weight and smoking status, and was predominantly white (98%). The socio-economic profile (using the Acorn classification system based on postcode and address (CACI International, London, UK)) showed the population to be slightly skewed towards professional and administrative occupations and away from manual occupations.

The present study uses data collected by postal questionnaire in Year 11 of this longitudinal study. Seven hundred and thirteen women (71.1% of the initial participants) returned the questionnaires with no reminders, and 684 gave complete responses regarding fear of falling, falls, functional abilities and psychological factors. The mean age of the responders was 64.2 ± 6 years, range 54–77.

Assessment tools

Participants responding YES to the question: 'In the last 12 months have you limited your activities because you are afraid you will fall?' were categorized as having fear of falling limiting activity (FoF-LA). Other scales (e.g. Tinetti Falls Efficacy Scale) [13] are lengthy and interview-based. The yes/no answer to a one-item question about the presence of fear of falling has been shown to correlate with both the Tinetti Falls Efficacy Scale and SAFE (Survey of Activities and Fear of falling in the Elderly) [14]. Further, a single-item FoF-LA question has been used by several other researchers as a dependent variable [4, 10, 15].

We used validated instruments [16] to assess potential associations of FoF-LA. Three levels of reduced functional capacity were assessed. Mild reduction was assessed as follows by the Pre-clinical Mobility Disability Questionnaire, developed by Fried *et al.* [17].

(i) In the past 12 months have you changed the way you (a) walk half a mile, (b) climb 10 steps, (c) get in or out of a car? (ii) In the past 12 months have you decreased how often you (a) walk half a mile, (b) climb 10 steps, (c) get in or out of a car? (iii) Do you walk indoors more slowly?

Moderate reduction was defined as being any degree of difficulty, and severe reduction as dependency with activities of daily living (ADLs) as measured by the Health Assessment Questionnaire [18].

Psychological factors assessed were psychological distress, well-being and general health perception as measured by the mental health domains of the SF-36 [19] and memory, using the Memory Self-Report Scale [20]. Falls-related questions were derived from the Osteoporotic Fractures Research Group survey [21]. Fallers were defined as those answering 'Yes' to the question: 'In the last 12 months, have you had a fall from standing height?' Habitual physical activity was assessed with the Physical Activity Scale for the Elderly (PASE) [22]. A score less than 100 was regarded as indicating a low level of habitual activity. Pain (in the last 4 weeks) was assessed using the SF-36; vision from a shortened version of the Visual Functioning Questionnaire [23]; hearing from a shortened version of the Hearing Handicap Inventory for the Elderly [24].

Statistical analyses

Odds ratios were calculated for the bivariate associations for FoF-LA using chi-squared tests, and statistically significant variables ($P < 0.05$) were included in age-adjusted multiple logistic regression models to identify independent associations (P-enter = 5%, P-remove = 5%). In order to give the multiple logistic regression model sufficient power however, not all significant variables could be included. Variables were therefore selected on the basis of strength of association, higher prevalence, clinical relevance and low potential for covariate interaction. The variables included in the final model are asterisked in Tables 1 and 2.

A preliminary model was used to look at the association of functional characteristics with FoF-LA, and the final model looked at whether this association was altered following adjustment for psychological factors. Variable selection for the multiple logistic regression models was based on the likelihood-ratio statistic using the backward stepwise method (SPSS software).

All respondents gave written informed consent and the study has been approved by the local research ethics committee.

Results

Total population characteristics

Seventy women (10.1%) reported limiting activity due to fear of falling (see Table 1). A quarter had pre-clinical mobility disability, based on one or more positive answers to the seven questions about altered mobility patterns.

Table 1. Bi-variate relationships between FoF-LA and demographic, functional, and clinical factors

Characteristic	Total respondent population *N* = 684 *n* (%)	Fear of falling-LA *N* = 70 *n* (%)	No fear of falling-LA *N* = 614 *n* (%)	Odds ratio (95% CI) and *P* value
Age[a] <65 years	385 (56.3)	36 (51.4)	349 (56.8)	
≥65 years	299 (43.7)	34 (48.6)	265 (43.2)	1.25 (0.7–2.1) $P = 0.37$
Function – pre-clinical mobility disability [17]				
- In past year, have you changed the way				
you walk half a mile[a]	152 (22.2)	48 (68.6)	104 (16.9)	17.0 (8.6–34.3) $P < 0.01$
you climb 10 steps[a]	197 (28.8)	53 (75.7)	144 (23.5)	14.8 (7.3–31.0) $P < 0.01$
you get in or out of a car[a]	161 (23.5)	49 (70.0)	112 (18.2)	12.4 (6.6–23.3) $P < 0.01$
- In past year, have you decreased how often				
you walk half a mile[a]	109 (15.9)	39 (55.7)	70 (11.4)	11.1 (6.2–20.1) $P < 0.01$
you climb 10 steps[a]	150 (21.9)	45 (64.3)	105 (17.1)	9.82 (5.4–17.9) $P < 0.01$
you get in or out of a car[a]	38 (5.5)	19 (27.1)	19 (3.1)	12.1 (5.7–25.8) $P < 0.01$
- Do you walk indoors more slowly[a]	124 (18.1)	40 (57.1)	84 (13.7)	10.6 (5.8–19.5) $P < 0.01$
Functional capacity – difficulty with ADL [18]				
Dressing[a]	72 (10.5)	30 (42.6)	42 (6.8)	10.6 (5.7–19.5) $P < 0.01$
Bathing	97 (14.2)	35 (50.0)	62 (10.1)	9.40 (5.3–16.9) $P < 0.01$
Get on and off toilet	31 (4.5)	18 (25.7)	13 (2.1)	16.2 (7.1–37.4) $P < 0.01$
Stand up from armless chair[a]	105 (15.4)	43 (61.4)	62 (10.1)	15.6 (8.6–28.6) $P < 0.01$
Get in and out of bed	70 (10.2)	27 (38.6)	43 (7.0)	8.62 (4.7–16.0) $P < 0.01$
Climb 5 steps	62 (9.1)	29 (41.4)	33 (5.4)	12.6 (6.7–23.7) $P < 0.01$
Running errands	90 (13.2)	32 (45.7)	58 (9.5)	8.81 (4.9–15.9) $P < 0.01$
Physical activity [22]				
Low PASE score (<100) i.e sedentary[a]	141 (20.6)	34 (48.6)	107 (17.4)	4.47 (2.6–7.7) $P < 0.01$
One or more falls from standing height[a] [21]	101 (14.8)	21 (30.0)	80 (13.0)	3.02 (1.7–5.5) $P < 0.01$
Comorbidities				
Self-reported treatment over past 12 months:				
Hypertension	177 (25.9)	32 (45.7)	145 (23.6)	3.15 (1.8–5.5) $P < 0.01$
Osteoporosis	72 (10.5)	12 (17.1)	50 (8.1)	2.94 (1.4–6.3) $P < 0.01$
Arthritis[a]	97 (14.2)	35 (50.0)	62 (10.1)	5.01 (2.8–9.0) $P < 0.01$
Polypharmacy (≥4 regular medications)[a]	126 (18.4)	27 (38.6)	99 (16.1)	3.27 (1.9–5.7) $P < 0.01$
Sensory impairments by self-report [23, 24]				
Fair/poor self-rated hearing	208 (30.4)	26 (37.1)	182 (29.6)	1.55 (0.9–2.7) $P = 0.11$
Fair/poor self-rated eyesight	346 (53.4)	34 (48.6)	312 (50.8)	1.38 (0.7–2.7) $P = 0.30$
Difficulty going down stairs or kerbs due to eyesight	18 (2.6)	7 (10.0)	11 (1.8)	6.76 (2.3–19.8) $P < 0.01$
Activities limited due to eyesight[a]	30 (4.4)	13 (18.6)	17 (2.8)	8.99 (3.9–20.9) $P < 0.01$
Pain (over past 4 weeks) [19]				
Moderate to very severe bodily pain[a]	194 (28.4)	44 (62.9)	150 (24.4)	5.36 (3.1–9.4) $P < 0.01$
Pain interferes with activities moderately to extremely	134 (19.6)	39 (55.7)	95 (15.5)	6.91 (4.0–12.1) $P < 0.01$
Urinary incontinence (>6 times in 1 year)	133 (19.4)	17 (24.3)	116 (18.9)	1.62 (0.9–3.0) $P = 0.11$
Resource use over previous12 months				
Acute hospitalisation[a]	73 (10.7)	21 (30.0)	52 (8.5)	4.86 (2.6–9.1) $P < 0.01$
Visited GP on more than 3 occasions[a]	296 (43.3)	54 (77.1)	242 (39.4)	5.99 (3.0–12.1) $P < 0.01$

[a]Variables included in multiple logistic regression model.

Difficulty performing activities of daily living were reported less often and with greater variability, from approximately 5% getting on and off the toilet to 15% with difficulty rising from an armless chair. Prevalent disability was low: only 5.6% were unable to perform one or more basic activities of daily living without assistance. Almost 15% reported one or more falls in the past 12 months, a third of these falling twice or more.

Almost 20% reported moderate or severe pain affecting activity. A minority (14%) reported fair or poor perceived health. Rather more reported symptoms of low mood (Table 2).

Associations with FoF-LA

Table 1 shows the bivariate relationships between FoF-LA and demographic, functional and clinical characteristics. Most (70%) of those reporting FoF-LA had not fallen in the past 12 months. All measures of functional capacity were strongly associated with FoF-LA. Other relevant and significant associations were low habitual activity (PASE score <100, with mean PASE score 153 ± 66, range 0–464), self-reported arthritis, visual impairment affecting activities, polypharmacy, pain and health services use (general practitioner (GP) visits and hospitalisations).

Table 2. Bi-variate relationships between FoF-LA and psychological factors

Characteristic	Total respondent population *N* = 684 *n* (%)	Fear of falling-LA *N* = 70 *n* (%)	No fear of falling-LA *N* = 614 *n* (%)	Odds ratio (95% CI) and *P* value
General health perception [19]				
Excellent/very good/good	589 (86.1)	35 (50.0)	554 (90.2)	
Fair/poor[a]	93 (13.6)	34 (48.6)	59 (9.6)	9.12 (5.1–16.3) $P < 0.01$
Cognitive impairment by self-report [20]				
Fair/poor self-rated memory	291 (42.5)	29 (41.4)	262 (42.7)	1.20 (0.7–2.2) $P = 0.52$
Memory worse than 1 year ago	128 (18.7)	17 (24.3)	111 (18.1)	1.57 (0.8–3.0) $P = 0.13$
Mood over past month[b] [19]				
Felt full of life (some/little/none of the time)[a]	249 (36.4)	43 (61.4)	206 (33.6)	3.58 (2.0–6.3) $P < 0.01$
Been a very nervous person[a]	59 (8.6)	14 (20.0)	45 (7.3)	3.26 (1.6–6.6) $P < 0.01$
Felt so down in the dumps nothing could cheer you up[a]	34 (5.0)	9 (12.9)	25 (4.1)	3.52 (1.5–8.4) $P < 0.01$
Felt calm and peaceful (some/little/none)	246 (36.0)	38 (54.3)	208 (33.9)	1.85 (1.2–2.9) $P < 0.01$
Have a lot of energy (some/little/none)[a]	284 (41.5)	54 (77.1)	230 (37.5)	7.00 (3.5–14.1) $P < 0.01$
Felt downhearted and low	53 (7.8)	12 (17.1)	41 (6.7)	2.92 (1.4–6.2) $P < 0.01$
Feel worn out	88 (12.9)	20 (28.6)	68 (11.1)	3.32 (1.8–6.2) $P < 0.01$
Been a happy person (some/little/none)	150 (21.9)	21 (30.0)	129 (21.0)	1.67 (0.9–3.0) $P = 0.07$
Feel tired	149 (21.8)	30 (42.9)	119 (19.4)	3.29 (1.9–5.7) $P < 0.01$

[a]Variables included in multiple logistic regression model.
[b]*SF-36* responses dichotomised to 'some or little or none of the time' and 'all or most or a good bit of the time'.

Table 2 shows the bivariate relationships between FoF-LA and psychological factors. FoF-LA had a strong bivariate association with fair/poor perceived health and various symptoms of low mood, but not with reported memory problems.

Table 3 shows that when the measures of functional capacity were initially adjusted for age, resource use, low habitual activity, falls, arthritis, visual handicap and pain, then both preclinical mobility disability ('change in the way walks half a mile') and difficulty standing up from an armless chair were independently associated with FoF-LA. Health resource use (more than three visits to GP over past year, and one or more acute hospitalisations over past year) and visual handicap were also independent associations.

A model was then constructed with adjustment for the most significantly associated psychological factors and fair/poor general health perception (see Table 3). Preclinical mobility disability and difficulty rising from a chair remained associated with FoF-LA, along with low habitual activity, frequent GP visits and acute hospitalisations. In a separate model, the psychological factors with significant bivariate associations with FoF-LA were entered first, without measures of functional capacity. After adjustment made for age and comorbidities, psychological factors were not independently associated with FoF-LA.

Table 3. Independent associations with FoF-LA

Characteristics	Prevalence %		Adjusted odds ratio (95% CI)	
	FoF-LA group	Total sample	Model 1[a] Adjusted for age and significant clinical and demographic covariates	Model 2[b] Additional adjustment for psychological factors
Changed the way walk half a mile	68.6	22.4	4.02 (1.5–10.7)	4.02 (1.5–10.7)
Difficulty rising from chair	61.4	15.4	5.07 (2.0–13.0)	3.83 (1.4–10.5)
Activities limited due to eyesight	18.6	4.4	9.27 (2.8–31.0)	9.27 (2.8–31.0)
Acute hospitalization	30.0	10.7	3.13 (1.2–8.3)	3.12 (1.2- 8.3)
>3 GP visits in 12 months	77.1	43.0	3.14 (1.2–8.6)	3.14 (1.2- 8.6)
Low habitual physical activity	48.6	20.7	1.81 (0.62–4.82)	5.07 (2.0–13.0)

[a]The variables entered in this model were age; pre-clinical mobility disability – walking half a mile, climbing 10 steps, walking indoors or getting in or out of a car; difficulty dressing or standing from an armless chair; low habitual physical activity; receiving drug therapy for arthritis; poly-pharmacy; limited activity due to eyesight; moderate to very severe bodily pain; acute hospitalisation or >3 GP visits.
[b]The variables included in this model were those in model 1 plus fair/poor perceived health, feeling full of life some/little/none of the time, being a very nervous person, feeling so down in the dumps nothing could cheer you up, having a lot of energy some/little/none of the time.

Discussion

Main findings

In this cohort of community-dwelling women entering old age, FoF-LA affected one in ten, most of whom had not fallen in the past year. Women reporting FoF-LA also reported higher prevalence of mild (preclinical) or moderate (difficulty in ADLs) reductions of functional capacity, physical comorbidities, and a range of potentially adverse psychological characteristics. In the first model, adjusting for age and comorbidity, FoF-LA was independently associated with indicators of both mild and moderate reductions of functional capacity. With further adjustment for the most strongly associated psychological factors, the association with functional capacity remained, while none of the prevalent psychological factors emerged as independent correlates. Self-reported visual handicap was also strongly associated with FoF-LA, but was present in only 18.6%. Women with fear of falling had significantly higher use of GP services, and were more likely to have been acutely hospitalised in the previous year. These findings are consistent with the notion that fear of falling limiting activity of women entering old age is primarily associated with physical performance limitation rather than psychological factors.

Comparison with other studies

This is the first study to report the prevalence of fear of falling associated with physical activity limitation in a UK population at the transitional stage of entering old age. Our sample was predominantly white British and skewed towards middle income groups, among whom disability is less prevalent [25], although the rates were comparable to the national average in England [26]. The prevalence of FoF-LA in this study was similar to the prevalence of fear of falling restricting activities (9.6%) reported from the Salisbury Eye Evaluation (SEE) study [5], which involved a slightly older population (mean age 72.6 years) but which excluded individuals with moderate or severe cognitive impairment. The prevalence was higher, 19%, in a USA population of mean age 79.6 years [6], and in a still older USA group (mean age 80.9 years), and selected as transitioning to frailty, the prevalence was higher still, nearly 50% [8].

Limitations

The response rate and data completion rates in our study were high, making selection bias unlikely. We did not assess the subjects' social network, which has been previously found to influence fear of falling related activity [3], and so this could be acting as an unseen confounder.

Significance of the findings

The measure of pre-clinical mobility disability was developed in the Women's Health and Aging Study II (Baltimore, USA) [17], in which it identified a group with four-fold subsequent risk of mobility disability. Difficulty, rather than dependency in daily activities, is also predictive of future dependency and increased health care needs [11]. Thus, in the cohort of young-old women in this study, with a low prevalence of disability, FoF-LA was significantly associated with known markers of future incident disability.

For some individuals, fear of falling is associated with perceived risk carrying out specific activities, giving rise to the notion of reduced falls-related efficacy. Not all fallers report this reduced falls-related efficacy. Its presence is more prevalent among fallers with more impaired gait, reduced functional ability and depression [27]. Fear of falling is associated with general fearfulness [28] and with poorer mental health [14], and it has been suggested that an individual's falls-related self-efficacy is a product of the interplay of behavioural, cognitive, social and biological factors [29]. For example, among independent living older people, it was associated with both physical (slower habitual walking pace) and psychological factors (anxiety and depression) [13]. The combination of lower falls-related self-efficacy and subsequent deterioration of objective physical performance was reported to be particularly predictive of a decline in functional abilities [30]. The findings in this study do not necessarily apply to other groups of women, as the significance of the prospect of falling and the resultant possible loss of dignity or independence is likely to be influenced by a number of factors, such as differences in culture, generation, and age. For example, among a group of older (75 plus) fallers in England, the fears of loss of functional independence and damage to sense of identity were predictive of subsequent activity avoidance [31].

It has been suggested that low mood or psychological well-being manifests as fear of falling, and that in the presence of physical impairments, this fuels a disuse–disability cycle, involving reduced activity and physical deconditioning, with increasing dependency as the result [32]. In an Australian population of women aged 70–85 among whom one-third reported fear of falling, reduced recreational activity levels were only evident in women with timed up-and-go test results in the slowest tertile [4], slower times being indicative of deficits in physical functioning [33]. This finding suggests that preclinical disability is the template upon which the presence of fear of falling becomes important in influencing individual activity patterns. Our findings are consistent with this inference.

In an older USA population of mean age 79.6 years, fear of falling with activity restriction was associated with both poorer physical performance and depressive symptoms [6]. In our study, although adverse psychological factors were more prevalent among those who also reported FoF-LA, these factors were present in only about half of them, whereas a majority of them reported mild or moderate reductions of functional capacity. Conversely, the majority of those with preclinical mobility difficulty did not report FoF-LA, so other factors must be involved, which could include other social or psychological factors which we did not assess.

Indeed, it seems likely that in this and in other populations, the phenomenon of fear of falling with activity restriction may have several distinct explanations. For example, visual handicap may be a powerful factor for the minority affected. Subjects with FoF-LA were higher users of healthcare resources, and this was independent of

whether or not they had fallen. A generally poorer health profile of those with FoF-LA could explain this. Alternatively, it is possible that recent illness or hospitalisation causes some individuals to alter their behaviour maladaptively towards activity limitation.

In summary, among young-old women, the presence of fear of falling associated with limiting activity may be indicative of early reduction of functional capacity, rather than psychological factors. It may be useful to incorporate inquiry about this phenomenon as part of community-based 'ageing health checks' aimed at the detection of frailty.

Key points

- Previous research has shown that fear of falling associated with activity limitation is a predictor of future falls, reduced functional capacity and increased dependency.
- Reported asssociations between fear of falling limiting activities (FoF-LA) and psychological factors are inconsistent.
- Among these community-dwelling women, aged 54–77, FoF-LA was present in 10%, of whom only a minority (30%) had fallen.
- FoF-LA was independently associated with reduced functional capabilities, but not with psychological factors.

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Conflicts of interest

The authors declare no conflicts of interest.

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The Caregivers for Alzheimer's disease Problems Scale (CAPS): development of a new scale within the LASER-AD study

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Abstract

Background: we developed the Caregivers for Alzheimer's disease Problems Scale (CAPS) comprising common risk factors for anxiety and depression for family carers of people with dementia.
Objective: to calculate the sensitivity and specificity of the CAPS in order to measure its usefulness in identifying dementia caregivers at risk of anxiety and depression and therefore whether it identifies clinically relevant areas for intervention or highlights the need for support if the problem could not be changed.
Method: 153 family caregivers were interviewed as part of a larger epidemiologically representative study of people with Alzheimer's disease and their caregivers. Caregiver anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS).
Results: the CAPS had high sensitivity and specificity in detecting caregivers with screen positive anxiety and depression. Five areas were indicated: neuropsychiatric symptoms and depression in the care-recipient, co-residence and relationships with the care-recipient, and physical health of the caregiver.
Conclusions: awareness of these problems can help clinicians identify those carers most likely to be anxious or depressed and indicate appropriate intervention and support. We recommend that this instrument be used as part of routine assessments of people with dementia and their families.

Keywords: *Alzheimer's disease, caregivers, anxiety, depression, elderly*