Psychometric evaluation of a Spanish Language Version of the Screen for Caregiver Burden (SCB) in caregivers of patients with mixed, vascular and Alzheimer’s dementia

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Aims and objectives. To validate a Spanish language version of the Screen for Caregiver Burden, the full-length or long (25-item) and short (seven-item) versions in Mexican caregivers of patients with mixed, vascular and Alzheimer’s dementia.

Background. Patients with dementia display impaired executive function and neuropsychiatric symptoms such as behavioural changes and sleep disturbances. These symptoms can make patients become more dependent. The experience of caregiving for patients under these conditions is burdensome. It is important to detect this burden to protect both the caregiver and the patient from negative outcomes.

Design. Survey.

Methods. Participants were 143 primary caregivers of patients with dementia and 30 caregivers of older adults without dementia in two hospitals in Mexico City.

Results. The internal reliability was Cronbach’s $\alpha = 0.89$ and 0.82 for the 25-item and the seven-item versions, respectively. The item–total correlations for two Screen for Caregiver Burden versions were significant from $r = 0.26$ to $r = 0.77$, $p < 0.001$. The test–retest was ICC = 0.78, $p < 0.001$; CI 95% (0.55–0.89) and ICC = 0.72, $p < 0.001$; CI 95% (0.41–0.86) for the 25-item and the seven-item, respectively. We found from non-significant to highly significant correlations between two Screen for Caregiver Burden versions and other measures ranged. Validity of known groups showed that the caregivers of demented patients experienced more burden than those caring for non-demented patients.

Conclusions. Given these psychometric properties, both versions of the Screen for Caregiver Burden are valid tools and can be reliably used to assess the presence and level of caregiver burden in caregivers of demented patients.

Relevance to clinical practice. The Screen for Caregiver Burden in the Spanish Language can be used in clinical practice to detect caregiver burden in family members. We recommend using the long or full-length version when the objective is to assess the caregiver burden carefully and the short version (seven-item) as a screening method of caregiver burden that requires attention.

Key words: caregiver burden, dementia care, nurses, nursing, screening tools, validity

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Introduction

Human life expectancy has increased considerably during the past decades. This phenomenon has enabled the appearance of chronic illnesses such as different types of dementia. Among subjects 65 years and older, the prevalence of dementing illnesses is 5% in general population of Mexico (Gutiérrez-Robledo et al. 2001, Mejía-Arango et al. 2007). This number can rise as high as 20–30% as these subjects become even older (Mittelmark 1994).

Patients with dementia display impaired executive function and neuropsychiatric symptoms such as behavioural changes, depression and sleep disturbances. These symptoms can make patients become more dependent on others, especially family members, who might become their caregivers. The experience of caregiving for patients under these conditions can result in a burdensome task (Mendoza-Martínez & Rodríguez-García 1999, Savundranayagam et al. 2005).

Caregiver burden refers to a worn-out or overwhelmed condition that jeopardises his/her capacity to fulfil the demented patient’s increasing demands (Mendoza-Martínez & Rodríguez-García 1999). ‘Exposure to stressors’ such as the patient’s cognitive and behavioural impairments (Vitaliano et al. 1987), personality characteristics, health status and the caregiving period of time are some of the variables that can influence burden vulnerability (Biaggio 1980).

It is important to detect and measure this burden to protect both the caregiver and the patient from negative outcomes, as well as to guarantee both an adequate quality of life. In many cases, appropriate monitoring of caregiver burden can avoid premature institutionalisation, elder abuse and increased healthcare use (Hirschman et al. 2004).

Different scales have been developed to assess this concept. There are scales to assess general caregiver burden like the Caregiver Burden Interview (Zarit et al. 1980, Caregiver Reaction Assessment (Given et al. 1992), among others. There are specific ones for caregiver burden in dementia such as the Caregiver Burden Inventory (Novak & Guest 1989), the Neuropsychiatric Inventory Caregiver Distress Scale (NPI-D) (Kaufer et al. 2000). However, the Screen for Caregiver Burden (SCB) scale (Vitaliano et al. 1991) has been used to assess the burden during the experience of caring for a patient with dementia as well as in other populations for its acceptable reliability and validity (Hirschman et al. 2004).

In Mexico, there is no validated Spanish language version of any of the caregiver burden scales for demented patients. The main objective of this study is the adaptation and validation of the SCB subjective burden (SB) scale in Mexican caregivers of patients with vascular, mixed and Alzheimer’s dementia (AD).

Methods

Participants

One hundred and forty-three primary caregivers of patients who had been previously diagnosed with AD, vascular dementia (VD) and mixed dementia, according to the NINCDS-ADRDA (McKhann et al. 1984) or NINDS-AIREN (Román et al. 1993) criteria, Alzheimer’s Disease Diagnostic and Treatment Centers (ADDT) (Chui et al. 1992), respectively, and 30 caregivers of older adults without dementia were recruited. All caregivers consecutively attended the Memory Clinic of the Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán (INCMNSZ) and the Geriatric Clinic of General Hospital Mocel, both in Mexico City.

The inclusion criteria for caregivers in the dementia group were (1) being the informal primary caregiver, which meant that he/she was a non-waged person who assisted the patient with the basic or instrumental activities of daily living (ADL), who was a reliable informant about the severity of the patient’s dementia, who would bring the patient to clinic visits and who spent long periods of time with the patient (Smith et al. 2005); (2) the ability to read and write; (3) having an informed consent sheet that was signed by both the caregiver and the patient and (4) have been assisting the patient for at least one month. The exclusion criteria for this group were (1) suffering from any acute or severe chronic illness and (2) being less alert or suffering from severe aphasia, impaired vision and/or hearing, which would make it difficult for the caregiver or the patient to answer any of the questionnaires.

The inclusion criteria for caregivers for the non-demented group were (1) being an adult, a close relative of the patient and being familiar to him/her, knowledgeable and aware of his/her environment; (2) caring for a non-demented older individual, who has no memory complaint reported by either the informant or the older person and who has an Mini Mental State Examination (MMSE) score of ≥24; (3), with the ability to read and write and (4) having an informed consent sheet signed by both the informant and the older person. The exclusion criteria for this group were (1) suffering from any acute or severe chronic illness and (2) being less alert or suffering from severe aphasia, impaired vision and/or hearing, which would make it difficult for the informant or the older person to answer any of the questionnaires.

Ethical considerations

The original project was approved by the Human Biomedical Research Institutional Committee of the INCMNSZ (reference number 1599).
Procedures

The selection of Screen for Caregiver Burden (SCB)

Meticulous research was carried out on Medline to identify the scales that were available to assess the caregiver burden of demented patients. We used the next key words: dementia, caregiving, caregiver burden, adaptation, reliability, validity, vascular, mixed and AD. The choice was limited to questionnaires that explicitly described the scale development or adaptation and psychometric properties.

We found four scales to assess caregiver burden in dementia, which were reviewed by a committee of clinical experts in the field (six geriatricians, two psychiatrists, three neuropsychologists and one geriatric nurse) and based in reliability, validity in different populations, practical application and adequate livelihoods in a theoretical model of caregiver burden in dementia, the SCB was selected by a majority. The authors’ authorisation to use the scale was requested (Vitaliano et al. 1991).

Translation–retranslation

Once the SCB was selected, the standardised procedure for scale adaptation was followed (Guillermin et al. 1993). This included the translation into the Spanish language by two blinded translators, which was followed by adaptations of any differences that were found between them. The Spanish version was retranslated into English by two bilingual and bicultural blinded expert translators. The original English version was compared with the retranslations by the expert committee, which concluded that there were no major differences between the original English version and the retranslated version. Afterwards, the Spanish version was submitted to a group of 10 caregivers to confirm its comprehensability.

Subsequently, all caregivers responded the questionnaire, which was applied by four geriatricians. Directions were thoroughly given to caregivers. They were told to answer independently (not in presence of the patient) and to circle the chosen option. They were allowed to clarify any doubts, if necessary, by seeking help from the interviewer. The SCB (25-item) was completed in 10 minutes and the entire questionnaire battery in an hour and a half.

Measures

Screen Caregiver Burden

The SCB is a 25-item instrument designed to measure objective burden (OB), which allows to know if there is or not burden and SB, which asks the caregiver to identify and rate the severity of distress that is associated with the burden that he/she has experienced during each caregiving activity. We will refer to the SCB SB just as SCB. Each of the items allows a Likert-type of response, using a five-point scale to rate the distress (0 = no occurrence; 1 = occurrence, but no distress; 2 = occurrence with mild distress; 3 = occurrence with moderate distress and 4 = occurrence with severe distress). The higher the number is, the greater the burden will be (Table 1).

The SCB SB measures six domains: patient’s cognition concerns and behaviour issues (correspond to items 1, 4, 8, 9, 11–16 and 23) and the caregiver’s social, emotional, financial and physical status (correspond to items 2, 3, 5–7, 10, 17–22, 24 and 25) (Table 1) (Vitaliano et al. 1991). This rapid tool can detect changes over time (Vitaliano et al. 1991). The SCB SB short version includes seven items (Table 1).

Mini Mental State Examination

The MMSE was used as an indicator for rating the severity of the patient’s dementia (cognitive domain). This instrument has been validated and used in our population (Ostrosky-Solis et al. 2000, Mejia-Arango et al. 2004), (Rosas-Carrasco et al. 2010) and its scores range from 0–30.

Dysexecutive Questionnaire (DEX)

The DEX evaluates the cognitive, behavioural and emotional domains of the patient’s executive functions and their alterations. Each of the 20 items is rated according the alterations’ frequency, with 0 = never, 1 = rare or unusual, 2 = occasionally, 3 = frequently and 4 = very frequently. The analysis of this study considered a total score range of 0–80 and the caregiver (proxy) responded to it (Wilson et al. 1996, Burgess et al. 1998).

Neuropsychiatric Inventory Questionnaire (NPI)

The brief version was previously validated in the Spanish language (Boada et al. 2002). The NPI evaluates 12 different neuropsychiatric symptoms in three different scales: NPIq determines whether the symptom is present (score range 0–12); NPI (severity) rates the symptom’s intensity (score range 12–36); and NPIb (burden) rates the amount of burden that the caregivers experience (score range 0–60). In this study, the presence or absence of the neuropsychiatric symptoms was correlated with the patient’s behavioural domain and the burden dimension was correlated with the caregiver’s specific burden. NPI severity was not considered in this study.

Sleep Disorders Inventory (SDI)

The eight-item SDI instrument assesses these disorders and other nocturnal behaviours of the patient by examining them.
in four scales: SDIq determines whether the behaviour is present (score range 0–8); SDI (frequency) measures the frequency of the behaviour (score range 8–32); SDI (severity) measures the severity of the behaviour (score range 8–24); and SDI (burden) measures the amount of burden the caregivers experience because of these behaviours (score range 0–40). In this study, the presence or absence of the disorders was correlated with the patient’s behavioural domain and the burden dimension correlated with the caregiver’s specific burden (Tractenberg et al. 2003).

**Lawton’s Scale**
This eight-item measure was used to evaluate the patient’s instrumental activities of daily living (IADL) (score range 0–8) (Lawton & Brody 1969).

**Barthel’s Index**
This 10-item scale was used to assess the patient’s basic ADL (score range 0–100). It has been previously validated in Spanish (Baztán et al. 1993).

**Beck’s Depression Inventory (BDI)**
To examine the caregiver’s depression, the standardised 21-item BDI for Mexico City’s residents was used (score range 0–63) (Jurado et al. 1998).

**Beck’s Anxiety Inventory (BAI)**
This 21-item instrument, which has been validated for the Mexican population, was used to evaluate the caregiver’s anxiety (score range 0–63) (Robles et al. 2001). These two scales evaluate caregiver’s emotional domain.

**Analysis**
Two sample calculations were performed according to Pearson’s correlation formula (Pértegas Díaz & Pita Fernández 2001). The first one was performed to determine the sample size that was required for the test–retest and it was calculated with the SCB test–retest value ($r = 0.70$) from the original work (Vitaliano et al. 1991). The security ($Z_1 - a/2$) value was 1.96 and the power ($Z_1 - b$) value was 0.84,
which resulted in 29 caregiver–patient dyads being enough to prove this test. Nevertheless, a total of 30 caregiver–patient dyads were included. For correlations between the measurements, the correlation obtained between SCB and an anxiety scale (Vitaliano et al. 1991) was $r = 0.26$, to detect a smaller effect in this sample size with a suitable security ($Z1 = a/2$), which was $1.96$ and power ($Z1 – b$), which was $0.84$. The result was a minimum of 119 dyads, nevertheless a total of 143 dyads were included.

Finally, to calculate the necessary number of subjects to prove validity between the demented and non-demented patient’s caregiver groups, the two-moments comparison formula was used (Pita Fernández 1996). The SCB variance value from an original study (Vitaliano et al. 1991) of 16.24 was taken, along with a security ($Z1 – a/2$) of $1.96$, power ($Z1 – b$) of $0.84$ and accuracy of $5$, which resulted in a minimum of 20 subjects for each group. Based on this calculation, we decided to include 30 in the control group.

The internal consistency of the 25-item and the seven-item SCB was determined by Cronbach’s alpha, which considered a value of 0.70 or higher to be reliable. Also we evaluated the item–total correlations, which were the correlation of the single item with the sum of all other items.

The test–retest that was performed within 15 days after the first test was determined through the Intraclass Correlation Coefficient (ICC), which considered a value of 0.70 or higher to be reliable. Other validity measures were examined through correlations between the SCB and other measures that encompassed the domains of the SCB. Our hypothesis postulates that the greater the SCB score is, the greater the caregiver burden will be. In turn, the SCB score should correlate with a more severe dysexecutive syndrome (patient’s cognitive domain), with more neuropsychiatric symptoms (patient’s behaviour domain), with more sleep disorders (patient’s behaviour domain) and with a worse emotional status of the caregiver (caregiver’s emotional domain). All the measures were examined by Pearson’s correlation coefficient.

Known groups’ validity was evaluated by examining the difference between the mean of the demented patients’ caregiver’s group and the mean of the non-demented older people’s informants. Our hypothesis postulates that both SCB versions will score higher in the group of caregivers of demented patients than in the group of informants for the non-demented older people. The difference was determined by the Student’s $t$ test.

Descriptive results were analysed through the difference between the means (continuous variables) of types of dementia using the ANOVA test. For differences between frequencies (nominal variables), the chi-square test was used.

All variables were analysed with the Stata 11 statistic program (Stata Corporation, College Station, TX, USA).

Results

We evaluated 143 caregiver–patient dyads. All of them completed the questionnaires. Forty-nine patients (34.27%), 49 patients (34.27%) and 45 patients (31.47%) had mixed dementia, vascular dementia and AD, respectively. Between all variables studied only significant differences were found in the score of MMSE by groups of dementia (Table 2).

Reliability

The overall alpha was 0.89 and 0.82 for the 25-item and seven-item SCB, respectively, which indicated that both scales had good internal consistency. The item–total correlations for the 25-item SCB were consistent, from $r = 0.26$ to $r = 0.76$ $p < 0.001$. For the seven-item SCB, the correlations were even more consistent, from $r = 0.59$ to $r = 0.77$ $p < 0.001$ (Table 2). The test–retest reliability was ICC = $0.78$ (CI 95% 0.55–0.89) $p < 0.001$ and was ICC = $0.72$ (CI 95% 0.41–0.86) $p < 0.001$ for the 25-item and seven-item, respectively.

Other validity measures

Correlations between the 25-item SCB and seven-item SCB and the other measures ranged from non-significant to highly significant. For the 25-item SCB, the higher correlations were obtained with: BDI and BAI $r = 0.57$ $p < 0.001$, NPI $r = 0.61$ $p < 0.001$ (Table 3). For the seven-item version, the higher correlations were obtained with: NPI $r = 0.54$ $p < 0.001$, BDI and BAI $r = 0.51$ $p < 0.001$. Lawton’s Scale (IADL) and Barthel’s Index (ADL) did not correlate with either version (Table 3).

Known groups’ validity between the group with dementia and the group without dementia (control group) demonstrated, as expected, that there were no differences with regard to the caregiver’s age and educational level. We found a highly significant difference in the MMSE of patients with and without dementia (Table 4). The difference was modest ($p < 0.03$) for the SD1b. With regard to the 25-item and the seven-item SCB, the differences were highly significant between the dementia group and the control group $p < 0.001$.

Discussion

The SCB has proved to be a useful tool to assess caregiver burden with AD in other populations (Vitaliano et al. 1991, Hirschman et al. 2004). Because of language and cultural differences that exist between those populations and our
Table 2 Characteristics of caregivers and patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alzheimer’s dementia</th>
<th>Vascular dementia</th>
<th>Mixed dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>caregiver’s data</td>
<td>n = 45</td>
<td>n = 49</td>
<td>n = 49</td>
</tr>
<tr>
<td>Gender</td>
<td>(31.47) %</td>
<td>(34.27) %</td>
<td>(34.27) %</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With partner</td>
<td>31 (28.44)</td>
<td>38 (34.86)</td>
<td>40 (36.70)</td>
</tr>
<tr>
<td>No partner</td>
<td>14 (41.18)</td>
<td>11 (32.35)</td>
<td>9 (26.47)</td>
</tr>
<tr>
<td>Relationship to patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse</td>
<td>12 (29.27)</td>
<td>10 (24.39)</td>
<td>19 (46.34)</td>
</tr>
<tr>
<td>Children</td>
<td>24 (32.00)</td>
<td>28 (37.33)</td>
<td>23 (30.67)</td>
</tr>
<tr>
<td>Other</td>
<td>9 (33.33)</td>
<td>11 (40.74)</td>
<td>7 (25.93)</td>
</tr>
<tr>
<td>Caregiver’s data</td>
<td>mean ± standard deviation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>57.22 ± 12.06</td>
<td>55.38 ± 14.31</td>
<td>61.46 ± 12.96</td>
</tr>
<tr>
<td>Educational level</td>
<td>11.95 ± 5.44</td>
<td>12.71 ± 5.39</td>
<td>12.93 ± 4.69</td>
</tr>
<tr>
<td>25-Item SCB</td>
<td>34.48 ± 10.81</td>
<td>38.77 ± 12.66</td>
<td>38.71 ± 12.97</td>
</tr>
<tr>
<td>7-Item SCB</td>
<td>12.20 ± 5.35</td>
<td>13.06 ± 5.87</td>
<td>13.53 ± 5.73</td>
</tr>
<tr>
<td>BDI</td>
<td>8.57 ± 7.44</td>
<td>9.30 ± 7.42</td>
<td>11.10 ± 7.86</td>
</tr>
<tr>
<td>BAII</td>
<td>7.77 ± 7.68</td>
<td>9.65 ± 7.75</td>
<td>11.93 ± 9.85</td>
</tr>
<tr>
<td>NPIb</td>
<td>8.06 ± 7.30</td>
<td>10.18 ± 11.94</td>
<td>12.61 ± 10.64</td>
</tr>
<tr>
<td>SDIb</td>
<td>2.51 ± 5.59</td>
<td>3.14 ± 6.36</td>
<td>3.95 ± 7.41</td>
</tr>
<tr>
<td>Patient’s data  mean ± standard deviation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>82.22 ± 8.36</td>
<td>80.38 ± 6.45</td>
<td>79.18 ± 8.89</td>
</tr>
<tr>
<td>MMSE</td>
<td>15.82 ± 5.90</td>
<td>19.59 ± 6.02</td>
<td>16.77 ± 6.03**</td>
</tr>
<tr>
<td>DEX</td>
<td>23.02 ± 15.78</td>
<td>22.16 ± 14.35</td>
<td>28.18 ± 18.57</td>
</tr>
<tr>
<td>Barthel’s Index</td>
<td>80.22 ± 26.45</td>
<td>73.16 ± 30.74</td>
<td>72.55 ± 29.61</td>
</tr>
<tr>
<td>Lawton’s Scale</td>
<td>5.73 ± 5.62</td>
<td>6.34 ± 5.46</td>
<td>5.44 ± 5.85</td>
</tr>
<tr>
<td>NPI (# of symptoms)</td>
<td>6.13 ± 3.67</td>
<td>5.36 ± 3.51</td>
<td>6.40 ± 2.96</td>
</tr>
<tr>
<td>SDI (# of alterations)</td>
<td>1.44 ± 2.18</td>
<td>1.59 ± 1.94</td>
<td>1.75 ± 1.96</td>
</tr>
</tbody>
</table>

Student t test for differences between means (continuous variables), chi-square test for differences between frequencies (nominal variables), *p < 0.05; **p < 0.01; ***p < 0.001.

Table 3 Correlation between two SCB versions and other measures

<table>
<thead>
<tr>
<th>Domains</th>
<th>Construct</th>
<th>25-Item SCB</th>
<th>7-Item SCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s cognitive domain</td>
<td>MMSE</td>
<td>-0.16**</td>
<td>-0.20**</td>
</tr>
<tr>
<td>Patient’s behaviour domain</td>
<td>NPI (# symptoms)</td>
<td>0.34***</td>
<td>0.32***</td>
</tr>
<tr>
<td>Caregiver’s specific burden</td>
<td>NPIb (SDI burden)</td>
<td>0.45***</td>
<td>0.34***</td>
</tr>
<tr>
<td>Caregiver’s emotional domain</td>
<td>BDI</td>
<td>0.57***</td>
<td>0.51***</td>
</tr>
</tbody>
</table>

Pearson’s Correlation *p < 0.05; **p < 0.01; ***p < 0.001.

GDS, Geriatric Depression Scale; DEX, Dysexecutive Questionnaire; BDI, Beck’s Depression Inventory; BAII, Beck’s Anxiety Inventory; NPIb, Neuropsychiatric Inventory burden; SDIb, Sleep Disorders Inventory burden; SCB SC, Screen Caregiver Burden, Subjective Burden; MMSE, Mini Mental State Examination.

explained, because the retest in our study was performed 15 days apart, in contrast to the 15–18 month interval of the original study (Vitaliano et al. 1991).

As expected, we found correlation between other specific measures of caregiver’s burden (NPI and SDI burden). Several previous studies found relation between sleep disturbances, neuropsychiatric symptoms and caregiver burden (Pang et al. 2002, Machnicki et al. 2009). There were strong correlations between depressive and anxious symptoms and higher scores in the two SCB versions as expected (Table 3). These symptoms are likely a result of the burden that is associated with the caregiving experience (Pang et al. 2002).

There was a good correlation between the two SCB versions and DEX. Impairment of the cognitive aspect of the frontal lobe function (dysexecutive syndrome) affects the ability to plan and perform complex voluntary actions that can lead to a specific target. Impairment of the non-cognitive aspect of the frontal lobe function includes behavioural symptoms such as apathy, personality changes, disinhibition, impulsiveness, affective issues, social relationship problems and anosognosia (Ardila & Ostromsky-Solis 1991, Dubois & Levy 2004). Dysexecutive syndrome is associated with a decline in the ADL in older people (Royall et al. 2005, Davis & Tremont 2007). All these alterations may cause caregiver’s burden.

We found correlation between the two SCB versions and NPI (number of symptoms). These patient’s neuropsychiatric changes, especially agitation, enhance the caregiver’s burden.
(Senanarong et al. 2004) and can comprise his/her physical and psychological health status when caregiver feels that he/she has no longer control over the patient’s behaviour and illness. This burden can be aggravated when he/she assists the patient more than six days/week for more than 14 hours/day and when there is no consistent social or family support (Mendoza-Martínez & Rodríguez-García 1999). These circumstances can negatively affect the quality of the caregiving activity, which has an impact on the patient’s health (Tractenberg et al. 2003).

With regard to sleep impairment (included in the SDI scale), we found a moderate correlation with the two SCB versions. This issue may be a prominent, disturbing and burdening phenomenon that can lead to the early institutionalisation of the patient with dementia (Mendoza-Martínez & Rodríguez-García 1999, Hirschman et al. 2004, Paniagua & Paniagua 2008).

In this study, we found a modest correlation between MMSE and the two SCB versions. Some investigations have established that other cognitive deficits, including memory, language and orientation have a weak correlation with the caregiver’s burden (Schneider et al. 1999). In Japan, the severity of the dementia was not associated with caregiver burden (Hirakawa et al. 2008). Based on all these findings, there does not appear to be a conclusive correlation between the severity of the patient’s dementia and caregiver burden.

Patients in the early stages of dementia may be unaware of cognitive and ADL impairment. Not until the illness progresses and more assistance with basic ADL is required their awareness of their deficits increase, producing behaviour modifications that could distress and change the psychological status of their caregiver. In both situations, these behavioural changes demand an adjustment period for both the patient and caregiver, but once the changes have occurred and both have adjusted, their quality of life might not suffer as much. Under this circumstance, the caregiver’s burden can decrease (Logsdon et al. 2002). About this, we found no correlation between the two SCB versions and IADL, ADL. Although, these patients may become functionally more dependent, they have a more positive attitude, which contributes to a less burdensome experience for the caregiver.

Known groups’ validity indicated that caregivers of demented patients are more overburdened, and SCB could discriminate between caregivers with burden and without burden. A limitation of this study is that no specific measures assessed the social, physical and economic status of the caregiver. These aspects are likely to also be associated with burden.

Conclusions

The SCB yielded satisfactory results in terms of internal and external reliability, validity between measurements and between known groups. Thus, we can recommend its use to evaluate the caregiver burden in caregivers of patients with dementia.

Relevance to clinical practice

This work makes available in clinical practice a Spanish language version of SCB, useful for evaluating specific caregiver burden of patients with mixed, vascular and Alzheimer’s dementia. The SCB in the Spanish Language can be used in clinical practice to detect caregiver burden in family members who are caring of patients with Alzheimer’s, vascular and mixed dementia. We recommend using the long or full-length version when the objective is to carefully assess the caregiver burden and the short version (seven-item) as a screening method, of caregiver burden that requires attention.

Contributions

Study design: MGGS, ORC, LMGR, JMV, JRG; data collection and analysis: MUPZ, MMA, ORC, MGGS and manuscript preparation: MGGS, ORC, LMGR.

Conflict of interest

We declare that there is no conflict of interest.
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