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Psychometric properties of the Caregiving Compassion Scale (CCS)

Running title: Psychometric properties of the CCS

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Compassion in dementia caregiving: psychometric properties of the Caregiving Compassion Scale in Spanish caregivers

Abstract

Compassion has been suggested as a relevant variable for understanding dementia caregivers' psychological distress. The objectives were to analyze the psychometric properties of the Caregiving Compassion Scale (CCS) and to explore the association between caregivers' compassion and their emotional health. Two hundred and thirty-six dementia caregivers were evaluated for compassion, depressive symptoms, guilt, ambivalence, care-recipient's functional and cognitive status, frequency of behavioral problems, and desire to institutionalize the care-recipient. Exploratory factor analyses, correlations, and regression analyses were done. Two factors were obtained. The factor labelled "Distress from witnessing the care recipient suffering" was associated with higher stress linked to witness depressive problems in the care-recipient and with caregivers' ambivalence and guilt levels. The factor labelled "Motivation/disposition for helping" was associated with less desire for institutionalization, and it showed a negative association with ambivalence and guilt feelings. The CCS seems to be a valid and reliable scale for assessing compassion in dementia caregivers.

Keywords: Compassion; caregiver; guilt; ambivalence; perceived suffering.

What is known about this topic:

- Compassion plays a relevant role in the explanation of caregivers' distress.
- Schulz et al., (2017) developed the Caregiving Compassion Scale (CCS) in order to assess the levels of compassion in dementia caregivers, however there are no studies aimed at analyzing its psychometric properties.

What this paper adds?

- The CCS presents good reliability properties.
- The CCS is composed by two distinct factors: Distress from witnessing the care recipient suffering and Motivation/disposition for helping, respectively. The factor related with the distress from witnessing the care recipient suffering is associated with higher guilt and ambivalence feelings, whereas the Motivation/disposition for helping factor is associated with fewer guilt, ambivalence and desire to institutionalize the person with dementia.

Introduction

Taking care of a relative with dementia has been proposed as a chronic stressful situation (Pinquart & Sörensen, 2003). In their daily routine, caregivers must face multiple demanding tasks over a long period and for many daily hours in fulfilling the needs of the person with dementia, as well as performing other activities regarding other personal life areas. Even though positive aspects associated with the caregiving role have been identified (Quinn & Toms, 2019), it is not surprising that a broad number of studies have shown negative outcomes associated with dementia family caregiving, including depression, anxiety, and burden (Schulz et al., 2020).

Less studied has been the fact that dementia family caregivers witness the continuous decline and dementia related symptoms (e.g., behavioral disturbances, changes in personality, functional disability) of their relatives, which may also affect their emotional health. In fact, the exposure to this suffering has been proposed as an

independent source of distress for caregivers regardless of the care demands (Schulz et al., 2020). Schulz et al. (2008) assessed caregivers' perceptions of care recipients' suffering through the depression subscale of the Revised Memory and Behavior Problems Checklist (RMBPC) (Teri et al., 1992), and their findings revealed that perceptions about the suffering of a care recipient were a relevant predictor of caregivers' depression. Similarly, in caregivers of relatives affected by other chronic conditions (e.g., osteoarthritis and amyotrophic lateral sclerosis), the perception of patient suffering was also related to higher caregiver distress (Boerner & Mock, 2012; Monin et al., 2010).

An experience that may emerge from exposure to another's suffering is compassion. In the caregiving literature, compassion has been defined as the feeling that arises from witnessing care-recipient suffering, a sense of shared suffering combined with a subsequent desire to help (Schulz et al., 2007). In non-caregiving samples compassion guided behaviors have been related to better psychological outcomes, as greater levels of positive affect and happiness (López et al., 2018; Sheldon & Cooper, 2008). In addition, compassion for others is related to physical health. In this line, Brown et al., (2003) showed that older adults who show higher levels of compassion for their spouses have a lower risk for mortality. In addition, greater levels of this construct have been related to poorer markers of physical health such as higher blood pressure and higher cortisol levels (Cosley et al., 2010). Regarding their correlates for wellbeing, it also been pointed out that compassion may constitute a key component of the caregiving stress process (Schulz et al., 2007). However, the number of studies analyzing this construct in the dementia caregiving literature is sparse, and there is a lack of studies focused on the design and development of assessment instruments that measure caregivers' compassion for the care recipient. To our knowledge, there is only

one available specific scale for measuring compassion for the care recipient in dementia family caregivers. Specifically, Schulz et al. (2017) used the Caregiving Compassion Scale, although no psychometric analysis of the scale was reported, except for the internal consistency of the scale (Cronbach's alpha of .79).

Taking into consideration the above-mentioned issues, the main objectives of the study were: 1) to analyze the psychometric properties of the Caregiving Compassion Scale (CCS); and 2) to explore the relationships between compassion levels and indicators of care recipient behavioral, cognitive, and emotional status, as well as caregivers' levels of stress, emotional status, and desire to institutionalize the care recipient. The hypothesis were the following: a) The CCS will present adequate reliability coefficients assessed through Cronbach's alpha and McDonalds's Omega; b) Caregivers showing greater compassion levels will report better psychological outcomes: lower levels of stress reactivity, better emotional status (lower depression, guilt and ambivalence levels); c) caregivers whose care recipient has a worse behavioral, cognitive and emotional status will report greater compassion levels; d) caregivers with greater levels of compassion will present lower desire to institutionalize the care recipient, as they would desire to help their loved ones themselves.

Methods

Sample

A total of 466 family caregivers of people with dementia were invited to participate in the study. Of these individuals: 90 participants did not meet the inclusion criteria for the study; 64 caregivers refused to participate in the study; 18 participants were excluded for being in psychiatric and/or psychological treatment at the moment of

the interview. In addition, 58 caregivers were excluded for the present analyses due the absence of response to the Caregiver Compassion Scale.

The final sample for the present study was composed by 236 caregivers. The mean age of the sample was 62.29 (SD = 12.7) years, and 68.6% were women. The 54.3% were offspring caregivers, 41.9% were spousal caregivers, and the rest were caregivers of other relatives, such as siblings, parents in law, etc. The mean age of the care-recipients was 80.3 years (SD = 8.4).

Procedure

The sample was recruited through different health and adult day care centers in BLINDED FOR REVIEW, Spain. The researchers contacted both private and public centers providing information about the study and inviting them to participate. The criteria to contact the centers were: a) to be a center addressing care or needs of dementia patients; b) not being a nursing home or other institution where the person with dementia lives permanently; c) to be located in BLINDED FOR REVIEW. The centers that agreed to collaborate elaborated a list of potential participants. After the centers sent the list of potential participants, the researchers conducted a brief telephone screening in order to check whether participants met the inclusion criteria. The inclusion criteria for the study were: a) being older than 18 years old; b) self-identifying as the primary caregiver of the relative with dementia; c) performing the caregiving task during at least one hour per day during the last three months. After that telephone interview, face-to-face interviews were arranged with the caregivers in the participating centers. All participants signed the informed consent form in the first part of the interview. The study was approved by the Ethics Committee of the BLINDED FOR REVIEW.

Measurement

In addition to sociodemographic data of the caregiver (age, gender, hours devoted to care, time since care begin), the following variables were assessed:

Compassion. Compassion was assessed through the Caregiving Compassion Scale proposed by Schulz et al. (2017), which was developed by drawing upon the work by Feeney and Collins (2003). It has 10 items aimed at assessing the caregiver's feelings of compassion for the care recipient (see Table 1). The response scale ranges from 1 (strongly agree) to 5 (strongly disagree). All the items must be reverse-coded, and the total score is obtained by summing all the items' punctuations. Higher scores indicate higher compassionate levels. The Spanish version of the scale was obtained by back-translation procedure. The original compassion scale was translated from its original language (English) to Spanish, and as a second step, the obtained Spanish version was translated to English. All the authors were involved in translation process, all of them did the translation to English to Spanish and vice versa independently. After that, the equivalence between the original version and the obtained version was evaluated and discussed by the research group. In addition, an independent translator English native speaker revised the translation of the instrument (both English to Spanish and vice versa).

Caregiver's emotional health.

Depression. Depressive symptoms were evaluated with the Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). The scale has 20 items that evaluate the presence of several depressive symptoms during the previous week (e.g., *I felt sad*). Answers vary between 0 (rarely or never) and 3 (most or all of the time). The internal consistency index (Cronbach's alpha) in this study was .89.

Guilt. Guilt feelings experienced by caregivers were assessed through the Caregiving Guilt Questionnaire (CGQ; Losada et al., 2010). The questionnaire is composed of 22 items (e.g., *I have felt guilty about the way I've sometimes behaved with my relative*) with a Likert type response ranging from 0 (never) to 4 (always). Cronbach's alpha in this study for the CGQ was .90.

Ambivalence. The Caregiving Ambivalence Scale (CAS; Losada et al., 2017) was used. The CAS measures the simultaneous experience of positive and negative emotions in the caregiving process through five items (e.g., *I have mixed feelings toward my relative (tenderness-rage; love-hate, etc.)*) with a Likert-type scale that ranges from 0 (never) to 3 (always). The Cronbach's alpha for this scale in this study was .78.

Caregiver's desire to institutionalization.

The caregiver's desire to place the person cared for in a nursing home was measured through a single item (*During the last week, have you considered the possibility of placing your relative in a nursing home?*) with a response ranging from 0 (I did not consider the option) to 100 (I have been thinking about it every day).

Stressors

Frequency and appraisal of behavioral and psychological symptoms of dementia. In order to assess the frequency of and the caregiver's reaction to behavioral and psychological symptoms of dementia (BPSD), the Spanish version (Nogales-González et al., 2015) of the Revised Memory and Behavior Problems Checklist (RMBPC; Teri et al., 1992) was administered. The instrument measures frequency and stress associated with three types of disturbances related to dementia: memory problems (e.g., *Losing or misplacing things*), disruptive behaviors (e.g., *Destroying property*), and

depressive behaviors (e.g., *Crying and tearfulness*). Cronbach's alpha for the frequency was .78 and .87 for the reaction total subscale in the present study.

Functional and cognitive status. For assessing the ability of the care recipient in ten basic activities of daily living, the Barthel Index (Mahoney & Barthel, 1965; validated to Spanish by Baztan et al., 1993) was administered. The Cronbach's alpha for the scale was .91. The cognitive status of the care recipient was evaluated through the Global Deterioration Scale (GDS; Reisberg et al., 1988). That scale was filled by the interviewer based on the data regarding the cognitive abilities of the care recipient commented by the caregiver during the interview.

Data analysis

Descriptive analyses were performed in order to analyze the characteristics of the sample and the assessed variables (means, standard deviations, and range). The factorial structure of the compassion scale was tested. First, the KMO measure of sampling adequacy and Bartlett's test were calculated. An exploratory factor analysis (EFA) was conducted using the maximum likelihood (ML) estimator and Geomin as a method of rotation. Geomin is one type of oblique rotation, and it allows to extract correlations between the possible factors, so due to the exploratory nature of the study this type of rotation was chosen. For determining the number of factors to retain, parallel analyses were carried out through the criteria proposed by Longman et al. (1989), using the mean eigenvalues and the 95th percentiles eigenvalues. The fit of the obtained factor structure was tested through the RMSEA, TLI, CFI, and SRMR indexes.

For examining reliability, Cronbach's alpha, MacDonald's Omega and Composite Reliability were calculated. In order to test convergent validity, average variances extrated (AVE), Pearson's correlations and hierarchical regressions analyses

were conducted, examining the associations between the compassion levels and the assessed variables. Furthermore, hierarchical regressions with compassion as the independent variable and caregivers' emotional health variables (depression, guilt, and ambivalence) as outcome variables were carried out. In the first step, caregiver's sociodemographic data and stressors were entered as predictors. In the second step, the compassion factors were entered as predictors. The Mplus version 7 was used for the exploratory factor and parallel analyses, while the descriptive, correlations, and regressions analyses were performed with SPSS version 26.

Results

Factorial structure of the Caregiving Compassion Scale

The adequacy of the sample for exploratory factor analyses was confirmed as the KMO value was 0.84 and the Bartlett's test was statistically significant ($\chi^2(45) = 818.85, p < .001$). The initial pool of ten items showed a Cronbach's alpha of .79, indicating adequate reliability properties of the instrument. However, the item *There is nothing that I can do to help reduce the suffering of my partner/relative* showed an item-scale correlation lower than 0.20 and was removed from further analyses. Then an EFA with the remaining nine items was performed. The first EFA showed one item (*Being around my partner/relative when they are suffering is stressful for me*) with non-significant factor loading, so it was removed. A second EFA was done with the eight remaining items. The second EFA showed a two-factor solution (with eigenvalues of 3.92 and 1.15, respectively). The fit indexes showed an excellent fit of the model to the data ($\chi^2(13) = 20.27, p > .05$; RMSEA = 0.049 90% CI [0.000 – 0.088]; CFI = 0.990; TLI = 0.978, and SRMR = 0.024). The final factor structure is shown in Table 1.

Although the parallel analyses suggested retaining a unique factor (only the eigenvalue of the first factor was higher than the simulated), the fit indexes of the one factor solution ($\chi^2(20) = 85.01, p < 0.001$; RMSEA = 0.118 90% CI [0.093 – 0.144]; CFI = 0.91; TLI = 0.874, and SRMR = 0.059) showed a worse fit of the model to the data. Considering that the eigenvalue of the second factor (1.15) was very close to the simulated one (1.22) and following the Kaiser criterion (1960), the two-factor structure was maintained.

The first factor was labelled “Distress from witnessing the care-recipient suffering” and explained a 48.94% of the explained variance. That factor grouped items assessing distress and upset feelings derived from the caregivers’ perceptions of the suffering experienced by the relative with dementia. The second factor was labelled “Motivation/disposition for helping” and explained 14.4% of compassion’s explained variance, grouping items assessing caregivers’ attempts to help or alleviate the distress of their relative with dementia.

Reliability of the Caregiving Compassion Scale

Cronbach’s alpha for the final total scale was .81, while the first and second factors yielded alphas of .79 and .72, respectively. Following the recommendations of Crutzen and Peters (2015) McDonald’s Omega coefficients were calculated due to its independence of the number of items, aspect that may be influencing others reliability index such as Cronbach’s alpha. Omega value for the total scale was .83; for the first and second factor were 0.79 and 0.72, respectively. These values indicated an acceptable reliability of the total scale and its factors. In addition, Composite Reliability (CR) was calculated for each factor. The CR has been proposed as a better indicator of internal consistency compared to Cronbach’s alpha as it relies on item factor loadings to

compute the factor. The cutoff for this index to indicate an instrument as reliable is 0.70 (Hair, 2005). The CR for the first factor was .80 and .70 for the second factor.

Relationships with other variables

Examining the average of variance extracted (AVE) both compassion factors showed values relatively close to the recommended cutoff of 0.50 (Hair et al., 1998). Concretely, the AVE for the first factor was .45 and 0.44 for the second factor.

Pearson correlations between the measured variables are shown in Table 2. The scores of the total compassion scale showed significant and positive associations with guilt levels, overall frequency of BPSD, and frequency and reactions of the RMBPC depressive behaviors subscale. The “Distress from witnessing the care-recipient suffering” factor was significantly and positively associated with guilt feelings, overall frequency and reaction to BPSD, frequency of depressive behaviors of the care recipient, and reaction to the care-recipient’s memory and depressive problems. Regarding the associations shown by the factor “Motivation/disposition for helping”, positive associations with frequency of depressive behaviors in the care-recipient and a negative association with caregiver’s desire to institutionalize the care-recipient were obtained. Moreover, both compassion factors were negatively correlated with caregiver age.

In order to further clarify the amount of variance in caregivers’ emotional health explained by both compassion factors, three hierarchical regression analyses were carried out (Table 3). Prior to these analyses, multicollinearity was tested with Tolerance and variance inflation factors (VIF) values. According to Hair et al. (2010) VIF values higher than 4.0, or tolerance less than 0.2 indicate a problem with multicollinearity. In none of the regression models multicollinearity problems were

found. As was found in the correlation analyses, no significant association between the compassion subscales and depressive symptoms was obtained. Only frequency of BPSD was associated with higher depressive symptoms. Regarding guilt feelings, lower caregiver age, a higher frequency of BPSD, higher scores on the compassion factor “Distress from witnessing the care recipient suffering” and lower scores on the compassion factor “Motivation/disposition for helping” were related to higher guilt feelings. The final model explained 34% percent of guilt variance, specifically 5.7% percentage of guilt variance was explained by the addition of compassion factors in the last step of the regression.

Regarding the regression model with ambivalence as dependent variable, lower caregiver age, higher frequency of BPSD, higher scores on the compassion factor “Distress from witnessing the care-recipient suffering” and lower scores on the compassion factor “Motivation/disposition for helping” were related to higher ambivalence scores. This model explained 17% of the ambivalence variance. The addition to the compassion factors in the last step, the explained variance of ambivalence feelings increased by 4.7%.

Discussion

The aim of this study was to analyze the psychometric properties of the Caregiving Compassion Scale (CCS; Schulz et al., 2017) and its associations with caregiving stressors and outcome variables. The findings suggest that the obtained CCS shows a good internal consistency, similar to the one reported by Schulz et al. (2007), and a two-factor structure, with factors labelled “Distress from witnessing the care-recipient suffering and “Motivation/disposition for helping”.

Although there are no previous studies analyzing the factorial structure of the CCS, the two obtained compassion factors support the two theoretical components of compassion proposed by Schulz et al. (2007). Along these lines, the factor labelled “Distress from witnessing the care recipient suffering” corresponds to the first component related to the perceptions and acknowledgment of suffering in the other individual, whereas, the factor “Motivation/disposition for helping” corresponds to the motivational component related to the evoked desire to help the individual who is suffering. Moreover, the two obtained factors are also coherent with the subscales of the Compassion of Others’ Lives Scale (COOL; Chang et al., 2014), aimed at assessing compassion in general samples and whose factorial structure has been validated in different socio-cultural contexts (Chang et al., 2020). Whereas the first CCS factor corresponds to the “empathy” COOL subscale, which contains items assessing the ability to acknowledge suffering in others and being able to put themselves in their position, the Motivation/disposition for helping factor could correspond to the COOL factor “alleviate suffering”, which contain items regarding the efforts of the person aimed at helping others. Keeping this in mind, our results support the compassion formulations that emphasize the existence of two different dimensions in compassion for others: a cognitive dimension related to the empathy to others and a behavioral and motivational dimension related to the attempts to alleviate or reduce that suffering (e.g., Preckel et al., 2018).

In addition, the results showed good convergent validity for the CCS as significant associations between the compassion dimensions and caregiving stressors and outcome variables were obtained in the expected directions. Specifically, the factor of caregiver distress from witnessing the suffering of the care recipient was associated with the variables related to signs of suffering in the care recipient and the distress

experienced by the caregiver (higher frequency of behavioral problems and the stress levels derived from them), showing the stronger associations for the care recipient's depressive behavioral problems dimension. Along these lines, this subscale of the RMBPC (Teri et al, 1992) has been used as a proxy measure for care recipient patients' suffering in previous studies (Schulz et al., 2003; 2008). In addition, the RMBPC memory and disruptive behaviors subscales were not associated with that the mentioned compassion factor, suggesting also a good divergent validity of the first factor. Furthermore, after controlling for sociodemographic and stressor variables, this compassion dimension was positively related to caregivers' levels of emotional health, specifically ambivalence and guilt feelings, two scarcely studied variables that have recently been suggested as potential predictors of caregivers' depressive symptoms (Losada et al., 2018). The obtained association between witnessing the suffering of the care recipient and higher psychological distress is coherent with previous studies (Monin et al., 2010; Schulz et al., 2008), which revealed that higher perceptions of suffering in the loved one increased caregiver distress.

In addition, the results of this study also suggest good convergent validity for the second compassion factor, motivation for helping, showing associations with lower levels of caregivers' desire to institutionalized the care-recipient. That finding may be suggesting that, whereas the distress derived from the perceived suffering may not be related to the caregivers' decision regarding nursing home placement, the motivation and abilities to diminish the suffering may affect that decision. Furthermore, and in the opposite direction to the first compassion factor, the second factor was related with less ambivalence and guilt feelings after controlling for the rest of the variables. Schulz et al. (2020) recently suggested that caregiver's preparation, knowledge, and ability to face up the demanding tasks derived from caregiving are key factors in the explanation of

caregiver distress and their negative health outcomes. It is possible that caregivers with higher motivation and abilities to diminish the suffering of the care-recipient perceive themselves as more self-efficacious and/or have more adaptive skills for facing up those challenging tasks in caregiving (e.g., depressive behavior in their cared relative), and thus, experience less ambivalence and guilt feelings. Moreover, the protective role of this factor against ambivalence and guilt could also be explained through a stronger commitment to the caregiving role, as higher commitment to that value has been related to less guilt feelings (Gallego-Alberto et al., 2017). It would be interesting for future studies to explore the relationships between caregivers' compassion levels and commitment with this role, as well as their contribution to the decision to place the care recipient in a nursing home.

Although significant associations were found for both compassion factors in regression analyses with ambivalence and guilt as dependent variables, no direct association was found with depression. These results are consistent with those obtained by López et al. (2018), who did not obtain a significant association between compassion for others and depression levels. However, Schulz et al. (2017) found that compassion indirectly influenced depressive symptoms by moderating the relationship between the perceived suffering in the care recipient and the frequency of intrusive thoughts, with this last variable being directly associated with depression levels. Keeping in mind that ambivalence and guilt are potential predictors of depression (Losada et al., 2018), caregivers' compassion levels may be affecting their mood and depressive problems indirectly, fostering these predictors of depressive symptoms. More studies are needed in order to examine the mechanisms through which compassion promotes depressive symptomatology.

The differential associations obtained by both compassion dimensions and emotional outcomes may be useful for identifying vulnerable profiles of caregivers. For example, higher scores on the first factor may be reflecting significant distress in the caregiver and the care recipient (e.g., potential unmet needs in the care recipient, the last stages of the dementia, and even a lack of support in the caregiving task). Through the identification of this profile, different strategies can be implemented, such as psychoeducational interventions about dementia, interventions for managing some behaviors performed by dementia persona, use of respite resources, etc. On the other hand, higher scores on the second factor seem to be related to protective profiles against emotional distress, like ambivalence and guilt feelings. Keeping this in mind, the reduction of distress in caregivers can be fostered by interventions aimed at increasing this component of compassion, namely, motivation for helping. In this sense, interventions based on Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) may be useful for reconnecting with the value of taking care of the relative fostering the personal meaning and commitment with caregiving role. These types of intervention have been demonstrated to be efficacious in reducing depressive, anxious, and guilt symptomatology (Gallego-Alberto et al., 2020; Losada et al., 2015). More studies are needed to explore the effects of these interventions on caregivers' compassion levels.

This study has several limitations. First, the sample is composed of caregivers who volunteered to participate in the study, an aspect that may affect the generalization of the results to the general caregiving population. In addition, the sample was composed solely of Spanish caregivers. Keeping in mind the influence of cultural values on the caregiving stress process (e.g., Losada et al., 2006), future studies should test the replicability of the findings in different socio-cultural contexts. Moreover, the cross-sectional design of the study does not allow causal interpretations to be made of the

findings, hence longitudinal research is needed. Although the compassion abilities may be hypothesized as stable in the short term, the test re-test reliability of the CCS was not addressed in this study. Future studies should explore the changes in compassion abilities with the passage of time. Furthermore, the presence of statistically significant associations between compassion levels and ambivalence feelings only after controlling for sociodemographic and stressor variables suggests the existence of mediating processes. Further studies should therefore explore the relationship between ambivalence and compassion in family caregivers. Finally, the AVE values for the compassion factor did not reach the recommended value by Haier et al. (1998), so future studies may examine possible mechanism to improve the quality of this instrument. For example, the CCS items do not evaluate positive emotions and experiences that may emerge during the caregiving task (e.g., love, closeness) which may be affecting caregivers' compassion feelings (Monin et al., 2015), it is possible that the inclusion of items regarding that aspect may improve the psychometric properties of the CCS.

Conclusion

In spite of the above-cited limitations, to our knowledge, this is the first psychometric study on the CCS. The findings suggest that this scale is a reliable and valid measure for assessing compassion in family caregivers of people with dementia, supporting its use in research and clinical settings. Caregivers' compassion seems to be a relevant construct for further understanding caregivers' emotions such as ambivalence and guilt (Losada et al., 2018), so additional studies analyzing the role of compassion in the caregiving process may contribute to improve caregivers' well-being.

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Table 1. Factorial structure of the Caregiving Compassion Scale

Item	Factor 1	Factor 2
1. My partner/relative is suffering because of their illness./Mi familiar está sufriendo por su enfermedad.	.46*	-.10
2. It is difficult for me to see my partner/relative suffer./ Es difícil para mí ver a mi familiar sufrir.	.81*	.00
3. It is important for me to try to do everything possible to help reduce the suffering of my partner/relative./ Es importante para mí intentar hacer todo lo posible para ayudar a reducir el sufrimiento de mi familiar.	.19	.72*
4. I “feel” the suffering of my partner/relative to some extent. / Hasta cierto punto yo “siento” el sufrimiento de mi familiar.	.64*	-.08
5. I believe that I can help reduce the suffering of my partner/relative./ Creo que puedo ayudar a reducir el sufrimiento de mi familiar.	-.04	.57*
6. It is very upsetting for me to see my partner/relative suffer./ Es muy triste o molesto para mí ver a mi familiar sufrir.	.74*	.15
9. It saddens me to see my partner/relative suffer./Es triste para mí ver a mi familiar sufrir.	.63*	.25
10. Knowing that I help my partner/relative makes me feel good./ Saber que puedo ayudar a mi familiar me hace sentir bien.	.01	.69*

Table 2. Pearson correlations between assessed variables and descriptive data of the assessed variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Caregiver's age	-																			
2. Time since caregiving began	.02	-																		
3. Daily hours caring	.39**	-.06	-																	
4. Functional status	.02	.28**	.08	-																
5. Cognitive status	.01	.26**	.06	.62**	-															
6. Depression	-.20**	.01	-.07	-.09	.09	-														
7. Guilt	-.45**	-.13*	.18**	.03	.07	.44**	-													
8. Ambivalence	.26**	-.04	-.11	.03	.03	.36**	.60**	-												
9. Desire to institutionalize	-.01	-.06	-.11	-.10	.09	.15*	.16*	.27**	-											
10. Overall frequency BPSD	-.23**	-.14*	-.01	.03	.06	.23**	.32**	.28**	.25**	-										
11. Overall reaction BPSD	-.23**	-.17*	-.02	.02	.06	.33**	.38**	.38**	.23**	.66**	-									
12. Frequency memory problems	-.07	-.12	.07	.13*	.09	.02	.07	.07	.08	.64**	.27**	-								
13. Reaction memory problems	-.06	-.14*	.09	.07	.01	.24**	.27**	.26**	.15*	.38**	.79**	.27**	-							
14. Frequency disruptive behaviors	-.11	-.04	-.05	-.11	.12	.30**	.23**	.31**	.37**	.72**	.57**	.24**	.27**	-						
15. Reaction disruptive behaviors	-.19**	-.09	-.07	-.08	.13	.34**	.26**	.36**	.31**	.58**	.80**	.16*	.46**	.78**	-					
16. Frequency depressive behaviors	-.28**	-.14*	-.04	.04	.04	.18**	.34**	.22**	.11	.80**	.59**	.23**	.28**	.39**	.35**	-				
17. Reaction depressive behaviors	-.29**	-.17*	-.08	.04	.02	.22**	.37**	.31**	.10	.64**	.83**	.21**	.46**	.35**	.51**	.76**	-			
18. Compassion total scale	-.26**	-.11	-.05	-.03	.01	.08	.23**	.05	-.11	.20**	.16*	.10	.08	.04	.03	.31**	.26**	-		
19. Distress from witnessing the care recipient suffering factor	-.25**	-.10	-.06	-.07	.03	.11	.30**	.12	-.05	.23**	.21**	.09	.14*	-.01	.06	.35**	.30**	.94**	-	

20. Motivation/disposition for helping factor	-.17**	-.07	-.01	.05	-.08	.00	.01	-.11	-.18**	.07	.01	.08	-.05	-.09	-.02	.14*	.09	.78**	.51**	
Descriptive																				
Mean	62.9	49.8	12.7	67.4	4.7	17.6	21.3	3.6	15.8	34.7	18.9	8.5	6.3	19.5	6.6	6.7	6.0	32.9	20.3	12.6
S.D.	12.7	40.4	7.8	27.5	1.2	10.9	12.9	3.0	30.2	12.9	15.3	7.0	6.9	5.4	6.1	5.3	5.9	6.1	4.5	2.4

Note: ** $p < .01$; * $p < .05$.

Table 3. Hierarchical regressions with compassion factors as predictor variables of caregivers' emotional health

Predictor	Depression		Guilt		Ambivalence	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Caregiver's age	-.16*	-.16	-.43***	-.41***	-.18*	-.20*
Caregiver's gender (0 = Female)	-.04	-.05	.08	.07	-.08	-.09
Time caring	-.03	-.02	-.09	-.08	-.03	-.03
Daily hours caring	-.01	-.01	-.01	.01	-.04	-.03
Functional status	-.07	-.06	-.09	-.06	-.01	.01
Cognitive status	.02	.01	-.11	-.11	-.05	-.06
BPSD	.19*	.17*	.22***	.17**	.22**	.18**
F1 compassion		.10		.29***		.19*
F2 compassion		-.08		-.18*		-.24**
R ²	.086	.094	.283	.341	.122	.169
Change R ²		.009		.057***		.047**

Note: BPSD = Frequency of psychological symptoms of dementia. *** $p < .001$; ** $p < .01$; * $p < .05$.