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Title: Family dynamics in dementia caregiving: development and validation of the Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire (ITGDCQ).

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Family dynamics in dementia caregiving: development and validation of the Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire (ITGDCQ).

Abstract

Objective: The objective was to develop the Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire (ITGDCQ). **Background:** An emotion frequently experienced by caregivers is guilt. However, the studies analyzing potential factors that generate guilt are scarce. Guilt may be generated through interpersonal interactions. **Methods:** A total of 201 dementia caregivers were evaluated for frequency of leisure, guilt, anxiety, depression, and a pool of items measuring the frequency and guilt was derived from different behaviors performed by the care-recipient (ITGDCQ-CR) and other relatives (ITGDCQ-OR). **Results:** Exploratory factor analysis of the ITGDCQ-CR showed a two-factor solution, explaining 56.24% of the variance. The ITGDCQ-OR subscale also showed two factors, explaining 63.24% of the variance. All the factors had acceptable to good reliability indexes. Positive associations were found between both subscales and depression, anxiety, guilt and stress associated with CR's behavioral problems. ITGDCQ-CR was negatively correlated with frequency of leisure. The interpersonal dynamics assessed with the ITGDCQ generated other emotions such as anger or sadness. Through structural equation modelling 28% of the variance of caregivers' distress was explained by the assessed variables, including a significant contribution of the interpersonal dynamics assessed with the ITGDCQ. **Conclusion:** The results provide preliminary support for the use of the ITGDCQ as a valid and reliable measure of care-recipients' or other relatives' factors that trigger or facilitate the experience of guilt in the caregivers. The association between these factors and caregiver distress suggests potential clinical implications for the findings.

Keywords: Dementia, family issues, guilt, informal caregivers, interpersonal relationships.

Introduction

Caring for a relative with dementia is a chronic, stressful situation that has been linked to negative outcomes in caregivers' psychological health (Sallim, Sayampanathan, Cuttilan, & Ho, 2015). One of these negative outcomes is the experience of guilt feelings (Gonyea, Paris, & Saxe Zerden, 2008; Losada, Márquez-González, Peñacoba, & Romero-Moreno, 2010).

Traditionally, guilt has been described as the negative emotion associated with the self-judgment that one has not behaved according to a personally relevant moral or social standard (Kugler & Jones, 1992). In the caregiving research literature, guilt is considered to be a multidimensional construct, related to perceptions of failing in the caregiving role. Different studies have shown the association between guilt and higher levels of caregiver distress, such as depression and anxiety (Feast et al., 2017; Gonyea et al., 2008; Losada et al., 2010, 2018; Romero-Moreno et al., 2013). Despite the evidence that guilt feelings represent a relevant cause of suffering in dementia caregivers (Losada et al., 2018), studies analyzing the sources and factors involved in its appearance and maintenance are limited (Losada et al., 2010). Several authors consider that guilt is not just the result of an individual process of cognitive appraisal and suggest the importance of the interpersonal context in its development (Baumeister, Stillwell, & Heatherton, 1994). This type of guilt originating through interpersonal dynamics has traditionally been studied in samples of parent-adolescent dyads. Several studies have shown that some types of behaviors performed by parents can induce or evoke guilt feelings in their offspring (Donatelli, Bybee y Buka, 2007; Rakow et al., 2011).

It is not uncommon for caregivers to report feelings of guilt triggered by behaviors or verbalizations made by their relative with dementia or other relatives. An example of this process is the situation in which the care-recipient has to leave home in order to attend an adult day care center. In this scenario, many caregivers report facial and verbal expressions

made by their relatives that lead them to feel guilty, such as verbalizations like “you are a bad caregiver, you leave me here alone!”. A recent qualitative study along these lines has revealed that the person with dementia being cared for and other close relatives are relevant factors for the guilt experienced by dementia family caregivers (Gallego-Alberto et al., in press). Specifically, the results showed that several types of comments and behaviors made by the care-recipients (such as criticism or behavioral disruption when it is time to go to the Day Care Center) lead the caregivers to feel guilty. In addition, the criticism by close relatives devaluing the caregivers’ actions also contributed to the experience of feeling guilty. Similarly, another qualitative study on the burden experienced by dementia caregivers has reported the presence of guilt derived from criticism or beliefs about not meeting expectations and disappointing the relative with dementia (Samuelsson, Annerstedt, Elmstahl, Samuelsson, & Grafström, 2001).

In the context of family caregiving, few studies have explored the impact of dynamics and communication between those with dementia and their caregivers on caregiver distress. For example, an observational study carried out by Braun et al. (2010) showed that those caregivers exposed to positive communications (e.g., humor) reported better well-being than those exposed to negative interactions (like hostile comments). Regarding guilt feelings triggered by this interpersonal context, only one study has to our knowledge analyzed this phenomenon. Fisher and Lieberman (1996) argued that family dynamics and interactions are relevant factors for understanding offspring caregivers’ well-being. Through a semi-structured telephone interview, these authors measured variables accounting for emotional management, defined as the way that emotions are expressed, acknowledged, and managed in the family, considering the factors of hostility, conflict avoidance, and guilt induction. Specifically, guilt induction was measured through a 3-point item rating the degree to which guilt is used by the care-recipient to coerce the caregiver (e.g., self-victimizing behaviors)

developed by Fisher, Nakell, Terry & Ransom (1992). Higher exposure to guilt induction behaviors performed by the care-recipients was associated with higher caregiver anxiety and levels of depression, and predicted lower general well-being in a one-year follow-up (Fisher & Lieberman, 1996).

Despite the potential influence of interpersonal relationships on caregiver guilt, the available measures in the dementia caregiving field only assess guilt derived from the self-judgments about transgressions of personal standards (Losada et al., 2010; Roach et al., 2013). To our knowledge, the Caregiving Guilt Questionnaire (CGQ) developed by Losada et al. (2010) is the only instrument aimed specifically at assessing the guilt feelings experienced by relatives who care of a relative with dementia in the community, and it has been widely used since its development in studies conducted with caregivers of older adults with or without dementia (e.g., Roach et al., 2013; You & Tak, 2014), but also in studies conducted with other caregiving populations, such as male partners of women with breast cancer (Duggleby et al., 2014). The CGQ has a multidimensional structure and is composed of five factors: 1) guilt about doing wrong by the care recipient; 2) guilt about failing to meet the challenges of caregiving; 3) guilt about self-care; 4) guilt about neglecting other relatives; and, 5) guilt about having negative feelings toward other people. As their labels suggest, these factors group items assessing the caregiver's guilt arising from negative self-perceptions about not being able to perform the caregiving task in accordance with their beliefs about how a good caregiver must behave (Losada et al., 2010). Nevertheless, the guilt originating in the interpersonal context is not addressed by the CGQ, and a specific measure of potential predictors of interpersonally generated guilt feelings in dementia caregiving literature is thus lacking.

Taking into consideration the negative effects of exposure to specific interpersonal dynamics (e.g., criticism, verbalizations of blame) on caregivers' psychological health and

the experience of guilt, the objectives of the present study were: 1) to develop a specific instrument for measuring the occurrence and frequency of behaviors performed by the care-recipient and other relatives that may act as guilt triggers; and, 2) to provide descriptive data on the presence of interpersonal sources of guilt in caregivers and its associations with relevant variables for understanding their distress. Although it was hypothesized that the frequency of behaviors performed by the care-recipient and other relatives would be related to caregivers' experience of negative emotions (guilt, anxiety and depression), no specific hypothesis about specific factors was made beyond differentiating between guilt triggers arising from interactions with the care-recipient and those arising from interactions with other relatives.

Method

Participants

A total of 360 family caregivers of people with dementia from Madrid (Spain) were invited to participate in the study. All the participants were born in Spain. Inclusion criteria for the study were: a) being at least 18 years old, b) self-identifying as the primary caregiver of a relative with dementia living in the community, and c) caring for at least an average of one hour per day during at least three consecutive months.

Procedure

The sample was recruited through different health and adult day care centers in Madrid, Spain. Before enrolling in the study, an initial telephone interview was conducted in order to check whether participants met the inclusion criteria. After the telephone contact, an individual face-to-face interview was arranged. Face-to-face interviews had a duration of 90 minutes approximately, they took place in the participating centers, and were carried out by trained psychologists. All participants signed the informed consent form. The study was

approved by the Ethics Committees of the Autonomous University of Madrid and the Rey Juan Carlos University.

Instruments

The measured variables were assessed in the following order:

Socio-demographic variables: Data regarding caregivers' age, gender, kinship with the person with dementia, and daily hours caring and time since being a caregiver were collected. In addition, the age and gender of the care-recipient were assessed.

Anxiety. The Tension-Anxiety subscale from the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971) was used. This scale measures the frequency of anxious symptoms in caregivers during the previous week. This scale consists of 9 items (e.g., "I felt nervous") with Likert-type response options ranging from 0 (not at all) to 4 (extremely). The POMS has been significantly associated with other measures of anxiety symptomatology (McNair et al., 1971). In fact, the POMS has been suggested as the most suitable instrument for assessing broader components of anxiety apart from the tension symptoms (Rosi & Pourtois, 2012). The internal consistency for this scale was 0.86 (Cronbach's alpha).

Depression. Depressive symptomatology was measured through the Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). The scale has 20 items for evaluating the experiencing of different depressive symptoms during the previous week (e.g., "I felt depressed"). Answers vary from 0 (rarely or never) to 3 (most or all of the time). This scale has obtained satisfactory test-retest reliability coefficients in clinical samples and also significant associations with other scales assessing depression, anxiety and fatigue (Hann, Winter & Jacobsen, 1999; Radloff, 1977). Cronbach's alpha was 0.88 in the present study.

Guilt. General guilt feelings were assessed through the Caregiver Guilt Questionnaire (CGQ; Losada et al., 2010). This instrument measures the frequency of the caregiver's guilt

feelings during the previous week (e.g., “I have felt guilty about the way I’ve sometimes behaved with my relative”). It consists of 22 items with Likert-type responses from 0 (never) to 4 (almost always). Although test-retest reliability coefficients have not been reported, the scale has good concurrent validity showing associations with the guilt factor of the Zarit Burden Interview (Zarit, Reever, & Bach-Peterson, 1980) and other measures of caregivers’ emotional status such as depression and anxiety (Losada et al., 2010). Cronbach's alpha for this study was 0.89.

Frequency of leisure activities. An adaptation of the leisure time satisfaction scale (Stevens et al., 2004) used in previous studies carried out with dementia caregivers (e.g. Losada et al., 2010) was used. This instrument assesses the caregiver's perceived frequency of engagement in six leisure activities over the past month (e.g., “pursuing hobbies and personal interests”). Significant associations with mental health outcomes in dementia caregivers, such as depression and guilt, have been reported in previous studies (e.g. Romero-Moreno et al., 2013). Cronbach’s alpha index in this study was 0.74.

Frequency and reaction to behavioral and psychological symptoms of dementia. The frequency of and stress associated with care the recipient’s behavioral and psychological symptoms of dementia (BPSD) were assessed through the Spanish version of the Revised Memory and Behavior Problems Checklist (RMBPC; Nogales-González, Losada, & Romero-Moreno, 2015). It has 24 items with Likert-type response ranging between 0 and 4 for frequency of and stress associated with the behavior (e.g., “Doing things that embarrass you”). Good test-retest reliability in Spanish dementia caregivers has been reported, also significant associations with other measures of behavioral and psychological symptoms of dementia (Salvia et al., 2011). The internal consistency indexes (Cronbach’s alpha) in this study were 0.78 for the frequency and 0.87 for the reaction subscale.

Interpersonal guilt triggers. Following a review of the literature and based on the authors' clinical experience, we developed the Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire. The search of literature was done with Web of Science database. The time limit included all publications until May of 2019. The keywords entered were: guilt*interpersonal; guilt*induction; guilt*dysfunctional dynamics; guilt*criticism. The review of literature yielded two measures of guilt triggered in the interpersonal context developed in research carried out with samples of parents-adolescents dyads. One of them was an observational measure which defined different types of behaviors that might evoke guilt in other family members: a) pointing out that the other person's behavior had a negative emotional impact on a family member, such as making them worry, feel sad, or lose self-esteem; b) attempting to evoke remorse or self-blame by enumerating all the things they have done; and, c) making verbalizations about the failure of the other's behavior in meeting the desired or expected standard (Barber, 1996). The other instrument that was found was the Maladaptive Guilt Induction measure (Donatelli et al., 2007), which measures the behaviors performed by a parent that may induce guilt in their offspring (like criticisms, attempts to diminish the offspring's independency, etc.). In addition to the above, the authors' clinical experience over recent decades in the development and validation of interventions for dementia family caregivers (e.g., Losada et al., 2004, 2015; Márquez-González et al., 2007, 2020) allowed us to develop and formulate items addressing potential interpersonal triggers of feelings of guilt in dementia family caregivers, specifically related to interactions with the care-recipient and other relatives.

The developed instrument is composed of two subscales. The first subscale assesses the frequency of guilt-triggering behaviors employed by the care-recipient and the guilt derived from them (ITGDCQ-CR), and is composed of an initial pool of 13 items (e.g., "Accuses me of being a bad caregiver"). The second subscale assesses the frequency of guilt-

triggering behaviors employed by other relatives (e.g., siblings, husband) and the guilt derived from them (ITGDCQ-OR). This second subscale comprised an initial pool of 12 items (e.g., “Blame me for the decline of my relative”). The instrument has Likert type-responses ranging from 0 (never) to 4 (always) for frequency responses; and from 0 (not at all) to 4 (extremely) for the magnitude of resultant guilt. In addition to guilt derived from these behaviors, we asked the caregivers through an open-ended question if there were other emotions resulting from the exposure to these behaviors.

Data Analyses

To analyze the characteristics of the sample and the assessed variables, descriptive analyses were carried out (means, standard deviations, and range).

Prior to the analysis of the factorial structure of the questionnaire, the KMO measure of sampling adequacy and Bartlett’s test were calculated. In order to analyze the factorial structure of the ITGDCQ, an Exploratory Factor Analysis was conducted with the maximum likelihood robust (MLR) estimator and Geomin as a method of rotation. In order to determine the number of factors to retain, parallel analyses were carried out with the criteria proposed by Longman, Cota, Holden, and Fekken (1989), using the mean eigenvalues and the 95th percentiles eigenvalues. For the assessment of the fit of the factor structure, four fit indexes were tested: RMSEA, TLI, CFI, and SRMR.

For the qualitative analysis of the open-ended question of the ITGDCQ, the researchers read all the participants’ answers and created categories grouping similar emotions (e.g., those answers reflecting a sense of being worried, stressed or anxious were grouped in the anxiety and stress category). Then frequency analyses were carried out for each emotion category.

In addition, t-test analyses for independent samples were carried out in order to analyze the differences in ITGDCQ as a function of caregiver gender and kinship with the

care-recipient, two variables that have been demonstrated to have strong relationships with guilt feelings (Roach et al., 2013; Romero-Moreno et al., 2013). Correlation analyses were also carried out between the study variables. Finally, in order to analyze the associations between the interpersonally triggered guilt and caregivers' psychological distress, a structural equation model (SEM) was performed. Based on the stress and coping model adapted to caregiving (e.g., Knight & Sayegh, 2010) the order of the variables entered in the model were: stressors (frequency of BPSD and both ITGDCQ frequency subscales), appraisal of stressors (reaction to BPSD and guilt subscales of ITGDCQ) and a potential mediator of the relationship between appraisals and distress (general guilt feelings). The dependent variable was a latent variable labelled "psychological distress" composed of depressive and anxious symptomatology. Next, following the model-generating strategy (Joreskog, 1993), only those significant associations observed when the model was run were included in the final model. The indexes χ^2 , RMSEA, CFI and TLI were calculated to determine model fit. Indirect effects were computed following of Preacher & Hayes (2008) recommendations (95% bias-corrected confidence intervals (CIs) were calculated and 5,000 bootstrap samples were used). The Mplus version 7 software (Muthen & Muthen, 1998-2012) was used for the exploratory factor analyses and SPSS version 26 (IBM, 2015) for the descriptive, t-test comparisons, and correlation analyses. For the SEM, AMOS 21 was used.

Results

Descriptive characteristics of the sample

Of the 360 caregivers approached, 139 (38.6%) rejected to participate and 20 (5.6%) caregivers did not meet the inclusion criteria. Finally, 201 (55.8%) dementia family caregivers participated in the study. The sample was composed mostly of women (66.2%), with a mean age of 62.7 (S.D. = 12.9). Mean daily hours devoted to the caregiving task was

14.5 (S.D. = 8.9) and they reported having been caring for an average of 49.7 months (S.D. = 45.2). Spouse caregivers made up 46.5% of the sample and 51% were offspring caregivers. The remaining caregivers were caring for other relatives, such as a sibling, etc. Statistical differences between participants were found by kinship. Compared to offspring caregivers, spouse caregivers were older ($t(193) = 16.4; p < .001$), devoted more daily hours to care of the relative with dementia ($t(191) = 5.17; p < .001$), and their care-recipients were younger ($t(193) = -5.23; p < .001$). The sociodemographic characteristics of the participants are summarized in Table 1.

Exploratory factor analysis of the Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire

Care-recipient scale

Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire: Care-recipient's (ITGDCQ-CR): Frequency subscale.

The preliminary pool of 13 items showed a good Cronbach's alpha (0.83) and all items showed good item-scale correlations (all higher than 0.20). All of the initial items were subjected to exploratory factor analysis (EFA). The KMO measure was 0.827 and the Bartlett test was significant ($\chi^2(75) = 751.427, p < 0.001$). The first solution of the EFA showed three items with non-significant factor loadings and were removed ("He/she reproaches me for not having enough patience"; "Tells me that I enjoy myself or have fun with other people without him/her"; Calls my problems less important than his/hers).

Parallel analysis was carried out with the remaining 10 items. The results showed a two-factor solution (the eigenvalues were higher than the simulated, 3.79 and 1.27, respectively). The fit indexes showed a good fit of the model to the data ($\chi^2(45) = 287.440, p < 0.001$; RMSEA = 0.039 90% CI [0.000 – 0.072]; CFI = 0.967; TLI = 0.942, and SRMR = 0.040). The final factors structure is shown in Table 2.

The first factor, labeled “Care-recipient’s criticism of the caregiver's role”, is composed of items referring to behaviors and comments performed by the care-recipient with the aim of criticizing and showing the caregiver's actions to be inadequate and/or distressing for the care-recipient. This factor explained 42.11% of the variance, and its Cronbach’s alpha was 0.73.

The second factor was named “Personal disparagement”, and it comprises items related to the care-recipient’s different behaviors aimed at criticizing personal issues of the caregiver. This second factor explained 14.13% of the variance and obtained a Cronbach’s Alpha of 0.80. The alpha for the total (10 items) scale was 0.81.

Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire: Care-recipient’s (ITGDCQ-CR): Guilt subscale.

The subscale of guilt feelings associated with the items assessed in the frequency subscale described in the previous section presents a reliability index of 0.74 (Cronbach’s alpha). The descriptive data are shown in Table 3.

Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire: Care-recipient’s (ITGDCQ-CR): qualitative analysis of emotions.

Participants were asked to answer the question “*Do you experience any other resultant emotion?*” for each of the items of the ITGDCQ-CR. A total of 106 reports of other emotions were provided by 25% of the assessed caregivers. Of these, 81 corresponded to other reactions to the behaviors assessed by the first factor. For a descriptive analysis of the data, the reported emotions were organized in the following categories: 1) Emotions related to anxiety and stress; 2) Emotions related to anger and frustration feelings; 3) Emotions related to sadness, depression, or similar emotions; 4) Feelings of being misunderstood; 5) Feelings of being threatened by the relative; and, 6) Other emotions.

Related to the “Care-recipient’s criticism of the caregiver's role”, the, 49% of the answers were related to anger and frustration feelings; 31% to emotions of sadness and depression. Whereas 10% of the sample reported anxiety derived from the relative’s behaviors; 8% felt fear and felt threatened by the care-recipient; 1% had feelings of being misunderstood; and finally, 1% experienced other emotions such as shame.

In relation to the “Personal disparagement” factor, the predominant emotions experienced were feelings of anger and frustration (44% of the answers), followed by feelings of sadness with 36%. Twelve per cent reported anxious feelings, while 4% reported feeling threatened by the relative and, finally, 4% of the caregivers reported feelings of being misunderstood.

Other relatives scale

Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire: Other relatives (ITGDCQ-OR): Frequency subscale.

Even though the reliability analysis of the 12 initial items reported an adequate reliability index (Cronbach’s alpha = 0.76), one item showed an item-scale correlation below 0.20, so it was removed (“Accuse me of having abandoned them and being only focused on the care of my relative”). A KMO value of 0.771 was obtained and the Bartlett test was statistically significant ($\chi^2(91) = 943.920, p < .001$). Three items with non-significant factor loadings were removed (“Blame me for the symptoms of my relative”; “Reproach me for not taking care of myself and/or not doing other activities because I am only focused on the task of caring”; “Tell me that I do not let them help in caregiving tasks”). The parallel analysis with the remaining eight items suggested a two-factor solution (with both eigenvalues, 3.55 and 1.51 being higher than the simulated values). The obtained fit indexes suggested a good fit of the model to the data ($\chi^2(28) = 212.235, p < .001$; RMSEA = 0.011 90% CI [0.000 –

0.071]; CFI = 0.998; TLI = 0.996, and SRMR = 0.025). The final factor solution for the ITGDCQ-OR is shown in Table 4.

The first factor accounted for 44.34% of the explained variance and was labeled “Accusations of harming the care-recipient”. This factor is composed of items assessing other relatives’ comments accusing or blaming the caregiver for the emotional, cognitive or functional status of the care-recipient. The reliability index for this factor was 0.81 (Cronbach’s Alpha).

The second factor explained 18.90% of the variance and was named “Shifting responsibility onto the caregiver”. This factor can be defined as the relatives’ attempts to avoid their share of responsibility in the caregiving situation and increase this responsibility for the primary caregiver, alongside other attempts to avoid problems related to dementia caregiving. That factor obtained a Cronbach’s alpha of 0.80. The alpha for the global scale (8 items) was 0.78.

Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire: Other relatives (ITGDCQ-OR): Guilt subscale.

The subscale of guilt feelings associated with the items of the frequency subscale described in the previous section presented a Cronbach’s alpha of 0.60. The descriptive data for this scale are shown in Table 3.

Interpersonal Triggers of Guilt in Dementia Caregiving Questionnaire: Other relatives (ITGDCQ-OR): qualitative analysis of emotions.

Caregivers were requested to answer the open-ended question “Do you experience any other resultant emotion?” for each item of the other relatives guilt induction scale. The answers were organized in the following categories: 1) Emotions related to anxiety, stress and worry; 2) Emotions related to anger and frustration feelings; 3) Emotions related to sadness,

depression, or similar emotions; 4) Emotions related to being misunderstood; and, 5) Emotions related to acceptance and being aware of the current situation.

A total of 77 reports of other emotions were obtained, provided by 21% of the sample. Thirty-nine reports were obtained regarding the “Accusations of harming the care-recipient” factor. Of these reports, 67% corresponded to the category of feelings of anger and frustration. Furthermore, 18% of the answers represented sadness. Ten per cent were linked to anxious feelings; and the last 5% corresponded to emotions related to being misunderstood.

Regarding the factor “Shifting responsibility onto the caregiver”, the most frequent reaction was anger, in 79% of the reports. A further 13% of the answers corresponded to feelings of sadness, 5% of the answers were of acceptance and awareness of the criticisms and 3% of the cases made reference to feelings of being misunderstood.

Concurrent validity

Both ITGDCQ subscales showed significant and positive associations with the scores obtained through the specific measure of guilt feelings in caregiving, the CGQ (Losada et al., 2010) (Table 5). Specifically, the ITGDCQ-CR (care-recipient) frequency ($r = 0.33, p < .01$) and guilt ($r = 0.44, p < .01$) subscales were significantly associated with the levels of guilt assessed through the CGQ. Furthermore, the guilt subscale of ITGDCQ-OR (other relatives) was positively associated with the guilt scores of the CGQ ($r = 0.25, p < .01$).

Associations with other variables

Associations with demographic and contextual variables

Regarding caregiver age, the results showed that younger caregivers obtained higher scores on both total frequency ($r = -0.16, p < .05$) and guilt subscales ($r = -0.19, p < .05$) of the ITGDCQ-CR (see Table 5). They also reported higher scores on the ITGDCQ-CR factor “Personal disparagement” ($r = -0.15, p < .05$). Furthermore, younger caregivers also reported

higher scores on the total frequency subscale of the ITGDCQ-OR ($r = -0.22, p < .01$), as well as on both factors of the ITGDCQ-OR “Accusations of harming the care-recipient” and “Shifting responsibility onto the caregiver”. With reference to care-recipient age, those caregivers who take care of an older relative reported higher levels of the frequency total subscale of ITGDCQ-OR ($r = 0.19, p < .01$).

Regarding the time since the caregiving task began, those caregivers who were caring for their relative more recently reported higher levels of guilt on the ITGDCQ-CR scale ($r = -0.16, p < .05$). No significant associations were found with the daily hours devoted to care and ITGDCQ scores.

Regarding the association with gender, statistical differences in the ITGDCQ were found as a function of gender. Women caregivers reported statistically significant higher frequencies on the ITGDCQ-OR factor “Shifting responsibility onto the caregiver” (women $\bar{X} = 1.77$ and men $\bar{X} = 0.97$; $t(196) = 2.83, p < .01$). No other differences were found in the ITGDCQ related gender variable ($p > .05$).

Regarding the differences by kinship, in the ITGDCQ-CR offspring caregivers obtained a statistically higher frequency on the factor of “Personal disparagement” compared with spouse caregivers (spouses $\bar{X} = 0.72$ and offspring $\bar{X} = 1.42$; $t(193) = -1.95, p < .05$). Furthermore, offspring caregivers reported statistically significant higher scores on the ITGDCQ-OR frequency subscale (frequency $\bar{X} = 3.37$) compared with spouses (spouses $\bar{X} = 0.70$), $t(193) = -5.24, p < .001$). These mean differences were significant in the “Other relatives’ criticism of the caregiver's role” factor (offspring $\bar{X} = 1.67$ and spouses $\bar{X} = 0.40$; $t(193) = -3.67, p < .001$); and the factor of “Shifting responsibility onto the caregiver” (offspring $\bar{X} = 1.67$ and spouses $\bar{X} = 0.29$; $t(193) = -4.93, p < .001$). Additionally, in the guilt reaction subscale, offspring caregivers reported higher levels of guilt ($\bar{X} = 0.79$) than spouse caregivers (spouses $\bar{X} = 0.29$); $t(193) = -2.24, p < .001$).

Associations with outcome variables

The results of correlation analysis are shown in Table 5. Regarding the ITGDCQ-CR total scale (care-recipient), the frequency of behaviors assessed through the scale was significantly and positively associated with anxious ($r = 0.31, p < .01$) and depressive symptoms ($r = 0.19, p < .01$) and the frequency and stress associated with CR's behavioral problems ($r = 0.45, p < .01$; and, $r = 0.45, p < .01$; respectively). Guilt triggered by these behaviors also correlated with higher levels of anxiety ($r = 0.27, p < .01$), depression ($r = 0.22, p < .01$) and frequency of CR's behavioral problems ($r = 0.30, p < .01$), whereas it was negatively associated with the frequency of leisure activities performed by the caregiver ($r = -0.14, p < .05$). Regarding the ITGDCQ-OR (other relatives), the frequency assessed of other relatives' behaviors was positively associated with anxiety ($r = 0.15, p < .05$) and depression levels ($r = 0.15, p < .05$), higher frequency ($r = 0.23, p < .01$) and stress ($r = 0.27, p < .01$) of CR's behavioral problems. Finally, guilt derived from other relatives' actions was positively related to distress related to CR's behavioral problems ($r = 0.19, p < .01$).

Structural equation model: The effect of interpersonal triggered guilt on distress.

Figure 1 represents the structural model examining the associations between the ITGDCQ scale and caregivers' psychological distress. The results showed that the frequency of guilt-triggering behaviors performed by the care-recipient were positively associated with higher levels of interpersonal guilt derived from these behaviors. The results of the bootstrap analysis suggested that the indirect effect of frequency of guilt-triggering behaviors performed by the CR on psychological distress was significant (standardized indirect effect = .10; $p < .01$; SE = .027; 95% CI = 0.06–0.59). The indirect effect of the triggered guilt by the CR on psychological distress was also significant (standardized indirect effect = .18; $p < .01$; SE = .040; 95% CI = 0.12–0.25). Similarly, the higher frequency of guilt-triggering behaviors performed by other relatives were associated with higher levels of stress associated

in turn with the BPSD and more interpersonal guilt feelings. In addition, the indirect effect of frequency of guilt-triggering behaviors performed by other relatives on psychological distress was also significant (standardized indirect effect = .10; $p < .01$; SE = .032; 95% CI = 0.05–0.16). These interpersonally triggered guilt levels were positively associated with general guilt feelings assessed through the CGQ, and these guilt feelings and stress were related to higher psychological distress. The bootstrapping showed that the indirect effect of that interpersonally triggered guilt on psychological distress was significant (standardized indirect effect = .10; $p < .01$; SE = .032; 95% CI = 0.05–0.16). The fit indexes suggest an excellent fit of the data to the model ($\chi^2 = 24.463$, $p = .22$; RMSEA = 0.035; CFI = 0.992, TLI = 0.986). The model explained 28% of the variance of the latent variable psychological distress.

Discussion

Main findings

The objective of the present study was to develop the ITGDCQ in order to provide a measure for assessing the existence of several interpersonal sources or triggers of guilt in the context of dementia caregiving. The ITGDCQ is an instrument for assessing the frequency and guilt caused by these types of behavior, with two subscales aimed at assessing guilt processes triggered by care-recipients and other relatives (ITGDCQ-CR and ITGDCQ-OR) aimed at the caregivers.

The results obtained suggest that both ITGDCQ subscales show acceptable to good psychometric properties, as assessed through reliability, factor, concurrent and convergent validity indexes. Even though the scores in the ITGDCQ scales may be considered low, the obtained data also provide support for the existence of dynamics established between the caregiver and other individual which may facilitate the experience of guilt in dementia caregivers and their association with higher distress in caregivers.

Care-recipient behavior and its impact on caregivers' psychological distress

Regarding the findings yielded by the scale aimed at assessing behaviors carried out by the care-recipient that may act as triggers of guilt (ITGDCQ-CR), the exploratory factor analysis suggests a two-dimensional structure for this scale. The two factors obtained were labeled *Care-recipient's criticism of the caregiver's role* and *Personal disparagement*. These two factors explained a significant percentage of the variance of the guilt construct. Both types of behaviors are coherent with the different types of guilt evoking behaviors suggested by Gallego-Alberto et al. (in press) and Samuelsson et al. (2001). The results obtained suggest that criticism of the caregiver's role was more frequent than personal criticism. In addition, the results suggest that younger caregivers and those who take care of a parent report a greater frequency of Personal disparagement by the care-recipient than older carers and those who care for a partner. This may be due to the differences in the long-term family dynamics and ways of interacting between the parent and the child maintained since childhood, something that has been found to have a negative impact on caregivers' psychological health (Quinn, Clare, & Woods, 2009). These findings may also be explained by the presence of higher role strain in offspring caregivers, who must cope with caregiving alongside other roles such as work or childcare (Stephens, Townsend, Martire, & Druley, 2001). These results are in line with previous research in the dementia caregiving literature. Several studies have shown that offspring caregivers report higher frequency of behavioral and psychological symptoms of dementia and psychological distress compared with spouses (Romero-Moreno et al., 2013). Perhaps these caregivers are more likely to identify and, consequently, report such behaviors in their relative.

Furthermore, the results showed the significant association between the exposure to this type of behavior by care-recipients and higher psychological distress in caregivers. Those caregivers exposed to a higher frequency of both factors of interpersonal guilt triggers performed by the care-recipient reported higher levels of anxiety, general guilt feelings, and

depressive symptomatology. These results are coherent with the work of Fisher and Lieberman (1996), who found the predictor role of guilt induction behaviors on negative outcomes in offspring dementia caregivers. In addition, disturbing behaviors aimed at the caregiver, especially those related to criticism of the caregiver's role, were significantly correlated with the frequency of behavioral problems by the care-recipient. It may be that the assessed behaviors are identified as problematic by the caregiver, in a similar way as items included in scales measuring disruptive behaviors in care-recipients. In fact, in the present study the RMBPC questionnaire (Teri et al., 1992) was administered, which contains items measuring behaviors that may be related to behaviors assessed by the ITGDCQ-CR (e.g., the RMBPC item “*My relative argues or is irritable*” may be conceptually close to the ITGDCQ-CR item “*Criticizes my actions and choices about her/his care*”). Given the evidence of the negative effect of the problematic behaviors on the caregiver's health (e.g., Logsdon et al., 2008), the association between the higher frequency of guilt-triggering behaviors and higher stress associated with this type of care-recipient behavior is not surprising.

Similarly, the subscale of guilt derived from the behaviors assessed in the frequency subscale of ITGDCQ-CR showed a good internal consistency index. Despite the scores being low for both factors, a positive association between guilt originated in the interpersonal context and general guilt experienced by the caregivers, as assessed through the *Caregiving Guilt Questionnaire* (Losada et al., 2010), was found. This finding supports the relevance of including interpersonal perspectives in order to understand this emotion in the caregiving literature (Baumeister, 1995). It could be hypothesized that these types of care-recipient behaviors can act as a trigger stimuli of negative self-evaluations about the role as a caregiver or not being good enough for their loved relative, which have been shown to lead to experiencing guilt feelings (Samuelsson et al., 2001). The results revealed that the frequency and guilt derived from guilt triggering behaviors performed by the care-recipient was

significantly and directly associated with higher levels of guilt and stress associated with BPSD. However, they were also indirectly associated with higher anxious and depressive symptoms. These results support the previous findings about the negative impact of guilt (e.g., Feast et al., 2017; Losada et al., 2010) and the guilt triggering dynamics (Fisher & Lieberman, 1996) on caregivers' psychological states.

On the other hand, interestingly, interpersonal guilt levels were negatively associated with the frequency of leisure activities carried out by the caregivers, an important predictor of burden in caregiving (Bedini, Labban, Gladwell, & Dudley, 2018). This result is coherent with previous findings by Romero-Moreno et al. (2013), who highlighted the moderating role of guilt feelings in the association between depressive symptoms and frequency of free time activities. It seems that those caregivers who feel more guilt perform fewer leisure activities and this may lead them to experience higher distress, such as depression (Romero-Moreno et al., 2013).

Other Relatives' behavior and its impact on caregivers' psychological distress

The second scale of the ITGDCQ (ITGDCQ-OR) was developed to assess several behaviors employed by other relatives that may act as triggers of guilt feelings. As with the ITGDCQ-CR, good reliability, as well as factors and validity indexes were found. In fact, the frequency of exposure to guilt-triggering behaviors performed by other relatives were directly associated with higher anxiety levels, which in turn are related to higher depression symptoms. This finding evidences the relevance of considering family dynamics established between the caregiver and other relatives in caregiving research.

Regarding the factor labeled *Accusations of harming the care-recipient*, this was significantly related to higher levels of stress associated with BPSD. The lack of validation by other relatives of the caregivers' behaviors towards the care-recipient may increase their

distress as well as debilitate caregivers' coping strategies and their perception of being exposed to a stressful environment.

The second factor, *Shifting responsibility onto the caregiver*, was associated with general guilt feelings, and frequency and appraisal of BPSD. It may be that some families may interpret the caregiving task as obligatory, and this leads members to engage more frequently in criticisms aimed at the caregiver. These attitudes and behaviors could activate the caregiver's schemas relating to the obligatory nature of the caregiving task and the sense of responsibility regarding the situation, increasing the perceptions of caregiving as an obligation (and an extrinsic motive for caring associated with the cultural value labeled familism; Losada et al., 2019), rather than a shared family responsibility. Perceiving caregiving as an obligation has been found to be associated with higher distress and frequency of behavioral problems in the care-recipient (Romero-Moreno, Márquez-González, Losada, & López, 2011).

Regarding the observed differences in the ITGDCQ-OR by gender, the results showed that female caregivers are more exposed to behaviors aimed at increasing their responsibility for caregiving tasks performed by their relatives. Regarding kinship, the findings suggest that offspring caregivers are more exposed to criticism and dysfunctional verbalizations about their performance of caregiving tasks. Role conflicts (e.g., in addition to caring for the parents, they may have children needing care or paid work responsibilities) may contribute to explaining the findings. In line with previous research (Romero-Moreno et al., 2013), it is likely that offspring caregivers may be exposed to a larger number of sources of demands and stress, thereby increasing their perception of failing to meet the challenges of caregiving or neglecting other relatives or responsibilities, and thus being exposed to increased triggers of guilt feelings. In addition, those caregivers who were taking care of older relatives were more exposed to guilt-triggering behaviors performed by other relatives, and this may be reflecting

the previously mentioned higher prevalence of these dynamics in offspring caregivers, as the results showed that offspring care-recipients were significantly older than the people with dementia cared for by their spouses.

The subscale assessing the guilt derived from the behaviors assessed in the ITGDCQ-OR showed acceptable psychometric properties. Despite the low means, the guilt derived from actions performed by other relatives was associated with higher general guilt feelings and higher stress associated with behavioral problems. This finding supports the idea of the multidimensional and interpersonal nature of the emotion of guilt (Baumeister, 1995), and that guilt can be facilitated by other individuals in the caregiving context (Spillers et al., 2008). In addition, the findings showed that these feelings of guilt triggered by other relatives can indirectly increase the levels of anxiety and depression experienced by the caregivers, supporting previous findings regarding the relevant role of guilt feelings on the explanation of caregivers' health (e.g. Losada et al., 2018).

Other interpersonal triggered emotions

Guilt feelings were not the only emotional reactions to the behaviors assessed in both ITGDCQ scales. In most cases, feelings of anger, irritation, and frustration arise from the guilt-triggering behaviors engaged in both by care-recipients and by other relatives. The second most frequently observed emotional reaction was sadness and hopelessness, followed by anxious reactions. Another emotional reaction was the feeling of being misunderstood by the person making the criticism. In the case of emotions experienced through exposure to the assessed care-recipient's behavior, some caregivers reported feelings of being threatened by their relative.

Clinical implications

Both scales of the ITGDCQ (ITGDCQ-CR and ITGDCQ-OR) represent a new opportunity to expand the literature on the sources of guilt in dementia caregiving. Although

there was a previous measure of guilt triggered in the interpersonal context, the Maladaptive Guilt-Induction questionnaire (Donatelli et al., 2007), this was specifically targeted at assessing behaviors performed by parents aimed at evoking guilt in their adolescent children. The ITGDCQ is the first questionnaire aimed at assessing behaviors performed by the person with dementia and other relatives which may evoke guilt in the caregiver. So far, the available measurements for guilt feelings in caregivers have only addressed guilt internally generated by the negative self-judgements about the performance of caregiving role, but they have not taken into consideration that caregivers are in constant interaction with their interpersonal context. The ITGDCQ may enrich the study of the phenomena of guilt, allowing researchers to explore the interpersonal sources of these feelings, in addition to those assessed through the specific measures of caregiving guilt such as the CGQ (Losada et al., 2010). Keeping in mind the direct and indirect associations between exposure to the interpersonal triggers of guilt assessed by the ITGDCQ and poorer psychological health in caregivers, interventions aimed at reducing caregiver distress may benefit from including specific techniques to identify these types of negative interpersonal dynamics and increase caregivers' skills for handling these types of situations.

The results have shown that the guilt-triggering behaviors performed by the care recipient and other relatives were strongly and directly associated with stress symptoms; indeed, the guilt levels derived from them were significantly related to the stress associated with the behavioral problems. However, they also had a significant impact on anxious and depressive symptomatology mediated by those stress levels and general guilt feelings. Moreover, the frequency and guilt triggered by the care-recipient and other relatives also had an impact on caregivers' health, showing indirect associations with higher levels of anxiety and depression. These results suggest the relevance of including specific techniques for managing guilt, as well as for training caregivers in abilities to cope with guilt-triggering

behaviors (i.e. assertiveness) in psychological interventions aimed at reducing the levels of physical and psychological distress in this population.

Furthermore, both subscales may be used separately for identifying different dynamics faced by caregivers in order to prevent future negative outcomes. For example, the ITGDCQ-CR may identify some behaviors performed by the person with dementia which may be a result of the disease (e.g., not being able to remember where the caregiver has been), thus allowing educational interventions and interventions aimed at fostering the acceptance of the disease to be recommended to the caregiver. Regarding the ITGDCQ-OR, for example, it may be used as a tool for identifying situations where the caregivers may have less support from their relatives and may help clinicians to guide the caregiver to available support services in the community, such as respite programs.

Limitations and future directions

The present study has several limitations. First, the sample is composed of caregivers who volunteered to participate in the study and we have no data about those caregivers who refused to participate, so the findings may not be generalizable to the entire caregiving population. The cross-sectional design of the study does not allow us to make causal interpretations of the findings and the significant associations obtained can be explained in alternative ways. For example, it is possible that caregivers with higher levels of depression report a higher levels of guilt feelings as well as difficult interactions with their families and the care-recipient (e.g. higher frequency in ITGDCQ subscales), hence more longitudinal and experimental research is needed. Although the sample was composed of family caregivers caring at home, some of them faced the caregiving task without any support services, while others used some formal care services (Adult Day Care center), and this difference could be affecting the results. It would be interesting for future studies to explore the differences in interpersonally triggered guilt among those caregivers who use respite programs and those

who do not. In addition, as interviews were face to face, it is possible that participants reported lower levels of unpleasant feelings (e.g., guilt), or situations (e.g., arguments with the CR). Future studies should control the caregivers' social desirability levels. Also, lower than expected negative associations between guilt associated with interpersonal triggers and frequency of leisure activities were obtained. Additional triggers/items to those that have been included in the initial pool of items for this study might exist and should be considered in future studies. Finally, the developed instrument is a first step in the direction of analyzing interpersonal triggers that can lead to guilt feelings in caregivers of relatives with dementia. More studies are needed in order to confirm the obtained findings and clarify the motivations and/or intentions of the person performing these behaviors.

Furthermore, the sample comprised only Spanish caregivers. Considering that cultural differences may have an influence on the caregiving process (e.g., Losada et al., 2006), future cross-cultural studies should test the replicability of the findings in other socio-cultural contexts. Despite this study offering evidence of the impact of interpersonal context on guilt and other forms of distress in caregiving, the presence of cognitive schemas and dysfunctional beliefs in the caregiver, which may be activated through the assessed behaviors and modulate the experience of guilt, must not be ignored. It may be the case that some caregivers are guilt-prone (with unrealistic and dysfunctional beliefs that may lead them to feel guilty), and that guilt may more likely be generated in these individuals through interpersonal processes. More studies aimed at a better understanding of the effects of the relationships established between the caregiver and the social environment are needed.

Conclusions

In spite of its limitations, the findings suggest that interpersonal dynamics may be an important source of distress, especially guilt, for dementia family caregivers. It seems that being exposed to disruptive behaviors performed by care-recipients and other relatives

increases the chances of negative outcomes in the caregiving process. Interpersonal processes are clinically relevant for the explanation of guilt levels and other negative emotions experienced by dementia caregivers.

References

- Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child development, 67*(6), 3296-3319.
- Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: an interpersonal approach. *Psychological bulletin, 115*(2), 243.
- Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1995). Personal narratives about guilt: Role in action control and interpersonal relationships. *Basic and applied social psychology, 17*(1-2), 173-198.
- Braun, M., Mura, K., Peter-Wight, M., Hornung, R., & Scholz, U. (2010). Toward a better understanding of psychological well-being in dementia caregivers: the link between marital communication and depression. *Family process, 49*(2), 185-203.
- Bedini, L. A., Labban, J. D., Gladwell, N. J., & Dudley, W. N. (2018). The effects of leisure on stress and health of family caregivers. *International Journal of Stress Management, 25*(S1), 43-55.
- Donatelli, J. A. L., Bybee, J. A., & Buka, S. L. (2007). What do mothers make adolescents feel guilty about? Incidents, reactions, and relation to depression. *Journal of Child and Family Studies, 16*(6), 859-875.
- Duggleby, W., Doell, H., Cooper, D., Thomas, R., & Ghosh, S. (2014). The quality of life of male spouses of women with breast cancer: Hope, self-efficacy, and perceptions of guilt. *Cancer nursing, 37*(1), E28-E35.

- Feast, A., Orrell, M., Russell, I., Charlesworth, G., & Moniz-Cook, E. (2017). The contribution of caregiver psychosocial factors to distress associated with behavioural and psychological symptoms in dementia. *International journal of geriatric psychiatry*, *32*(1), 76-85.
- Fisher, L., & Lieberman, M. A. (1996). The effects of family context on adult offspring of patients with Alzheimer's disease: A longitudinal study. *Journal of Family Psychology*, *10*(2), 180-191.
- Fisher, L., Nakell, L. C., Terry, H. E., & Ransom, D. C. (1992). The California Family Health Project: III. Family emotion management and adult health. *Family Process*, *31*(3), 269-287.
- Gallego-Alberto, L., Losada, A., Cabrera, I., Romero-Moreno, R., Pérez-Miguel, A., Pedroso-Chaparro, M.S. & Márquez-González, M. (in press) "I Feel Guilty". Exploring Guilt-Related Dynamics in Family Caregivers of People with Dementia, *Clinical Gerontologist*, DOI: 10.1080/07317115.2020.1769244
- Gonyea, J. G., Paris, R., & de Saxe Zerden, L. (2008). Adult daughters and aging mothers: The role of guilt in the experience of caregiver burden. *Aging and Mental Health*, *12*(5), 559-567.
- Hann, D., Winter, K., & Jacobsen, P. (1999). Measurement of depressive symptoms in cancer patients: evaluation of the Center for Epidemiological Studies Depression Scale (CES-D). *Journal of psychosomatic research*, *46*(5), 437-443.
- Hyde, J., & Grieve, R. (2014). Able and willing: Refining the measurement of emotional manipulation. *Personality and Individual Differences*, *64*, 131-134.
- Kugler, K., & Jones, W. H. (1992). On conceptualizing and assessing guilt. *Journal of personality and Social Psychology*, *62*(2), 318.

- Logsdon, R. G. (2008). Dementia: psychosocial interventions for family caregivers. *The Lancet*, 372(9634), 182-183.
- Longman, R. S., Cota, A. A., Holden, R. R., & Fekken, G. C. (1989). A regression equation for the parallel analysis criterion in principal components analysis: Mean and 95th percentile eigenvalues. *Multivariate behavioral research*, 24(1), 59-69.
- Losada, A., Márquez-González, M., Peñacoba, C., & Romero-Moreno, R. (2010). Development and validation of the Caregiver Guilt Questionnaire. *International Psychogeriatrics*, 22(4), 650-660.
- Losada, A., Márquez-González, M., Vara-García, C., Barrera-Caballero, S., Cabrera, I., Gallego-Alberto, L., ... & Romero-Moreno, R. (2019). Measuring familism in dementia family caregivers: the revised familism scale. *Aging & mental Health*, 1-5.
- Losada, A., Márquez-González, M., Vara-García, C., Gallego-Alberto, L., Romero-Moreno, R., & Pillemer, K. (2018). Ambivalence and guilt feelings: Two relevant variables for understanding caregivers' depressive symptomatology. *Clinical psychology & psychotherapy*, 25(1), 59-64.
- Losada, A., Robinson Shurgot, G., Knight, B. G., Marquez, M., Montorio, I., Izal, M., & Ruiz, M. A. (2006). Cross-cultural study comparing the association of familism with burden and depressive symptoms in two samples of Hispanic dementia caregivers. *Aging & Mental Health*, 10(1), 69-76.
- Márquez-González, M., Losada, A., Izal, M., Pérez-Rojo, G., & Montorio, I. (2007). Modification of dysfunctional thoughts about caregiving in dementia family caregivers: Description and outcomes of an intervention programme. *Aging & Mental Health*, 11(6), 616-625.
- Márquez-González, M., Romero-Moreno, R., Cabrera, I., Olmos, R., Pérez-Miguel, A., & Losada, A. (2020). Tailored versus manualized interventions for dementia caregivers:

- The functional analysis-guided modular intervention. *Psychology and Aging*, 35(1), 41-54.
- McNair, D. M., Lorr, M., & Droppleman, L. F. (1971). *Manual for the profile of mood states (POMS)*. San Diego: Educational and Industrial Testing Service.
- Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide (1998–2012)*. Los Angeles, CA: Muthén & Muthén, 6.
- Nogales-González, C., Losada, A., & Romero-Moreno, R. (2015). Confirmatory factor analysis of the Spanish version of the revised memory and behavior problems checklist. *International Psychogeriatrics*, 27(4), 683-692.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891.
- Quinn, C., Clare, L., & Woods, B. (2009). The impact of the quality of relationship on the experiences and wellbeing of caregivers of people with dementia: A systematic review. *Aging and Mental Health*, 13(2), 143-154.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401.
- Rakow, A., Forehand, R., Haker, K., McKee, L. G., Champion, J. E., Potts, J., ... & Compas, B. E. (2011). Use of parental guilt induction among depressed parents. *Journal of Family Psychology*, 25(1), 147.
- Roach, L., Laidlaw, K., Gillanders, D., & Quinn, K. (2013). Validation of the Caregiver Guilt Questionnaire (CGQ) in a sample of British dementia caregivers. *International Psychogeriatrics*, 25(12), 2001–2010. <https://doi.org/10.1017/S1041610213001506>
- Romero-Moreno, R., Losada, A., Marquez, M., Laidlaw, K., Fernández-Fernández, V., Nogales-González, C., & López, J. (2013). Leisure, gender, and kinship in dementia

- caregiving: psychological vulnerability of caregiving daughters with feelings of guilt. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69(4), 502-513.
- Romero-Moreno, R., Márquez-González, M., Losada, A., & López, J. (2011). Motives for caring: relationship to stress and coping dimensions. *International Psychogeriatrics*, 23(4), 573-582.
- Rossi, V. & Pourtois, G. (2012) Transient state-dependent fluctuations in anxiety measured using STAI, POMS, PANAS or VAS: a comparative review. *Anxiety, Stress & Coping*, 25(6), 603-645. doi: 10.1080/10615806.2011.582948
- Sallim, A. B., Sayampanathan, A. A., Cuttilan, A., & Ho, R. C. M. (2015). Prevalence of mental health disorders among caregivers of patients with Alzheimer disease. *Journal of the American Medical Directors Association*, 16(12), 1034-1041.
- Samuelsson, A. M., Annerstedt, L., Elmståhl, S., Samuelsson, S. M., & Grafström, M. (2001). Burden of responsibility experienced by family caregivers of elderly dementia sufferers: analyses of strain, feelings and coping strategies. *Scandinavian journal of caring sciences*, 15(1), 25-33. doi:10.1093/geronb/56.1.P2
- Spillers, R. L., Wellisch, D. K., Kim, Y., Matthews, A., & Baker, F. (2008). Family caregivers and guilt in the context of cancer care. *Psychosomatics*, 49(6), 511–519.
- Stephens, M. A. P., Townsend, A. L., Martire, L. M., & Druley, J. A. (2001). Balancing parent care with other roles: Interrole conflict of adult daughter caregivers. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56(1), 24–34.
- Stevens, A. B., Coon, D., Wisniewski, S., Vance, D., Arguelles, S., Belle, S., ... & Haley, W. (2004). Measurement of leisure time satisfaction in family caregivers. *Aging & Mental Health*, 8(5), 450-459.

Teri, L., Truax, P., Logsdon, R., Uomoto, J., Zarit, S., & Vitaliano, P. P. (1992). Assessment of behavioral problems in dementia: the revised memory and behavior problems checklist. *Psychology and Aging, 7*(4), 622.

You, S. Y., & Tak, Y. R. (2014). Feelings of guilt and depression in family caregivers after nursing home placement of older adults. *Journal of Korean Gerontological Nursing, 16*(3), 276-287.

Zarit, S. H., Reever, K. E. and Bach-Peterson, J. (1980). Relatives of the impaired elderly: correlates of feelings of burden. *The Gerontologist, 20*, 649–655.

Table 1. Sociodemographic characteristics of the sample

	Total (N = 201)	Spouses (N = 93)	Offspring (N = 102)	<i>p</i> (<i>t</i> / χ^2)
Caregivers' age, M (SD)	62.7 (12.9)	73.0 (7.5)	53.2 (9.2)	.001
Caregivers' gender female n, (%)	133 (66.2%)	51 (54.8%)	78 (76.5%)	.001
Caregivers' education level n (%)				
High	73 (26.4%)	25 (26.9%)	46 (45.1%)	
Medium	97 (58.2%)	41 (44.1%)	52 (57.3%)	.001
Low	24 (15.4%)	27 (29%)	4 (3.9%)	
Daily hours caring, M(SD)	14.5 (8.9)	17.7 (6.9)	11.4 (9.6)	.001
Time being a caregiver in months, M (SD)	49.7 (45.2)	54.7 (54.0)	45.5 (35.7)	.05
Care-recipients' age, M (SD)	79.2 (10.6)	75.3 (10.6)	82.8(9.3)	.001
Care-recipients' diagnosis n, (%)				
Alzheimer's disease	121 (61.2%)	56 (60.2%)	63 (61.8%)	
Mild Cognitive Decline	53 (26.4%)	23 (24.7%)	29 (28.4%)	.38
Other dementia (Parkinson, Lewy Bodies...)	23 (11.5%)	13 (14%)	9 (8.9%)	

Table 2. Factor loadings and descriptive data of the ITGDCQ-Care recipient subscale.

Item	Factor 1	Factor 2
3. Makes me responsible for problematic situations (disruptive behaviors, resistance to caring, etc.)	0.842	0.052
11. Accuses me of being a bad caregiver	0.643	0.044
4. Criticizes me for not letting him/her live quietly and for disturbing him/her	0.597	-0.001
1. Criticizes my actions and choices about her/his care.	0.580	0.052
2. Makes me responsible for his/her problems and distress	0.526	0.083
8. Tells me that I abandon him/her and I am a bad caregiver when I try to go out to do some leisure activity	0.367	0.156
12. Accuses me of being a bad wife/husband/son/daughter/etc.	-0.004	0.871
10. Tells me that if I really cared or love him/her, I wouldn't do things that cause him/her distress	0.063	0.651
6. Reminds me of the sacrifices, efforts and favors that he/she has made for me	0.119	0.506
5. Says that I am a disappointment for him/her	0.279	0.474
Mean	3.01	1.09
S.D.	4.10	2.53
Range	0-21	0-15

Table 3. Descriptive data of Guilt Subscales of the ITGDCQ

	Mean	S.D.	Range
Guilt derived from CR total subscale	1.40	3.06	0-16
Guilt derived from Care recipient's criticism of the caregiver's role factor	1.04	2.33	0-14
Guilt derived from Global disqualifications factor	0.36	1.27	0-10
Guilt derived from OR total subscale	0.53	1.60	0-14
Guilt derived from Other relatives' criticism of the caregiver's role factor	0.36	1.35	0-14
Guilt derived from Excessive attribution of caregiving responsibility factor	0.17	0.62	0-4

Table 4. Factor loadings and descriptive data of the ITGDCQ-Other relatives subscale.

Item	Factor 1	Factor 2
2. Make me responsible for my cared-for relative's distress	0.841	0.228
7. Accuse me of being a bad caregiver.	0.840	-0.081
4. Make me responsible for problematic situations (disruptive behaviors, resistance to caring, etc.)	0.704	0.032
3. Blame me for the decline of my relative	0.664	0.133
1. Criticize my actions and my choices related to the care of my relative	0.551	0.228
9. Blame me for choosing my caregiving role	-0.009	0.867
10. Reproach me, saying that they have other responsibilities and that my personal situation is better for performing the caregiving task	0.022	0.631
12. Tell me that I do not organize well the tasks I have to do	0.112	0.415
Mean	1.50	1.01
S.D.	2.49	2.08
Range	0-20	0-12

Table 5. Associations between the assessed variables

	Caregiver's age	Care recipients' age	Daily hours caring	Time being caregiver	Anxiety	Depression	Guilt	Frequency of leisure	Frequency of BPSD	Appraisal of BPSD
ITGDCQ-CR										
Frequency total subscale	-0.16*	-0.01	-0.10	-0.08	0.31**	0.19**	0.33**	-0.09	0.45**	0.45**
ITGDCQ-CR										
Criticism of the caregiver's role	-0.14	-0.03	-0.14	-0.04	0.33**	0.18*	0.29**	-0.07	0.45**	0.44**
ITGDCQ-CR										
Personal disparagement	-0.15*	-0.02	-0.01	-0.11	0.18*	0.15*	0.29**	-0.09	0.32**	0.33**
ITGDCQ-CR										
guilt subscale	-0.19*	-0.04	-0.07	-0.16*	0.27**	0.22**	0.44**	-0.14*	0.30**	0.43**
ITGDCQ-OR										
Frequency total subscale	-0.22**	0.19**	-0.10	-0.03	0.15*	0.15*	0.16*	-0.10	0.23**	0.27**
ITGDCQ-OR										
Accusations of harming the care- recipient	-0.21**	0.12	-0.12	-0.08	0.11	0.13	0.12	-0.04	0.17*	0.21**
ITGDCQ-OR										
shifting the responsibility onto the caregiver	-0.15*	0.11	-0.02	-0.12	0.13	0.12	0.16*	-0.13	0.21**	0.22**
ITGDCQ-OR										
guilt subscale	-0.09	0.03	-0.06	-0.09	0.11	-0.04	0.25**	-0.05	0.13	0.19**

Note: * $p < .05$; ** $p < .01$; Anxiety = Scores of the POMS; Depression = Scores of the CES-D; Guilt = Scores of the CGQ; Frequency of BPSD = Scores of the frequency subscale of the RMBPC; Appraisal of BPSD = Scores of the stress associated subscales of the RMBPC;

Figure 1. Structural model examining the role of ITGDCQ subscales on caregiver distress. Note: All associations were significant ($p < .01$). Errors have been omitted for ease of presentation.

