

CARE-RECIPIENTS' DISRUPTIVE BEHAVIORS AND CAREGIVERS' COGNITIVE FUSION: RELEVANT VARIABLES FOR UNDERSTANDING CAREGIVERS' AMBIVALENT FEELINGS

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Abstract

The goal of this study was to analyze the relationship between stressors (frequency of and reaction to disruptive behaviors), cognitive fusion and ambivalence among caregivers, and more specifically to study whether cognitive fusion acts as a mediator in the relationship between stressors and ambivalence. To assess these variables, individual interviews were conducted with a total of 364 caregivers of a relative with dementia. Significant and positive correlations were found among stressors, cognitive fusion and ambivalence ($p < .05$). The model suggests that there is a significant and positive relationship between reaction to disruptive behaviors and ambivalent feelings among caregivers, although it seems to be mediated by cognitive fusion. The final model explains 37% of the variance of ambivalence, and it shows an excellent fit to the data. The results suggest that the relationship between frequency of disruptive behaviors and ambivalence seems to be mediated by reaction to disruptive behaviors and cognitive fusion; consequently this last variable seems to be relevant for understanding emotional ambivalence among caregivers.

KEY WORDS: *caregivers, dementia, cognitive fusion, emotional ambivalence, problematic behaviors.*

Resumen

El objetivo de este estudio fue analizar la relación entre factores estresantes (frecuencia y reacción a comportamientos problemáticos), fusión cognitiva y ambivalencia en cuidadores. Específicamente, estudiar si la fusión cognitiva actúa como variable mediadora en la relación entre factores estresantes y ambivalencia. Se realizaron entrevistas individuales a un total de 364 cuidadores familiares de

The preparation of this paper was supported in part by grants from the Spanish Ministry of Economy and Competitiveness (PSI2012-31239 and PSI2015-65152-C2-1-R). Samara Barrera was supported by a FPU grant from the Spanish Ministry of Education, Culture and Sport. We thank all the caregivers for their participation in the study and also the following centers for collaborating with us in the project: Fundación Cien, Fundación María Wolff, Centro de Salud General Ricardos, Centro de Salud García Noblejas, Centro de Salud Benita de Ávila, Centro de Salud Vicente Muzas, Centro Reina Sofía de Cruz Roja, Centro de Psicología Aplicada de la Universidad Autónoma de Madrid, Hospital Gregorio Marañón.

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personas con demencia. Se encontraron correlaciones significativas y positivas entre los factores estresantes, fusión cognitiva y ambivalencia ($p < 0,05$). El modelo sugiere que existe una relación significativa y positiva entre la reacción a los comportamientos problemáticos del familiar y los sentimientos de ambivalencia, aunque parece estar mediada por la fusión cognitiva. El modelo final explica el 37% de la varianza de la ambivalencia y muestra un ajuste excelente a los datos. Los resultados sugieren que la relación entre frecuencia de comportamientos problemáticos y ambivalencia parece estar mediada por la reacción a dichos comportamientos y la fusión cognitiva. Esta última variable parece ser relevante para comprender la ambivalencia emocional en los cuidadores.

PALABRAS CLAVE: *cuidadores, demencia, fusión cognitiva, comportamientos problemáticos.*

Introduction

Providing care for a relative with Alzheimer's disease or related disorders has been associated with negative consequences for the caregiver's mental and physical health (e.g., depression and stress) (Mausbach, Chattillion, Roepke, Patterson, & Grant, 2013; Otero, Vázquez, Blanco, & Torres, 2017; Pinquart & Sörensen, 2003). Caregivers are subject to highly demanding tasks while devoting several hours per day over long periods of time. For these reasons, caring for a relative with dementia has been considered a prototypical example of a chronic stressful situation, and the theoretical framework that has received the most empirical support has been the stress and coping model adapted to caregiving (Knight & Sayegh, 2010). According to this approach, the impact of difficult situations and demands (stressors) in caregiver's distress depends on caregivers' personal and contextual resources that can buffer or accentuate this impact (Knight & Sayegh, 2010).

Among the most significant and important stressors faced by caregivers are the behavioral and psychological symptoms of dementia (BPSD), which consist of a wide variety of patient behaviors, including repetition of questions, depression, physical aggression, and delusions (Ornstein et al., 2013). These symptoms are considered to be among the most difficult stressors that caregivers can face. Within BPSD (e.g., disruptive behaviors, memory problems or depressive symptoms), disruptive behaviors such as aggressiveness turn out to be the stressors that cause the greatest reaction (distress) in caregivers, although they are not the most frequent (Fauth & Gibbons, 2014).

To date, much of the research in the dementia caregiving field has focused on psychological outcome variables such as depression or anxiety. However, a variable that has scarcely been explored in the literature is emotional ambivalence. In the caregiving context, ambivalence has been defined as the simultaneous experience of positive and negative feelings toward the care recipient (Fingerman, Pitzer, Lefkowitz, Birditt, & Mroczek, 2008; Willson, Shuey, & Elder, 2003). It is a complex experience that resembles the feeling of being "divided in two directions" (Pillemer et al., 2007). Although this type of ambivalent attitude or emotion has

been studied to a greater extent in other areas (e.g., intergenerational relationships; Birditt, Fingerman, & Zarit, 2010; Pillemer, Munsch, Fuller-Rowell, Riffin, & Sutor, 2012; Pillemer et al., 2007), it is not uncommon for caregivers to report simultaneously experiencing negative and positive emotions associated with care (Shim, Barroso, & Davis, 2012), an internal conflict that is typically perceived as aversive by the individual (Pillemer et al., 2007). Recently, Losada, Pillemer, Márquez González, Romero Moreno, and Gallego Alberto (2017) developed and tested the Caregiving Ambivalence Scale, finding that ambivalent feelings (e.g., feeling both satisfaction and resentment due to caregiving) contributed significantly and positively to the explanation of depressive and anxious symptomatology in caregivers. Apart from this, there are also studies that have found data in favor of ambivalence being especially likely to arise when disruptive behaviors by the person with dementia are frequent and stressful for the caregiver (Pillemer & Sutor, 2005). The association of disruptive behaviors and ambivalence is not surprising because such behaviors often act as triggers of negative emotions in caregivers, mingling with the positive feelings that are frequently associated with the care of a loved relative (Losada et al., 2018). However, although disruptive behaviors of the care recipient seem to be associated with experiencing ambivalent feelings, the process through which this occurs and which variables intervene is unclear.

One of the variables that could be contributing to the effect of disruptive behaviors in the development of ambivalent feelings is cognitive fusion. Cognitive fusion has been defined as the tendency for behavior to be overly regulated and influenced by cognition. When 'fused,' a person acts on thoughts as though they are literally true, cognitive events come to dominate behavior and experience over other sources of behavioral regulation (Gillanders et al., 2014). In recent years there has been a significant increase in interest in the study of cognitive fusion, which has been indicated as a highly relevant variable, significantly and positively related to psychopathological problems such as anxiety (Herzberg et al., 2012) and depression (Dinis, Carvalho, Pinto-Gouveia, & Estanqueiro, 2015). Specifically, recent studies suggest that cognitive fusion may play an important mediating role in the explanation of the relationship between the experience of chronic stressful life events (e.g., cancer) and anxiety (Gillanders, Sinclair, MacLean, & Jardine, 2015). Although cognitive fusion has scarcely been studied among the caregiver population, recent studies have found that caregivers of people with dementia who report a higher frequency of disruptive family behaviors as well as high levels of cognitive fusion also report higher levels of depressive and anxious symptomatology (Romero-Moreno, Márquez-González, Losada, Fernández-Fernández, & Nogales-González, 2015). However, to our knowledge, there are no studies that examine the relationship between cognitive fusion and other outcome variables such as emotional ambivalence.

Taking into consideration the aforementioned issues and following the stress and coping model adapted to caregiving (Knight & Sayeh, 2010), the aim of the present study was to explore the role played by cognitive fusion in the association between care-recipients' disruptive behaviors and caregivers' ambivalent feelings. In particular, our aim was to analyze the degree to which cognitive fusion exerts a

mediating role in the explanation of the relationship between the disruptive behaviors of people with dementia (frequency of disruptive behaviors and reaction to these behaviors) and the experience of ambivalence in caregivers.

Our hypothesis is that a higher frequency of and reaction to disruptive behaviors of the care-recipient is associated with a higher level of cognitive fusion of the caregivers, that is, the tendency to assume the literality of thought. In turn, high levels of cognitive fusion may be linked to a higher frequency of negative emotions towards the care-recipient, which add to the positive feelings that are usually associated with caring for a loved one, thus increasing emotional ambivalence. In other words, we hypothesized that the variable cognitive fusion could act as a mediator in the relationship between frequency of and reaction to disruptive behaviors and feelings of ambivalence in caregivers.

Method

Participants

Participants in this study were 364 family caregivers of people with dementia. Inclusion criteria were: a) considering oneself to be the principal caregiver of a relative with dementia, b) devoting at least one hour per day to caring for the family member, c) having been a caregiver for at least three consecutive months, and d) being at least 18 years old. Five extreme cases were obtained in the frequency of and reaction to disruptive behaviors variables. In addition, three multivariate outliers (Mahalanobis distance of $p < .001$) were obtained. Therefore, the sample was reduced to 356 participants. The sociodemographic characteristics of the sample are shown in Table 1. The sample consisted mainly of women (76.10%) and had a mean age of 61.53 years ($SD = 13.70$). Participants reported having provided care for a mean of 46.44 months ($SD = 42.72$) and devoting approximately half a day caring for their relative 13.62 ($SD = 8.06$).

Table 1
Characteristics of the sample ($N=356$)

Variables	Total	Male ($n= 85$)	Female ($n= 271$)
Caregiver age			
<i>M</i>	61.50	64.82	60.46
<i>SD</i>	13.70	15.48	12.95
Range	21-87	29-87	21-86
Time since becoming a caregiver (months)			
<i>M</i>	46.44	47.41	46.13
<i>SD</i>	42.72	55.70	37.87
Range	3 - 444	3-444	3-300
Daily hours caring			
<i>M</i>	13.62	14.04	13.49
<i>SD</i>	8.06	8.05	8.07
Range	1-24	1-24	1-24

Instruments

Apart from sociodemographic information (gender, caregivers' age, time being a caregiver, and number of daily hours devoted to caregiving), the following variables were measured:

- a) *Revised Memory and Behavior Problems Checklist* (Teri et al., 1992), Spanish version by Nogales, Losada, & Romero-Moreno (2015). This checklist measured how often the person with dementia displayed disruptive behaviors and how the caregiver reacted to them using the subscales of frequency of disruptive behaviors and reaction to disruptive behaviors. Both subscales comprise eight Likert-type scale items. In the frequency subscale, each item (e.g., "aggressive to others verbally") is rated on a scale ranging from 0 ("never occurs") to 4 ("occurs daily or more often"). In the reaction to disruptive behavior subscale, each item (e.g., "how much has this bothered or upset you?") is rated from 0 ("not at all") to 4 ("extremely"). A total score is obtained by summing the eight individual frequency and reaction scores, with higher scores reflecting greater severity of disruptive problems. The internal consistency (Cronbach's α) for the frequency of disruptive behaviors and reaction subscales in this sample was .60 and .68 respectively, similar findings to those originally obtained by Teri et al. (1992) and by Nogales et al. (2015).
- b) *Cognitive Fusion Questionnaire* (CFQ; Gillanders et al., 2014), Spanish version by Romero-Moreno, Márquez-González, Losada, Gillanders, & Fernández-Fernández (2014). This scale measures the tendency to believe in the literal content of thoughts and feelings. Seven items (e.g., "I feel so trapped in my thoughts that I am unable to do the things I really want to do") are rated on a Likert-type scale ranging from 1 (Never) to 7 (Always). The scores of the items are summed in order to get a total score of the measure, with higher scores reflecting higher cognitive fusion. The internal consistency (Cronbach's alpha) for this scale in the present study was .88.
- c) *Caregiving Ambivalence Scale* (CAS, Losada et al., 2017). The CAS measures ambivalent feelings in dementia family caregivers. This is a 5-item scale (e.g., "I have mixed feelings towards my relative [tenderness-rage, love-hate, etc.]") that assesses the degree to which caregivers' feelings toward their relative are mixed or conflicted. Participants are asked to select the option that best describes their feelings during the last month. Each item is rated on a Likert-type scale that ranges from 0 ("Never") to 3 ("Always"). The scores in the five items are summed in order to obtain a total score, with higher scores reflecting more ambivalent feelings. Cronbach's alpha coefficient for this scale was .87 in this study.

Procedure

Participants were recruited through different social services and health care centers of the Community of Madrid (Spain) and through media outreach such as Internet. The first contact was established by telephone to verify if the participants met the inclusion criteria of the study. Once this was established, face-to-face

interviews were conducted in the participating centers. Caregivers gave their informed consent to participate in the study, which was approved by the Spanish Ministry of Economy and Competitiveness as well as by The Ethics Committee of Rey Juan Carlos University (Madrid).

Data analysis

Following Tabachnick and Fidell (2001) criteria, analyses for sample normality and outliers (univariate and multivariate) were conducted. Descriptive data (means, standard deviations, ranges, and frequencies) were calculated for the assessed variables. In order to investigate the relationship between variables, correlation analyses were run. The IBM SPSS Statistics program, version 22.0 (IBM, 2013) was used for all analyses.

In order to analyze the association between the variables, a theoretical model was developed, drawing on the stress and coping model adapted to caregiving (e.g., Knight & Sayegh, 2010). The following variables were included: sociodemographic variables (gender, caregivers' age, time since becoming a caregiver, and number of daily hours devoted to caregiving), demands or stressors (frequency of disruptive behaviors and reaction to disruptive behaviors), potential mediator (cognitive fusion) and, as the outcome variable, ambivalent feelings. First, all the associations between variables that had been shown to be significant in the correlation analyses were included as paths in the model. Next, following the model-generation strategy (Joreskog & Sörbom, 1993), only those associations between the variables that were observed as significant once the first path analysis was run were included in the final model. In addition to the chi square (χ^2) statistic, the chi square value divided by the degrees of freedom (χ^2/df) was considered, with values under or near 3 indicating good model fit (Bollen, 1989). The root mean square error of approximation (RMSEA), the normed fit index (NFI) and the Tucker-Lewis index (TLI) were also evaluated as additional indicators of model fit, considering Hu and Bentler's (1998) indications of values under .06 (RMSEA) and over .95 (NFI and TLI) as indicating excellent fit of the data to the model. Finally, mediation was analyzed following the bootstrapping approach recommended by Preacher and Hayes (2004) using 1000 bootstrap samples. IBM SPSS Amos version 21.0.0 was used for these analyses.

Results

Correlational analyses

The results of the correlational analyses are shown in Table 2. Significant and positive associations between the variables frequency of disruptive behaviors, reaction to disruptive behaviors, cognitive fusion and ambivalence were obtained (in all cases $p < .01$). Caregivers' age was significantly and negatively correlated with cognitive fusion and ambivalence. The results also showed a positive and significant association between gender (being female), frequency and reaction to disruptive behaviors, cognitive fusion and ambivalence. Time since becoming a

caregiver was significantly and negatively correlated with cognitive fusion, but showed no relation to any of the other variables in the model. Finally, the number of daily hours devoted to caregiving showed a significant and negative association with ambivalence.

Table 2
Pearson correlations between the assessed variables

Variables	1	2	3	4	5	6	7
1. Gender (0= female)	-						
2. Caregiver age	.14*	-					
3. Time since becoming a caregiver	.01	.17*	-				
4. Daily hours caring	.03	.33**	.01	-			
5. Frequency of disruptive behaviors	-.21**	-.13*	.04	.03	-		
6. Reaction to disruptive behaviors	-.20**	-.13*	.03	-.06	.79**	-	
7. Cognitive fusion	-.26**	-.18**	-.12*	-.04	.21**	.28**	-
8. Ambivalent feelings	-.28**	-.23**	-.04	-.12*	.38**	.48**	.47**

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

Path model for explaining relationship between stressors and ambivalent feelings

Figure 1 shows the associations obtained through the path analysis for ambivalent feelings, including all the significant associations between variables. Time since becoming a caregiver and number of daily hours devoted to caregiving were initially introduced in the model, but were discarded in the final model because no significant associations with the rest of the variables included in the model were obtained.

As can be seen, all the variables (except frequency of disruptive behaviors) have a direct association with ambivalence. Female and younger caregivers, with higher stress reactions to disruptive behaviors and with higher scores in cognitive fusion report more ambivalence.

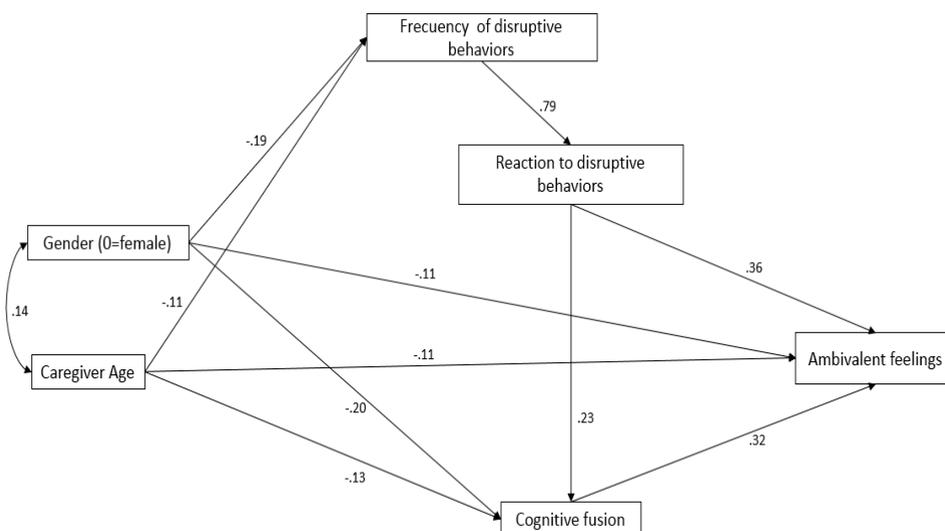
In addition to the direct associations, additional indirect influences on ambivalence were found. Even though a significant positive association between frequency of disruptive behaviors and ambivalence was observed in the correlation analyses, this association is no longer significant when all the variables are considered together in the model. The results suggest that frequency of disruptive behaviors have an indirect association with ambivalence through its influence on reaction to disruptive behaviors. The results of the bootstrap analysis for testing mediation suggest that this indirect association is significant (standardized indirect effect: .34, $p < .01$, SE = .04, CI = .27-.41). In addition, even though a significant and positive correlation was observed between frequency of disruptive behaviors and cognitive fusion, this association was not significant in the model. The influence of frequency of disruptive behaviors on cognitive fusion is indirect, through its influence on reaction to disruptive behaviors, as was found through the analysis for testing mediation (standardized indirect effect: .18, $p < .01$, SE = .04, CI = .12-.25). These findings suggest that caregivers who experience a higher frequency of disruptive behaviors also have a more stressful reaction to these

behaviors and get more cognitively fused. Finally, there is also an indirect influence of reaction to disruptive behaviors on ambivalence through the influence of reaction on cognitive fusion. Again, the results of the bootstrap analysis for testing mediation suggest that this association is significant (standardized indirect effect: .07, $p < .01$, $SE = .02$, $CI = .05-.11$). Caregivers who report being more stressed due to their care-recipients' disruptive behaviors are more cognitively fused, and this association seems to increase their ambivalence.

The final model explained 37% of the variance of caregiver's ambivalent feelings. The obtained fit indices suggest an excellent fit of the path model to the data ($\chi^2 = 2.674$, $p = .614$, $\chi^2/df = .669$, $RMSEA = .000$, $NFI = .996$, $TLI = 1.009$).

Figure 1

Path analysis testing the role of frequency of and reaction to disruptive behaviors and cognitive fusion in caregiver's ambivalent feelings



Note: All associations are significant ($p < .05$). The errors have been omitted for ease of presentation.

Discussion

The objective of this study was to analyze the role of cognitive fusion in the model of caregiver stress and to explore the role of this variable as a contributor to caregivers' ambivalent feelings. Concretely, our goal was to analyze if cognitive fusion acts as mediator in the relationship between frequency of and reaction to disruptive behaviors and ambivalence in caregivers. To our knowledge, this is the first study that simultaneously analyzes the relationship between the variables frequency of disruptive behaviors, reaction of the caregivers to relative's disruptive behaviors, cognitive fusion and ambivalent feelings.

The results obtained coincide with previous studies in that the frequency of and reaction to disruptive behaviors of the care recipient are significantly and

positively associated with caregiver's ambivalent feelings (Losada et al., 2017, 2018). In addition, the results also confirm the relationship observed in previous studies between the frequency of care-recipients' disruptive behaviors and caregivers' cognitive fusion (Romero-Moreno et al., 2014). However, as far as we know, this is the first study that analyses the association between the variable cognitive fusion and ambivalent feelings, variables which, as observed in the results of this study, show a significant and positive relationship. The results also suggest that the frequency of disruptive behaviors is not associated with ambivalence in a direct way, but in an indirect one, with this association being explained through two paths: 1) caregivers' reaction to disruptive behaviors acts as a mediator in the relationship between the frequency of disruptive behaviors and ambivalence; and 2) the impact of caregiver's reaction to disruptive behaviors on ambivalent feelings is mediated by through cognitive fusion.

In conclusion, it can be said that our initial hypotheses are confirmed. Intense stress reactions to care recipients' disruptive behaviors are associated with an inadequate cognitive functioning of the caregivers (increased levels of cognitive fusion), thus facilitating the emergence and/or maintenance of negative emotions towards their relative. These negative emotions add to the positive feelings that are usually associated with caring for a loved relative, thus increasing the emotional ambivalence. These findings provide support for the stress and coping model (Knight & Sayegh, 2010), which postulates that the influence of stressors (e.g., disruptive behaviors) on caregiving consequences (in this study, ambivalence) is modulated by other variables (in this study, reaction to disruptive behaviors and cognitive fusion). Although the cross-sectional nature of this study prevents us from reaching causal conclusions, the results obtained suggest an interesting path through which disruptive behaviors can contribute to increasing caregivers' distress (emotional ambivalence), because more intense reactions to disruptive behaviors seem to be associated with higher levels of cognitive fusion among caregivers.

These results have several implications for practice. In the clinical setting, it can be hypothesized that caregivers' distress may be reduced by intervening in two areas. First, behavioral interventions for decreasing the frequency of care-recipients' disruptive behaviors or the reaction of caregivers to these behaviors (e.g., Bravo-Benitez & Navarro-González, 2018; Logsdon, McCurry, & Teri, 2007) may reduce not only the sources of distress but may also minimize the chances of caregivers getting fused with their thoughts, and the likelihood of the emergence of negative emotions towards the care-recipient. In addition, the use of acceptance-based strategies (e.g., acceptance and commitment therapy, ACT; Hayes, Strosahl, & Wilson, 1999) that include cognitive fusion as a main target of the interventions as well as a mediator of the impact of these interventions (Zettle, Rains, & Hayes, 2011) may be also helpful. According to this idea, ACT-based interventions could be useful in caregivers by promoting the opposite mechanism to cognitive fusion, that is, cognitive defusion; this implies teaching caregivers skills to help them distance themselves from their own thoughts through acceptance, thus diminishing the power their thoughts have over behavior, without directly attempting to modify their content (Losada et al., 2015).

This study presents several limitations that should be mentioned. First, as already noted, the cross-sectional design of the study prevents causal inferences. The direction of the associations that are shown in the model may be different. For example, cognitive fusion may increase the reaction to disruptive behaviors. Therefore, it is necessary to treat the results with caution, and future experimental and longitudinal studies to confirm the data obtained here are recommended. Second, the sample was composed of caregivers who participated voluntarily in this study, which limits the generalization of the results to the rest of the caregiver population. Despite these limitations, the results of this study suggest that the frequency of disruptive behaviors of the care recipient may have not only a direct effect on caregivers' ambivalent feelings. The results suggest that the influence of these behaviors on ambivalence can be mediated by cognitive fusion, as well as by the discomfort associated with the disruptive behaviors of the relatives (reaction to disruptive behaviors). High levels of reaction to disruptive behaviors could place caregivers in a situation of vulnerability to ambivalent feelings, making it difficult for them to distance themselves from their thoughts and develop a more adaptive coping with the stressors and demands associated with caregiving.

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RECEIVED: June 12, 2018

ACCEPTED: September 25, 2018