

COGNITIVE FUSION IN DEMENTIA CAREGIVING: PSYCHOMETRIC PROPERTIES OF THE SPANISH VERSION OF THE "COGNITIVE FUSION QUESTIONNAIRE"

Rosa Romero-Moreno¹, María Márquez-González², Andrés Losada¹,
David Gillanders³, and Virginia Fernández-Fernández¹

¹*Universidad Rey Juan Carlos;* ²*Universidad Autónoma de Madrid (España);*

³*University of Edinburgh (United Kingdom)*

Abstract

Based on Acceptance and Commitment Therapy, cognitive fusion, or the extent to which we are psychologically tangled with and dominated by the form or content of our thoughts, is a key psychopathological dimension. The aim of this study was to test the factor structure and psychometric properties of the Spanish Version of the Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014) in a sample of dementia caregivers. Cognitive fusion, stressors, guilt, depression, anxiety, rumination, experiential avoidance and life satisfaction were assessed in 179 caregivers. Confirmatory factor analysis (CFA) was conducted to test the factor structure of the CFQ and correlational analyses were used to assess the convergent validity of the measure. A uni-dimensional factor structure of the CFQ was confirmed. Good internal consistency and significant associations in the expected directions between the CFQ and other coping and outcome variables were found. The CFQ may be a useful questionnaire to assess cognitive fusion in Spanish speakers in general and in dementia caregivers in particular.

KEY WORDS: *caregivers, cognitive fusion, acceptance and commitment therapy, experiential avoidance, depression.*

Resumen

Según la Terapia de Aceptación y Compromiso, la fusión cognitiva o la medida en la que estamos psicológicamente enredados con o dominados por la forma y el contenido de nuestros pensamientos, es una dimensión psicopatológica. El objetivo de este estudio fue analizar la estructura factorial y las propiedades psicométricas de la versión española del "Cuestionario de fusión cognitiva" (*Cognitive Fusion Questionnaire*, CFQ; Gillanders et al., 2014) en cuidadores de personas con demencia. Se evaluaron en 179 cuidadores la fusión cognitiva, eventos estresantes, culpa, depresión, ansiedad, rumiación, evitación experiencial y satisfacción con la vida. Se realizó un análisis factorial confirmatorio para analizar la estructura factorial del CFQ y análisis correlacionales para hallar su validez convergente. Se confirmó una estructura factorial unidimensional del CFQ. Se encontró una buena consistencia interna y asociaciones significativas en las

Correspondence: Rosa Romero-Moreno, Universidad Rey Juan Carlos, Dpto. de Psicología, Edificio Departamental II, Avda. de Atenas, s/n. 28922 Alcorcón (Spain). E-mail: rosa.romero@urjc.es

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direcciones esperadas entre el CFQ y otras variables de afrontamiento y de resultado. El CFQ puede ser un cuestionario útil para medir fusión cognitiva en personas de habla española en general y en cuidadores de personas con demencia en particular.

PALABRAS CLAVE: *cuidadores, fusión cognitiva, terapia de aceptación y compromiso, evitación experiencial, depresión.*

Introduction

Research is consistent in establishing that dementia caregiving is linked to negative physical and mental consequences for family caregivers (Mausbach, Chattillion, Roepke, Patterson, & Grant, 2013; Pinquart & Sörensen, 2003). Given that dementia caregiving has been considered as a chronic stressful situation, the most common theoretical model used to study the caregiving process is the stress and coping model adapted to caregiving (Knight & Sayegh, 2010). Following this model, coping variables are the most important factors to predict emotional distress, as they reduce or increase the impact that stressors (e.g., frequency of behavioral problems) have on emotional consequences (e.g., depression, anxiety). Hence, a challenge of caregiving research consists of the design and development of psychological interventions to help caregivers to cope more adaptively with the stress process and reduce their levels of distress (Knight & Sayegh, 2010; Li, Cooper, Austin, & Livingston, 2013). In this sense, cognitive behavioral therapies (CBTs) have shown the best results, although their effect sizes are at best moderate (Pinquart & Sörensen, 2006).

One of the coping processes that has been highlighted from the CBT perspective is changing the content and the form of dysfunctional thoughts and beliefs in order to reduce caregivers distress (Losada, Márquez-González, Peñacoba, Gallagher-Thompson, & Knight, 2007; Losada, Márquez-González, & Romero-Moreno, 2011). This process of thought modification has been shown to be a central mechanism of action (mediator) of the impact of CBT interventions (Losada et al., 2011), which uses cognitive restructuring to produce those changes.

Acceptance vs. control based coping strategies in the dementia caregiving context

Despite the proven efficacy of altering thought content in order to lessen caregivers' distress, it is not infrequent to find that some caregivers do not benefit from this intervention technique, especially when their cognition is "realistic" (e.g., "this disease has no cure and it is going to get progressively worse") or understandable thoughts (e.g., "in these conditions, it would be better for my relative to die"). These kinds of thoughts are distress-provoking and become very difficult to challenge and change using cognitive restructuring. These kind of thoughts, and the associated emotions (sadness, fear, etc.), are ubiquitous all along the course of the dementia disease. Indeed, dementia disease involves high doses of stressors, different unavoidable external situations (e.g., care-recipient's memory problems and proneness to behavioral problems such as emotional

outbursts or aggressiveness) and persistent internal events (e.g., negative thoughts, memories, feelings). Bearing this in mind, it has recently been suggested that fostering the skill of acceptance may be useful in older people with chronic pain (Alonso, López, Losada, & González, 2013) and also in the caregiving process (Márquez-González, Romero-Moreno, & Losada, 2010). More concretely, when helping caregivers cope with hard-to-change upsetting thoughts and emotions, the use of strategies to foster psychological acceptance may be an appropriate therapeutic alternative to strategies focused on cognitive and emotional change and/or control (Li et al., 2013).

One therapeutic model that actively promotes the development of psychological acceptance is acceptance and commitment therapy (ACT, said as one word, not three letters). ACT is an approach framed in the cognitive-behavioral tradition, with its theoretical roots in relational frame theory (RFT: Hayes, Strosahl, & Wilson, 2011). RFT is a modern behavioural analytic account of language and cognition. The theory specifies how verbal behaviours (thoughts) exert influence on overt behaviours and other private events such as emotional responses, through relational learning histories. RFT and ACT suggest that how people relate to their own mental events, and the clinical relevance of distinguishing between the frequency or form of dysfunctional thoughts (e.g., depressive thoughts), and the function of thoughts on clients' behavior (functional context), is important (Hayes, Levin, Plumb-Villardaga, Villatte, & Pistorello, 2013; Hayes et al., 2011). From an ACT perspective, a central source of psychopathology is the construct of 'psychological inflexibility', which has been described as the inability to modulate behaviour in response to direct contingencies (Hayes et al., 2004) or, in other words 'the way that language and cognition interact with direct contingencies to produce an inability to persist or change behavior in the service of personal long-term valued or desired ends' (Hayes, Luoma, Bond, Masuda, & Lillis, 2006, p. 6).

ACT highlights the importance of an individual's awareness of and relationship to their thoughts: seeing certain thoughts and feelings as the problem and trying to eliminate or control them can have the unintended consequence of amplifying them (Hayes et al., 2011). While cognitive restructuring defines its procedures in terms of modifying thoughts and feelings, the ACT perspective states that attempts to control these internal events are not only likely to be ineffective but may actually be paradoxical or counterproductive (Hayes et al., 2011; Zettle & Hayes, 1986).

An ACT specific process and related construct is cognitive fusion, which has been proposed as a core psychopathological mechanism consisting of the tendency to believe in the literal content of thoughts and feelings or, in more general terms, the excessive or improper regulation of behavior by verbal processes, such as rules and derived relational networks (Hayes et al., 2011). When a person is cognitively fused, the individual's attention and behavior is dominated by the content of thoughts and it is less influenced by direct contact with environmental contingencies. Hence, cognitive fusion implies that people react to thoughts as if they were literal reality (Gillanders et al., 2014) and thus may act in a way that is inconsistent with what the environment affords relevant to chosen

values and goals (Hayes et al., 2006). In contexts of cognitive fusion, certain thoughts or feelings (particularly those with provocative meanings) become connected to powerful behavior patterns, usually in the service of experiential avoidance: doing things to avoid internal experiences such as feelings, sensations, urges, memories or thoughts (Hayes et al., 2011). The contrary process of cognitive fusion has been called cognitive defusion, and it has been defined as the ability to see one's thoughts as mental events rather than as 'literal' representations of reality; in other words, cognitive defusion is a cognitive process entailing change in the influences exerted by thoughts on behaviour and experience, without necessarily changing their form or frequency.

Different studies have shown that higher levels of cognitive fusion are associated with higher levels of depression, anxiety, burnout, lower levels of quality of life and life satisfaction and maladaptive coping strategies (e.g., experiential avoidance, frequency of automatic thoughts) (Fergus et al., 2012; Gillanders et al., 2014). Negative associations have also been reported between cognitive fusion and physical and mental wellbeing and quality of life in chronic pain patients, whilst positive relationships between fusion and affective distress have been also found (Wicksell, Renöfält, Olsson, Bond, & Melin, 2008). Cognitive fusion may constitute a core mechanism of action of interventions based on ACT, as it is supported by empirical data showing that it is a mediator of the impact of the ACT interventions (Zettle, Rains, & Hayes, 2011).

Hence, it would be useful for clinicians and researchers to consider both the content and the function of dysfunctional thoughts. It is plausible that caregivers' distress is related not only to the presence and degree of dysfunctional thoughts, but also to how fused they are with their thinking. The impact that dysfunctional thoughts have on caregivers' emotional distress and behavior may be influenced by caregivers' cognitive fusion levels.

Other similar concepts to cognitive fusion or specific dimensions of it have been described in the traditional psychology literature. For example, different studies analyze cognitive fusion in terms of believability of thoughts (e.g., Zettle & Hayes, 1986) and this description refers to a part of cognitive fusion, relative to the content of thoughts. However, Gillanders et al., (2014) consider a wider operationalization of cognitive fusion, including other aspects such as reacting emotionally to thoughts, inability to view cognitive events from a different perspective, behavior being highly regulated by cognitive events, and dominance of cognitive events, among other dimensions (Gillanders et al., 2014). In addition, other ACT processes overlap with the cognitive fusion construct (for a more detailed description of differences between fusion and other aspects of the ACT model see Gillanders et al., 2014).

Cognitive fusion measurement

Despite its increasing popularity among clinicians and researchers, there is a paucity of research focused on the development of instruments to measure this variable. Among the few cognitive fusion measures developed so far, most of them were designed to measure fusion in specific populations. Specifically, the

Believability of Anxious Feelings and Thoughts Questionnaire (item example: “*I need to get a handle on my anxiety and fear for me to have the life I want*”) (BAFT; Herzberg et al., 2012) was developed for non-clinical undergraduates and anxious community samples; the Automatic Thoughts Questionnaire (ATQ-B; Zettle & Hayes, 1986) assesses believability of depressogenic thoughts (“*I’m a loser*”); the Stigmatizing Attitudes Believability Scale (SAB; Hayes et al., 2004) measures substance abuse therapists’ stigmatizing thoughts about their clients; the Psychological Inflexibility in Pain Scale (PIPS; Wicksell, Lekander, Sorjonen, & Olsson, 2010) is used to assess fusion with thoughts about chronic pain; the Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco, Lambert, & Baer, 2008) for children and adolescents, and the recent version of the AFQ for non-clinical adults and adults with anxiety disorders (Fergus et al., 2012). Furthermore, available instruments include cognitive fusion items as part of measurement of the psychological inflexibility construct, in which other ACT processes are also present (Wicksell et al., 2010).

Following a transdiagnostic approach to cognitive fusion, there is only one study designed to measure cognitive fusion in general terms, which allows flexibility in terms of item content (Gillanders et al., 2014). Specifically, Gillanders et al. (2014) developed a brief self-report measure of cognitive fusion, the Cognitive Fusion Questionnaire, which was designed to assess fusion with cognition in general, rather than with particular forms of cognition (e.g., anxious thoughts), and in the general population (clinical and non-clinical). The study used different samples, including one of dementia caregivers. The authors suggest that the CFQ has a coherent, simple and theoretically consistent factor structure suggesting it as a unidimensional scale. To our knowledge, there are no validated instruments in Spanish language to measure cognitive fusion. In addition, taking into account the stress and coping model (Knight & Sayegh, 2010), there is no research analyzing the influence of cognitive fusion in the stress process of dementia caregiving.

The purpose of this study was to translate the Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014) into Spanish language and validate it using confirmatory factor analysis, as well as analysing its psychometric properties in a dementia caregiving population. In order to analyze the construct validity of the scale, and following the stress and coping model (Knight & Sayegh, 2010), other variables were also measured: stressors (frequency of behavioral problems and functional capacity of the care-recipient), rumination, experiential avoidance, depression, anxiety, guilt and satisfaction with life. Based on Gillanders’ et al. (2014), we hypothesized that the CFQ will have a unidimensional structure. We also hypothesized positive associations between cognitive fusion and both rumination and experiential avoidance. In addition, positive associations between cognitive fusion and depression, anxiety and guilt as well as negative associations between cognitive fusion and satisfaction with life were expected.

Methods

Participants

The sample consisted of 179 caregivers of relatives with dementia who were recruited through Social Services and Day Care centres from Madrid (Spain). Inclusion criteria were: caregivers had to identify themselves as the main source of help for their loved one; being older than 18 years old; reporting that more than 1 hour per day was provided to caregiving tasks during at least a period of 3 months. Sociodemographic characteristics (gender, relationship to care recipient, caregivers' age, care recipient's age, time since care began, daily hours caring and care recipient's illness) are shown in table 1.

Table 1
Socio-demographic characteristics of the sample (N= 179)

Gender	
Female	77.7%
Male	22.3%
Relationship to care recipient	
Spouse	40.8%
Son/Daughter	49.1%
Other (e.g., parent-in-law)	10.1%
Caregiver's age	
<i>M</i> (years)	61.45
<i>SD</i>	14.84
Range	21-88
Care recipient's age	
<i>M</i>	79.52
<i>SD</i>	8.84
Range	55-101
Time since caring began	
<i>M</i> (years)	3.62
<i>SD</i>	2.59
Range	0.8-12
Hours caring per day	
<i>M</i>	13.82
<i>SD</i>	8.26
Range	1-24
Care recipient's illness	
Alzheimer's disease	77.0%
Other dementia	23.0%

Measures

- The Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014). The CFQ is a seven item scale assessing cognitive fusion. Response scores range from 1= never true to 7= always true (Appendix). This scale has been validated in English language for a wide variety of clinical and non clinical populations including, for example, transdiagnostic sample of mental health difficulties, depression, anxiety disorders, post-traumatic stress disorders, work stress, multiple sclerosis, and dementia caregivers. The range of internal consistency (Cronbach's alpha) in the original scale was from .80 to .90. The CFQ was translated into Spanish and then back translated. The back translation was assessed by the original authors of the CFQ as to whether items retained the same meaning as the original English language items.
- The Revised Memory and Behaviors Problems Checklist (RMBPC; Teri et al., 1992), the Spanish version of Losada, Peñacoba, Márquez-González, and Cigarán (2008). The RMBPC consists of a 12 item-scale (e.g., "During the past week; how often did your relative ask the same question over and over?) and scores range from 0= "not at all" to 4= "extremely". In this study, the internal consistency that has been found was .72.
- The Barthel Index (Mahoney & Barthel, 1965), the Spanish version of Baztán et al. (1993). The Barthel Index which consists of a 10-item scale that evaluates the level of independence for activities of daily living (ADL) (e.g., "To what extent is your relative able to ascend and descend stairs?), with scores ranging from 0= "dependent" to 100= "independent". Internal consistency in this study was .91.
- The Acceptance and Action Questionnaire (AAQ; Hayes et al. 2004), the Spanish version of Barraca (2004). The questionnaire consists of 9 items measuring a high need for emotional and cognitive control, avoidance of negative private events, inability to take needed action in the face of private events, and some items assessing cognitive fusion, such as excessively negative evaluations of private experiences or negative self-references (e.g., "If I could magically remove all the painful experiences I've had in my life, I would do so") (Hayes et al., 2004). Scores range from 1= "never true" to 7= "always true". Internal consistency of the scale in the original study was .70 and in this study was .59.
- The short version of the Ruminative Responses Scale (RRS-reduced version; Nolen-Hoeksema & Jackson, 2001), the Spanish version of Márquez-González, Izal, Montorio, and Losada (2008). This scale consisted of a 10-item measure evaluating self and symptom-focused responses to sadness and distress (e.g., "Go away by yourself and think about why you feel this way") and scores range from 0 "never" to 3 "always". In this study, internal consistency was .90.
- The Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977), the Spanish validation by Losada et al. (2012). The CES-D consists of 20 items, that evaluate the frequency of depressive symptomatology during the

- last week (e.g., "I felt lonely"). Answers range from 0 "rarely or none of the time" to 3 "most or all of the time". In this study internal consistency was .89.
- The Tension-Anxiety subscale of the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971), the Spanish version of Moltó et al. (1999). This subscale consists of 9 items assessing the level of anxiety during last week (e.g., "Anxious"). Answers range from 0 "not at all" to 4 "very much". Internal consistency of the scale in this study was .91.
 - The Caregiver Guilt Questionnaire (CGQ) (*Cuestionario de culpa del cuidador*; Losada, Márquez-González, Peñacoba, & Romero-Moreno, 2010). The CGQ consists of 22-items assessing caregivers' feelings of guilt about having negative feelings, emotions or acts towards their relative, about failing to meet the challenges of caregiving, about self-care, about looking after themselves and taking part in activities other than caring for their relative and about having negative feelings toward other people (e.g., "I have felt bad for leaving my relative in the care of someone else while I had fun"). In this study internal consistency was .88.
 - The Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985), the Spanish version by Pons, Atienza, Balaguer, and García-Merita (2002). This scale consists of 13 items (e.g., "In most ways my life is close to my ideal") assessing global satisfaction with one's life global life satisfaction. Answers range from 1 "strongly disagree" to 7 "strongly agree". Internal consistency in this study was .83.

Procedure

Inclusion criteria were assessed via telephone screening interview. Then, face to face interviews were carried out at the different centres collaborating in the study. All caregivers provided their informed consent to participate in the study. This research was approved by both the Spanish Ministry of Education and the Ethics Committee at the Universidad Rey Juan Carlos.

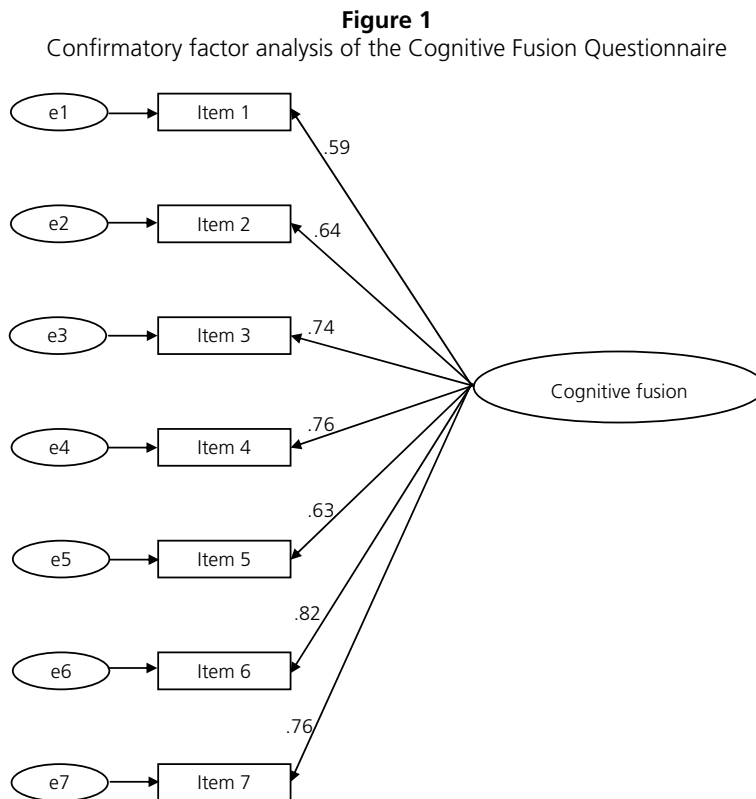
Data analysis

In order to analyze the factor structure of the Cognitive Fusion Questionnaire, confirmatory factor analysis (CFA) using AMOS 16 software was conducted. A one-factor model consisting of 7 fusion items was tested. With the aim to test the degree to which data fitted the model, different fit indices were used: the chi-square (χ^2) statistic, the chi-square value divided by the degrees of freedom (χ^2/df), with values below 3 indicating a good model fit (Bollen, 1989); the root mean square error of approximation (RMSEA), with values near or below .06 indicative of good model fit (Hu & Bentler, 1998); the goodness of fit index (GFI), comparative fit index (CFI) and iterative fit index (IFI), with values greater than .95 for all indices indicative of good model fit (Hu & Bentler, 1998). Descriptive statistics (means, SDs, and ranges) of the assessed variables of the study, correlations between them and reliability analysis were conducted using the SPSS version 19.

Results

Confirmatory factor analysis

Factor loadings for the one factor model are shown in figure 1. Although in the model chi-square was significant, due to the χ^2 sensitivity to sample size, the one factor model shows good fit across the other fit indices. ($\chi^2= 33.24$; $df= 14$; $p= .003$; $\chi^2/df= 2.37$; RMSEA= .088; GFI= .95; CFI= .96; IFI= .96). The 7-items of the Spanish version of the Cognitive Fusion Questionnaire is shown in Appendix.



Reliability

The Spanish version of the Cognitive Fusion Questionnaire had an internal consistency (Cronbach's alpha) of .87.

Descriptive data, construct validity and criterion related validity

Table 2 shows descriptive information about the measured variables and correlational analysis between the cognitive fusion scale and the assessed variables

of the study. The cognitive fusion scale correlated significantly and positively with rumination, experiential avoidance, depression, anxiety, guilt and frequency of behavioral problems. In addition, higher scores on the cognitive fusion scale were significantly associated with lower scores on satisfaction with life, as predicted by the ACT model.

Table 2

Correlations, means, standard deviations and ranges of the assessed variables ($N= 179$)

Variables	1	2	3	4	5	6	7	8	<i>M</i>	<i>SD</i>	Range
1. Cognitive fusion									25.28	9.68	7-47
2. Rumination	.63**								12.21	6.75	0-30
3. Experiential avoidance	.67**	.56**							33.99	7.71	15-57
4. Depression	.43**	.53**	.51**						22.57	12.11	1-48
5. Anxiety	.53**	.57**	.58**	.70**					17.53	8.37	1-36
6. Guilt	.43**	.42**	.35**	.23**	.46**				28.44	13.94	1-66
7. Satisfaction with life	-.38**	-.41**	-.50**	-.53**	-.49**	-.22**			20.52	7.25	5-35
8. Frequency of behavioral problems	.22**	.21**	.25**	.27**	.40**	.22**	-.24**		14.76	8.00	0-43
9. Functional capacity	-.04	-.04	-.09	-.08	-.02	-.07	.04	-.14	61.40	27.39	0-100

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

In order to test criterion related validity comparisons of the cognitive fusion scale between caregivers with depressive symptoms scores ≥ 16 and those with depressive symptoms scores < 16 were conducted. In addition, these analyses were also carried out for the female and male participants separately. As can be seen in table 3, there were significant differences in cognitive fusion between caregivers with high and low levels of depressive symptoms. Specifically, caregivers with depressive symptoms had significantly higher scores on the cognitive fusion scale than those without depressive symptoms in the total sample and in female caregivers. No significant differences were obtained for the Cognitive Fusion Scale for male caregivers.

Table 3

Mean differences in cognitive fusion in caregivers with high versus low levels of depressive symptoms

Caregivers	Depressed			Non depressed			
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>T</i>
Female	107	27.30	9.63	32	21.53	9.38	2.99**
Male	18	24.06	9.98	22	21.96	7.73	0.75
Total	125	26.83	9.71	54	21.70	8.68	3.35**

Note: ** $p < .01$.

Discussion

The results of this study suggest that the Spanish version of the Cognitive Fusion Questionnaire has adequate psychometric properties, and it constitutes a useful instrument to assess cognitive fusion in dementia caregivers. Consistent with the original studies of the CFQ (Gillanders et al., 2014), and using confirmatory factorial analysis, results point to a 7-item single factor scale of the Spanish version of the CFQ, as this one-dimensional model shows good overall fit and good reliability indexes. Results of this study show that cognitive fusion, or the excessive attachment to the literal content of thoughts was positively associated with maladaptive coping strategies and with negative mental health outcomes for dementia caregivers, such as depression (Gillanders et al., 2014). Specifically, and following the stress and coping model (Knight & Sayegh, 2010), this study adds to Gillanders et al., (2014) in that dementia caregivers with high levels of cognitive fusion show more frequent rumination and experiential avoidance, and present higher levels of anxiety symptoms and guilt. In addition, higher levels of cognitive fusion are related to lower levels of caregiver' satisfaction with life. These variables were not measured by Gillanders et al. (2014).

Results of this study suggest that in dementia caregiving research there may be value in including not only measures of frequency of dysfunctional thoughts (a variable which has been proposed as an important mediator of cognitive-behavioral intervention with caregivers [Losada et al., 2011]), but also cognitive fusion, as a measure of caregivers' proneness to maintain a maladaptive relationship with their thoughts. The joint consideration of thought content and function is clinically relevant, as both aspects of thoughts are somewhat independent constructs. It is plausible that some caregivers present high levels of dysfunctional beliefs but low levels of cognitive fusion, which may explain a lower impact of maladaptive thoughts on these caregivers' behavior and emotions. Similarly, caregivers who have high levels of dysfunctional thoughts together with high levels of cognitive fusion may be at particularly high risk for distress. It is plausible that the negative impact that the content of dysfunctional thoughts about caregiving (e.g., It is selfish for a caregiver to dedicate time to himself/herself when a relative is frail/sick and needs care) have on caregivers depression would be mediated by cognitive fusion. Future research should address the hypothesis that cognitive fusion might be a mediator of the negative impact that dysfunctional thoughts have on emotional distress. Consistent with this hypothesis, it has been found that hallucination believability mediated the relationship between frequency of hallucinations and distress in people diagnosed with schizophrenia (Gaudiano & Herbert, 2006). Similarly, it would be interesting to analyze if the positive impact that extrinsic motives for caring (e.g., I provide care because I have no alternative) have on caregivers' anxiety (Romero-Moreno, Márquez-González, Losada, & López, 2011) is influenced by cognitive fusion.

It is plausible that the negative impact that maladaptive coping strategies such as rumination and experiential avoidance have on emotional distress is also mediated by caregivers' level of cognitive fusion. For example, it may be that rumination influences negatively on emotional distress (e.g., depressive symptoms)

only when people present high levels of fusion with their thoughts. Also, future longitudinal and/or experimental studies analyzing the mechanism through which cognitive fusion influences distress are needed, as the cross sectional nature of this study does not allow us to make directional inferences. Results also suggest that clinical depressive symptoms are positively associated with scores on cognitive fusion, but only for female caregivers, and not for males. The small caregiver sample of males included in this study may partly explain these results, although similar results were found in a previous study with a bigger sample of men, in which it was found that only female caregivers, but not male ones, with scores close to clinical depressive symptoms presented higher scores on their frequency of dysfunctional thoughts (Losada, Montorio, Izal, & Márquez-González, 2006). In this same line, many studies found rumination to be a coping strategy more frequently used by women than men and it has been suggested that women's greater tendency to ruminate appears to contribute to their greater tendency toward depressive symptoms compared to men (Nolen-Hoeksema & Jackson, 2001). Similarly, it has been found that women caregivers, especially daughters, present higher levels of guilt about neglecting other relatives and guilt about having negative feelings toward other people than men (Losada et al., 2010). Associations between caregivers' feelings of guilt and depressive and anxiety symptoms might also be explained by cognitive fusion. Taken together, these results may suggest the hypothesis that in caregiving contexts, women may be more vulnerable to suffering the consequences of excessive verbal control of behavior. These hypotheses may also be explored by future studies. A limitation of the study consists of the convenience nature of the sample (volunteer caregivers recruited from social and health centres), which may mean that these results not be generalizable to other caregiver's samples, in particular other samples of male caregivers.

Results of this study present relevant clinical implications. It may be clinically useful to train caregivers to increase their ability to distance from their thoughts (cognitive defusion strategy) in order to respond more adaptively to their levels of emotional distress, as it has been suggested by experimental and intervention studies (Masuda et al., 2010). Specifically, it has been suggested that comprehensive distancing may lead to therapeutic change in a different way from cognitive therapy, by reducing believability (not the frequency) of self-reported depressive thoughts, and leading to greater reductions in the validity of both external reasons and internal self-reasons (Zettle & Hayes, 1986). Furthermore, it has been found that cognitive defusion increases patient's self-reported ability to step back psychologically from their thoughts and view them as mental processes rather than absolute truths and that this was an equivalent mediator of treatment effect across cognitive therapy and acceptance and commitment therapy (Forman et al., 2012). In order to clarify the mechanisms of action of CBT and/or ACT interventions for dementia caregivers, it would be interesting to evaluate cognitive fusion across treatment trials, given that preliminary evidence of sensitivity to treatment effects for the CFQ was found (Gillanders et al., 2014). The CFQ constitutes a reliable, valid and very brief questionnaire, which is especially relevant for this population that have scarce time.

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APPENDIX

“Cuestionario de fusión cognitiva, versión en español”

(Romero-Moreno, Márquez-González, Losada, Gillanders y Fernández-Fernández, 2014)

A continuación se presentan algunas frases. Por favor, indique hasta qué punto se aplican a usted o le definen utilizando la siguiente escala:

1= nunca; 2= muy rara vez; 3= rara vez; 4= alguna vez; 5= frecuentemente; 6= casi siempre; 7= siempre

Ítems	1	2	3	4	5	6	7
1. Mis pensamientos me provocan malestar o dolor emocional							
2. Me siento tan atrapado/a en mis pensamientos que soy incapaz de hacer las cosas que realmente quiero hacer							
3. Tiendo a analizar demasiado las situaciones, hasta un punto que me perjudica							
4. Lucho con mis pensamientos							
5. Me enfado conmigo mismo/a por tener determinados pensamientos							
6. Tiendo a enredarme mucho en mis propios pensamientos							
7. Es una gran lucha intentar deshacerme de los pensamientos molestos, incluso sabiendo que sería muy útil para mí librarme de ellos							