Effects of the frequency and satisfaction with leisure profile on dementia caregivers distress

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Título: Efectos del perfil de frecuencia y satisfacción con el ocio en el malestar de cuidadores de personas con demencia.
Resumen: Objetivos: El modelo PEAR ("Actividades Agradables-Restricción Conductual") ha sido propuesto como una manera de entender los efectos del ocio sobre el malestar de cuidadores de personas con demencia. En base al modelo PEAR y al de estrés y afrontamiento, el objetivo de este estudio fue analizar de forma conjunta el papel de la frecuencia y la satisfacción con la activación conductual en la explicación del malestar del cuidador (depresión, ansiedad, salud percibida), el riesgo de institucionalización de la persona cuidada, los estresores y recursos del cuidador (rumiación y reevaluación cognitiva) en una muestra de 275 cuidadores. Método: Se dividió a la muestra en cuatro grupos en función de sus niveles en la frecuencia y la satisfacción con la activación conductual: BFBS = Baja frecuencia + baja satisfacción; BFAS = Baja frecuencia + alta satisfacción; AFBS = Alta frecuencia + baja satisfacción; y AFAS = Alta frecuencia + alta satisfacción. Resultados: Mientras que los cuidadores del grupo AFAS mostraron un perfil más positivo en variables relacionadas con los recursos y de salud, y menores puntuaciones en riesgo de institucionalización en comparación con el resto de los grupos, los cuidadores del grupo BFBS utilizaron en mayor medida estrategias de regulación emocional desadaptativas y mostraron peores consecuencias sobre variables de resultado de salud. Discusión: Los resultados sugieren la importancia de considerar el perfil de frecuencia y satisfacción con el ocio a la hora de entender el malestar del cuidador.
Palabras clave: cuidadores de personas con demencia; activación conductual; actividades agradables; riesgo de institucionalización; depresión; ansiedad.

Abstract: Objectives**:** The PEAR (pleasant events-activity restriction) model has been proposed as a way of understanding leisure effects on dementia caregivers' distress. Considering both the PEAR model and the stress and coping model, the purpose of this study was to analyze the potential of both frequency and satisfaction with leisure to explain caregivers' distress (depression, anxiety and perceived health), risk of institutionalization of the care recipient, caregivers' stressors and resources variables (rumination and cognitive reappraisal) in 275 caregivers. Methods: The sample was divided in four groups based on caregivers' scores on frequency and satisfaction with leisure: LFLS = Low frequency + low satisfaction; LFHS = Low frequency and high satisfaction; HFLS = High frequency + low satisfaction; HFHS = High frequency + high satisfaction. Results: Results indicated that while caregivers from the HFHS group showed a generally more positive profile on resources variables, health outcomes and lower levels of risk of institutionalization compared with the other groups, caregivers from the LFLS group used significantly less adaptive emotional regulation strategies and showed worse consequences on health outcomes. Discussion: The results of this study suggest the importance of considering caregivers' profile on frequency and satisfaction with leisure in order to understand caregiving distress.
Key words: dementia caregivers; behavioral activation; pleasant events; risk of institutionalization; depression; anxiety.

Introduction

It is well known that dementia caregiving is associated with psychological and physical health problems for caregivers (e.g., Pinquart & Sörensen, 2003). Due to the high demands (number of tasks and daily hours caring) required to provide care for a loved one over an extended period of time, dementia caregiving has been considered a chronic stressful situation (Vitaliano, Young & Zhang, 2004). The most commonly theoretical approach used in caregiving literature is the stress and coping model adapted to caregiving, which has received significant empirical support (Knight & Sayegh, 2010). Following this model, the impact that caregiving stressors (e.g., care-recipient frequency of behavioral problems or care-recipient functional capacity) has on caregivers outcomes (e.g., depression or physical health) depends on mediating variables (e.g., coping strategies) that may attenuate or increase the influence of stressors on caregivers' health.

Behavioral activation and caregiver distress

One of the coping variables found to have a positive influence on caregivers' mental and physical health is the level of caregivers' behavioral activation or engagement in pleasant events or leisure. Specifically, it has been found that higher levels of behavioral activation were significantly associated with higher levels of psychological well-being, life satisfaction and positive affect, and lower levels of burden and depression in caregivers (Croezen, Haveman-Nies, Alvarado, Van`T Veer & De Groot, 2009; Hirano, et al., 2011; Losada et al., 2010; Mausbach, Coon, Patterson & Grant, 2008; Mausbach, Roepke, Depp, Patterson & Grant, 2009;). These positive effects of leisure have been found even after controlling other relevant variables in the caregiving stress process, such as socio-demographic variables, care recipients' functional status and caregivers' social support (Losada et al., 2010), and are consistent with Lewinsohn's theory (1975) on the explanation of depression, which suggests that low levels of reinforcement for engagement in pleasant events predict significantly higher levels of depression.

Significant associations between behavioral activation and variables that influence caregiving outcomes have also been found. Caregivers with lower levels of activity partici-

pation reported higher levels of negative appraisals and both variables significantly predicted caregivers' depressive symptomatology (Mausbach et al., 2009). Similarly, it has been found that lower levels of behavioral activation were significantly linked with a more frequent use of rumination strategy in a non-caregiver sample (Raes, Hoes, Van Gucht, Kanter, & Hermans, 2010). These results suggested that behavioral activation may have a significant impact not only on caregivers' distress but also on the way caregivers use emotion regulation strategies, which may impact caregivers' mental health outcomes, as significant associations between emotional regulation (e.g. rumination and cognitive reappraisal) and psychopathology (e.g. depression and anxiety) have been found (Aldao, Nolen-Hoeksema & Schweizer, 2010).

Satisfaction with leisure and caregiver distress

Research has shown that not only behavioral activation or frequency of leisure is important. The construct of leisure has not been uniformly operationalized, and most studies have considered leisure as the frequency or duration of participation in different activities, operationalized as the quantity of time spent in activities (Stevens et al., 2004). In this sense, few studies have focused on satisfaction with the amount of leisure time, and this concept has not been adequately clarified. However, the importance of considering the individual's subjective feelings regarding leisure participation has also been highlighted, given that individual differences in values and preferences exist, and may influence whether leisure is satisfying or not (Stevens et al., 2004). Satisfaction with leisure has been defined as the positive perceptions or feelings which an individual forms, elicits, or gains as a result of engaging in leisure activities and choices or as the degree to which one is presently content or pleased with his/her general leisure experiences (Beard and Ragheb, 1980). In addition, this construct has been considered as a subjective dimension of behavioral activation (Stevens et al., 2004), and empirical support has been found linking this variable with caregiver distress. Specifically, it has been found that reporting higher levels of leisure satisfaction was significant and negatively associated with depression, anxiety (Raj, Manigandan & Jacob, 2006) and guilt (Losada, Márquez-González, Peñacoba & Romero-Moreno, 2010).

A different concept related with satisfaction with leisure is activity restriction, or the perception of the extent to which different areas of activity (e.g. self-care, visiting friends, working on hobbies) are restricted by stressful life events (Williamson & Shaffer, 2000; Williamson & Schulz, 1992). Williamson & Shaffer (2000) developed the Activity Restriction Model, which suggested that the extent to which one's normal activities are restricted by significant stressors (such as behavioral problems of care-recipients) plays a central role in reductions of psychosocial adjustment resulting in poorer mental health (e.g. depression). Both constructs, satisfaction with leisure and activity restriction highlight the

subjective appraisal dimension of leisure. Satisfaction with leisure has been considered as the distinct psychological dimension of satisfaction with the amount of time spent in leisure activities (Stevens et al., 2004), suggesting positive feelings as a result of caregivers cognitive appraisals of their time spent in leisure. On the other side, activity restriction is more focused on negative feelings as a result of the perception that one cannot engage in social and leisure activities as a result of life stresses resulting in negative consequences in mental health, such us depression (Williamson and Shaffer, 2000).

Because activity restriction is related with the cognitive appraisal that one is not able to engage in as much activity as one would like, it may be considered as dissatisfaction with engagement in leisure activities (Mausbach, Cardenas, Goldman & Patterson, 2007) or otherwise, a measure of satisfaction with leisure time (Mausbach et al., 2011). Mausbach, Patterson & Grant (2008) found that activity restriction had an important role in explaining increased depressive symptoms in Alzheimer caregivers when compared to non-caregivers, suggesting that activity restriction mediates the relationship between caregiver status and caregivers´ depression.

The caregiving "PEAR" (Pleasant Events and Activity Restriction) Model

Most of the studies that have been done analyzing caregiving and leisure have centered their attention on analyzing either the frequency of pleasant events or the satisfaction with them to predict caregiver distress. However, several researchers have highlighted the importance of considering both dimensions at the same time: frequency and satisfaction (Benyamini & Lomranz, 2004; Mausbach et al., 2007; Mausbach et al., 2008). Empirical support for this idea has been reported by Mausbach et al. (2008), who found that the number of activities was significantly correlated with positive affect, while the obtained pleasure from activities was associated with both higher scores on positive affect and lower levels of negative affect (Mausbach et al., 2008). Considering these results, Mausbach et al. (2011) developed the Pleasant Events and Activity Restriction Model ("PEAR" model). Through this model, more precise predictions of caregiver health and well-being are done by considering both a measure of frequency of pleasant events and the subjective experience of feeling restricted from engaging in activities (Mausbach et al., 2011; Moore et al., 2011). When testing their model, Mausbach et al. (2011) conducted a study with 108 spousal dementia caregivers and found that those caregivers with low levels of pleasant events and high activity restriction showed significantly higher scores on caregivers' distress (depressive symptoms, negative affect, and overload) and poorer coping strategies and resources (personal mastery and self-efficacy) compared with those caregivers with high levels of pleasant events and low activity restriction, or with those caregivers with either high pleasant

events and high activity restriction or low pleasant events and low activity restriction (Mausbach et al., 2011). Recently, additional support for the PEAR model has been found considering sleep measures as outcome variables in dementia caregivers (Moore et al., 2011).

Drawing upon the stress and coping model and the "PEAR" model, the aim of this study is to analyze the advantages of considering both frequency of and satisfaction with leisure to explain caregiver distress. We analyzed caregivers with low frequency of pleasant events and low levels of satisfaction with them (LFLS) and those with both high frequency of and high satisfaction with them (HFHS). However, our study adds to the Mausbach et al. (2011) study the consideration of two additional groups of caregivers based on their scores on frequency and satisfaction with leisure: caregivers who engage in high frequency of pleasant events and report low levels of satisfaction with them (HFLS), and those who engage in low frequency of pleasant events and report high levels of satisfaction with them (LFHS). Additionally, other key variables of the stress process, which have been underanalyzed in dementia caregiving research and have not been previously considered in Mausbach et al. (2011) study, have been included in this study such as stressors (e.g. frequency of behavioral problems), different emotion regulation strategies (rumination and cognitive reappraisal), health outcomes (e.g. anxiety), and risk of institutionalization. Also, a novel aspect of this study is the consideration of another subjective dimension of leisure, more focused on the positive feelings as a result of cognitive appraisals of their time spent in leisure, instead of negative ones (activity restriction), specifically satisfaction with life. Finally, while in Mausbach et al. study (2011) the caregiver sample consisted of spouses, in this study other kinship variables have been controlled including sons, daughters and others (e.g. daughters in law).

Specifically, these groups will be compared on their scores in variables tapping the different dimensions included in the stress and coping model: stressors (time caring, daily hours caring, functional status and behavioral problems), mediating variables (rumination and cognitive reappraisal), and health outcomes (depression, anxiety and perceived health). In addition, the effect that the caregiver leisure profile has on risk of institutionalization of the care-recipient will be also assessed, following suggestions by previous research (Mausbach et al., 2011).

Drawing upon Mausbach et al. (2011) previous results, we hypothesize that caregivers with low frequency of pleasant events and low satisfaction with them (LFLS) will show lower levels of health outcomes and less adaptive emotional regulation strategies (higher use of rumination and lower use of reappraisal) than the other three groups. In addition, we expect the group formed by those caregivers with high frequency of pleasant events and high satisfaction with them (HFHS) to be the one reporting more adaptive results. Specifically, we hypothesize that this profile of caregivers (HFHS) will report lower levels of stressors, more frequent

use of adaptive emotional regulation strategies and better health outcomes. Finally, we hypothesize significant and negative associations between frequency and satisfaction with leisure and risk of institutionalization.

Method

Participants and procedure

The sample consisted of 275 caregivers of relatives with dementia living in the community. They were recruited through Social Services and Day Care centers from Madrid (Spain) or by announcements on the media (i.e., radio or television). In order to participate in the study, caregivers had to identify themselves as the main source of help for their love ones, being older than 18 years old and providing care (caregiving tasks) at least one hour per day during a period of 3 consecutive months. In order to test if caregivers met the inclusion criteria, initial telephone interviews were conducted. Then, face-to-face interviews were carried out in the different Social and Day Care centers. All caregivers provided their consent to collaborate in the study and the research was approved by both the Spanish Ministry of Sciences and Innovation and the Spanish Ministry of Economy and Competitiveness, and the Ethics Committee at the Universidad Rey Juan Carlos (Madrid).

Measures

The selection of the variables has been done drawing upon the dimensions composing the stress and coping model (Knight & Sayegh, 2010). In addition to the sociodemographic variables, the following variables were assessed:

Frequency of leisure activities.- Frequency of pleasant events was assessed using an adaptation of the Leisure Time Satisfaction measure (Stevens et al., 2004). This 6-item scale measures caregivers´ frequency of engagement in 6 different pleasant events over the past month (e.g., "How often have you participated in hobbies or other interests"), with scores ranging from 0 "not at all" to 4 "a lot". Internal consistency (Cronbach's alpha) of the scale was .72 in this study.

Satisfaction with leisure.- Satisfaction with pleasant events was also measured using the Leisure Time Satisfaction (LTS) scale (Stevens et al., 2004) which consists of 6 items assessing the level of caregivers' leisure time satisfaction regarding different activities over the past month (e.g., "How satisfied are you with the amount of time you have been able to spend taking part in hobbies or other interests?"). Answers ranged from 0, "not at all" to 2 "a lot". The internal consistency (Cronbach´s alpha) in this study was .86.

Stressors.- Time since caregiving began (months caring) and daily hours caring were considered as stressors.

Patient Behavioral Problems.- Frequency of behavioral problems in dementia patients was measured using the Revised Memory and Behaviors Problems Checklist (Teri et al., 1992). It consists of a 24 item-scale (e.g., "During the past

week; how often did your relative start but not finish things?) with scores ranging from from 0 = "not at all" to 4 = "extremely". The internal consistency (Cronbach's alpha) found for this study was .82.

Functional status.- Patients' functional status was assessed with the Barthel Index (Mahoney & Barthel, 1965), a 10-item scale that measures the level of independence for Activities of Daily Living (ADL) (e.g., "What extent is your relative able to bathing by her/his self?). Scores range from 0 = "dependent" to 100 = "independent", with higher scores suggesting higher level of independence of the care-recipient. In this study, the internal consistency (Cronbach's alpha) that has been found was .92.

Resources variables

Rumination.- The reduced version of The Ruminative Responses Scale (RRS-reduced version; Jackson & Nolen-Hoeksema, 1998) was used. This scale is a 10 item-measure that evaluates the reactions to distress that are self-focused and symptom-focused (e.g., Go away by yourself and think about why you feel this way"). Item scores range from 0 "never" to 3 "always". In this study, internal consistency (Cronbach´s alpha) was .88.

Cognitive reappraisal.- Cognitive reappraisal was measured using the Mood Repair subscale from the Trait Meta-Mood Scale (TMMS-24; Salovey, Mayer, Goldman, Turvey & Palfai, 1995). This subscale has 4 items (e.g., "Although I am sometimes sad, I have mostly optimistic outlook"), which assess the ability to repair unpleasant moods or maintain pleasant ones. Item scores range from 0 "never" to 3 "always" and the internal consistency (Cronbach´s alpha) that has been found for this study was .86.

Outcome variables

Depression.- Depression was measured using the Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). It consists of 20 items that measure the frequency of depressive symptomatology during the last week (e.g., "I was bothered by things that usually don't bother me"). Item scores range from 0 "rarely or none of the time" to 3 "most or all of the time". Internal consistency (Cronbach's alpha) of this scale in this study was .89.

Anxiety.- Anxiety was assessed using the Tension-Anxiety subscale of the Profile of Mood States (POMS; McNair, Lorr & Droppleman, 1971). This scale consists of 9 items evaluating the level of anxiety during last week (e.g., "Anxious"). Answers range from 0 "not at all" to 4 "very much". In this study, internal consistency of the scale was .90 (Cronbach's alpha).

Perceived health.- The caregivers´ perception of the overall health was measured using the one single-item "In this moment, how do you consider your health?" Answers ranged on a Likert scale from 0 ("very bad") to 4 ("very good").

Risk of institutionalization.- Risk of institutionalization was measured using a single item which consisted of asking caregivers "During the past week; how often did you think about the possibility of institutionalize your relative into a residence?" Scores ranged from 0 ("I haven't thought about it at all") to 100 ("I think about it every day").

Data Analysis

Following Tabachnick and Fidell (1996) criteria, normality and the presence of outliers (univariate and multivariate) were tested.

The sample was divided in four groups based on caregivers' scores on frequency and satisfaction with pleasant events. Caregivers were coded as high or low in frequency and satisfaction with pleasant events, respectively, based on their median splits in each variable. The four groups were: 1) Low frequency + low satisfaction (LFLS); 2) Low frequency and high satisfaction (LFHS); 3) High frequency + low satisfaction (HFLS); and 4) High frequency + high satisfaction (HFHS).

In order to test significant differences between these groups in different domains (stressors, emotional regulation strategies and outcome variables), a MANOVA was conducted, using Wilks' criterion. Specifically, stressors domain consisted of scores on time caring (in months), daily hours caring, frequency of behavioural problems and care recipient' functional capacity; emotional regulation strategies domain was composed of rumination and cognitive reappraisal scores; and the outcomes domain included caregiver' depression, anxiety and perceived health scores. In order to control for familywise error, the critical value for alpha for stressors was adjusted to 0.0125 (.05/4). For emotional regulation strategies and outcome variables, alphas were adjusted to .025 and. 017, respectively.

In addition, in order to compare the sociodemographic characteristics by group, ANOVA and chi-square analysis were conducted for linear and categorical variables, respectively.

Results

Outliers, normality, homogeneity of variance and descriptive data

Two univariate outliers (z score higher of 3.29; $p < .001$) were found for both frequency of pleasant events and satisfaction with them and were deleted. One multivariate outlier (Mahalanobis distance at $p < .001$) was found and was deleted. Skewness and kurtosis were within the expected values. Levene's tests were used to analyze homogeneity of group variances and significant effects were found for frequency of pleasant events, satisfaction with pleasant events, depression and risk of institutionalization. The Brown-Forsythe and Welch statistics were used to control non-homogeneity of

group variances for these variables and significant group effects were found for all these variables.

The sociodemographic characteristics of the final sample (*N* = 272) are shown in Table 1.

Table 1. Differences between groups in caregiver and care-recipient characteristics.

	Total sample (*N* = 275)	LFLS (*N* = 92)	LFHS (*N* = 29)	HFLS (*N* = 51)	HFHS (*N* = 103)	*F*, χ²	*p*-value
Female, *n* (%)	218(79.27)	76 (82.61)	25(86.21)	45(88.24)	72(69.90)	10.10	<.05
Caregiver age *M* (*SD*)	60.22(12.07)	58.39(11.71)	59.83(13.85)	57.94(10.81)	63.13(12.02)	3.57	<.05
Relationship with care-recipient, *n* (%)						10.30	.59
Spouses	101(36.73)	30(32.61)	12(41.38)	14(27.45)	45(43.69)		
Daughters/Sons	160(58.18)	55(59.78)	17(58.62)	34(66.67)	54(52.43)		
Others	14(5.1)	7(7.60)	0(.00)	3(5.88)	4(3.88)		
Care-recipient disease *n* (%)						12.83	.38
Alzheimer Disease	158(57.45)	48(52.17)	13(44.83)	33(64.70)	64(62.14)	5.28	.15
Other dementia	117(42.55)	44(47.83)	16(55.17)	18(35.30)	39(37.86)		
Frequency of pleasant events	7.84(4.35)	3.84(1.81)	4.34(1.62)	9.28(2.16)	11.68(3.34)	179.15	<.001
Satisfaction with pleasant events	6.56(3.59)	3.10(1.99)	8.59(1.57)	4.76(1.41)	9.97(2.02)	246.99	<.001

Note. LFLS = Low frequency of pleasant events + low satisfaction with pleasant events; LFHS = Low frequency of pleasant events and high satisfaction with pleasant events; HFLS = High frequency of pleasant events + low satisfaction with pleasant events; HFHS = High frequency of pleasant events + high satisfaction with pleasant events.

Correlation analyses

Correlation analyses (see Table 2) between both frequency and satisfaction with leisure and the assessed variables showed that, while frequency of leisure was significantly and positively correlated with the care recipients´ functional capacity, satisfaction with leisure had a significant and negative relationship with frequency of behavioral problems. In addition, those caregivers with high levels of both frequency and satisfaction with leisure showed lower scores on rumination, higher levels of cognitive reappraisal and higher scores on depression, anxiety and higher levels of perceived health. Finally, both frequency and satisfaction with leisure were significantly and negatively correlated with risk of institutionalization.

Differences between groups in the assessed variables

Mean and standard deviations of the assessed variables for the whole sample and by frequency and satisfaction with leisure group profile are shown in Table 3. In addition, in order to analyze the effect size of between-group differences in the assessed variables, partial eta-squared (ηp^2) was analyzed (small ~ .01, medium ~ .06 and large ~ .14).

Results of MANOVA analyses testing group differences in different domains (stressors, mediating variables and outcome variables) and ANOVA analyses for the individual dependent variables are described below.

Sociodemographic characteristics

As it is shown in Table 1, significant group effects were found for age. Specifically, HFHS caregivers were signifi-

cantly older than LFLS (*p* < .001) and HFLS (*p* < .001). In addition, those caregivers from the HFHS group were significantly more likely to be male and those from the HFLS group were significantly more likely to be female compared to the other groups. In addition, as expected, significant effect group was found for both frequency and satisfaction with leisure.

Table 2. Bivariate correlations between frequency and satisfaction with leisure and the other assessed variables.

	Frequency of pleasant events	Satisfaction with pleasant events
Frequency of behavioral problems	-.12	-.23**
Functional capacity	.15*	.11
Rumination	-.38**	-.44**
Cognitive reappraisal	.27**	.31**
Depression	-.41**	-.48**
Anxiety	-.36**	-.42**
Perceived health	.24**	.24**
Risk of institutionalization	- .15*	-.22**

(**p* < .05; ** *p* < .01)

Stressors

Regarding objective stressors, the MANOVA analyses using the 4-group categorization showed a significant main effect of group (*F* = 1.98; *p* < .05). As it is shown in Table 3, a significant main effect of group (ANOVA) was found for frequency of behavioral problems. Specifically, the LFLS group had significantly higher scores on frequency of behavioral problems than the LFHS (*p* < .001) and HFHS (*p* < .001) groups. No group effects were found for time caring, daily hours caring and care-recipient´s functional capacity. The effect size was large for frequency of behavioral problems (ηp^2 = .21).

Table 3. Differences between groups in the assessed variables.

	Total sample (N = 272)	LFLS (N = 92)	LFHS (N = 29)	HFLS (N = 50)	HFHS (N = 101)	F	p-value
Time caring, *M (SD)*	54.80(46.03)	57.80(52.93)	49.97(38.62)	60.80(51.28)	50.49(37.97)	.83	.48
Daily hours caring, *M (SD)*	10.75(7.56)	11.51(7.68)	10.19(7.85)	8.38(6.43)	11.39(7.73)	2.28	.08
Behavioral problems *M (SD)*	35.17(14.68)	38.53(14.58)	30.48(14.45)	36.96(13.30)	32.56(14.85)	4.03	<.001
Functional capacity	67.21(30.21)	64.64(31.78)	66.76(27.47)	63.82(31.29)	71.35(28.88)	1.07	.36
Rumination *M (SD)*	9.25(6.42)	12.38(6.34)	9.00(6.16)	10.50(6.23)	5.84(4.88)	21.38	<.001
Cognitive reappraisal *M (SD)*	6.51(3.42)	5.28(3.10)	6.76(3.57)	6.24(3.19)	7.69(3.41)	8.81	<.001
Depression *M (SD)*	17.85(11.70)	24.38(12.31)	15.79(10.01)	18.33(10.48)	12.26(8.91)	21.53	<.001
Anxiety *M (SD)*	16.17(8.84)	19.97(8.92)	15.24(7.19)	17.36(8.50)	12.38(7.81)	14.01	<.001
Perceived physical health *M (SD)*	2.20(1.08)	1.87(1.03)	2.48(1.02)	2.26(1.19)	2.40(1.02)	4.90	<.001
Risk of institutionalization *M (SD)*	16.18(29.85)	21.43(33.95)	15.86(31.91)	20.90(33.59)	9.21(21.10)	3.27	<.05

Note. LFLS = Low frequency of pleasant events + low satisfaction with pleasant events; LFHS = Low frequency of pleasant events and high satisfaction with pleasant events; HFLS = High frequency of pleasant events + low satisfaction with pleasant events; HFHS = High frequency of pleasant events + high satisfaction with pleasant events.

Resources variables

A significant main effect of group on emotional regulation strategies was also found (F = 10.80; p < .001). Significant group effects were found for both rumination and cognitive reappraisal. Particularly, the HFHS group scored significantly lower in rumination than the other three groups (LFLS/LFHS/HFLS) (p < .05). In addition, the LFLS group scored significantly higher in rumination than the LFHS (p < .001) and HFHS (p < .001), and there was a trend to score higher than the HFLS group (p = .06).

Regarding cognitive reappraisal, the LFLS group had significantly lower scores on this variable than the LFHS (p < .05) and HFHS (p < .001) groups. In addition, the HFHS group scored significantly higher in this variable than the HFLS group (p < .001). The effect sizes were large for both rumination (ηp^2 = .44) and cognitive reappraisal (ηp^2 = .30).

Outcome variables

The results of the MANOVA for outcome variables were also significant (F = 7.38; p < .001). Significant group effects for all the assessed outcome variables have been found. Specifically, the LFLS group had significantly higher levels of depression (for all groups; p < .001) and poorer levels of perceived health (for the LFHS and HFHS groups, p < .001; for the HFLS, p < .05) than the other three groups. Also, the LFLS group scored significantly higher in anxiety (p < .001) than the LFHS and HFHS groups. Additionally, the HFHS group had lower scores on depression (p < .001) and anxiety (p < .001) than the HFLS group. The effect sizes were large for depression (ηp^2 = .44), anxiety (ηp^2 = .37) and perceived health (ηp^2 = .23).

Risk of institutionalization

Finally, a significant main effect of group was found for risk of institutionalization (F = 3.27; p < .05). The HFHS group had significantly lower scores on risk of institutionalization than the LFLS (p < .05) and the HFLS (p < .05) groups. The effect size was large for this variable (ηp^2 = .19).

Discussion

The principal aim of this study was to analyze differences in key variables (the stress and coping domains and risk of institutionalization) between caregivers' profiles on both reported frequency of and satisfaction with leisure. Taken together, the obtained results are consistent with previous studies (Mausbach et al., 2007, 2008), showing that having higher levels of both frequency and satisfaction with behavioral activation benefits caregiving (Losada et al., 2010; Mausbach et al., 2008), given that these variables are related with the use of more adaptive emotional regulation strategies, and attenuate caregivers' distress. Specifically, the obtained results showed that caregivers with higher scores on both frequency of/and satisfaction with leisure also reported lower levels of depression and anxiety, and better perceived health, as well as, lower scores on rumination and higher levels of cognitive reappraisal.

Regarding caregivers profiles on frequency and satisfaction with leisure, the obtained results showed that the LFLS (low frequency and low satisfaction with leisure) caregiver group used less adaptive emotional regulation strategies and presented higher levels of caregiver distress, as compared to some of the other groups. Specifically, the LFLS group showed higher levels of rumination and lower levels of cognitive reappraisal than the other groups. Additionally, this group (LFLS) reported higher levels of depression, anxiety and lower levels of perceived health as compared to the other groups. These results are similar to those found by Mausbach et al. (2011), who found that caregivers with low frequency of pleasant events and high levels of activity restriction reported higher levels of depression, negative affect and overload, and lower levels of personal mastery and self-efficacy than caregivers with high frequency of pleasant events and low activity restriction or with either both high pleasant events and high activity restriction or both low pleasant events and low activity restriction (Mausbach et al., 2011).

Additionally, the results of this study showed that those caregivers with high frequency and high satisfaction with lei-

sure (HFHS) were more likely to be males and older than the other groups. This group (HFHS) also reported lower scores on rumination, depression, anxiety than those caregivers with low levels of both frequency and satisfaction with leisure (LFLS), and, furthermore, they had less risk of institutionalization as compared to the LFLS group.

It is important to note that our study added to the Mausbach et al. (2011) study the consideration of two additional groups based on caregivers profile on frequency and satisfaction with leisure. The consideration of these additional groups leaded to interesting findings, namely, that among caregivers with low levels of behavioral activation, only those who also report low levels of satisfaction show greater levels of distress and are at risk of regulating their emotions in a dysfunctional way, and that, among those caregivers with high levels of behavioral activation, only those with high levels of satisfaction with it showed better psychological resources and lower distress. Specifically, caregivers who engaged in high levels of leisure and reported high levels of satisfaction with leisure (HFHS) reported lower levels of depression, anxiety and risk of institutionalization, a lower use of rumination and a higher use of reappraisal strategies than those caregivers with high levels of leisure and low levels of satisfaction with leisure (HFLS). It might be that engagement in high levels of leisure activities and reporting better emotional regulation strategies (low rumination and high cognitive reappraisal) fosters caregiver' satisfaction with leisure, which may contribute to explain reductions on caregiver' distress. However, the cross-sectional nature of the study does not allow us to confirm which are the precise directions of the relationships between different coping and outcome variables.

In addition, while in Mausbach et al. study (2011) two different caregiver profiles (caregivers with low frequency of pleasant events but also high levels of satisfaction with leisure -LFHS-, and caregivers with high frequency of pleasant events but low levels of satisfaction -HFLS) were considered as a unique group, in the present study they have been considered separately, as representing two different groups. Furthermore, results of this study suggest that caregivers with low levels of frequency of leisure but high levels of satisfaction with leisure constitute a better caregiver leisure profile than those with high levels of frequency of leisure but low levels of satisfaction, thus supporting the idea that it is more useful to consider them separately. For example, results show that caregivers from LFHS group used more adaptive emotional regulation strategies and higher levels of perceived health than LFLH group, as they reported lower levels of rumination and higher levels of cognitive reappraisal strategy, results that were not found in the HFLS group. In turn, caregivers from HFLS group reported higher levels of depression and risk of institutionalization and lower levels of cognitive reappraisal than HFHS group, results that were not found in LFHS group. Also, this study adds to the previous one (Mausbach et al., 2011) that results provide some support for the PEAR model but considering other cogni-

tive reappraisal variable of leisure, not focused on the negative feelings of perceived loss of engagement (activity restriction) ("how much you felt restricted from caring yourself over the past month") but considering a positive dimension of leisure, namely, satisfaction with leisure ("over the past month, how satisfied are you with the amount of time you have been able to spend visiting family and friends"), as well as other caregivers´ kinship different from, spouses, specifically, sons and daugthers of the frail relative. So, it should be expected that the cognitive appraisal that one is not able to engage in as much leisure activity as one would like (activity restriction) is related to satisfaction with leisure, and both constructs reflect two poles of the same continuum.

It would be interesting to analyze if reporting higher levels of behavioral and/or satisfaction with leisure leads to using better emotional regulation strategies (e.g. low rumination and high cognitive reppraisal) which repercutes on caregivers' distress, or if the higher use of maladaptative emotional regulation contributes to a lesser frequency and satisfaction with leisure. In this sense, one of the ways that has been suggested in non-caregiver population is that rumination reduces motivation to initiative instrumental behavior (e.g. pleasant actitivities) leading to increases in depression (Nolen-Hoeksema, Wisco & Lyubomirsky, 2008). Nevertheless, longitudinal and experimental studies are needed in order to improve our knowledge of these issues.

The results of this study reinforce the importance of simultaneously considering caregivers' frequency of/ and satisfaction with leisure. The joint consideration of these two dimensions of leisure may be useful in order to identify those caregivers who may be at greater risk of suffering negative outcomes due to caregiving, as it follows from the obtained associations of the specific leisure profiles with the variables that have been assessed. Specifically, our results suggest that those caregivers reporting at the same time low frequency and low satisfaction with leisure may be at special risk, given that they also report using more frequently than the other groups maladaptive emotional regulation strategies (more rumination and less cognitive reappraisal). The fact that they do and enjoy less leisure activities, and also use more maladaptive emotion regulation strategies, may explain why they also report higher levels of distress.

In addition, this study adds to previous research the analysis of the effect that leisure profile has on caregivers' risk of institutionalizating their relatives. Consistently with our expectations, results indicate that both frequency and satisfaction with leisure were negatively associated with caregivers' desire of institutionalization. This study highlights the importance of leisure (frequency and satisfaction) for the continuation of caregiving at home, given the obtained finding that caregivers with HFHS report lower scores on desire to institutionalize their relatives. Hence, it seems that having high levels of behavioral activation may not be enough to prevent risk of institutionalization, as it is also important to be satisfied with activities. This finding suggests that training

caregivers in behavioral and satisfaction activation techniques (Burgio, Stevens, Guy, Roth & Haley, 2003; Gallagher-Thompson et al., 2000) may contribute to prevent risk of institutionalization (or to delay the desire of institutionalization).

Furthermore, more research analyzing which variables mediate the relationship between frequency of pleasant events and satisfaction with them is needed. Future studies are required to explore the possible reasons explaining that caregivers´ satisfaction with leisure activities varied independently of their frequency of realization of these activities. It seems especially interesting to analyze why some caregivers report a high frequency of pleasant events but low satisfaction with them, and, also, why some caregivers report a low frequency of pleasant events but high satisfaction with them. One explanation may be related with the caregivers' expectations (e.g. unrealistic or perfectionist goals) about the frequency of pleasant activities or the joy/pleasure with leisure they should or are (socially) expected to have. Some caregivers can engage in pleasant activities, but may find difficult to enjoy them because they are not able to mentally disengage from their caregiving obligations or feel guilty about devoting leisure time to theirselves (Losada et al., 2010).

Regarding gender differences in the leisure profile, we have found that it is more likely that men with high levels of frequency of pleasant events also report high levels of satisfaction with them. Conversely, the profile defined by a high frequency of pleasant activities and low levels of satisfaction with them is more likely to be found among women. This finding might be explained by taking into account that female caregivers report greater number of caregiving hours, caregiving tasks and role conflict than males (Pinquart & Sörensen, 2006), circumstances that might interfere with the enjoyment of leisure time. Other possible explanation may be related to the greater levels of guilt about neglecting other relatives reported by females (Losada et al., 2010), which may explain why, even though they engage in leisure activities, they do not enjoy them because they have guilt-related thoughts such as "I should be looking after my other relatives".

The results of this study have several clinical implications. First, the analysis of the leisure profile may provide relevant information to help clinicians and policy makers to tailor interventions to match caregivers´ specific profile. For example, caregivers with LFLS may be those caregivers at greater risk of health problems and could benefit more from interventions aimed at fostering behavioral activation, such as training them in better coping skills that could help them increase the number of leisure activities (see studies, Gallagher-Thompson et al., 2003; Losada, Márquez-González & Romero-Moreno, 2011). However, our results highlight the importance of focusing not only on increasing caregiver frequency of leisure activities but also on their levels of satisfaction with them. Although increase of behavioral activation has been considered as a key component in psychological interventions to improve distress (e.g., Cuijpers, van Straten & Warmerdam, 2007; Jacobson et al., 1996), more caution should be taken by therapists in order to activate those leisure activities related with caregivers´ personal values, so that they can obtain a sense of purpose and fulfilment which facilitate their satisfaction with leisure. The new therapeutical approach called 'Acceptance and Commitment Therapy' may be a useful tool to achieve these objectives, as their main treatment goals are fostering caregivers´ commitment with their personal values, encouraging them to engage in actions that help them get closer to these values, and promoting caregivers´ acceptance of negative internal events (e.g. feelings and thoughts) (Márquez-González, Romero-Moreno & Losada, 2010).

Caregivers showing other frequency and satisfaction profiles may also benefit from interventions. For example, caregivers showing a HFHS could benefit of respite interventions that could provide them enough time to continue doing leisure activities. In this regard, results must be interpreted cautiously as, even though there were no significant differences between groups in hours/day caring, the lack of statistical control of the amount of caregivers' service use (e.g. day care centers) may influence caregivers frequency of leisure profile.

Some limitations of this study have to be considered. As it has been commented above, the cross-sectional nature of this study prevents us from doing causal inferences. In addition, the caregiver sample consisted of caregivers recruited through social and day care centers who volunteered to participate in the study, and so the results may not be generalizable to the whole caregiver population (Pruchno et al., 2008).

Another limitation of this study is that activity restriction has not been assessed. Instead of this variable, which constitutes a key variable of the PEAR model, another subjective dimension of leisure, specifically satisfaction with leisure, has been included and results were similar to those reported by Mausbach et al. (2011), suggesting the importance of considering not only a negative cognitive appraisal dimension of leisure, but also a positive one. Future studies should confirm these results measuring activity restriction. However, results highlight the benefits of analyzing simultaneously, rather than separately, the effects of frequency of/ and satisfaction with leisure on caregivers distress.

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