Cross-cultural analysis of the role of ambivalent feelings for understanding caregivers' depressive symptoms

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Abstract

Objectives: Behavioral and psychological symptoms of dementia (BPSD) are considered to cause ambivalent feelings in caregivers that may contribute to understanding their depressive symptoms. Transnational research is needed in order to increase our knowledge about the cross-cultural equivalence of theoretical models to understand caregivers' mental health. The aim of this study was to cross-culturally analyze the association between BPSD, ambivalent feelings and depressive symptoms in two samples of family caregivers of people with dementia from Spain and the UK.

Methods: Participants in this study were 432 caregivers who completed measures of BPSD, ambivalent feelings and depressive symptoms. The association between the assessed variables was tested through path-analysis, with differences between countries tested through multigroup analysis.

Results: The results suggest that the influence of BPSD on caregivers' depressive symptoms is indirect, through ambivalent feelings. The observed associations were equivalent between countries and explained a significant percentage of the variance of depressive symptoms.

Conclusion: The findings of this study provide, for the first time, evidence of equivalent cross-cultural paths analyzing the role of ambivalent feelings for understanding caregivers' depressive symptoms. The practical implications of these results are discussed.

Keywords: Alzheimer, ambivalence, caregiving, dementia, distress

INTRODUCTION

Caring for a relative with dementia is associated with negative outcomes for caregivers' mental health (Schulz et al., 2020). One of the most studied outcome variables in the caregiving process is depression. A recent meta-analysis showed that 31.2% of dementia family caregivers have clinical depression (Collins & Kishita, 2020), although a higher percentage may show clinically significant levels of depressive symptoms (Barrera-Caballero et al., 2021; Schulz & Martire, 2004).

There is general consensus that one of the factors that contribute the most to understanding caregivers' levels of distress are the behavioral and psychological symptoms of dementia (BPSD) or neuropsychiatric symptoms (Fauth & Gibbons, 2014). In fact, in the sociocultural stress and coping model (Knight & Sayegh, 2010), BPSD is a variable that leads to caregivers' health outcomes, a link consistent across different cultural groups. Studies show that most of the people that have dementia show BPSD, with more than 75% showing three or more concurrent symptoms (Brodaty et al., 2015). However, the mechanisms through which BPSD contribute to an increase in caregivers' depressive symptomatology are still unclear. BPSD may act as stressors, increasing the number of negative life events to which caregivers are exposed. However, BPSD may also initiate cognitive and emotional processes that may eventually lead to mental health problems, such as depression.

Losada et al. (2018) analyzed a theoretical model that suggested that BPSD influence caregivers' depressive symptoms through increased ambivalent feelings. Many caregivers actively decide to assume the role of being the primary caregiver for their loved relative (mainly spouses or parents). However, as previously mentioned, most people with dementia show BPSD, including repetitive questioning, agitation and aggressiveness. These BPSD are usually perceived as aversive by the caregivers, and

may contribute to the change in caregivers' feelings toward their relative (de Vugt et al., 2003). Even when positive feelings toward the care recipient (e.g., love, tenderness, compassion) are present, which is frequently the case, negative feelings, such as rejection or anger may also appear and coexist with the positive feelings, leading to the emergence of emotional ambivalence. As Losada et al. (2018) found, caregivers who report higher BPSD in their care recipients report more ambivalent feelings. When these feelings were controlled statistically, the direct association between BPSD and caregivers' depressive symptoms was no longer significant. Meaning, ambivalent feelings and guilt associated with those feelings were the variables that explained depressive symptoms. Even-though other variables such as coping strategies, self-efficacy or social support are critical for understanding caregivers' well-being (e.g., Knight & Sayegh, 2010; Steffen et al., 2019), the Losada et al. (2018) study showed that BPSD and ambivalent feelings contributed significantly to the explanation of caregivers' depressive symptoms. Further support for the importance of considering ambivalent feelings for understanding caregivers' depressive symptoms has been provided by AboJabel and Werner (2022), who found that ambivalent feelings added a significant contribution to the explanation of depressive symptoms.

The literature highlights the existence of differences among diverse cultural groups that have a significant influence on caregivers' distress and so may be relevant for conceptualizing theoretical frameworks that may guide effective interventions (Gallagher-Thompson et al., 2020; Knight & Sayegh, 2010). For example, some countries (e.g., Spain) are more familistic than others (e.g., UK) (Jurado and Naldini, 1996). These more family-oriented style of countries such as Spain has important implications in terms of care, as familistic people have stronger feelings of obligation to provide care for their relatives, and people in need from more familistic countries expect

help from the family rather than from public institutions (Rainer & Siedler, 2012). However, in spite of being more familistic, formal care (e.g., respite services) use in Spain is higher than that of the UK, probably due to a larger availability of formal care services paid for by social programs (Solé-Auró and Crimmins, 2014).

As between-countries differences in sociocultural aspects do exist, comparing caregivers from countries with different sociocultural backgrounds (e.g., Spain and UK) is helpful for identifying dimensions that may be acting as common core factors of the caregiving stress process. In this regard, transnational research is needed in order to increase our knowledge about the cross-cultural equivalence of measures and theoretical models that may inform future interventions that are acceptable to culturally diverse family caregivers (Cheng et al., 2019; Gallagher-Thompson et al., 2020).

Considering the above-mentioned issues, the objective of this study is to cross-culturally replicate findings reported by Losada et al. (2018), that was done in Spain. Specifically, the aim of this study is to test if the model that considers an indirect effect of BPSD on caregivers' depressive symptoms through ambivalent feelings may be generalized to a sample of caregivers from a country different to Spain, namely the UK. In other words, the aim of this study is to provide cross-cultural validation to the Losada et al. (2018) model for explaining caregivers' depressive symptoms using a path analysis. We hypothesize that no differences between countries will be found in the structural part of the tested model and that an indirect effect of BPSD on depressive symptoms through ambivalent feelings will be found for both, UK and Spanish caregivers.

METHODS

Participants and procedure

Participants in this study were 432 family caregivers of people with Alzheimer's Disease or related disorders. Of these, 353 (81.7%) were from Madrid (Spain) and 79 (18.3%) were from the East of England (UK). The Spanish sample, which was different to the sample included in the Losada et al. (2018) study, was recruited as part of an ongoing longitudinal study. All participants were recruited through health and social care centres from Madrid. Users of each of the collaborating centres were informed about the study and, if interested in collaborating with the study, provided their contact data to the centre. Of those 492 participants who were approached, 432 (87.8%) participated. Baseline screening data collected for an intervention study (Kishita et al., 2021) was used for the UK sample. In the UK, participants were recruited via clinician referral from healthcare services and self-referral from the community, including public advertisement in local newspapers and advertisement on a national recruitment website (Join Dementia Research). Of those 108 participants referred, 79 (73%) took part in the screening session.

Participants from both countries shared the same caregiving characteristics: Participants had to be aged 18 and over, being and unpaid carer for a relative with Alzheimer's disease or related disorders and identifying as a primary carer in their family. Face-to-face interviews were conducted with Spanish participants while online questionnaires were completed by UK participants. All the assessments took place before the COVID-19 pandemic, between January 2016 and February 2020 in the case of Spain, and during the COVID-19 pandemic, between August 2020 and January 2021in the case of UK. Both the Spanish and the UK studies were approved by the respective Research Ethics Committee in each country, and caregivers signed informed consent prior to the assessments.

Measures

In addition to caregivers' age and gender, the following variables were measured.

Frequency of behavioral and psychological symptoms of the dementias. The Revised Memory and Behavior Problems Checklist (RMBPC; Teri et al., 1992) frequency scale was used in the UK, and the Spanish validation of the RMBPC (Nogales et al., 2015) was used in Spain. It is a 24-item scale that measures caregivers' perceived frequency of behavioral and psychological symptoms in the care recipient (e.g., asking the same question over and over). The internal consistency (Cronbach's alpha) for this scale in the present study was .79 for the Spanish sample and .94 for the UK sample.

Ambivalence. Caregivers' ambivalent feelings toward the care recipient were measured through the Caregiving Ambivalence Scale (CAS), using the English and Spanish versions (Losada et al., 2017) in the UK and Spain, respectively. It is a 5-item scale that measures ambivalent feelings in dementia family caregivers (e.g., "I have mixed feelings toward my relative (tenderness-rage; love-hate, etc.)"). The internal consistency (Cronbach's alpha) for this scale in the present study was .83 for the Spanish sample and .76 for the UK sample.

Depressive symptomatology. Caregivers' depressive symptoms were measured in Spain through the Spanish version (Losada et al., 2012) of the CES-D (Radloff, 1977) and in UK through the Center for Epidemiologic Studies Depression Scale, Revised (CESD-R; Eaton et al., 2004). These scales include 20 items measuring depressive symptoms (e.g., "I felt depressed"). In order to be able to compare both scores, total scores were transformed to z-scores. The internal consistency (Cronbach's alpha) for this scale in the present study was .89 for the Spanish sample and .94 for the UK sample.

Data analysis

First, descriptive data for the participants of each country were calculated. Secondly, in addition to testing the internal consistency of each of the measures, correlations between the assessed variables for each country were tested. Student's t and independence chi-square tests were conducted to analyze the differences between both countries in each variable to describe both samples. In this line, it is worth mentioning that the mean differences between both groups are not relevant to the aim of the present study because we are interested in showing that the relationships between the variables are the same between both countries in the path analysis. Then, a path analysis was conducted testing the model shown in Figure 1, based on the study by Losada et al. (2018). This model and its invariance across countries were performed in *Mplus 8* using the maximum likelihood estimator with 1000 bootstrap samples to estimate the confidence intervals and the standard errors due to the sample of the UK was relatively small. Variables were standardized prior to the analysis. The model estimator handled the missing data by means of using the available information of all the participants of the study. To evaluate model fit, we used the following fit indices: The chi-square (χ^2) statistic, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMSR), considering the null statistical significance of the χ^2 statistic ($p \geq .05$) and the Hu and Bentler's (1998) cut-off values (values under .06 for RMSEA and over .95 for CFI) as indicators of excellent fit of the model to the data. The indirect effect of BPSD on depressive symptoms through ambivalent feelings was analyzed using 1000 bootstrap samples (please see, for example, the Preacher and Hayes's (2004) recommended bootstrapping approach). Additionally, we tested the equivalence of the model in both countries by means of (1) testing the model separately in each country and then using a multigroup analysis (configural invariance) to see if the structure of the model is appropriate for

both countries, and (2) comparing a model where the same path estimates were imposed for both countries against a model with free parameters for each country (invariance of the structural coefficients).

Two additional covariates, cared person age and time as caregiver, were also considered in the present study. But these covariates did not present a relevant relationship with ambivalent feelings, frequency of BPSD, nor depressive symptoms. It was also possible to maintain the structural invariance of the model between the Spanish and the UK groups in these results. But we balanced the lack of contribution of the variables to the findings of the study and the lack of sample size in the UK sample, and we decided not to include these covariates in the final model reported in the study to reduce the noise in the estimations.

RESULTS

Characteristics of the sample

The characteristics of the total sample are shown in Table 1. No significant differences between countries were found in caregivers´ age and gender. Both samples consisted of mainly female caregivers. In addition, no significant differences were found for depressive symptoms. Significant differences were found for the frequency of BPSD and ambivalent feelings. Caregivers from the UK reported a higher frequency of BPSD and ambivalent feelings.

Correlations between variables

The correlations between the assessed variables are shown in Table 2. Significant ($p < .01$) positive correlations were found for both countries between

frequency of BPSD, ambivalent feelings and depressive symptoms. Ambivalent feelings were significantly associated with being female and with a lower age in Spain, but these associations were not observed for UK participants. Being female and younger was associated with higher depressive symptoms for participants from both countries.

Path analysis for Spanish and UK caregivers

The associations between all the measured variables were also tested through path analysis, performed separately in the Spanish and UK samples. Model fit was good for both the Spanish ($\chi^2(1)=2.57$, $p=.11$, CFI=.99, RMSEA=.068 [.000-.177], $p_{RMSEA}=.14$, SRMR=.016) and the UK ($\chi^2(1)=2.65$, $p=.10$, CFI=.96, RMSEA=.145 [.000-.371], $p_{RMSEA}=.25$, SRMR=.029) caregivers. Figure 1 presents the structural part of the fitted model for each country. The analysis of the indirect effect of frequency of BPSD on depressive symptoms through ambivalent feelings was significant for both Spanish (standardized indirect effect = .14, $SE = .04$, $p<.01$) and UK caregivers (standardized indirect effect = .21, $SE = .07$, $p<.01$). This result suggests that, for both countries, perceiving a higher frequency of BPSD is associated with higher scores of ambivalent feelings, and this link is associated with higher depressive symptoms.

Testing the invariance of the path analysis for Spanish and UK caregivers

Previous results showed that the model fit was adequate for both samples. Then, a model was conducted considering that both samples have different path estimates. This model obtained an appropriate model fit to the data ($\chi^2(2)=5.20$, $p=.07$, AIC=7029.51, BIC=7181.28, CFI=.98, RMSEA=.089 [.000-.187], $p_{RMSEA}=.18$, SRMR=.020), supporting the idea that the structure of the model is adequate for both countries. Then, a nested model imposing the same paths to both samples was fitted to the data with adequate model fit ($\chi^2(11)=13.78$, $p=.25$, AIC=7020.07, BIC=7135.89,

CFI=.99, RMSEA=.035 [.000-.086], p_{RMSEA}=.62, SRMR=.040). Model comparison revealed that it was plausible to assume that both samples have the same structural path estimates as there was not a relevant decrease in model fit ($\Delta\chi^2(9)=8.58$, p=.48). The analysis of the indirect effect of the frequency of BPSD on depressive symptoms through ambivalent feelings was also significant (standardized indirect effect = .14, *SE* = .03, p<.01).

DISCUSSION

The aim of this study was to cross-culturally replicate the theoretical model tested in the study conducted by Losada et al. (2018), in which the effects of frequency of BPSD on depressive symptoms were found to be indirect, through its effects on ambivalent feelings. The results of this study replicated those found in a different sample of family caregivers of relatives with dementia from Spain (Losada et al., 2018). In addition, this study replicated those findings in a culturally different sample, composed of family caregivers of people with dementia from the UK.

Although significant differences between samples were observed for some of the measured variables (e.g., higher scores in the frequency of BPSD and ambivalent feelings for the UK sample), the results of the multigroup analysis suggested that the links between variables proposed in the tested model are statistically equivalent. That is, the findings of this study provided, for the first time, evidence of equivalent cross-cultural paths analyzing the role of ambivalent feelings for understanding caregivers' depressive symptoms. A non-negligible percentage of the variance of depressive symptoms was explained by the variables included in the model, something that adds additional value to the importance of considering emotional ambivalence for

understanding caregivers´ depressive symptoms (Abo Jabel & Werner, 2022; Losada et al., 2017).

This study has some limitations that need to be acknowledged. Firstly, the cross-sectional nature of the design of this study does not allow to make causal inferences about the direction of the observed findings. Further experimental and longitudinal studies are needed in order to gather evidence that allows us to advance our knowledge in this area. In addition, although the main inclusion criteria were shared by both samples, the sample of caregivers from the UK may be considered small compared to the Spanish sample. Also, different assessment procedures were used, with face-to-face interviews in Spain and online assessments in the UK. Thus, future studies with a larger sample and more between-countries shared characteristics may be needed to confirm the results. Furthermore, all the participants in this study were volunteers, therefore the findings may not be generalizable to the general population of caregivers. Finally, although the findings of the study support the equivalence of the tested associations, cross-cultural differences still may exist in other relevant variables not included in this study, such as coping strategies, self-efficacy, social support or cultural values (e.g., familism; Knight & Sayegh, 2010; Losada et al., 2006), which may have an impact on ambivalent or depressive feelings. Therefore, future studies are needed that include larger samples and additional variables to those included in this study.

In spite of the above-mentioned limitations, the findings of this study have important clinical implications. Depressive symptoms are common among caregivers of relatives with dementia. The results of this study suggest that BPSD may cause ambivalent emotional processes in caregivers that increase their levels of distress (depressive symptoms). This process seems to be equivalent for different cultural backgrounds, such as Spain and UK, suggesting that the association between BPSD, ambivalence and

depressive symptoms may need to be taken into consideration when developing and implementing interventions for culturally diverse dementia family caregivers. More specifically, caregivers' ambivalent feelings may potentially be an important component that may improve the efficacy of existing interventions for caregivers, and so it may be considered as a relevant variable to be assessed (Cheng et al., 2019). Interventions directly targeting BPSD (see, for a review, Logsdon et al., 2007) may reduce the chances of having ambivalent feelings. But, also, some problematic characteristics of the dementias (e.g., forgetting things or cognitive decline) may not be successfully targeted by interventions and may contribute to ambivalent feelings in caregivers. Instead of trying intervention techniques aimed at changing care-recipients status or caregivers' thoughts about the illness, it may be more helpful to train caregivers in techniques for helping caregivers to accept the unchangeable issues associated with the illness and the caregiving process (Márquez-González et al., 2010), a strategy that has been found to significantly reduce caregivers symptoms of anxiety and depression (Losada et al., 2015; Márquez-González et al., 2020). Considering the significant impact of ambivalent feelings on depressive symptoms, future studies are needed to test the impact on caregivers' mental health of interventions targeting ambivalent feelings, a potential significant mechanism of action for improving caregivers' well-being.

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References

AboJabel, H., & Werner, P. (2022). Examining the mediating effect of psychosocial resources on the relationship between ambivalent feelings and depression among Israeli Arab family caregivers of people with dementia. *Dementia*,.DOI: 10.1177/14713012211053967

Barrera-Caballero, S., Romero-Moreno, R., del Sequeros Pedroso-Chaparro, M., Olmos, R., Vara-García, C., Gallego-Alberto, L., Cabrera, I., Márquez-González, M., Olazarán, J., & Losada-Baltar, A. (2021). Stress, cognitive fusion and comorbid depressive and anxiety symptomatology in dementia caregivers. *Psychology and Aging, 36*(5), 667–676. https://doi.org/10.1037/pag0000624

Brodaty, H., Connors, M. H., Xu, J., Woodward, M., Ames, D., & PRIME Study Group. (2015). The course of neuropsychiatric symptoms in dementia: a 3-year longitudinal study. *Journal of the American Medical Directors Association*, *16*(5), 380-387. https://doi.org/10.1016/j.jamda.2014.12.018

Cheng, S. T., Au, A., Losada, A., Thompson, L. W., & Gallagher-Thompson, D. (2019). Psychological interventions for dementia caregivers: what we have achieved, what we have learned. *Current Psychiatry Reports*, *21*(7), 1-12. https://doi.org/10.1007/s11920-019-1045-9

Collins, R., & Kishita, N. (2020). Prevalence of depression and burden among informal caregivers of people with dementia: A meta-analysis. *Ageing and Society*, 40(11), 2355-2392. https://doi.org/10.1017/S0144686X19000527

De Vugt, M. E., Stevens, F., Aalten, P., Lousberg, R., Jaspers, N., Winkens, I., ... & Verhey, F. R. (2003). Behavioural disturbances in dementia patients and quality

of the marital relationship. *International journal of geriatric psychiatry*, *18*(2), 149-154. https://doi.org/**10.1002/gps.807**

Eaton, W. W., Smith, C., Ybarra, M., Muntaner, C., & Tien, A. (2004). Center for Epidemiologic Studies Depression Scale: Review and Revision (CESD and CESD-R). In M. E. Maruish & M. E. Maruish (Eds.), *The use of psychological testing for treatment planning and outcomes assessment: Instruments for adults* (3rd ed., Vol. 3, pp. 363–377). Lawrence Erlbaum Associates Publishers.

Fauth, E. B., & Gibbons, A. (2014). Which behavioral and psychological symptoms of dementia are the most problematic? Variability by prevalence, intensity, distress ratings, and associations with caregiver depressive symptoms. *International journal of geriatric psychiatry*, *29*(3), 263-271. https://doi.org/**10.1002/gps.4002**

Gallagher-Thompson, D., Choryan Bilbrey, A., Apesoa-Varano, E. C., Ghatak, R., Kim, K. K., & Cothran, F. (2020). Conceptual framework to guide intervention research across the trajectory of dementia caregiving. *The Gerontologist*, *60*(Supplement_1), S29-S40. https://doi.org/10.1093/geront/gnz157

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological methods, 3*(4), 424. https://doi.org/10.1037/1082-989X.3.4.424

Jurado, T., & Naldini, M. (1996). Is the South so different? Italian and Spanish families in a comparative perspective. *South European Society and Politics, 1*, 42-66. https://doi.org/10.1080/13608749608539482

Kishita, N., Gould, R. L., Farquhar, M., Contreras, M., Van Hout, E., Losada, A., ... & McCracken, L. M. (2021). Internet-delivered guided self-help acceptance and

commitment therapy for family carers of people with dementia (iACT4CARERS): a feasibility study. *Aging & Mental Health*, 1-9. DOI: 10.1080/13607863.2021.1985966

Knight, B. G., & Sayegh, P. (2010). Cultural values and caregiving: The updated sociocultural stress and coping model. *The Journals of Gerontology: Series B*, *65*(1), 5-13. DOI: 10.1093/geronb/gbp096

Losada, A., de los Angeles Villareal, M., Nuevo, R., Márquez-González, M., Salazar, B. C., Romero-Moreno, R., Carrillo, A. L., & Fernández-Fernández, V. (2012). Cross-cultural confirmatory factor analysis of the CES-D in Spanish and Mexican dementia caregivers. The Spanish Journal of Psychology, 15(2), 783–792. https://doi.org/10.5209/rev_SJOP.2012 .v15.n2.38890

Losada, A., Márquez-González, M., Vara-García, C., Gallego-Alberto, L., Romero-Moreno, R., & Pillemer, K. (2018). Ambivalence and guilt feelings: Two relevant variables for understanding caregivers' depressive symptomatology. *Clinical Psychology & Psychotherapy*, *25*(1), 59-64. https://doi.org/10.1002/cpp.2116

Losada, A., Pillemer, K., Márquez-González, M., Romero-Moreno, R., & Gallego-Alberto, L. (2017). Measuring ambivalent feelings in dementia family caregivers: The caregiving ambivalence scale. *The Gerontologist, 57*(3), e37-e46. https://doi.org/10.1093/geront/gnw144

Losada, A., Robinson Shurgot, G., Knight, B. G., Márquez, M., Montorio, I., Izal, M., & Ruiz, M. A. (2006). Cross-cultural study comparing the association of familism with burden and depressive symptoms in two samples of Hispanic

dementia caregivers. *Aging & Mental Health, 10*(1), 69-76. https://doi.org/10.1080/13607860500307647

Nogales-González, C., Losada, A., & Romero-Moreno, R. (2015). Confirmatory factor analysis of the Spanish version of the revised memory and behavior problems checklist. *International Psychogeriatrics, 27*(4), 683–692. https://doi.org/10.1017/S1041610214002476

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*(4), 717-731. https://doi.org/10.3758/BF03206553

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.

Schulz, R., Beach, S. R., Czaja, S. J., Martire, L. M., & Monin, J. K. (2020). Family Caregiving for Older Adults. *Annual Review of Psychology, 71*, 635–661. https://doi.org/10.1146/annurev-psych-010419050754

Schulz, R., & Martire, L. (2004). Family caregiving of persons with dementia: Prevalence, health effects and support strategies. *American Journal of Geriatric Psychiatry, 12*, 240–249. https://doi.org/10.1097/00019442-200405000-00002

Solé-Auró, A., & Crimmins, E. (2014). Who cares? A comparison of informal and formal care provision in Spain, England and the USA. *Ageing and Society, 34*(3), 495-517. doi:10.1017/S0144686X12001134

Steffen, A. M., Gallagher-Thompson, D., Arenella, K., Au, A., Cheng, S. T., Crespo, M., Cristancho-Lacroix, V., López, J., Losada, A., Márquez-González, M., Nogales-González, C., & Romero-Moreno, R. (2019). Validating the revised

scale for caregiving self-efficacy: A cross-national review. *The Gerontologist, 59*(4), e325–e342. https://doi.org/10.1093/geront/gny004

Teri, L., Truax, P., Logsdon, R., Uomoto, J., Zarit, S. and Vitaliano, P. P.(1992). Assessment of behavioral problems in dementia: the revised memory and behavior problems checklist. *Psychology and Aging, 7*, 622–631. https://doi.org/10.1037/0882-7974.7.4.622

Table 1. Characteristics of the sample

	Spain (n = 353)		UK (n = 79)		
	Mean/n(%)	S.D.	Mean/n(%)	S.D.	Significance of differences
Caregiver age	62.76	12.87	63.60	10.53	t = -.61 (p = .54)
Gender (female)	243 (68.8)		57 (72.2)		$\chi^2(1)$ = .33 (p = .56)
Frequency of BPSD	34.45	13.08	40.30	17.42	t = -2.81 (p = .01)
Ambivalent feelings	3.59	3.22	5.81	3.11	t = -5.53 (p = .00)
Depressive symptoms	17.34	11.00	15.43	12.72	t = -1.35 (p = .18)

Table 2. Correlation matrix for each country

	Spain				UK			
	1	2	3	4	1	2	3	4
1- Caregiver gender (1 = female)								
2- Caregiver age	-.19**				-.37**			
3- Frequency of BPSD	.10	-.17**			.11	-.20		
4- Ambivalent feelings	.22**	-.23**	.39**		.08	-.07	.53**	
5- Depressive symptoms	.19**	-.16**	.24**	.42**	.25*	-.27*	.34**	.42**

* = $p<.05$. ** = $p<.01$

Figure 1. Standardized estimates of the path analysis testing the role of ambivalence in the caregiving process.

Figure 1a) Spain

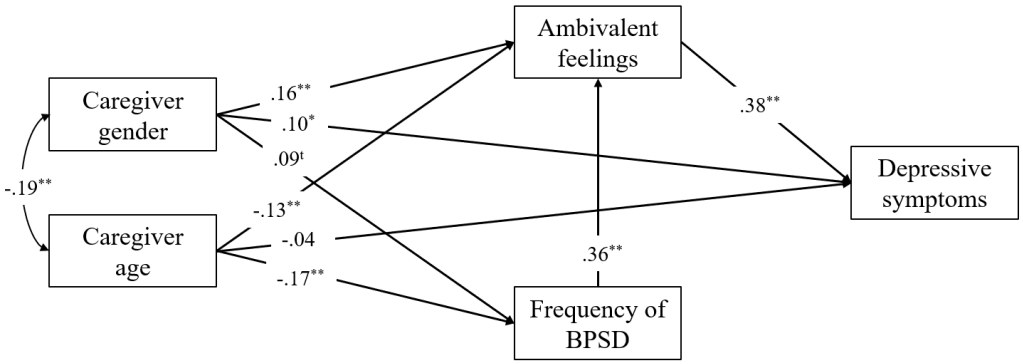
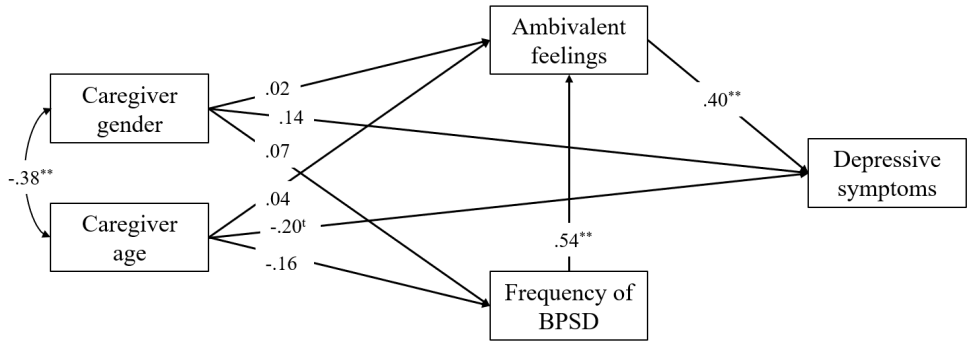


Figure 1b) UK



Note: ** = $p<.01$. * = $p<.05$. t = $p<.10$.