Development of a measure to evaluate gains among spanish dementia caregivers: The gains associated with caregiving (GAC) scale

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ABSTRACT

Background: The study is aimed at developing a new measure devised to evaluate gains associated with caregiving for a person with dementia.
Methods: We conducted two studies with Spanish informal caregivers. In Study 1 a total of 152 participants responded to a preliminary set of 62 items referred to gains related with caregiving. After exploring their psychometric properties, we studied its factor structure, concurrent validity, and internal consistency reliability by means of, respectively, an exploratory factor analysis (EFA), its correlation with the similar measures, and Cronbach's alpha coefficients. In Study 2 we undertook a confirmatory factor analysis (CFA) to obtain further evidence regarding the scale dimensionality and we studied its construct validity by calculating its correlations with the Zarit Burden Interview (ZBI), the Geriatric Depression Scale – Short Form (GDS-SF), and the Satisfaction With Life Scale (SWLS).
Results: The final version of the Gains Associated with Caregiving (GAC) scale comprised 22 items, all of which seemed to belong to the same factor according to both the EFA and the CFA. The correlation between the GAC scale and similar measures was statistically significant and strong, and the Cronbach's α coefficient was 0.95. Statistically significant correlations in the expected direction were found between the GAC and the ZBI, the GDS-SF, and the SWLS.
Conclusions: The high internal consistency of the GAC scale, and its adequate concurrent and construct validity suggest that it is a suitable instrument for evaluating gains among Spanish informal dementia caregivers.

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1. Introduction

The responsibility for providing care to persons with dementia (PWD) is assumed, in most cases, by informal caregivers, namely relatives or friends who are not paid for their services (Vitaliano, Zhang, & Scanlan, 2003) and who are believed to have an increased risk of certain negative outcomes, such as deterioration in physical and/or psychological health (e.g., Buyck et al., 2011; Pinquart & Sörensen, 2003). However, associating caregiving exclusively with negative outcomes means ignoring a part of the experience of most caregivers, who are able to find positive aspects in their task, such as gains (Netto, Goh, & Yap, 2010; Sanders, 2005; Yap et al., 2010), that is, specific benefits which caregivers attribute to their role and

which contribute to personal development and growth (Kramer, 1997). In comparison with other positive aspects of caregiving (such as uplifts or positive emotions), gains may be less limited to the caregiving situation and their effect might go beyond it.

Gains could be key for understanding and improve the caregiving experience, since their presence and intensity seem to be related to lower levels of negative affect and burden (Rapp & Chao, 2000; Yap et al., 2010) and better their mental health (Liew et al., 2010), In addition, promoting gains might help to boost the effectiveness of the interventions carried out by clinicians and practitioners (Kramer, 1997), and some authors even argue that the distress experienced by many caregivers may be due more to the absence of gains than to the presence of burden (Rapp & Chao, 2000).

Despite so, gains have not yet been studied in depth, in part because of a lack of suitable instruments for exploring the whole range of gains that the caregiving situation may trigger. In the design of such instruments it should be taken into account that the

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number of caregivers who ascribe some gains to their role, and the diversity of such gains, seems to be lower when using open-ended questions (e.g., Sanders, 2005) than if quantitative measures are chosen (e.g., Yap et al., 2010), which might be reflecting a certain difficulty to reflect upon this part of their experience. This study aims to fill this gap by presenting a new instrument in Spanish to assess gains associated with caregiving.

1.1. Measuring gains related to dementia caregiving: the GAIN scale

A first step towards taking full advantage of the benefits of studying gains would be to develop instruments to measure this variable. Several instruments have been created to measure different positive aspects of caregiving (e.g., Farran, Miller, Kaufman, Donner, & Fogg, 1999; Lou, Lau, & Cheung, 2015; Tarlow et al., 2004), but only one of them specifically aims to measure gains, the Gain in Alzheimer care INstrument (GAIN; Yap et al., 2010). Both the original version of the GAIN scale (Yap et al., 2010) and its Spanish adaptation (Fabà & Villar, 2013) represent important steps forward in the caregiving research field and have shown adequate psychometric properties. Nevertheless, the GAIN scale has several drawbacks that call into question its adequacy and generalizability. Firstly, the items included in the scale are based on the responses of just 12 caregivers from a very specific and different geographical and cultural area (Singapore) who participated in a previous qualitative study (Netto et al., 2010), and thus not capture the whole range of gains identified by previous research (Parveen, Morrison, & Robinson, 2011; Peacock et al., 2010; Sanders, 2005). Secondly, some of the items on the GAIN scale ask about more than one gain simultaneously, which may produce some confusion among caregivers, especially in cases where only one of the two gains has been experienced, or both of them but to different degrees. Finally, some of the items ask about concepts that some caregivers might find difficult to understand such as "resilience".

Altogether, then, there is a pressing need to develop psychometrically solid instruments to measure the full range of potential gains among caregivers of PWD. In this context, this article is aimed to develop a new scale for measuring gains associated with caregiving, the GAC Scale.

1.2. Rationale for the new gains associated with caregiving (GAC) scale

Several types of gains have been identified in previous research. Netto et al. (2010) detected three different kinds: personal growth (intrinsic positive changes such as becoming more patient, understanding, strong, resilient, or knowledgeable, and knowing oneself better), gains in relationships (positive changes in the relationship with the PWD, with older people, or with some of their relatives), and higher-level gains (more abstract positive changes related to philosophy in life, spirituality, and their willingness to contribute to the well-being of others). However, according to Sanders (2005), Peacock et al. (2010), and Parveen et al. (2011) some caregivers may also develop certain practical skills closely related to caregiving tasks, such as toileting and dressing a dependent person, or dealing with their relative's disruptive behaviors, which would thus add a fourth category to the classification of Netto et al. (2010).

Although several models have been proposed to explain how gains can appear in the midst of a demanding situation such as caregiving for a PWD (e.g., Kramer, 1997; Liew et al., 2010), there is at present no theoretical framework providing a logical structure within which all the gains identified by previous research can be organized in a meaningful way. Nevertheless, if we consider gains as positive changes in certain personal qualities or competences that caregivers can use as resources to face problems in their day-

to-day lives (Liew et al., 2010), then it seems reasonable to assume that they could easily be conceptualized from a developmental perspective. In this regard, Erikson's model of psychosocial development may be a suitable starting point, since the different kinds of gain identified by the research cited above can be considered as expressions of five of the eight forces that contribute to personal development according to this model, namely industry, identity, intimacy, generativity, and ego integrity (for a more detailed explanation, see Erikson, 1963, 1982).

Thus, gains involving an improvement in certain skills that are highly valued by society, such as patience or resilience (Netto et al., 2010; Sanders, 2005), might be related to the Eriksonian concept of industry, whereas signs of identity development may be appreciated among caregivers who feel that they have got to know their own personality better, that they are more aware of their strengths and weaknesses, or that they have realized what they want their own future to be like (Netto et al., 2010). Similarly, adding new relationships to one's social network or increasing the quality of some previous relationships could imply higher levels of intimacy. In another vein, considering oneself as a better role model, or realizing that through the caregiving role one has accumulated experience and knowledge that might be useful to others (Acton, 2002; Netto et al., 2010; Peacock et al., 2010), could be understood as expressions of generative concerns. Lastly, achieving positive changes in one's philosophy of life or spirituality, or attaining a more positive perspective in relation to one's own past (Acton, 2002; Netto et al., 2010; Sanders, 2005) might indicate gains in integrity.

Studying gains from this developmental perspective also highlights the adaptive relevance that gains might have for caregivers, since higher levels of industry, identity, intimacy, generativity, and integrity have been linked to positive outcomes such as greater life satisfaction and personal adjustment at different points of the life cycle (Ackerman, Zuroff, & Moskowitz, 2000; de St. Aubin & McAdams, 1995; McAdams, de St. Aubin, & Logan, 1993; Rylands & Rickwood, 2001; Sneed, Whitbourne, Schwartz, & Huang, 2012; Tucak & Nekic, 2007), just as gains have been found to be positively related to psychological well-being (Liew et al., 2010; Rapp & Chao, 2000).

1.3. Purpose of the study

The purpose of the present paper is to describe a new evaluative instrument (Kirshner & Guyatt, 1985) devised to assess gains among Spanish caregivers of PWD, and to provide information regarding its psychometric properties. To this end, we conducted two studies. Study 1 aimed to select the items with the best psychometric properties from a large initial pool of items and to obtain initial evidence regarding the factor structure, concurrent validity, and reliability of the resulting scale. Study 2 aimed to confirm the factor structure and internal consistency of the GAC scale, and to assess its construct validity.

2. Study 1

2.1. Methods

2.1.1. Participants and procedure
To gather the sample, 12 organizations whose remit was to promote the well-being of informal caregivers and their relatives with dementia (e.g., Alzheimer's associations and adult day care centers), as well as a health professional working on this field, all of them from Catalonia (a region in the northeast of Spain), were approached. In each case, one of the researchers explained the objectives of the study and the conditions under which caregivers should answer the questionnaire to the responsible of each

association in order to standardize the administration process. There was only one Alzheimer's association that refused to participate, the reason put forward being that previous attempts to get their caregivers to take part in other studies had been unsuccessful.

The remaining 11 organizations appointed a staff member to make a list of all the informal caregivers meeting the following inclusion criteria, which were established in order to maximize sample homogeneity: a) currently caring for a PWD; c) having been his/her caregiver for at least six months; and d) being one of the main caregivers with responsibility for taking decisions that concern the PWD. This person also took responsibility for approaching the caregivers, briefly explaining the purpose of the study to them, and personally delivering them the survey, which included written information on the goals of the research and an informed consent document which caregivers were asked to sign. Questionnaires were self-administered.

Two hundred and forty-four informal caregivers were initially contacted, of whom 63.11% agreed to participate. Of these 174 informal caregivers, 22 did not meet the inclusion criteria and were excluded from the study. The demographic characteristics of the 152 caregivers who were eligible to participate in this study are displayed in Table 1. Caregivers ranged in age between 34 and 90 years old, the most common profile being a retired, married woman who had completed primary or secondary education and who was caring for her spouse.

2.1.2. Measures

2.1.2.1. Demographic characteristics. Participants provided information regarding their age, gender, marital status, relationship to the PWD, educational level, and employment status.

2.1.2.2. Gains associated with caregiving (GAC) scale. This scale evaluates the gains that caregivers experience as a consequence of their role across five different domains: Industry, Identity, Intimacy, Generativity, and Ego Integrity. Three external judges, all of them members of the *Grup d'Investigació en Gerontologia* (Gerontology Research Group) from the University of Barcelona

and with extensive experience in the field of psychogerontology and developmental psychology, evaluated the semantic definition of each of these five domains. None of the judges reported any objections to the adequacy of these definitions or considered that it would be helpful to make certain changes to them.

As the model on which our measurement is based was reflective rather than formative (Coltman, Devinney, Midgley, & Veniak, 2008), before creating the initial version of the scale we made a list with all the kinds of gains identified by the previous literature, and the specific examples cited in it. Among them, we chose the ones most commonly reported and the ones included in existing instruments (Farran et al., 1999; Tarlow et al., 2004; Yap et al., 2010), and created 62 items based on the results. Each of the items represented a gain, and caregivers had to indicate to what extent they felt they had experienced it as a consequence of their role choosing between one out of four response options (0 = Not at all; 1 = Yes, slightly; 2 = Yes, quite a lot; 3 = Yes, very much so).

Each item was assigned to one of the five domains cited above, there being 10 items for Industry, 14 for Identity, 12 for Intimacy, 10 for Generativity, and 16 for Integrity. Two items on each domain were created so as to have the same meaning, such that there were five pairs of control items. Two of the three external judges who had evaluated the semantic definition of the five kinds of gains included in the scale were also asked to indicate the domain to which they considered each item belonged. Cohen's kappa statistic was then used to assess the degree of agreement between observers. Agreement with the original classification was high for both external judge 1 (kappa = 0.77; $p < 0.001$) and external judge 2 (kappa = 0.90; $p < 0.001$).

2.1.2.3. GAIN. This 10-item scale was developed to assess personal gains, gains in relationship, and higher-level gains among caregivers of PWD in Singapore (Yap et al., 2010). In its Spanish adaptation (Fabà & Villar, 2013), all of the items showed appropriate psychometric properties and were grouped into a single factor accounting for 47.3% of the original variance. The internal consistency of the scale was high. On the GAIN, respondents have to state whether they "disagree a lot", "disagree a little", "neither agree or disagree", "agree a little" or "agree a lot" with the possibility of having experienced different gains as a result of being caregivers. Scale scores range from 0 to 40, with higher scores denoting higher gains, and vice versa.

2.1.3. Statistical analysis

In order to assess the psychometric properties of the GAC scale we began by calculating the internal consistency index for each of the five theoretical domains, and the contribution of its items to the corresponding index. We also calculated standard deviations for each item and the Pearson correlation between each item and the domain to which it belonged (item-rest score correlation). Each item's contribution to the internal consistency index of its theoretical domain, standard deviation and item-rest score correlation were used to select the most psychometrically robust items. An exploratory factor analysis (EFA), using polychoric correlations, was then conducted with such items in order to eliminate those with non-significant factor loadings according to the sample size (Hair, Anderson, Tatham, & Black, 1998) and to obtain evidence about the factor structure of the scale.

After selecting the items that would make up the definitive version of the scale, we obtained the Pearson correlation between the GAC and GAIN scores in order to evaluate the GAC scale's concurrent validity and estimated its internal consistency reliability by means of Cronbach's alpha coefficient.

All analyses were conducted using SPSS (v.17), except for the EFA, which was conducted using FACTOR, a program that can implement this procedure with ordinal data (Lorenzo-Seva &

Table 1
Sociodemographic characteristics of the sample.

Variables	Study 1 (n = 152)	Study 2 (n = 260)
Age *M* (SD)	67.07 (11.54)	63.0 (12.30)
Sex (%)		
Female	59.2	66.5
Male	40.8	33.5
Marital Status (%)		
Single	11.8	9.6
Married	81.6	82.7
Divorced	3.9	6.5
Widowed	2.7	1.2
Educational Level (%)		
No formal schooling	21.1	7.7
Primary education	36.8	37.3
Secondary education	29.6	38.1
Higher education	12.5	16.9
Work status (%)		
Currently employed	19.1	26.9
Unemployed	3.3	9.6
Retired	52.0	44.7
Housekeeper	25.6	18.8
Relationship with the PWD (%)		
Spouse/partner	63.8	48.8
Father/mother	34.2	47.4
Other	2.0	3.8

Ferrando, 2006). Items with missing data on the GAC scale and the GAIN were imputed using the hot deck method, which is particularly suitable for missing data scenarios in which missing data constitute between 1% and 10% of the sample (Myers, 2011). Hot deck method replaces missing values with the score of another participant who is randomly chosen among all participants who match the receptor in a set of variables predetermined by the researcher (Andridge & Little, 2010). None of the items in either scale had more than 3% of missing values. There were no blank responses in the socio-demographic questionnaire.

2.1.4. Ethical considerations

Ethical approval for the second study was also obtained from the Ethics Committee of the Faculty of Psychology of the University of Barcelona.

2.2. Results

All 152 paticipant caregivers gave compatible answers to at least three of the five pairs of control items, thereby indicating that they had responded carefully to the scale. Item-rest score correlations ranged from 0.28 to 0.70, and most items had a SD > 1. Cronbach's alpha for the five initial domains ranged between 0.85 and 0.89, and according to the alpha-if-item-deleted index they were not considerably improved by eliminating any particular item.

In order to maximize the scale variance, items showing an item-rest score correlation ≤ 0.50, and SD ≤ 1 were proposed for elimination (Carretero-Dios & Pérez, 2005). According to these criteria we eliminated five items from Industry, seven items from Identity, six items from Intimacy, eight items from Generativity and nine items from Integrity. We also decided to discard the item with the worse psychometric properties from each pair of control items that remained intact after application of the abovementioned criteria (this led to one more item being eliminated). A criterion was also established to avoid the elimination or under-representation of any of the five theoretical domains at this initial stage, it being decided that a minimum of five items would be maintained per domain before conducting the EFA. The items selected were those with the best psychometric properties. Application of this criterion meant that an item referring to Industry and three items referring to Generativity were not eliminated.

After eliminating the resulting 32 items we tested the factor structure of the scale through an EFA. Both the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = 0.91) and Bartlett's test of sphericity (χ^2 = 2373.90; $p < 0.001$) suggested a good fit of the data to a factor model.

The EFA extracted six factors (with eigenvalues greater than 1) which accounted for 66.79% of the total variance. However, the inspection of these eigenvalues suggested that the GAC scale is essentially unidimensional. Indeed, according to the scree plot (Fig. 1) there was a considerable difference between the amount of variance explained by the first (eigenvalue = 13.27) and second (eigenvalue = 1.62) factors, the value for the former being 8-fold greater than that of the latter. Furthermore, the eigenvalue of the first factor was the only one that surpassed the mean of the seven eigenvalues with magnitudes greater than 1 (M = 3.34).

Given this, we did not rotate the factors and instead conducted a new EFA, forcing the extraction of a single factor. The factor loadings for all the items ranged between 0.46 and 0.80. We decided to eliminate the less relevant items so as to reduce the redundancy of the scale. Thus, two items were discarded because they had similar meanings to other items with higher factor loadings, while six items were omitted because their factor loadings were < 0.60. The final version of the GAC scale (Table 2) therefore had 22 items which accounted for 47.94% of the total variance, and sumscores on it can range from 0 to 66, with higher scores reflecting a higher attribution of gains to the caregiving role.

Regarding the concurrent validity of the scale, the correlation between the GAC and the GAIN was found to be positive, statistically significant and strong (r = 0.75; $p < 0.001$). In terms of internal consistency, the Cronbach's alpha coefficient ranged from 0.81 to 0.89 for the domanins, and it reached a value of 0.95 for the whole scale.

3. Study 2

3.1. Methods

3.1.1. Participants and producedure

In Study 2 we approached 9 of the 11 organizations that participated in Study 1 (those who had collected at least one questionnaire) and 15 additional organizations of the same characteristics, all of them from Catalonia. The procedure for presenting the study and collecting data, as well as the inclusion
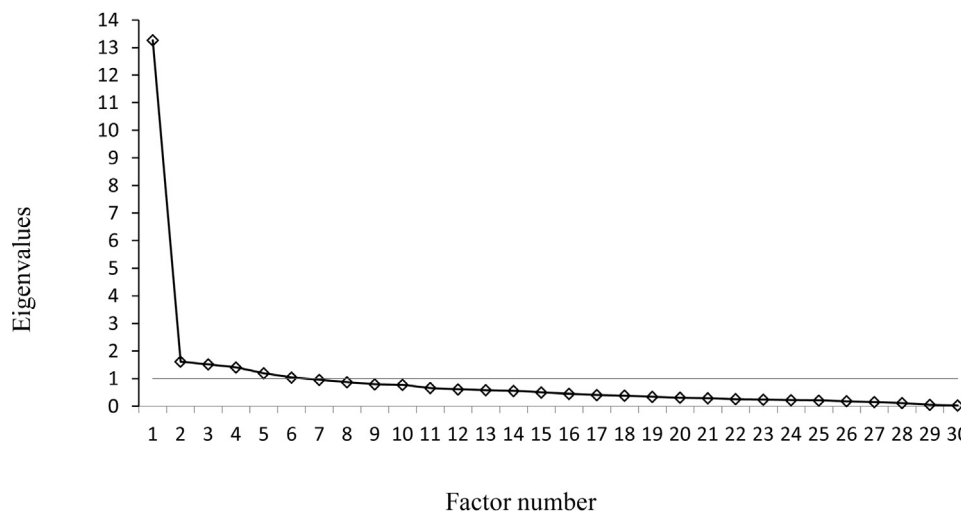

Fig. 1. Scree plot for the exploratory factor analysis.

Table 2
Final Spanish version of the GAC scale (translation into English is provided for the sole purpose of helping non-Spanish speakers to understand what the meaning of each item is).

Ser cuidador me ha ayudado a . . . [Being a caregiver has helped me to . . .]	
Domain	Item
Identity	1. Sentirme más generoso/a [Feel more generous]
Industry	2. Expresar más libremente lo que pienso o siento sin ofender a los demás [Express more freely what I think or feel without offending other people]
Identity	3. Sentirme más completo/a [Feel more complete]
Generativity	4. Ser un mejor modelo a seguir [Be a better role model]
Generativity	5. Ser más consciente de la importancia de transmitir algunos de mis valores a los que me rodean [Be more aware of the importance of sharing some of my values with those around me] G
Intimacy	6. Crear nuevos buenos recuerdos de la persona que cuido [Create new good memories about the person I care for] In
Identity	7. Ser más valiente [Be braver]
Identity	8. Ser más fuerte [Be stronger]
Integrity	9. Encontrarle más sentido a la vida [Find more meaning in life
Industry	10. Ser mejor a la hora de organizar mi tiempo [Be better at organizing my time]
Generativity	11. Aprender cosas importantes que me gustaría compartir con otros [Learn important things that I would like to share with other people] G
Intimacy	12. Relacionarme mejor con otros cuidadores [Relate better to other caregivers] In
Integrity	13. Crecer a nivel espiritual [Grow spiritually]
Generativity	14. Tener más ganas de ayudar a otras personas que puedan estar atravesando una situación parecida a la mía [Be more willing to help other people who may be going through a similar situation]
Intimacy	15. Relacionarme mejor con las personas mayores dependientes [Relate better to dependent older people]
Integrity	16. Estar más en paz conmigo mismo/a [Be more at peace with myself]
Industry	17. Ser más imaginativo a la hora de buscar soluciones a mis problemas [Be more creative when seeking solutions to my problems]
Integrity	18. Ser más consciente de qué valores son importantes en la vida [Be more aware of what values are important in life]
Generativity	19. Ser más consciente de las cosas buenas que las personas jóvenes podrían aprender de mí [Be more aware of the good things that younger people might learn from me]
Identity	20. Conocerme mejor a mí mismo/a [Know myself better]
Integrity	21. Ser más consciente de todo lo que me ha aportado la persona que cuido [Be more aware of everything the person I care for has given me]
Identity	22. Ser más responsable [Be more responsible]

criteria, were the same in both studies. Caregivers who had participated in Study 1 were allowed to participate in Study 2.

In total, 417 informal caregivers were approached and 278 returned the questionnaire (66.7% response rate). Eighteen of these were exluded from the study because they did not meet the inclusion criteria mentioned above. The demographic characteristics of the 260 remaining caregivers are displayed in Table 1, and they were similar to the demographic characteristics of caregivers in Study 1.

3.1.2. Measures

Participants in Study 2 had to provide the same demographic information as was collected in Study 1, and they were required to respond to the final version of the GAC scale and the following instruments:

3.1.2.1. Zarit burden interview (ZBI). The ZBI is a 22-item self-report questionnaire that measures caregivers' subjective feelings of burden (Zarit, Reever, & Back-Peterson, 1980). It is the most widely used standardized, validated for assessing this variable, and its Spanish version has been shown to have good internal consistency, content validity, and test-retest reliability (Martín et al., 1996). Items are statements related to several feelings that caregivers can experience in relation to their role, and respondents have to indicate how often they feel a particular way using a 5-point Likert scale ranging from "never" to "always". Sum scores can vary between 0 and 88, and the higher the score, the higher the level of burden.

3.1.2.2. Geriatric depression scale – short form (GDS-SF). The GDS-SF is a 15-item self-report depression screening scale for older adults (Sheikh & Yesavage, 1986). The Spanish version of the scale used in this study was validated by Martínez-de-la-Iglesia et al. (2002), and showed high internal consistency and good convergent and discriminant validity. Items are yes/no questions referring to respondents' worries and to what they think about their own

quality of life. Sumscores can range from 0 to 15, with higher scores reflecting more depressive symptoms.

3.1.2.3. Satisfaction with life scale (SWLS). The SWLS is a five-item instrument for obtaining global judgments of satisfaction with one's life (Diener, Emmons, Larsen, & Griffin, 1985). Its Spanish adaptation with older people (Pons, Atienza, Balaguer, & García-Merita, 2002) showed adequate internal consistency. Participants have to indicate the extent to which they agree or disagree with each item using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree". Sum scores can vary from 0 to 20, and the higher the score, the higher the level of satisfaction.

3.1.3. Statistical analysis

In order to obtain more evidence about the psychometric properties of the GAC scale we conducted a confirmatory factor analysis (CFA) to test its factor structure using the EQS software version 6.1 for structural equation models (Bentler, 2006). Three factor-analytic models were compared: a) a single-factor model assuming that all items load on a general gains factor, as suggested by the EFA in Study 1; b) a five-factor structure following the initial distribution of the items in domains; and c) a five-factor structure with a single second-order latent gains factor. A matrix of polychoric correlations was used for this analysis due to the ordinal nature of our data. Several fit statistics were obtained for each model: the chi-squared statistical significance test (χ^2), the Akaike information criterio, (AIC, generally used to campare among models tested on the same data set), the standardized root mean-square residual (SRMR) and the comparative fit index (CFI). A model is supposed to show a good fit when χ^2 is not statistically significant, when the CFI, index is equal to or greater than 0.95, and when the SRMR has a value of 0.08 or less. Also, the smaller AIC value suggest the better model (Harrington, 2009; Thompson, 2004).

We then studied the construct validity of the scale by obtaining the Pearson correlation between the GAC scale and scores on the

ZBI, the GDS-SF, and the SWLS. Based on the positive relation that might exist between caregivers' gains and psychological well-being (Liew et al., 2010; Rapp & Chao, 2000), we expected the GAC scale to negatively correlate with the ZBI and the GDS-SF, and to positively correlate with the SWLS. As previously, its internal consistency reliability was estimated by means of Cronbach's alpha coefficient. These analyses were performed using SPSS (v.17).

As in Study 1, missing data among items on the GAC scale, the ZBI, the GDS-SF, and the SWLS were imputed using the hot deck method, since none of the items had more than 5% of missing values. There were no blank responses in the socio-demographic questionnaire.

3.1.4. Ethical considerations

Ethical approval for the second study was also obtained from the Ethics Committee of the Faculty of Psychology of the University of Barcelona.

3.2. Results

The results of the CFA are shown in Table 3. According to the values of the fit indices none of the models showed a perfect fit, since in all cases the chi-squared test (χ^2) was statistically significant and the CFI values were lower than 0.95. Of the three different models the one-factor solution had better goodness-of-fit indices, and it was the only model with a SRMR lower than 0.08. The Cronbach's alpha coefficient was exactly the same as in Study 1.

As regards its construct validity, the GAC scale showed statistically significant correlations with the ZBI ($r = -0.229$, $p < 0.01$, 95% CI [−0.346, −0.107]), the GDS-SF ($r = -0.237$, $p < 0.01$, 95% CI [−0.354, −0.116]), and the SWLS ($r = 0.257$, $p < 0.001$, 95% CI [.139, 0.366]). These results indicate that the more gains caregivers experience, the lower their levels of burden and depression, and the higher their satisfaction with their own life.

4. Discussion

The GAC scale not only considers the main types of gains highlighted by previous research with caregivers of PWD, but also presents several important strengths compared with the GAIN scale, which so far was the only scale designed to specifically assess gains related to the caregiving experience. First, none of its items refer to more than one gain at the same time. Second, all the items were written in a way that could be understood by anybody regardless of age or educational level. And third, it includes dimensions such as intimacy, generativity or integrity, which were not present in the GAIN and are central domains of development in the second half of life (Erikson, 1963, 1982), when caregiving is more likely to occur.

According to the results of Study 1 the items included in the final version of the GAC scale have adequate standard deviations and item-rest score correlations, and the scale's overall internal consistency was found to be high in both Study 1 and Study 2. The scale has good concurrent validity, as its correlations with the GAIN were statistically significant and strong. In addition, and in line with previous research (Liew et al., 2010; Rapp & Chao, 2000; Yap

et al., 2010), higher sum scores on the GAC scale were associated with lower levels of both burden and depression, and with higher levels of satisfaction with life. The correlational nature of these relationships prevents us from drawing any firm conclusions as to whether it is the experience of gains that causes caregivers' burden and depression levels to decrease, and their satisfaction with life to increase, or, alternatively, whether feeling less burdened and depressed, and more satisfied with one's life, fosters gains, or even allows gains to occur. At all events, these correlations suggest that the GAC scale may also have good construct validity.

The GAC scale seems to be an essentially unidimensional measure, since according to both the EFA and the CFA carried out in Study 1 and Study 2, respectively, its 22 items could belong to a single component representing the construct "gains associated with caregiving". Whilst the apparently unidimensional nature of the GAC scale casts doubt on the empirical relevance of classifying gains according to Erikson's model of psychosocial development, it allows researchers to obtain a single, easy-to-interpret overall score for each participant. Moreover, since the final version of the scale contains several items for each of the five initial domains that we proposed (which is equivalent to saying that it includes items referring to all the different dimensions identified by previous qualitative research), it could also be argued that its content validity is high. The GAC scale is therefore a comprehensive and relevant instrument that may be used for evaluative purposes, such as quantifying the treatment benefit of those interventions designed to improve caregivers' psychological well-being (Kirshner & Guyatt, 1985). In spite of the scale being unidimensional, we believe that at a theoretical level Erikson's model of psychosocial development provides a useful framework for organizing gains into meaningful categories and for understanding their relevance from a developmental perspective. Indeed, it may help to guide future qualitative research in terms of unifying the categories within which gains can be coded and, thus, make it easier to compare the results of different studies.

Finally, certain limitations of this study need to be considered. The first concerns the sample size, which may not have been large enough to carry out a reliable EFA. Although some authors state that a minimum of 4–5 participants per item (Martín, Cabero, & de Paz, 2008) is sufficient, others (Gorsuch, 1983) argue that this ratio should be 5–10:1. Our sample size would therefore only be acceptable according to the former criterion. Regarding the generalizability of our results, it should be noted that all the participants in this study had asked for help from professionals (in most cases, from Alzheimer's associations and adult day care centers), and they were informal caregivers of a PWD. As a result, our sample may not be representative of dementia caregivers who do not receive any kind of formal assistance, those who provide care to patients with illnesses other than dementia, or formal dementia caregivers. In addition, some of the caregivers who participated in Study 2 might have also participated in Study 1, and thus their answers to the second survey might have been influenced by the higher level of insight regarding the positive aspects of their role that some of them might have developed as a result of their participation in Study 1, and 36.89% and 33.3% of the caregivers who were initially recruited in Study 1 and Study 2, respectively, did not return the survey, and we therefore have no

Table 3
Goodnes-of-fit indices for the three factor-analytic models that were compared using a confirmatory factor analysis.

Model	χ^{2*}	gl	SRMR	CFI	AIC
Single factor structure	1338.51	209	0.07	0.71	905.18
Five-factor structure	2253.59	199	0.40	0.48	1835.59
Five-factor structure with a second-order factor	1607.77	184	0.38	0.64	1189.77

[*] The chi-squared test was statistically significant for the three models at the $p < 0.001$ level.

information about their perceived gains. The corresponding possibility of non-response bias casts further doubt on the representativeness of the sample in both studies. Nevertheless, the response rates obtained are comparable to those typically reported in academic research in the behavioral sciences, and are even higher than the average (Baruch, 1999).

Another potential limitation is that all the caregivers participating in this study were currently living in Catalonia (Spain). Although studies carried out in different sociocultural backgrounds have reported that caregivers experience similar kinds of gains, there are still some differences that could be attributed to cultural factors. For instance, gains related to skills development were not found among caregivers from Singapore (Netto et al., 2010), but they were reported by American (Sanders, 2005) and Canadian (Peacock et al., 2010) caregivers. While it is not clear to what extent such divergences might be due to sociocultural or methodological differences, cross-cultural studies comparing caregivers' gains in different backgrounds might help to shed light on this issue. In another vein, although evidence suggests that the GAC scale is essentially unidimensional, the single factor model did not show a perfect fit to our data. Thus, it would be advisable to administer the GAC scale to a larger and more diverse sample so as to confirm its psychometric properties. In addition, longitudinal studies would be helpful to understand better the relationship between gains and several relevant caregiving outcomes such as burden, depression, and satisfaction with life, among others.

To conclude, this study describes the development of the GAC scale, an instrument designed to assess a variable which has often been neglected but which may be related to important outcomes among caregivers: the gains associated with caring for persons with dementia. The scale is shown to have adequate psychometric properties and, thus, it is a suitable instrument for Spanish researchers aiming to measure the positive changes that caregivers might experience as a direct result of caregiving for a PWD.

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