Validity of the de Jong Gierveld Loneliness Scale in Spanish older population: competitive structural models and item response theory

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Abstract Loneliness is a subjective measure of one's state of mind and the negative feelings about one's level of social contact, which usually involves an unwanted discrepancy between existing and desired relationships. It is measured through self-reported questionnaires, among which a widely used one is the de Jong Gierveld Loneliness Scale (DJGLS). Although it has been previously tested and proven to be a reliable tool for measuring loneliness of Spanish older people, some relevant research questions remain unsolved. Therefore, this article aims to present a validity study of the Spanish version of the DJGLS for its use with older people, by establishing its factorial validity; studying the adequateness of a Rasch model underlying participants' responses; offering evidence of its reliability; and testing for convergent and discriminant validity. Data were obtained in a survey conducted with older adults attending Lifelong Learning programs in Valencia (Spain). The sample consisted of 335 people aged 55 years or older. Sociodemographic data were collected, and loneliness was measured with the DJGLS and the UCLA Loneliness Scale. Results have supported a unidimensional substantive structure, but with minor method effects associated with negatively worded items. In terms of multidimensional IRT analysis, the 2 Parameters Logistic Model fitted the data well and offered better information functions than the Rasch model. Reliability and criterion-related validity estimates were adequate.

Keywords Loneliness · De Jong-Gierveld Loneliness Scale · Psychometric properties · Factor validity · Graded response models

Introduction

Loneliness can be defined as a subjective measure of one's state of mind and the negative feelings about one's level of social contact (Weeks 1994), which usually involves an unwanted discrepancy between existing and desired relationships (Perlman and Peplau 1981). A key aspect of loneliness is that it is a subjective emotional experience of one's personal relationships (Lim and Kua 2011). If one's intimate and social needs are not adequately met, a set of feelings termed loneliness occurs. In the words of de Jong Gierveld and Tesch-Römer (2012, p. 286): "Loneliness might be the bitterly felt for the absence of an intimate partner (emotional loneliness) or the sadness of being unnoticed or rejected by the others (social loneliness)". Older adults face an elevated risk of loneliness as they age, especially those aged 80 and over (Dykstra 2009). In fact, Pinquart and Sörensen's (2003) meta-analysis indicated that about 50% of those aged 80 and over report frequent feelings of loneliness.

Loneliness has typically been conceptualized as a relatively stable trait, with variations depending on the specific circumstances in which people find themselves. Measurement of loneliness has mainly been made by means of self-reported questionnaires. Among them, the most widely used one has been UCLA Loneliness Scale (UCLA-LS). Another relevant scale, considerably shorter, is the 11-item de Jong Gierveld Loneliness Scale (DJGLS). Some authors have suggested that the DJGLS is more appropriate than the UCLA scale to measure loneliness in older adult

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populations (Penning et al. 2014). In fact, the DJGLS is the most used loneliness scale in Europe (Buz et al. 2014), and its use is spreading to Australia, Eastern, and Asian countries (for example, de Jong Gierveld and van Tilburg 2010; Sansoni et al. 2010).

The DJGLS was developed from a content analysis of accounts written by 114 lonely people about their experiences. Items were chosen to develop a scale that to assess severe feelings of loneliness as well as less intense loneliness feelings, with both positive and negative items, and to represent a latent continuum of deprivation. It is also important to consider the distinction between emotional and social dimensions of loneliness theorized by Weiss (1973). Emotional loneliness relates to the absence of an intimate relationship, while social loneliness is related to the absence of a broader, engaging social network. According to the authors of the DJGLS (de Jong Gierveld and van Tilburg 2010), the researchers can use the scale either as a unidimensional measure of loneliness or both dimensions of emotional (six items) and social loneliness (five items), depending on their research question.

A reduced six-item version of the DJGLS is also available. It intends to measure two dimensions of loneliness, but in a simpler and faster way (de Jong Gierveld and van Tilburg 2006). However, their authors recommend that the full version of the scale is a more adequate choice when researchers are interested in collecting detailed information about the prevalence of loneliness, or if the investigation aims to understand changes in loneliness throughout time, such as in longitudinal studies, or to analyze how specific life events could have an impact on loneliness.

The dimensionality of the DJGLS remains unclear. Even though the scale was developed as a Rasch instrument, the authors recognized that there was evidence of a second relevant dimension attributed to a methodological artifact associated with negatively worded items (de Jong Gierveld and Kamphuis 1985). Moorer and Suurmeijer (1993) and van Tilburg and Leeuw (1991) obtained evidence of a one-factor structure, but also confounded by a second, less important dimension associated with the negatively phrased items. Grygiel et al. (2012) validated the Polish version of the scale and confirmed the existence of two dimensions, but with a bifactor structure: a single dimension of loneliness explaining a part of the variance and two unrelated emotional and social dimensions also explaining some part of the variance of the indicators. Therefore, the dimensionality is unclear, but there is enough evidence that a two-factor solution never adequately fits.

In Spain, the DJGLS was first translated and adapted to be used in older adults populations by Buz and Prieto (2013). They used the Rasch model to assess its psychometric properties in a sample of 614 Spanish older people and found good reliability levels and moderate convergent and

discriminant validity. Using the same adapted version, subsequent studies were done in order to determine its factor structure (Buz et al. 2014) and to investigate its measurement invariance (Buz and Pérez-Arrechaederra 2014). Buz et al. (2014) studied the factorial validity of the scale in a snowball sample of 360 community-dwelling older adults (>59 years old). They tested three alternative confirmatory models: one factor; two correlated (emotional and social loneliness) factors; and two uncorrelated factors. They found adequate model fit, according to their cutoff criteria, for the one-factor and two correlated factor models. The two-factor (oblique) model slightly better fitted the data, but they found a fairly large correlation between emotional and social loneliness ($r = .87$), concluding that the one-factor or unidimensional model outperforms the two-factor structure, and accordingly they defined the Spanish version of the scale as a unidimensional instrument.

Therefore, although the DJGLS has been proven to be a reliable measure of older people's loneliness in Spain, some research questions remain unsolved. Firstly, previous studies on the DJGLS's factor structure have failed to test and compare all the alternative models proposed in the literature. This is true both for the Spanish version of the scale and for other versions. There is no single study in which all factor structures defended in the literature have been tested as competitive models. Secondly, the available evidence casts serious doubt on the use of Rasch models to understand the psychometric properties of the scale, as two of its assumptions, local independence and constant discrimination parameters for the items do not seem tenable. The studies on the validity and reliability of the scale based on IRT models in the Spanish version of the scale have always assumed a one-parameter logistic model rather than testing for its adequacy against a two-parameter model. This research tries to fill this gap in the literature. Therefore, and with this in mind, the aim of this manuscript is to present a validity study of the Spanish version of the DJGLS for its use with older people. Specifically, the aims are: (a) to analyze its factorial validity; (b) to study the adequateness of a Rasch model underlying participants' responses; (c) to offer evidence of its reliability; and (d) to test for convergent and discriminant validity with other measures of loneliness.

Method

Design, participants and procedure

The research is a survey of older adults attending University of Valencia's Lifelong Learning programs during the academic year of 2014–2015. Participants were invited to answer the survey in their classroom setting, in sessions of

about 30 min, carried on in the presence of trained interviewers. Education Ethics Committee gave its approval, and all those attending the program were asked to give their informed consent. All those willing to participate were finally surveyed, with a response rate of 78%. The final sample consisted of 335 people aged 55 years or older (with a maximum of 80 years; mean age of 63.97 years and $SD = 5.56$). In total, 67.5% were women. Most of them were retired (75.1%), some declared to be unemployed (11.1%), 6.9% were currently working, and others (mostly homemakers) represented 5.2% of the total sample. Regarding their marital status, 72.3% were married, 8.5% were widows or widowers, 8.5% were single and 10.1% were divorced.

Instruments

The questionnaire comprised two sections: questions requesting demographic information; and scales to assess personality dimensions, attitudes, perceptions, and behaviors related to the aging process.

The de Jong Gierveld Loneliness Scale, DJGLS (de Jong Gierveld and Kamphuis 1985), is a well-known scale used in international research (van Tilburg et al. 2004), composed of 11 items. Six of them in the direction of loneliness (“I miss having a really close friend”), and the other five reversed (“There is always someone I can talk to about my day-to-day problems”). The original scale had three categories of response (“yes,” “more or less” and “no”). Descriptive statistics for the three-point item scale were: mean = 5.34, $SD = 4.17$, asymmetry = .94 and kurtosis = .44. The authors also proposed to use the scale to establish categories of loneliness. According to these categories, in this sample 37.5% were not lonely, 48.4% had moderate feelings of loneliness, 10.8% had severe feelings of loneliness and the remaining 3.3% had very severe feelings of loneliness. These results are similar to those found in previous research that also used the DJGLS to measure loneliness in Spanish elderly samples (Sánchez-Rodríguez 2009). In this research, we used the Spanish version of the scale translated and adapted by Buz et al. (2014).

In order to assess criterion and convergent validity, other scales were used as follows:

- a. A second measure of loneliness, the University of California Loneliness Scale version 3, UCLA-3 (Russell 1996) was used to test for convergent validity. It includes 20 items that measure loneliness in a direct way such as “I feel left out” or reversely, as “I do not feel alone.” The scale response ranges from 0 (never) to 3 (always). As there was no adapted version of the UCLA-3 into Spanish, the investigators back-translated and adapted the instrument during this study

following the guidelines recommended by the International Test Commission (van de Vijver and Hambleton 1996). Cronbach’s alpha for this scale was .90 in this sample.

- b. Social support was measured with the Spanish adaptation of the Functional Social Support Questionnaire DUKE-UNC (Broadhead et al. 1988) by Bellón et al. (1996). It has 11 items with a 5-point Likert rating. This questionnaire measures the degree of perceived social support. Cronbach’s alpha in this sample was .92. Social support has been used to test for convergent validity as high levels of loneliness have been associated with living alone (Routasalo et al. 2006), little contact with friends and family (Bondevik and Skogstad 1998), small social networks (Hawkey et al. 2005), or low quality of the social relationships (Routasalo et al. 2006).

Data analyses

Two psychometric procedures were used to assess psychometric properties of the DJGLS: structural equation modeling (SEM), and particularly confirmatory factor analysis (CFA), which is part of the classical test theory (CTT) framework, and item response theory (IRT) analyses. With respect to the SEM analyses, several confirmatory factor analyses (CFA) were specified, all of them a priori. CFA was used because there were doubts about the dimensionality of the scale. In other words, from the literature review on the DJGLS, several models (both theoretical and empirical) arise, and therefore, all plausible a priori models should be tested. These CFAs were specified and estimated in Mplus (Muthén and Muthén 2007). WLSMV (Weighted Least Square Mean and Variance corrected) method of estimation was employed in order to accommodate the non-normality and ordinal nature of the items. Model fit was evaluated using several statistics and indices, specifically the Chi-square, the CFI and RMSEA. The following criteria were used to determine good fit: CFI above .90 (better if above .95) and RMSEA below .08 (Marsh et al. 2004). In addition to overall fit indexes, the acceptability of the model was evaluated by the strength and interpretability of the parameter estimates and the absence of large and substantively meaningful modification indices. Internal consistency was estimated with the composite reliability index (CRI), an index based on the confirmatory results that overcomes some of the shortcomings of Cronbach’s alpha (Raykov 2001).

IRT analyses were also conducted to estimate the psychometric properties of the scale. Unidimensional and bidimensional graded response IRT models were performed using the IRTPRO program (Cai et al. 2011). In

Fig. 1 Tested models. *Note:* For the sake of clarity, errors not shown

particular, 1-parameter (1PL) and 2-parameter (2PL) logistic models with one and two underlying dimensions were estimated. The parameterization used was in the slope-intercept form, $a\theta + c_k$, more appropriate with multidimensional models than the traditional form, $a(\theta - b_k)$, where c_k are the intercept parameters and b_k are the threshold parameters between response options. 1PL model assumes equal discrimination parameters across items. Discrimination parameter a determines the slope by which responses to the items change as a function of the level in the dimension measured, typically range from 0 to 3, and values above 1.0 are considered highly discriminant. Accuracy of measurements using information functions was also estimated. Goodness of fit was evaluated using -2 log likelihood, Akaike information criterion (AIC), the Bayesian information criterion (BIC), and M2 statistics and its associated root-mean-square error of approximation (RMSEA) values (Cai et al. 2006). The information criteria are useful for model comparisons, with lower values indicating better performance of a model (Raykov and Marcoulides 2011). IRT models were used as they also present some psychometric advantages in some aspects over the CTT models. Specifically, IRT offers sample-independent item parameters, which partially overcomes the relative specificity of the studied sample, and information functions that reveal the reliability of the scale at the different levels

of the measured dimension, rather than offering a single (point) estimate of reliability (Zickar and Broadfoot 2009).

Additionally, several other statistical analyses were performed in SPSS 22. First, classical test theory estimates of internal consistency of the scale (alpha) and the items (item-total corrected correlation) were estimated. And second, zero-order correlations among the DJGLS and criteria were also calculated in SPSS 22 to test for convergent and criterion-related validity.

Results

Competitive structural models

In order to explore the dimensionality of the Spanish version of the DJGLS, several competitive CFAs were specified, all of them based on then different factorial structures found in the literature. The CFA models were: Model 1, a single factor of loneliness underlying all items; Model 2, two factors of emotional and social loneliness (negative vs. positively worded items); Model 3, a bifactor model in which a general trait (loneliness) is assumed to underlie all items, but also domain-specific uncorrelated factors (emotional and social loneliness) are proposed; Model 4, one trait (loneliness) underlying all items plus a method

Table 1 Goodness-of-fit indexes for the CFA tested models

Model	χ^2	df	p	CFI	RMSEA	10% CI
1. One trait (loneliness) factor	219.64	44	<.0001	.907	.109	[.095–.124]
2. Two factors (social and emotional loneliness)	75.33	43	.001	.983	.048	[.029–.065]
3. Bifactor	39.52	33	.201	.997	.024	[.000–.049]
4. One trait (loneliness) factor and a (negative) method factor	57.69	38	.021	.990	.039	[.016–.059]

Table 2 Standardized factor loadings for all the tested models

Item	Loadings (λ)				
	Model 1	λ Model 2	λ Model 3	λ Model 4	
1	.405	.486	.440	.287	.489
2	.694	.723	.540	.456	.530
3	.877	.901	.584	.678	.577
4	.540	.650	.577	.502	.649
5	.701	.743	.331	.753	.325
6	.734	.769	.526	.540	.516
7	.584	.698	.669	.150	.693
8	.643	.762	.848	–.19	.765
9	.787	.816	.466	.681	.460
10	.851	.865	.557	.659	.547
11	.606	.731	.675	.35	.729

Model 1, one trait (loneliness) factor; Model 2, two factors (social and emotional loneliness); Model 3, bifactor; Model 4, one trait (loneliness) factor and a (negative) method factor

(response bias) factor associated with the negatively worded items. Figure 1 shows all the proposed models.

Table 1 shows goodness-of-fit indexes for all models. The one-factor solution fits the data poorly. Models 2, 3 and 4 had excellent fit indexes, but Models 3 and 4 were superior. Nevertheless, given that three of the models fitted the data well at the overall level, a careful examination of factor loadings is needed. Standardized factor loadings are listed in Table 2.

Factor loadings for Model 2 are not significantly larger than those in the one-factor solution. Model 3's loadings showed that social loneliness (second specific dimension in the bifactor model) did not hold, explaining very little additional variance. In other words, Model 3 almost

Table 4 Means, standard deviations, item discriminations (a), intercepts (c) and corrected item–total correlations (r_{it}) of the 11 items in the DJGLS

Item	Mean	SD	r_{it}	a_1	a_2	c_1	c_2
1	0.51	0.58	.28	1.00	0.05	–0.21	–3.25
2	0.43	0.65	.52	1.10	1.36	–0.84	–3.26
3	0.22	0.47	.58	1.70	2.73	–2.95	–6.97
4	0.36	0.56	.35	1.73	–0.00	–1.05	–4.12
5	0.61	0.72	.46	0.66	2.29	–0.19	–2.96
6	0.52	0.71	.57	1.07	1.62	–0.71	–3.00
7	0.91	0.69	.44	1.68	0.24	1.21	–2.04
8	0.69	0.69	.51	1.69	0.43	0.33	–2.65
9	0.35	0.60	.55	1.17	2.34	–1.63	–4.34
10	0.14	0.40	.53	1.53	2.45	–3.83	–6.50
11	0.45	0.55	.46	2.01	0.22	–0.46	–4.52

a_1 = discrimination parameters in the first dimension; a_2 = discrimination parameters in the second dimension

reduced to Model 4, a single dimension of loneliness plus a method factor associated with the negatively (loneliness) worded items, as repeatedly found by the authors of the scale. In sum, the best-fitting models cast doubt on the unidimensionality of the scale and point out toward the presence of a second underlying factor associated with the negatively worded items (emotional loneliness items).

Item response theory models

Unidimensional and bidimensional 2PL and 1PL (Rasch) models were estimated. Fit statistics are listed in Table 3. The best-fitting model was clearly the bidimensional 2PL model, with lower values in all indices.

Table 3 Fit statistics for the graded response models

Model	–2LL	AIC	BIC	M2	df	p	RMSEA
Unidimensional							
1PL	5235.97	5281.69	5369.69	536.56	219	<.001	.07
2PL	5173.06	5239.06	5364.93	467.10	209	<.001	.06
Bidimensional							
1PL	5235.97	5283.97	5375.51	532.96	218	<.001	.07
2PL	5052.15	5140.15	5307.97	314.67	198	<.001	.04

Fig. 2 Test information functions for **a** the 1PL and **b** 2PL models

Item discrimination and intercept estimates are presented in Table 4. All items had discrimination values above 1.0 in the first dimension, with the exception of item 5. However, it is also clear that all the negatively worded items (2, 3, 5, 6, 9 and 10) also had large discriminant parameters in the second dimension. These estimates reinforce the results of the CFA models, as it was clear that two dimensions underlie to these particular items.

The total information curves (TIC) were also examined for both the 1PL and 2PL models, see Fig. 2 for TIC and Standard Errors. A close look at Fig. 2 made clear that the 2PL model gave much more information than the 1PL model across the range of theta (the latent construct, loneliness). This again reinforces the conclusion that the 2PL better represents the data than the 1PL model.

Reliability

CRI for the total scale (loneliness) was .89. Table 4 offers means, standard deviations and corrected item–total correlations. In general, all items were homogeneous enough with the whole scale. Test information curve for 2PL model offers information about the reliability of the scale across the different levels of loneliness.

Criterion and convergent validity

A different and well-established measure of loneliness, the UCLA-3, was used as an external criterion of convergent validity. The correlation between the DJGLS and UCLA-3

was positive, large and statistically significant ($r = .68$, $p < .01$). Social support was also, as expected, highly correlated with the DJGLS ($r = -.66$, $p < .01$). In any case, these results on criterion and convergent validity were calculated with zero-order correlations among the DJGLS and UCLA-3 and Social support (Duke's scale). Therefore, the method effect found in the scale may confound the relationship. Accordingly, two more CFA in which UCLA-3 and Duke were estimated together with the DJGLS with the method effect modeled. With this specification, the correlation among the substantive loneliness factor in the DJGLS and loneliness and social support is free of method effects.¹ The CFA in which both measures of loneliness (DJGLS and UCLA-3) are modeled fits the data well: $\chi^2(95) = 171.25$, $p < .001$, RMSEA = .049 90% CI [.037–.061], and CFI = .953. In this CFA, the latent correlation between the DJGLS and UCLA-3 loneliness factors was .643 ($p < .001$). Another CFA was estimated which modeled the DJGLS (and its method factor) together with social support as measured with Duke's scale. This CFA also fits the data well: $\chi^2(95) = 171.25$, $p < .001$, RMSEA = .049 90% CI [.037–.061], and CFI = .953. The latent correlation between the DJGLS loneliness factor and social support was $-.673$ ($p < .001$).

¹ For the shake of parsimony, both the UCLA-3 and Duke's scale have been modeled with five and four item parcels, respectively.

Conclusions and discussion

The aim of this research was to offer evidence on the psychometric properties of the Spanish version of the DJGLS in a sample of Spanish older adults. This scale has been primarily used as a unidimensional measure of loneliness. However, our results (and others as well) point out that the scale is fundamentally unidimensional, but with minor method effects associated with negatively worded items, something common in many scales (Dalal and Carter 2015). In our opinion, this is one of the main contributions of this paper, as we should try to avoid these method effects, warn researchers using this scale about them, and future studies should try to better control for them. This is especially true since all negatively worded items belong to the emotional theoretical dimension of loneliness.

Originally developed as a Rasch scale (de Jong Gierveld and Kamphuis 1985), subsequent validations have either used IRT models (Buz and Prieto 2013) or CTT models (in particular confirmatory factor analysis) (Buz et al. 2014; de Jong Gierveld and van Tilburg 2010; Penning et al. 2014). IRT approach has the advantage that it allows for more realistic assumptions about measurement error (Embretson and Reise 2000), but it is not free of shortcomings. In particular, Zickar and Broadfoot (2009) highlight the need for large sample sizes and the strong assumption about unidimensionality as IRT shortcomings. They also indicated that there are extremely useful applications available within the CTT framework, such as structural models, that are not available within the IRT models. Specifically, the CFA framework can aid to test for unidimensionality and equal discrimination parameters. In other words, psychometric results from both factor analysis framework (i.e., classical test theory) and IRT framework complement each other. Current research has used both approaches to reinforce the conclusions.

In the present study, competitive CFA models have been tested, and the best-fitting model was unidimensional with a method factor associated with the negatively worded items. This result is in line with most available literature both for the Spanish version of the scale (Buz et al. 2014) and for other versions (Grygiel et al. 2012; Moorer and Suurmeijer 1993; van Tilburg and Leeuw 1991). It is pretty clear from this result that strict unidimensionality is not tenable, as a second latent variable seems to underlie the negatively worded items.

With all the information from the competitive CFA models, two IRT models, the 2PL and the 1PL, were calculated. Both unidimensional and multidimensional (two dimensions) models were estimated. Again fit indices and information functions favored the 2PL model over the more restrictive 1PL (Rasch) model, and again the best-fitting model was bidimensional. With the 2PL model, the

sumscore is no longer a sufficient statistic for the latent loneliness estimate. The best-fitting IRT model was a 2PL model with two dimensions, which reinforces the results of the CFA models. The second dimension was clearly apparent in the negatively worded items. With the parameter estimates at hand, some items have very high difficulties. In particular, item 3 “I experience a general sense of emptiness” and item 10 “I often feel rejected” had large item difficulties (also item 9 “I miss having people around me”), which means that the person that answers these questions must have a deep sense of loneliness (probably clinical) to agree with the item. This same result can be easily observed, not for the individual items, but for the scale as a whole, when the TIF is interpreted, as maximum information is given at high levels of loneliness. That is, according to our results, the DJGLS is better suited for its use in samples of people with high levels of loneliness, rather than for the general population.

Finally, the results of the reliability and convergent and discriminant validity of the DJGLS suggest that it is very adequate in this sample. In sum, current results showed that the DJGLS measured a single factor of loneliness, confounded probably by method bias, with adequate levels of reliability and validity.

Nevertheless, this study is not free of limitations and weaknesses. Firstly, the sample was somewhat specific, as it included exclusively older adults who were attending Lifelong Learning programs. Therefore, their levels of activity and cognitive functions were presumably higher than were those of other elderly groups, which could have contributed for lower levels of loneliness, as shown in the results. Although the use of IRT models, a type of psychometric model that gets sample-independent parameter estimates, may help, there is a need for further analysis with different samples of older adults and other samples at risk of suffering loneliness. A second limitation of this study is that Models 3 and 4 both involve a component that is identically specified, but interpreted either as another substantial content-related (emotional loneliness) or a method (negatively worded items) factor. This distinction between unwanted method-variance and content-related, domain-specific, additional variance should be theoretically argued for in greater detail. This indicates a gap in the loneliness research area that could be solved by designing new scales to cope with these problems. Unless some negatively items were formulated to tap the social loneliness dimension and some positively worded items were formulated to tap the emotional one, the magnitude of the confounding is not be empirically estimable.

Regardless of the study limitations, some strengths should also be highlighted. Firstly, the factor validity study presented in this paper has tested all the competitive models available in the literature as explanations for its underlying

structure. Testing the 2PL model as well as the 1PL (Rasch) model to this data is also a strength of this article as there was strong empirical evidence that the 2PL model could be more adequate for this scale than the previously used 1PL model. A third strength is the combination of both CCT and IRT models to widen our understanding of the psychometric properties of the DJGLS. Therefore, this innovative research can contribute to enrich the evidence available about an important and widely used instrument for measuring such a serious phenomenon, as the older adults' feelings of loneliness.

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Appendix

See Table 5.

Table 5 Original English and Spanish translated items of the DJGLS used in this research

Items	
1	There is always someone I can talk to about my day-to-day problems [Siempre hay alguien con quien puedo hablar de mis problemas diarios]
2	<i>I miss having a really close friend</i> [Echo de menos tener un buen amigo/a de verdad]
3	<i>I experience a general sense of emptiness</i> [Siento una sensación de vacío a mi alrededor]
4	There are plenty of people I can lean on when I have problems [Hay suficientes personas a las que puedo recurrir en caso de necesidad]
5	<i>I miss the pleasure of the company of others</i> [Echo de menos la compañía de otras personas]
6	<i>I find my circle of friends and acquaintances too limited</i> [Pienso que mi círculo de amistades es demasiado limitado]
7	There are many people I can trust completely [Tengo mucha gente en la que confiar completamente]
8	There are enough people I feel close [Hay suficientes personas con las que tengo una amistad muy estrecha]
9	<i>I miss having people around me</i> [Echo de menos tener gente a mi alrededor]
10	<i>I often feel rejected</i> [Me siento abandonado/a a menudo]
11	I can call on my friends whenever I need [Puedo contar con mis amigos/as siempre que lo necesito]

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