

Exploring the assessment of Adjustment Disorders: Differences between a general and a clinical sample

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Abstract

Background: Adjustment Disorders (AjD) are one of the most prevalent psychological problems in primary and hospital care. It is necessary to have evidence-based instruments to help professionals diagnose and better understand this problem, which has been little studied. This study presents an adaptation of the Inventory of Complicated Grief for the assessment of AjD symptoms, referred to as the Inventory of Stress and Loss (ISL), and explores the differences in the response to stressful situations between general and clinical Spanish populations. **Methods:** The general sample included 208 participants, and the clinical sample 91 patients with AjD. **Results:** Results showed that the ISL has high internal consistency. Confirmatory factor analysis showed one single factor, as in the original questionnaire. With respect to concurrent validity, the ISL correlated positively with the STAI-T. Finally, significant differences were found in the total score on the questionnaire between the clinical and general samples, and between men and women in the general sample. **Conclusions:** Results suggest that the ISL is a simple, useful assessment tool that exhibits good psychometric properties and makes it possible to differentiate normal reactions to a stressful situation from pathological reactions.

Keywords: Assessment, validation, stress-related disorders, adjustment disorders, complicated grief.

Resumen

Explorando la evaluación de los Trastornos Adaptativos: diferencias entre una muestra general y clínica. Antecedentes: los Trastornos Adaptativos (TA) son uno de los problemas psicológicos más prevalentes en atención primaria y hospitalaria. Necesitamos disponer de instrumentos basados en la evidencia que ayuden a los profesionales a diagnosticar y a atender mejor este problema tan poco estudiado. Este estudio presenta la adaptación del Inventario de Duelo Complicado para la evaluación de los síntomas del TA, denominado Inventario de Estrés y Pérdida (IEP), y explora las diferencias en la respuesta a situaciones estresantes entre la población general y clínica española. **Métodos:** la muestra general incluyó 208 participantes, y la muestra clínica 91 participantes con TA. **Resultados:** los resultados mostraron que el IEP tiene una alta consistencia interna. El análisis factorial confirmatorio mostró un único factor, como el cuestionario original. En cuanto a la validez convergente, el IEP correlacionó positivamente con el STAI-R. Finalmente, se encontraron diferencias significativas en la puntuación total del cuestionario entre la muestra general y clínica, y entre hombres y mujeres de la muestra general. **Conclusiones:** los resultados sugieren que el IEP es una herramienta de evaluación simple y útil que muestra buenos resultados psicométricos y hace posible diferenciar las reacciones normales ante un acontecimiento estresante de las patológicas.

Palabras clave: evaluación, validación, trastornos relacionados con el estrés, trastorno adaptativo, duelo complicado.

People frequently face stressful situations (e.g., the breakup of a sentimental relationship, family problems, illnesses, etc.), and they often get over them in a short period of time. However, sometimes these events are not coped with adequately. Adjustment Disorder (AjD) is defined as a maladaptive reaction, in mood or behavior, to a specific stressful event (Strain et al., 1998). The conceptualization of this disorder was changed in the DSM-5 (APA, 2013) by including it in the category of “disorders related to trauma and stress”, along with the important diagnosis of Posttraumatic Stress Disorder, among others. This classification may lead to increased

interest in AjD in the scientific community. Moreover, the ICD-11 (WHO, 2018) also includes this disorder in the category of “disorders specifically associated with stress”, and it specifies the response to the stressor in more detail, specifically focusing on the notion that “the reaction to the stressor is characterized by symptoms of preoccupation like excessive worry, recurrent and distressing thoughts about the stressor or constant rumination about its implications”. AjD has a high prevalence (Yaseen, 2017) and is one of the most prevalent psychological problems in primary and hospital care (Carta, Balestrieri, Murru, & Hardoy, 2009; Blázquez & Cruzado, 2016). Furthermore, it is associated with significant impairments in social and work functioning, causing a high percentage of sick leaves (Van der Klink, Blonk, Schene, & van Dijk, 2003).

Despite the changes in the classification systems, the symptom structure proposed for AjD is still ambiguous (Kazlauskas, Zelviene, Lorenz, Quero, & Maercker, 2018), a fact that complicates

its diagnosis, assessment and treatment. Moreover, there are very few specific instruments to assess AjD. One of the most recent ones is the *Adjustment Disorder New Module* (ADNM-20), used in the general population by Lorenz, Bachem & Maercker (2016), which assesses with 19 items the different AjD symptoms based on the ICD-11: the two core symptom clusters (“preoccupations” and “failure to adapt”) and four associated feature clusters (avoidance, depression, anxiety, and impulsivity).

Considering the aforementioned, there is a need to develop evidence-based assessment instruments that help clinicians to differentiate normal reactions to a stressful event from excessive ones. These measures would be useful not only in diagnosing this problem, but also in better understanding AjD. A similar objective was outlined by Prigerson et al. (1995) for complicated grief (CG) by looking for an assessment instrument that could differentiate maladaptive symptoms of grief (CG) from normal reactions after the death of a loved one. They developed a scale to measure maladaptive symptoms of loss experienced after death, the *Inventory of Complicated Grief* (ICG). This questionnaire has 19 items rated on a 5-point Likert scale (from 0 = “never” to 4 = “always”) and assesses cognitive, emotional, and behavioral symptoms. It has shown good psychometric properties, and it has been widely used to identify clinical symptoms of grief in research (Jordan & Litz, 2014). The associations between the ICG total score, the level of self-reported depressive symptomatology (assessed by the BDI), and the Grief Measurement Scale (Jacobs, Kasl, Ostfeld, Berkman, Kosten, & Charpentier, 1987) provided evidence supporting the scale’s concurrent validity. Regarding the factorial structure, exploratory factor analyses in the original work indicated that the ICG measured a single underlying construct of CG. Later validation studies have also found this result in Confirmatory Factor Analysis (CFA) (Carmassi et al., 2014; Simon, Wall, Keshaviah, Dryman, LeBlanc, & Shear, 2011). Simon et al (2011) also found a six factor model when they tested the factorial analysis with only the clinical CG cases. Other studies suggest different symptom clusters (García, Reverte, García, Méndez, Prigerson, 2009; Li & Prigerson, 2016; Holland & Neimeyer, 2011).

Given the nonspecific symptoms established by the diagnostic manuals, we need to develop instruments that can help the clinician to establish the diagnosis of AjD. People with AjD have to deal with the loss that triggers the stressful event (e.g., a partner, a job, a good health condition), so an adaptation of the ICG could be helpful to assess the symptoms of loss in this disorder. The aim of this study is to present the adaptation of the ICG for the assessment of AjD symptoms, and to explore the differences in the response to stressful situations between general and clinical Spanish populations.

Method

Participants

The sample was composed of two groups: a non-clinical group (NCG) and an AjD group (AjDG). The NCG consisted of 208 participants (62 men; 146 women), with a mean age of 28.17 years (SD= 10.91). The inclusion criteria were having suffered a stressful event in the past 3 months, and that this event was not the death of a loved one. This period of time was established following the AjD criteria of the DSM-IV-TR, which was used at the time the present study was conducted.

The AjDG included 91 patients (23 men; 68 women), with a mean age of 30.88 years (SD= 9.42). All the participants in this group were patients at the Emotional Disorders Clinic at Universitat Jaume I of Castellón (Spain). The presence of an AjD was assessed with the Diagnostic Interview for Adjustment Disorders (Andreu-Mateu, Botella, Baños, & Quero, 2008), a semi-structured interview, based on the ICD-10 and DSM-IV-TR, for the diagnosis of AjD. This interview is currently under validation process. The AjD diagnostic subtype and the stressful situations experienced by the clinical population are shown in Table 1.

Instruments

- *Inventory of Stress and Loss (ISL)*. An adaptation of the ICG (Prigerson et al., 1995) was made in order to assess to what extent the loss of the person/situation (e.g., the loss of a partner, friends, life status or health) as a result of the stressful event interferes in the individual’s life. A back translation procedure was conducted on the original version of the ICG by a native English-speaking translator. The ISL was composed of the same items included in the ICG, but replacing the words referring to the “deceased person” with words referring to the “person/situation” that was lost due to a stressful event. Two items were removed because they were not relevant to assessing AjD (“*I hear the voice of the person who died talking to me*” and “*I see the person who died standing in front of me*”). Therefore, the final questionnaire included 17 items assessing different situations that interfere in a person’s life on a scale ranging from 0 (“Never”) to 4 (“Always”). The instructions included in the questionnaire for the participants were the following: “*Please, mark with a cross the answer that best describes how you feel at the moment regarding the loss of the person (eg, a couple) or the situation (eg, a job, health) as a result of the stressful event that has happened to you*”. See the Spanish version in annex.
- *Beck Depression Inventory (BDI-II)*; Beck, Steer, & Brown, 1996, Spanish adaptation by Sanz, Navarro, & Vázquez, 2003). The questionnaire includes 21 items to assess the severity of depression, with 4 response alternatives ranging from 0 to 3. It shows adequate internal consistency

Table 1
Adjustment disorder subtypes and stressful event type in the AjDG

AjD Subtype	Frequency	Percentage
Depressed mood	14	15.4
Anxiety	8	8.8
Mixed anxiety and depressed mood	68	74.7
Mixed disturbance of emotions and conduct	1	1.1
Stressor		
Break up, separation or divorce	33	36.3
Own health problems/Health problems in a family member	18	19.8
Problems at work/school	13	14.3
Family problems	25	27.5
Other stressful events	2	2.2
AjDG: Adjustment Disorder Group		

(Cronbach's alpha ranges from 0.76 to 0.96). Test-retest reliability is 0.8. The psychometric properties of the Spanish adaptation show high internal consistency: a Cronbach's alpha of 0.87 in the general population (Sanz, Perdigón, & Vázquez, 2003) and 0.89 for the clinical population (Sanz, García-Vera, Espinosa, Fortún, & Vázquez, 2005).

- *State-Trait Anxiety Inventory (STAI-T)*; Spielberger, Gorsuch, & Lushene, 1970). This is a 20-item questionnaire to assess anxiety as a trait. Internal consistency coefficients in the validation of the questionnaire ranged from .86 to .95. Test-retest reliability ranged from .65 to .75 (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Similar psychometric results were found for the Spanish adaptation (Spielberg, Gorsuch, & Lushene, 1982).

Procedure

NCG participants were recruited through the Survey Monkey platform using a link sent by e-mail. This link was sent to students from Universitat Jaume I. Completing the survey and sending the data meant that the participants agreed to participate and that their data could be used for research purposes. They were asked to fill out the ISL if they had experienced a stressful event in the past 3 months and they did not complete any other questionnaire.

AjDG participants completed the ISL, BDI-II and STAI-T questionnaires, among other instruments, in the assessment sessions they underwent before receiving psychological treatment in the Emotional Disorders Clinic at Universitat Jaume I. It

should be noted that not all the patients completed the STAI-T questionnaire (n= 40) nor the BDI-II (n= 90). They took part in two different clinical trials on the efficacy of a CBT treatment supported with virtual reality. They were informed about the investigation purposes and signed an informed content to participate in the study.

Data analysis

Internal consistency of the questionnaire was analyzed by using Cronbach's α for the total score on the questionnaire, and it was calculated separately for the NCG and AjDG.

Confirmatory Factor Analysis (CFA) was conducted using Mplus v.8 (Muthén & Muthén, 1998-2017) given that the ICG has been previously validated. Following the original authors and the works by Carmassi et al. (2014) and Simon et al. (2011), a mono-factorial structure was tested. WLSMV estimation (Weighted Least Square Mean and Variance corrected) was conducted as the variables were not multivariate normal and that the items were categorical. Criteria for acceptable model fit were CFI above .90, and RMSEA and/or SRMR below .08 (Marsh, Hau, & Wen, 2004).

Student t tests were conducted between the NCG and AjDG, and between men and women of the clinical and general samples, separately, to test whether there were differences in the total score of the questionnaire.

To examine convergent validity, bivariate correlations were performed between the ISL and a measure of anxiety (STAI-T) and depression (BDI-II).

Table 2
Descriptive statistics, item-total correlation and Cronbach's alpha for the ISL in the NCG

Item	Mean	Standard deviation	Cronbach's alpha if the item is removed	Item-total correlation	Skewness	Kurtosis
1. I think about this person/situation so much that it's hard for me to do the things I normally do	1.7885	.89737	.913	.621	.106	-.098
2. Memories of the person/situation upset me	2.1298	.98171	.915	.546	-.326	-.091
3. I feel I cannot accept the loss of this person/situation	1.7308	1.11408	.911	.684	.041	-.785
4. I feel myself longing for the person/situation lost	2.1587	1.14581	.912	.652	-.179	-.635
5. I feel drawn to places and things associated with the person/situation	1.6538	1.13588	.917	.485	.153	-.843
6. I can't help feeling angry about the loss of this person/situation	1.8510	1.14710	.913	.620	.063	-.734
7. I feel disbelief over what happened	1.7163	1.19634	.914	.587	.051	-.954
8. I feel stunned or dazed over what happened	1.6394	1.19167	.910	.722	.158	-.945
9. Ever since I lost this person/situation, it is hard for me to trust people	1.3798	1.24915	.913	.624	.524	-.783
10. Ever since I lost this person/situation, I feel as if I have lost the ability to care about other people or I feel distant from people I care about	1.1490	1.12155	.911	.679	.657	-.564
11. I feel pain or other symptoms that cause me discomfort since the loss occurred	1.0240	1.08766	.915	.541	.907	.044
12. I go out of my way to avoid reminders of the person/situation	1.4375	1.21819	.913	.624	.390	-.854
13. I feel that life is empty without the person/situation	1.0433	1.02766	.911	.711	.641	-.530
14. I feel that it is unfair that I should live after suffering this loss	.3317	.70919	.918	.393	2.377	5.786
15. I feel bitter over this person/situation loss	1.5192	1.16288	.912	.666	.269	-.760
16. I feel envious of others who have not suffered a loss	1.2356	1.30672	.917	.501	.591	-.991
17. I feel lonely a great deal of the time ever since I lost this person/situation	1.2548	1.17850	.913	.616	.512	-.876

ISL: Inventory of Stress and Loss; NCG: Non-clinical group

Results

Internal consistency

For NCG, the Cronbach's alpha was 0.92, and each item's correlation with the total score ranged between 0.39 and 0.72. As for AjDG, the alpha coefficient obtained was 0.85, and each item's correlation with the total score ranged between 0.27 and 0.64. The results for each item as well as other descriptive analyses are shown in Tables 2 and 3.

*Factorial analysis**Concurrent validity*

A positive and significant correlation ($r = .433, p=.05$) was found with the STAI-T, but the correlation with the BDI did not reach statistical significance ($r = .201, p=.057$).

Discussion

The aim of this study was to present the adaptation of the ICG for AjD and explore the differences in the response to stressful situations between general and clinical Spanish populations. The ISL showed excellent internal consistency for the general population

Table 3
Descriptive statistics, item-total correlation and Cronbach's alpha for the ISL in the AjDG

Item	Mean	Standard deviation	Cronbach's alpha if the item is removed	Item-total correlation	Skewness	Kurtosis
Item 1	2.4066	.86895	.843	.491	-.173	-.241
Item 2	3.1429	.94952	.843	.472	-1.168	1.330
Item 3	2.4396	1.19451	.836	.600	-.634	-.414
Item 4	2.5495	1.31879	.835	.600	-.689	-.629
Item 5	1.4396	1.29279	.850	.324	.515	-.815
Item 6	2.3516	1.19605	.842	.476	-.477	-.595
Item 7	2.2637	1.34854	.844	.435	-.274	-1.050
Item 8	2.3736	1.22609	.839	.536	-.422	-.564
Item 9	2.4286	3.49648	.849	.349	-.246	-1.116
Item 10	1.7473	1.21649	.842	.465	.199	-.893
Item 11	1.8352	1.13787	.848	.350	-.223	-.830
Item 12	2.1538	1.30744	.852	.271	-.291	-.951
Item 13	1.8462	1.31591	.835	.603	-.039	-1.205
Item 14	.3407	.80581	.849	.290	2.295	4.083
Item 15	2.1758	1.27011	.834	.635	-.239	-.933
Item 16	1.6703	1.49855	.848	.383	.179	-1.451
Item 17	2.2527	1.20732	.835	.624	-.309	-.806

AjDG: Adjustment Disorder Group; ISL: Inventory of Stress and Loss

CFA results showed a reasonably fit: $\chi^2(119) = 504.20, RMSEA = .104$ CI[.095 - .114], CFI = .93, SRMR = .061. RMSA was higher than expected, but fit was adequate according to both the CFI and the SRMR. Having into account that also the parameter estimates were all statistically significant and very large, we may conclude that the model fits adequately. Factor loadings are presented in Table 4.

Differences between the NCG and AjDG

The results showed that there were statistically significant differences, $t(297) = -6.577, p = .000$, with AjDG participants scoring higher ($M = 35.08; SD = 11.24$) than NCG participants ($M = 25.04; SD = 12.51$).

Gender differences

For NCG, results showed that females ($M = 26.89, SD = 12.36, N = 146$) scored significantly higher than males ($M = 20.69, SD = 11.76, N = 62$), $t(206) = -3.348, p = .001$, but there were no significant differences in AjDG between men ($M = 32.70, SD = 11.81, N = 23$) and women ($M = 35.88, SD = 11.02, N = 68$).

Table 4
Factor loadings

	One-factor
Item 1	.702
Item 2	.670
Item 3	.776
Item 4	.740
Item 5	.412
Item 6	.649
Item 7	.653
Item 8	.778
Item 9	.669
Item 10	.726
Item 11	.611
Item 12	.613
Item 13	.793
Item 14	.468
Item 15	.755
Item 16	.519
Item 17	.746

and an adequate Cronbach's alpha for the clinical population. These high alpha coefficients obtained in each population allow us to conclude that the questionnaire is a reliable measure and shows high homogeneity across its items. However, it is necessary to be careful with two items. Item 14 showed very low item-total correlation in both samples and the analyses of skewness and kurtosis showed that this item was skewed right in both samples, meaning that participants did not feel represented with it. Results suggest that this item seems not to be adequate to assess AjD symptoms and it should be excluded from the questionnaire. A possible explanation for this could be that the feeling of unfairness continuing living when the person is not here anymore is a characteristic symptom of CG, but this is not applicable to AjD since the loss of a person/situation does not involve death of a love one. Item 12 showed a low item-total correlation in the AjDG, however, the other results obtained for this item do not suggest that the scale would improve its psychometric properties excluding it. Future studies should review this item.

On the other hand, the confirmatory factor analysis showed an acceptable fit to the theoretical model of a unique factor as in the original questionnaire used for this adaptation (Prigerson et al., in 1995) and other studies of the inventory (Carmassi et al., 2014; Simon et al., 2011). Items showed good factor loadings, all of them exceeding 0.4 and being significant.

Significant differences were found in the total score on the questionnaire between men and women in the general population, with women suffering more after facing a stressful event. These differences were not found in the clinical population, suggesting that when the disorder has developed, there might not be any differences between men and women in the severity of the symptoms. These results do not agree with those from other studies, where a higher proportion of women were found among patients with AjD (Pelkonen, Marttunen, Henriksson, & Lönnqvist, 2006; Quero et al., 2017), but are supported by recent prevalence studies that found no association between gender and AjD (Yaseen, 2017).

Finally, concurrent validity was tested with a measure of depression and anxiety, following the original study and its different adaptations (e.g., García et al., 2009; Carmassi et al., 2014). In this study, the ISL correlated positively only with the STAI-T. However, it should be remembered that data from this measure was only available for some participants from the AjDG (n = 40).

The absence of significant correlations with the BDI could be due to the fact that, by definition, AjD is a category that may include a mixture of emotional symptoms. Indeed, most of the patients in the AjDG showed mixed depressive and anxiety symptoms. Thus, anxiety symptoms could mask depressive symptoms. The absence of a significant result could also be explained by the low sample size of the present study. Further research is necessary to explore whether in a larger sample the correlation with the BDI would reach statistical significance. Future studies should also test the concurrent validity of the ISL with other questionnaire that assesses AjD as the ADN-20 since it was not available at the time this study was conducted.

To finish we would like to acknowledge some limitations of our study. First, one of the items (item 12) showed a very low item-total correlation in the AjDG, and so to review this item in clinical populations in future research is needed. Second, the number of men included in the AjDG in the present study was quite small and might not be representative; therefore we cannot establish any statements with the fact that significant differences were not found between genders in the clinical population. Furthermore, the size of the AjDG was lower than the size of the general sample. This aspect should be investigated in future research due to the contradictory findings regarding this issue in several studies so far. Finally, as mentioned before, we could only test the concurrent validity of the questionnaire with other measures with the participants of the AjDG. Therefore, to explore the convergent validity in larger samples is required.

In conclusion, the ISL is a simple and useful questionnaire that shows good psychometric properties and makes it possible to differentiate normal reactions to a stressful situation from pathological ones, thus facilitating the diagnosis and subsequent treatment of this disorder. The development of a specific questionnaire to assess AjD loss symptoms makes a clear contribution to the field, considering the lack of assessment instruments for this problem.

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ANNEX					
Inventario de Estrés y Pérdida (IEP). English translation of the items is available in the Table 2					
	Nunca	Raramente	A veces	A menudo	Siempre
1. Pienso tanto en esa persona/situación que me resulta difícil hacer las cosas que normalmente hago	0	1	2	3	4
2. Los recuerdos sobre la persona/ situación me producen malestar	0	1	2	3	4
3. Siento que no puedo aceptar la pérdida de esa persona/situación	0	1	2	3	4
4. Siento mucha nostalgia por la persona/ situación que he perdido	0	1	2	3	4
5. Me siento atraído por lugares y cosas asociadas a la persona/situación	0	1	2	3	4
6. No puedo evitar sentirme enfadado/a sobre la pérdida de esa persona/ situación	0	1	2	3	4
7. Siento incredulidad acerca de lo que ocurrió	0	1	2	3	4
8. Me siento aturdido respecto a lo que ocurrió	0	1	2	3	4

ANNEX					
Inventario de Estrés y Pérdida (IEP)					
	Nunca	Raramente	A veces	A menudo	Siempre
9. Desde que perdí a esa persona/ situación me resulta difícil confiar en los demás	0	1	2	3	4
10. Desde que perdí a esa persona/ situación, siento como si ya no me importase nadie más o como si me sintiera distante de aquellos que me importan	0	1	2	3	4
11. Siento dolores u otros síntomas que me producen malestar desde que se produjo la pérdida	0	1	2	3	4
12. Abandono ciertas situaciones para evitar las cosas que me recuerdan a la persona/ situación	0	1	2	3	4
13. Siento que la vida está vacía sin esa persona/situación	0	1	2	3	4
14. Siento que es injusto que yo viva después de sufrir esta pérdida	0	1	2	3	4
15. Siento amargura respecto a la pérdida de la persona/situación	0	1	2	3	4
16. Siento envidia de otras personas que no han sufrido una pérdida.	0	1	2	3	4
17. Me siento solo/a gran parte del tiempo desde que perdí a esa persona/situación	0	1	2	3	4

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