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Factor structure and concurrent construct validity of ICG among bereaved substance users

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Background. It is important to understand the repercussions of Complicated Grief (CG) symptoms in addictions. There are no studies to date which have examined the psychometric properties of any test of bereavement among people with substance use disorder (SUD). Participants with SUD can have a different experience of bereavement from other people and therefore could respond differently to the usual instruments which assess CG symptomatology.

Method. This study aims to establish the psychometric properties of the Spanish adaption of the Inventory of Complicated Grief (ICG) in a sample of 196 bereaved drug dependent patients.

Results. Results indicate that the internal consistency of the Spanish ICG was high (Cronbach's alpha=0.922). The Spanish IDC shows good psychometric properties and it is a useful tool to discriminate adaptive reactions to symptomatology of complicated grief. Four factors were identified: discomfort, non-acceptance, loneliness-isolation and presence of deceased. Those factors showed a good internal reliability (minimum Cronbach's alpha=0.78).

Conclusions. The results of the current study confirm the multidimensionality of CG's symptomatology construct.

Keywords: Substance use disorder, Complicated grief, Reliability, Validity

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Estructura factorial y validez de constructo concurrente del IDC entre usuarios de drogas en duelo

Introducción. Es importante entender las repercusiones del duelo complicado (DC) en el ámbito de las adicciones. Hasta la fecha no hay estudios que hayan examinado las propiedades psicométricas de ningún instrumento de evaluación del duelo en las personas con trastorno por uso de sustancias (TUS). Los participantes con TUS pueden tener una experiencia del duelo diferente a la de otras personas sin patología psiquiátrica y, por tanto, podrían responder de manera diferente a los instrumentos habituales que evalúan sintomatología del duelo complicado.

Metodología. Este estudio tiene como objetivo establecer las propiedades psicométricas de la adaptación española del Inventario de Duelo Complicado (IDC) en una muestra de 196 pacientes dependientes de drogas en duelo.

Resultados. Los resultados indican que la consistencia interna del ICG español fue alta (alfa de Cronbach=0,922). La adaptación española del ICG en la muestra con pacientes con TUS muestra buenas propiedades psicométricas y es una herramienta útil para discriminar reacciones de adaptación a la sintomatología de duelo complicado. Se identificaron cuatro factores: el malestar, la no aceptación, la soledad-aislamiento y la presencia del difunto. Esos factores mostraron una buena fiabilidad interna (alfa de Cronbach mínimo de 0,78).

Conclusiones. Los resultados de este estudio confirman la multidimensionalidad del constructo sintomatología del duelo complicado.

Palabras clave: Trastorno por uso de sustancias, Duelo complicado, Fiabilidad, Validez

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INTRODUCTION

Bereavement is a universal experience to which the majority of individuals adjust adequately¹. A minority of bereaved people develop symptoms of Complicated Grief (CG)^{2,3}. CG has been defined as a clinically-significant deviation from the cultural norm (i.e., that which could be expected to pertain, according to the extremity of the particular bereavement event) in either (a) the time course or intensity of specific or general symptoms of grief and/ or (b) the level of impairment in social, occupational, or other important areas of functioning⁴. In DSM-5, CG is labelled "Persistent Complex Bereavement Disorder", and is integrated in the appendix listing "conditions for further study". At this point in time, more research is needed to better understand of the phenomenon⁵. For this reason, the use of validated measures to assess symptoms of CG in clinical samples would be especially relevant to distinguish it from other disorders such as depressive disorders or PTSD⁶.

One of the main instruments validated in Spanish to assess symptoms of CG is the Inventory of Complicated Grief (ICG)⁷. The ICG is a 19-item questionnaire which shows high internal consistency with Cronbach's alpha of 0.94 and test-retest reliability of 0.80 after six months⁷. This test was designed to focus on symptoms that are characteristic for a diagnosis of CG symptomatology and associated with adverse health and mental health outcomes⁸. A score higher than 25 is an indicator of symptoms of CG. The ICG assesses symptoms of CG such as intense yearning and preoccupation with the deceased, anger and bitterness about the death, shock and disbelief, estrangement from others, hallucinations of the deceased, behavioural change, including avoidance or proximity seeking behaviour⁹. Along the same lines, an Italian study⁶ revealed a high level of internal consistency, with Cronbach's alpha of 0.947, and factor analyses noted a single-factor solution, as did Prigerson's original ICG test. The Spanish validation of ICG was conducted by Limonero et al.¹⁰ This study proved three constructs related to CG ("memories of the deceased", "feeling of emptiness" and "presence-absence of the deceased") which highlighted the multidimensionality of the concept. This validation reported high psychometric properties such as Cronbach's alpha of 0.88 and test-retest reliability of 0.81.¹⁰

CG has been assessed in general population samples, but we are unaware of any studies that have examined the CG symptomatology performance among SUD samples specifically. It is important to study CG symptomatology among SUD samples, because their experience of grief may differ from non-SUD samples. Specifically, SUD samples may be particularly vulnerable to symptoms associated with the brain's reward system. For example, recent fMRI research indicates that persons with complicated grief are more likely to activate the nucleus accumbens when reminded of the deceased¹¹. These findings suggest that persons with SUD

may be particularly vulnerable to symptoms with reward components, such as yearning.

The current study was based on bereaved drug users. The occurrence of CG among bereaved drug dependent individuals in treatment was 34.2%¹², which underlines that CG has a high presence among the SUD population than general population. In the field of substance use disorders, it is clinically relevant to study effects on an emotional level and how to deal with one of the most traumatic situations such as the loss of a significant person to improve specific and more accurate treatment. In this regard, having knowledge related to the specific characteristics of the instrument among drug bereaved individuals strengthens the understanding of the complexity of the symptomatology of CG.

Most broadly, persons with diagnosable mental disorders are often assumed to classify in a simple category (mental disorder) regardless of their co-morbid diagnoses, what implies a minimization of the differences between different groups of psychiatric patients. Furthermore, sometimes the study of an instrument in clinical populations confirms the psychometric strengths previously described in the general population or in patients with other mental disorder¹³. However, many studies have found that clinical instruments perform diversely in different populations. For example, the Beck Depression Scale failed to demonstrate the same psychometric properties when employed in a sample of substance users¹⁴. Thus, any instrument should be validated across specific subpopulation because researchers have to be aware about potential differences in the responses and perceptions in different groups of patients¹³.

Considering that the prevalence of CG among SUD population is more than double that of the general population and following previous studies that have examined the implementation of psychiatric diagnoses in the SUD population¹⁵ we wanted to examine the psychometric properties of the ICG among a substance user population, a group that is particularly likely to experience co-morbid psychiatric disorders, high psychosocial impairment, increased risk of violence, lower health and functional status, and poorer treatment outcomes.

The present study aims to a) analyse the factor structure of the ICG and b) examine the concurrent construct validity among bereaved drug dependent individuals with coping strategies, social support and clinical syndromes.

METHOD

Participants

The sample was based on a consecutive non-probabilistic convenience sample of 196 patients with SUD who attended

the Public Addiction Treatment Centre in Girona (Catalonia, Spain). The inclusion criteria were that 1) they had a diagnosis of alcohol, cocaine or heroin dependence carried out by clinical specialists in the centre according to DSM-IV-TR criteria, 2) they suffered a loss of a significant person (family, best friend or partner) at some time in their life, but at least a year previous to the interview, and 3) abstinence during the last month, to avoid the presence of any toxic effects of drugs.

Measures

Several socio-demographic characteristics were assessed: age, gender, marital status (single, married or with partner, separated or divorced, or widowed), education (primary, which includes education up to eight years of age, and secondary, which includes education after eight years of age, the latter also including higher education) and work status (working, retired, unemployed, or being on disability benefit).

Bereavement-related variables. We assessed what the most significant loss in their life was and how that person had died (natural or caused by illness and/or traumatic) and the time since the death.

Drug use-related variables. The diagnosis of main drug dependence (alcohol, cocaine or heroin) was established by the clinician assigned to each participant according to DSM-IV-TR criteria. We asked participants at what age they increased the consumption of their main drug as well as the method of drug administration. We assessed whether participants received psychopharmacological treatment.

CG symptomatology was assessed using the Spanish version of the Inventory of Complicated Grief (ICG)¹⁰. It consists of 19 items. Responses are provided on a 5-point likert scale to present an increase in severity (0-never, 1-seldom, 2-sometimes, 3-often and 4-always) (maximum score: 76). The highest scores corresponding to an increased likelihood of developing symptoms of CG¹⁰. The cut-off point was based on the English version of the ICG⁷. We categorised a respondent as having CG symptoms if the total score was higher than 25. The reliability (internal consistency) of the Spanish version was high (Cronbach's alpha=0.88). The test-retest reliability was measured using 30 individuals after 4 months and it was also high (0.81). The ICG convergent validity was assessed in relation to other scales (BDI; BAI and IED). The total score of ICG showed a positive and statistically significant correlation with the BDI ($r=0.43$; $p<0.001$), BAI ($r=0.243$; $p<0.01$) and nine scales of IED with significant correlations ranging between 0.217 and 0.314¹⁰.

Social support was assessed using the Spanish version of the Multidimensional Scale of Perceived Social Support MSPSS¹⁶. This self-administered test consists of 12 items in

which perceived social support is evaluated. The answers were rated on a 7-point likert scale (1: totally disagree - 7: totally agree). To validate the scale a pilot application to 12 older adults was conducted, which showed that it was necessary to make adjustments to the instrument. Then the instrument adapted to 76 adults over the Metropolitan Region was applied using SPSS for statistical analysis, which showed that the behaviour of items allowed it to be applied in its original version. The exploratory factor analysis resulted in a two-factor model, which is supported by the oblique rotation and confirmatory factor analysis¹⁶. Internal consistency (Cronbach's alpha) of the test is above 0.8 for peer group and family support perception and above 0.7 for the support of significant others. The internal consistency of the 12 items is close to 0.85.

For evaluating the coping strategies, we used the Spanish version of Coping Strategies Inventory, CSI¹⁷. The CSI is a self-administered test with 40 items which were rated on a 5-point likert scale (0: nothing - 4: totally agree). This questionnaire presented a hierarchical structure of eight strategies (problem solving, cognitive restructuring, social support, emotional expression, avoidance of problems, desiderata thinking, social withdrawal and self-criticism). Eight factors explained 61% of variance with only 40 items (compared to the original 72 items that explained 47% of the original instrument). Internal consistency coefficients were obtained between 0.63 and 0.89. Convergent validity it was found using the inter-correlations between scales and correlations with personality dispositions (NEO-FFI) and perceived effectiveness of coping¹⁷.

For the assessment of clinical syndromes we used Millon Multi-axial Clinical Inventory^{18,19}. The MCMI-III is a self-report questionnaire of 175 items with dichotomous answers (true/false), which measures 11 clinical personality patterns, 3 traits of severe personality pathology, 7 syndromes of moderate severity, 3 severe syndromes and a validity scale and 3 modifying indices. The clinical syndrome scales cover major diagnostic criteria of DSM-IV. The scores which indicate presence of clinical syndromes are equal or greater than 85. The internal consistency is 0.66 to 0.80 and the test-retest reliability for dimensional ratings of 0.85 to 0.93. The test-retest reliability for the categorical diagnosis is Kappa <0.45. It shows sensitivity 0.44-0.92 (mean=0.60) and its predictive power is 0.30 to 0.81 (mean=0.69).

Procedure

Participants who met the three inclusion criteria were informed by their therapist about potential participation in the study. If patients agreed to collaborate, the psychologist (who is the first author) called each patient to arrange an appropriate time for an interview with them. All participants were informed about the study procedure as well as terms of

confidentiality. Informed consent was obtained from all participants and the protocol was approved by the Institutional Ethics and Research Review Board of the Institut Assistència Sanitària (IAS). Data collection took place from September 2012 to June 2013.

Statistical analyses

A descriptive analysis of the study variables was carried out by means of absolute and relative frequencies for qualitative variables and by means of central tendency and dispersion measures for quantitative variables.

The presence of CG was defined as a score higher than 25 points in the ICG, which was computed as the relative frequency and 95% confidence intervals were calculated. We performed a descriptive analysis of the ICG item characteristics by means of the mean and the variance. The discriminant index was computed as the item-total Spearman correlation coefficient. In order to assess the differential item functioning (DIF) we used ordinal logistic regression models according to the procedure proposed by Zumbo²⁰. The statistical test or DIF consisted of a chi-squared test with 2 degrees of freedom of the difference between the chi-square test value for the ordinal logistic regression with each item ICG score and the chi-square test value for the model with the CG group and an interaction term²⁰. The effect size was computed as the R-squared difference values between the two ordinal logistic regression models. The ICG characteristic curve and the test information function were performed. The dimensionality of the 19 items of the ICG scale was evaluated using a Principal Component Analysis (PCA). Eigenvalues higher than 1 and the Cattell's scree plot (the eigenvalues were plotted on descending values and the graph was examined to identify the last substantial drop in the magnitude of the eigenvalues) were used to verify factor solution accuracy²¹. Items were included in a factor if their factor loading was ≥ 0.4 . Cattell's scree plot, absorption of variance and face validity of potential dimensions were used as criteria for multidimensionality. We applied the Promax oblique rotation method to relax the assumption that factors should be uncorrelated with each other. The internal consistency reliability of the scale was evaluated using alpha coefficients for ordinal data²². The concurrent construct criterion validity of the ICG factors was tested with canonical correlation analyses including the Coping Strategies scores, social support by MSPSS and clinical syndromes by MCMI-III. Statistical tests were considered to be significant with a 2 tailed p value < 0.05 . Data processing and analysis were performed using the SPSS statistical program version 21.0 for Windows and Ministep.

RESULTS

Descriptive statistics

78.1% of participants were men and most of them (94.9%) were from Spain. The mean age was 45.59 years old (SD=10.14). With regard to marital status, 37.2% were married or with partner and 32.1% of the participants were separated or divorced. Regarding addiction variables, 68.9% presented alcohol dependence as a main diagnosis, 18.4% heroin dependence and 12.8% cocaine dependence. Regarding bereavement characteristics, 53.05% lost a parent, 18.37% a sibling, 9.69% a spouse, 7.14% a friend and 5.61% a grandparent. 27.19% of the general sample reported traumatic circumstances of loss (accident, homicide, suicide or overdose). Related to the time since the loss of the significant person, 11.97 years was the media (SD=11.07). The mean scores of ICG of those participants with CG symptoms were 41.67 (SD=10.85) and the mean of those patients without symptomatology were 11.37 (SD=7.02), and the differences between the two groups were statistically significant ($F=23.14$; $p<0.001$). The mean score, the variance, the discriminant index and the DIF of each ICG item are shown in table 1. Overall, the discriminant capacity of the ICG items was high, excepting for items number 12, 15 and 16, with item-total coefficient correlation values under 0.5. Only items number 4, 6, 7, 8 and 10 showed significant DIF values, however the corresponding effect sizes were low.

Reliability and internal consistency

The internal consistency of ICG was adequate on the total scale (alpha for ordinal data=0.931). The Cronbach Alpha from the original test was 0.94 and the Spanish adaptation was 0.8.

The confirmation of the sampling adequacy was performed using the index of Kaiser-Meyer-Olkin (KMO=0.910) and Bartlett's Test of Sphericity was statistically significant ($p<0.001$). The factor analysis shows four factors related to the CG construct. The eigenvalues of each factor were high. The first factor (F1), labelled "discomfort", explains 42.34% of the variance and is comprised of items: 2, 4, 6, 7, 8, 12, 13 and 18; the second factor (F2), called "non-acceptance", explains 7.28% of the variance and includes items: 1, 3, 5, 14, 17 and 19; the third factor (F3), defined as "loneliness, isolation," explains 6.34% of the variance and covers items: 9, 10 and 11; the last factor, "presence of the deceased", (F4) explains 5.54% of the variance and is comprised of items 15 and 16 (Table 2). The figures 1 and 2 show the ICG characteristic curve and the test information function (random sample of 75 participants).

Table 1	Items characteristics of the ICG			
Item	Mean	Variance	DI*	DIF†
1	1.38	1.69	0.664	0.006 (0.324)
2	1.16	1.74	0.674	0.006 (0.306)
3	1.22	2.43	0.732	0.004 (0.403)
4	2.74	1.74	0.749	0.023 (0.009)
5	1.78	2.25	0.568	0.017 (0.081)
6	1.51	2.55	0.690	0.023 (0.016)
7	1.44	2.75	0.771	0.019 (0.013)
8	1.32	2.14	0.759	0.017 (0.022)
9	0.73	1.72	0.535	0.000 (0.962)
10	0.75	1.61	0.574	0.029 (0.012)
11	1.14	2.24	0.672	0.009 (0.192)
12	0.41	0.89	0.260	0.007 (0.450)
13	0.69	1.72	0.598	0.004 (0.557)
14	1.32	2.17	0.748	0.000 (0.903)
15	0.35	0.76	0.428	0.009 (0.305)
16	0.24	0.53	0.358	0.014 (0.191)
17	0.79	1.74	0.592	0.013 (0.132)
18	1.87	2.43	0.758	0.013 (0.057)
19	0.84	2.09	0.465	0.013 (0.188)

* Discriminant Index (item-total Spearman Correlation coefficient)
 † Differential Item Functioning (difference R-squared and p value for the Chi-square values between model with item total score vs. model with item, group and interaction)

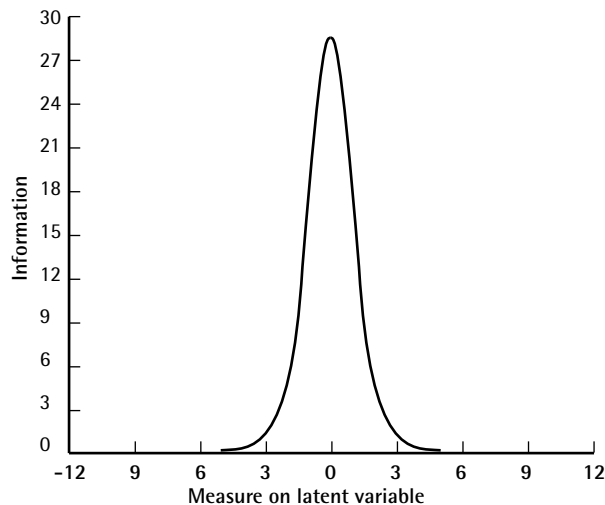


Figure 1 | ICG Information function

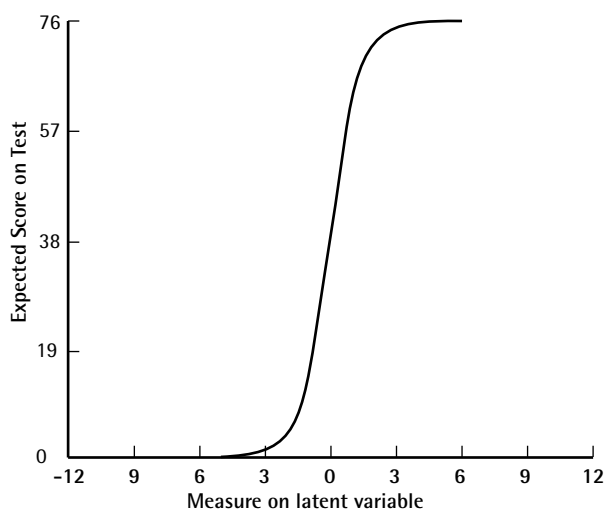


Figure 2 | ICG Characteristic curve

Concurrent construct validity

The canonical correlation analysis for the coping strategies and social support showed a full model statistically significant (Wilk's lambda [λ] of 0.712; $F[32; 680.15]=2.048$, $p<0.001$), and the squared canonical structure coefficient was 0.288. Function 2 to 4 explained less than 15% in their variance. Social support, the expression of emotions and problem solving capacities were the predictors with large standardized canonical function coefficient with inverse associations between factors 1 and 2 and factors 3 and 4 (Table 3). The canonical correlation analysis for the clinical syndromes showed a full model statistically significant (Wilk's λ of 0.554; $F[28;668.45]=4.251$; $p< 0.001$), and the squared canonical structure coefficient was 0.446. Again, functions 2

to 4 explained less than 15% in their respective variable. Post-traumatic stress disorder and major depression were the variables with higher standardized canonical function coefficients and mainly related to factors 1 and 3 (Table 4).

DISCUSSION AND CONCLUSIONS

The present study aimed to analyse the dimensional factor structure of Inventory of Complicated Grief (ICG) and

Table 2				
Factorial Structure of the Spanish CG Inventory and ordinal alpha values				
Item	Factor 1	Factor 2	Factor 3	Factor 4
	Discomfort	Non-acceptance	Loneliness	Presence deceased
6	0.804	0.578	0.560	0.321
2	0.782	0.582	0.594	0.339
18	0.777	0.532	0.463	0.278
7	0.776	0.625	0.466	0.170
4	0.770	0.418	0.453	0.225
8	0.696	0.626	0.340	0.156
13	0.685	0.324	0.647	0.479
12	0.406	0.158	0.189	0.216
19	0.653	0.762	0.670	0.294
5	0.699	0.726	0.556	0.351
17	0.547	0.711	0.444	0.240
14	0.280	0.692	0.321	0.188
3	0.450	0.686	0.240	0.303
1	0.588	0.653	0.519	0.168
9	0.447	0.353	0.859	0.270
10	0.483	0.423	0.818	0.145
11	0.567	0.608	0.791	0.260
16	0.318	0.271	0.238	0.899
15	0.409	0.388	0.356	0.892
Ordinal Alpha	0.899	0.887	0.861	0.889

examine the concurrent and discriminating construct validity of each factor among bereaved drug dependent users.

The Spanish ICG is a useful tool which allows for an efficient evaluation of CG symptoms¹⁰. This is the first step to differentiate between a functional reaction to the grief process and a dysfunctional reaction, and after that offer psychological assessment for those who are suffering symptoms of CG. While we use the term complicated grief, it is important to note that using this scale is not sufficient for a diagnosis of CG, for which patients need to undergo a clinical interview conducted by an experienced practitioner.

From the clinical point of view, the four factors identified in our factor analyses allows the clinician to tailor psychological intervention to the patient's symptoms. ICG is

being reinterpreted as a measure of "traumatic grief" because, in the author's view, its content reflects "the two underlying dimensions of the syndrome (i.e., trauma and separation distress")²³. Although the ICG disregards other potentially worrisome symptoms, such as guilt or avoidance of traumatic stimuli associated with other psychiatric disorders, it is a practical tool for everyday clinicians.

The Spanish version of ICG adapted to bereaved drug dependent users shows sound psychometric properties. Internal consistency of the Spanish ICG was high. Cronbach's alpha was 0.922 and each item had a substantive correlation with the total. The current research found four factors and that were conceptually consistent and that support the multidimensionality of symptoms of CG as Limonero et al. (2009) suggested. The difference between our study and Limonero et al. (2009) was the number of factors in each

Table 3 Canonical solution for Coping Strategies predicting ICG factors for Function 1			
	Coef.	r_s	r_s^2 (%)
Problem solving	-0.247	-0.347	12.04
Self criticism	0.056	-0.378	14.28
Express emotions	-0.410	-0.460	21.16
Wishful thinking	-0.058	-0.517	26.72
Social support	-0.019	-0.116	1.34
Cognitive restructuring	-0.113	-0.322	10.36
Problem avoidance	0.011	-0.291	8.46
Social withdrawal	-0.846	-0.805	64.80
Factor 1. Discomfort	-0.555	-0.282	7.95
Factor 2. Non-acceptance	-0.578	-0.271	7.34
Factor 3. Loneliness	0.676	0.221	4.88
Factor 4. Presence deceased	0.869	0.619	38.31

Table 4 Canonical solution for Clinical Syndromes predicting ICG factors for Function 1			
	Coef.	r_s	r_s^2 (%)
Post-traumatic Stress Disorder			
Disorder	-0.709	-0.939	88.17
Major Depression	-0.671	-0.815	66.42
Dysthymia	0.374	-0.674	45.42
Anxiety	0.043	-0.806	64.96
Bipolar	-0.093	-0.546	29.81
Delusional disorder	-0.204	-0.591	34.92
Thought disorder	0.126	-0.770	59.29
Factor 1. Discomfort	0.995	0.843	71.06
Factor 2. Non-acceptance	0.198	0.510	26.01
Factor 3. Loneliness	-0.520	0.042	0.17
Factor 4. Presence deceased	-0.340	0.005	<0.01

study and that Limonero and their colleagues did the study in a non-SUD population. Limonero et al. (2009) found three factors (memories of the deceased, empty feelings and presence-experience of the deceased) whereas the current study four factors (discomfort, non-acceptance, loneliness and presence of the deceased). The first factor "discomfort", included memories, beliefs and negative feelings such as feeling yearning, anger, shock, pain, avoidance and bitterness. The second once comprised statements related to "non-acceptance", such as feeling empty, envious, unfairness, and thoughts about the deceased. The third "loneliness" included trust, feeling distant and alone. The last one, "presence of the deceased", was defined as seeing and hearing the voice of the significant person. Each factor showed internal consistency presenting a good Cronbach's alpha. The difference between both Spanish studies is in relation to the first two factors, which the current study has converted into three.

In contrast to the findings among the non-SUD bereaved sample, our study underlines one characteristic of SUD individuals which is the difficulties of accepting the reality so the drug can be taken to avoid their problems, circumstances, and the reality. The results showed how this feature of SUD participants is as important as the second

factor. In the present study, in the first factor we noted a division between "emotional" component and the "cognitive" component. These results highlight the importance of emotional components within the bereavement process as other studies explained^{3,24}. Apart from that, it is important to consider that the fourth factor from our study called "presence of the deceased" was homogenized in contrast with the third factor of Limonero research. In the current study the last factor is based only with the two items related to presence of the deceased (hear the voice and seeing the deceased).

The present results support the concurrent construct validity of the Spanish version of the ICG. For example, social support, emotional expression and problem resolving capacities showed an inverse associations between factors 1 and 2 and factors 3 and 4. The discriminant capacity of the ICG items was high (except for 12, 15 and 16 items). The squared canonical correlation for the social support and the coping strategies showed a full model statistically significant. From the clinical point of view, more perceived social support is associated with feeling less isolated and experiencing less CG symptomatology. The negative correlation between the total score of ICG and the Social Support scale underline the importance of having social

support to adapt better to the bereavement process, as several studies suggested^{25,26}.

Related to the clinical syndromes and construct validity, depression and PTSD were the disorders which showed high association with factors 1 and 3. It is interesting to note the significant correlation between the fourth factor and anxiety and post traumatic stress disorder. Apparently, the last factor, "presence of deceased", might indicate psychotic symptoms, but we found no correlation between this factor and the psychotic disorders assessed, such as delusional or thought disorder, indicating that this symptomatology is specific to CG such as intrusive thoughts or images, as different authors noted²⁷. Indeed, there is a lot of research showing that hallucinations of the deceased are normative after loss²⁸⁻³¹. However, more investigation is needed to assess the validity of the present results in an accurate way.

In summary, our results provided information about the multidimensionality of CG symptomatology construct which Limonero and collaborators had proved in their Spanish adaptation of the ICG. In addition, the Spanish version of the ICG performed well among our SUD sample. In fact, these four factors (discomfort, difficulties to accept the death, isolation and the presence of the deceased) are characteristic traits of CG symptomatology, as different studies suggested³²⁻³⁴. Taking into account the results, the ICG can be used to identify difficulties among people with SUD.

To our knowledge, this is the first study to analyse the factor structure of ICG among bereaved drug dependent people. Most relevant to our focus is that the Spanish ICG performs well among SUD population.

LIMITATIONS

The present study presented some limitations, such as the cross-sectional transversal design of the research. Future studies should analyze the clinical utility of the four factors as well as the test inter-examiner reliability and the test-retest. Furthermore, there was no control group from the general population not suffering from SUD. Despite these limitations, our study shows significant data related to the specificity of the sample.

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CONFLICT OF INTEREST

All authors declare that they have no conflicts of interest.

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