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The Structured Clinical Interview for Complicated Grief: Reliability, Validity, and Exploratory Factor Analysis

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Abstract

Background—Complicated grief (CG) has been recently included in the DSM-5, under the term "Persistent Complex Bereavement Disorder", as a condition requiring further study. To our knowledge, no psychometric data on any structured clinical interview of CG is available to date. In this manuscript, we introduce the Structured Clinical Interview for CG (SCI-CG) a 31-item "SCID-like" clinician-administered instrument to assess the presence of CG symptoms.

Methods—Participants were 281 treatment-seeking adults with CG (77.9% (n=219) women, mean age = 52.4, SD = 17.8) who were assessed with the SCI-CG and measures of depression, posttraumatic stress, anxiety, functional impairment.

Results—The SCI-CG exhibited satisfactory internal consistency (α = .78), good test-retest reliability (Inter-class correlation [ICC] 0.68, 95% CI [0.60, 0.75]), and excellent inter-rater reliability (ICC=0.95, 95% CI [0.89, 0.98]). Exploratory factor analyses revealed that a five-factor structure, explaining 50.3% of the total variance, was the best fit for the data.

Conclusions—The clinician-rated SCI-CG demonstrates good internal consistency, reliability, and convergent validity in treatment-seeking individuals with CG and therefore can be a useful tool to assess CG. Although diagnostic criteria for CG have yet to be adequately validated, the SCI-CG may facilitate this process. The SCI-CG can now be used as a validated instrument in research and clinical practice.

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For copies of the SCI-CG contact the Center for Complicated Grief at http://www.complicatedgrief.org

Introduction

Each year in the United States, 2.5 million people die [1]. For the millions of close friends and relatives who survive, the loss is often one of the most painful and disruptive events they will experience. The intensity of the grief and life disruption will subside in the following weeks or months for the majority of people. However, rather than integrating grief and re-engaging in ongoing life, about 7% of bereaved individuals will experience prolonged acute grief with marked distress and functional impairment for years after the death [2]. Complicated Grief (CG) or Prolonged Grief Disorder (PGD), is a severe, impairing, syndrome that was provisionally included in the DSM5 as a subtype of "*Other Specified Trauma and Stressor-Related Disorders*," under the designation of Persistent Complex Bereavement Disorder (PCBD), with explicit criteria listed under conditions requiring further study. CG can be reliably identified in clinical and epidemiologic studies [3]. Although mood and anxiety disorders frequently co-occur among clinical populations [4,5], it also occurs independently of these conditions and uniquely contributes to suicidality, morbidity, and reduced quality of life [6], adding a major health burden to society and to the millions of individuals who suffer from it.

Other Measures Used to Assess Complicated Grief

Most assessments that have been used to evaluate CG symptoms to date are self-report inventories in which individuals rate the frequency of grief-related symptoms [e.g., the Brief Grief Questionnaire 7] or the extent to which they agree with statements that reflect the presence of grief-related symptoms (e.g., the Texas Revised Inventory of Grief) [8]. Several of these self-report assessments exhibit excellent psychometric properties [for reviews, see 9,10].

Among those, the Inventory of Complicated Grief (ICG) [11] and the Prolonged Grief Disorder scale (PG-13) [12] are perhaps the most commonly used instruments to assess clinical levels of CG symptoms. Assessment by the ICG consists in reporting on 5-point scales (0 = "*never*", 1 = "*rarely*", 2 = "*sometimes*", 3 = "*often*", 4 = "*always*") the frequency of 19 statements about affects, thoughts, and behaviors related to the loss of a loved one. A total score can be calculated by summing the response to all the items. In its validation paper, the ICG demonstrated solid psychometric properties including good internal consistency (Cronbach's $\alpha = 0.94$) and test-retest reliability ($r = 0.80$), as well as satisfactory concurrent validity with strong correlation with other measures of grief symptoms ($r = 0.87$ with the Texas Revised Inventory of Grief, and $r = 0.70$ with the Grief Measurement Scale [13]). Interestingly, the ICG was also strongly associated with a measure of depressive symptoms ($r = 0.67$ with the Beck depression inventory [14]). Our group recently examined the factor structure of the ICG among n=288 individuals with CG, and reported six underlying dimensions, including: yearning and preoccupation with the deceased, anger and bitterness, shock and disbelief, estrangement from others, hallucinations of the deceased, and behavior change including avoidance and proximity seeking [15]. The initial ICG cutoff proposed to be indicative of CG was >25 corresponding to the upper quintile of scores in the initial validation study[11]. Our group increased the score to ≥ 30 in order to ensure identification of clinically significant CG for the purposes of our treatment studies [16].

The PG-13 [12] is a self-report diagnostic tool comprising three sections assessing the diagnostic criteria for PGD. The measure assumes that the respondent has experienced the loss of a loved one (criterion A), and assesses separation distress (criterion B), duration (criterion C), cognitive, emotional, and behavioral symptoms (criterion D), as well as impairment (criterion E). Prigerson and colleagues [17] reported that the 12 items of the PG-13 that assess PGD symptoms exhibit good internal consistency ($\alpha = 0.82$). To our knowledge, no additional psychometric analyses of the PG-13 have been reported in the literature.

Although self-report measures decrease social desirability bias, they are limited by the other potential bias including misinterpretation of questions or inappropriate use of anchors (e.g. inter-individual variation in the representation of "often") by respondents. There is thus a need for a clinician-administered interview to standardize the clinical evaluation of this condition. We therefore developed a structured interview similar to the widely used Structured Clinical Interview for DSM-IV [18]. To our knowledge, there are no published reports of psychometric properties of clinician-administered interviews for CG available in the literature. A few studies have relied on the use of clinical diagnostic interviews based on certain sets of proposed criteria for CG [e.g. 17,19,20,21] however, we could find no reports of the psychometric properties of these instruments. Further, given the lack of agreement about CG diagnostic criteria, we developed a clinician-administered interview that includes items from each of the proposed criteria sets and thus can be used to diagnose CG [6], PGD [17], or PCBD [3] (See Table 2), thus allowing refinement of the definitive diagnostic criteria to be included in the DSM.

Development of a Structured Clinical Interview for Complicated Grief

The SCI-CG includes CG symptoms identified by clinical and research observations. We used a SCID-like format that assesses the presence or absence of clinical symptoms of complicated grief [6]. An early version of the instrument was developed for use in our first randomized controlled trial (MH60783) [22]. Subsequently, the instrument was revised to include symptoms identified in our own work [6,15] as well as DSM-5 PCBD and proposed criteria for PGD [17] and to incorporate feedback from assessors about the instrument's ease of use and precision language feedback from our biostatistical team (N.D. and Y.W.). The final version consists of 31 items.

The present study examines the psychometric properties of the 31-item SCI-CG in 281 treatment-seeking individuals who participated in our multi-site clinical trial (MH085288, MH060783, MH085308, and MH085297). We evaluated the internal consistency, inter-rater and test-retest reliability, construct validity, and factor structure of the SCI-CG.

Methods

Participants

Participants were 281 treatment-seeking adults of whom 77.9% (n = 219) were women (mean age = 52.4, *SD* = 17.8) evaluated prior to randomization in an ongoing, multi-site (Massachusetts General Hospital (MGH), Columbia University, University of California -

San Diego, and University of Pittsburg Medical Center) clinical trial sponsored by the NIMH, investigating efficacy of citalopram and Complicated Grief Therapy (CGT)[22] for treating CG (ClinicalTrials.gov #NCT01179568). This report utilizes baseline data from all individuals randomized from March 2010 through April 2014. Inclusion criteria for the parent study were: English fluency, age of 18-95, having lost a loved one at least 6 months prior, a score ≥ 30 on the Inventory of Complicated Grief [11] and a judgment on clinical interview that CG was the primary problem in need of treatment. Exclusion criteria included: current substance or alcohol use disorders, lifetime bipolar I or psychotic disorders, cognitive impairment (Montreal Cognitive Assessment [23] score < 21), immediate suicide risk, or unable/unwilling to discontinue current psychotherapy or antidepressant treatment. Participant characteristics are reported in Table 1. In addition, in order to provide preliminary psychometrics in a non CG sample, we also examined data from individuals without CG (n=50, mean age = 33.4, SD = 12.4; 64% females; 88% with Axis I anxiety disorder diagnoses and 12% with no axis I diagnosis) who completed a self-report version of the SCI-CG as part of an IRB-approved ongoing questionnaire-based study at the MGH site.

Procedures

Assessments were conducted by independent evaluators (IEs; n = 19), who were trained and certified to reliability standards and monitored throughout the study. Certification required three consecutive ratings that matched those of a certified rater from the coordinating site. Criteria for a match included no more than one point difference on each individual item, and no more than three points difference on the total score. Bi-monthly IE telephone conference calls were held throughout the study to review and discuss ratings and establish conventions for ambiguous boundary decisions, with assessment guidelines updated as needed. In order to assess test-retest reliability, a subset of the participants (n = 218) was reassessed with the SCI-CG at the first treatment visit by study pharmacotherapists (n = 19) who did not undergo extensive training or certification (mean time between assessments = 17.6 days, *SD* = 14.5, median = 14, range 0 – 104 days). Participants who were re-assessed did not differ in age, gender, race, ethnicity, or on scores of any study measures from those who were not. Finally, all assessments were audio-recorded; to establish interrater reliability, the assessment recordings for a randomly selected subsample of about 10% of participants (n=24) were co-rated by another IE who was not familiar with original assessment scores.

Measures

The SCI-CG is a structured clinical interview comprising 31 symptom ratings. An optional screening section assesses characteristics related to the death, including relationship to the deceased, cause of death, and time since the death (<6 months, between 6 and 12 months, or > 12months). Duration criterion for CG requires that the individual has experienced the death of a loved one at least 6 months prior to the date of the interview [e.g. 24]. Each of 31 CG symptom rating is rated on a 3-point Likert-type scale (1 = "*Not present*", 2 = "*Unsure or equivocal*", 3 = "*Present*") over the prior month. A total score ranging from 31 to 93 is calculated by summing the scores of these items. The SCI-CG and assessment guidelines will be directly available to clinicians and researchers from the website www.complicatedgrief.org.

For each assessment they administered, study pharmacotherapists completed a 5-item 4-point Likert type questionnaire rating the degree to which administration of the SCI-CG helped them better understand the patient's problem, helped the patient feel understood, was useful as an assessment instrument, was useful to develop treatment formulation, and was difficult to use.

Other assessment instruments included: the Structured Clinical Interview for the DSM-IV (SCID)[25] used to assess DSM-IV Axis I psychiatric diagnoses and exclusion criteria; the Montreal Cognitive Assessment [23] used to screen for cognitive impairment (< 21 was a study exclusion criterion); and the 19-item self-report Inventory of Complicated Grief [11] used to screen for CG symptoms (Cronbach's alpha = 0.75).

Construct validity was examined using the 16-item Quick Inventory of Depressive Symptomatology – Self Report (QIDS-SR)[26] (Chronbach's alpha = 0.69), the 19-item clinician-administered Structured Interview Guide for the Hamilton Anxiety rating scale (SIGH-A)[27] (Cronbach's alpha = 0.80), and the Davidson Trauma Scale (DTS)[28] administered in relation to the index death (Cronbach's alpha = 0.94).

Impairment in work, home management, social leisure, private leisure, and in maintaining close relationships was assessed using the 5-item Work and Social Adjustment Scale (WSAS) [29] modified to ask specifically about the effects of grief (Cronbach's alpha = 0.81).

Data Analyses

Categorical variables were summarized using frequencies and percentages; continuous variables with means and standard deviations (SD). For SCI-CG, we examined the mean and SD of the total score as well as the frequency distribution of each symptom item. To test for associations between SCI-CG total score and demographics, ANOVAs were used. If a significant difference was found for a categorical variable, multiple comparisons were carried out using Tukey's adjustment. Internal consistency was calculated using Cronbach's alpha coefficient. Inter-rater and test-retest reliability was assessed using intra-class correlation coefficients. Convergent validity was evaluated using Pearson's correlation coefficients. Statistical significance was set at $p<0.05$ (two-tailed) and analyses were conducted using SAS 9.3.

Exploratory Factor Analyses (EFA) were conducted using robust weighed least squares mean and variance adjusted (WLSMV) estimation and geomin orthogonal rotation, which accounts for the categorical nature of the items. The number of factors was chosen based on model adequacy and overall interpretability. Model adequacy was assessed using Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). Interpretation of the factor analysis results was guided by examining factor loadings. Items with a dominant loading (larger than 0.35) on just one factor were interpreted to be indicative of that factor. In instances were an item had multiple loadings, or no large loadings at all, content interpretation was used to guide placement of that item. The EFA was carried out in MPlus version 7 (Muthen & Muthen, 1998-2012).

Results

Descriptive Statistics and Internal Consistency

Table 1 presents basic descriptive statistics of the sample. Mean SCI-CG score was 63.6, *SD* = 9.0 and the total scores ranged from 41 to 84. The SCI-CG total score correlated weakly with time since the loss (r = -0.23, 95% CI [-0.34, -0.12], p<0.0001). SCI-CG was not significantly associated with age, gender, educational level, or race/ethnicity. However, there was a significant association between SCI-CG total score and the relationship of the deceased to the bereaved person (p = 0.0073). Those who lost an "other relative or friend" had significantly lower scores (mean = 62.3) than those who lost a child (mean = 67.4, p = 0.0278) and those who lost a partner (mean = 67.7, p=0.0047). Additionally, those bereaved by non-violent death had higher scores on the SCI-CG than those whose loved one died violently (67.2 *vs.* 64.9, p = 0.044), but these differences were not clinically meaningful.

Across all 31 symptom rating items (see Table 2), the rate of positive endorsement (*i.e.*, 3 - "*Present*") ranged from 9.6% for item 19 ("*Do you often think you are hearing her/his voice or seeing him/her?*") to 88.3% for item 1 ("*Do you often find yourself yearning or longing for [the deceased] a lot or feel a very strong desire to be with [her or him] again?*"), with a mean positive endorsement rate of 51.9%. Across all items, the mean endorsement rate of "2- *unsure or equivocal*" was 10.2%, with items 9 and 10 having the lowest rate (4.3%), and items 26 and 28, the highest (18.9%).

Item-total correlations ranged from 0.04 for item 9 ("*Do you have difficulty having positive memories or thoughts about [her or him]?*") to .51 for item 27 ("*Do you often feel like your life is empty or no longer has purpose or meaning since [she or he] died?*"; see Table 2). Although item-total correlation coefficients were modest for item 9 (r = .04) and 19 (r = .07) dropping them did not change significantly the internal consistency of the SCI-CG in our sample of individuals with CG, and they were therefore retained in the subsequent analyses. Cronbach's alpha coefficient was 0.77.

Reliability

Our test-retest reliability assessment was stringent as it included both test–retest and inter–rater reliability. The intra-class correlation coefficient (ICC) between IE-administered baseline assessment and pharmacotherapist-administered assessment at treatment week-one (n = 218) was 0.68, 95% CI [.60, .75] suggesting good test-retest reliability. Further, the inter-rater reliability based on co-ratings of audio recordings, was excellent, with ICC = 0.95, 95% CI [.89, .98].

Convergent Validity

As expected, the SCI-CG score strongly correlated with the ICG score, r = 0.57, 95% CI [0.48, 0.64], p < 0.0001. The SCI-CG also exhibited moderate correlations with depressive symptoms on the QIDS, r = 0.44, 95% CI [0.34, 0.53], p < 0.0001, anxiety symptoms on the SIGH-A, r=0.35, 95%CI [0.24, 0.44], p<0.0001, PTSD symptoms on the DTS, r=0.44, 95%CI [0.34, 0.53], p<0.0001, and grief-related functional impairment, r=0.42, 95% CI [0.31, 0.51], p<0.0001 (with item 31 excluded from this analysis).

Factor Structure

The EFA yielded 10 eigenvalues greater than one. Based on examination of the screeplot and of the specific items and factor loadings, we judged that a 5-factor solution was the best interpretable fit to data. The five factors corresponded to eigenvalues of 6.48, 3.18, 2.45, 1.85, and 1.63 respectively, and explained 50.3% of the total variance. Both the CFI = 0.97 and RMSEA = 0.02 indicated good model fit. Factor loadings for each item are reported in Table 2, but briefly, Factor 1 reflected yearning and emotional pain; Factor 2 difficulty accepting the death; Factor 3 emotional numbness, loneliness, and social disconnection; Factor 4 suicidal ideation and meaninglessness, and Factor 5 avoidance and negative affect. Selection of symptom clusters was almost entirely based on empirically driven results (*i.e.*, large loadings relating symptoms to factors). Item 27 cross-loaded on two factors, and required decision making to choose the most clinically coherent cluster (Factor 4). Three symptoms (item 14, 19, and 26) did not exhibit a strong loading with any factors. Of those, item 14 (avoiding getting rid of possessions) and item 26 (envious of others without loss), were theoretically placed into factors by investigators, based on their conceptual meaning.

Preliminary Psychometrics in Individuals Without CG

In addition, in the sample of individuals without CG (mean ICG = 8.9, *SD* = 6.6), the internal consistency of the self report SCI-CG was good (Cronbach's alpha = 0.77), as were the convergent validity with the ICG score ($r = 0.57$, $p<0.001$) and with grief-related functional impairment ($r = 0.47$, $p<0.001$).

Acceptability

Acceptability questionnaires completed after each pharmacotherapist assessment (n=198) indicated that clinicians found the SCI-CG useful. The majority of ratings indicated that using this interview “moderately” or “to a great extent”: helped the pharmacotherapist understand the patient's problem (86.4%); helped the patient feel understood (78.3%); was useful as an assessment instrument (85.8%); and was useful to develop treatment formulation (80.2%). Additionally, with minimal training, they reported that it was “slightly” or “not at all difficult” to use (86.2%).

Discussion

The SCI-CG was developed as a much needed structured clinical assessment of CG. As self-report instruments are limited by biases, developing a structured clinician-administered instrument significantly contributes to the assessment, understanding, and treatment of grief-related psychopathology by allowing interviewers to use anchors when making judgments about the presence and absence of symptoms, thus improving the validity of the assessment. Our results suggest that the SCI-CG has good psychometric properties as demonstrated by good internal consistency, inter-rater and test-retest reliability and evidence of convergent validity in a sample of treatment-seeking individuals with CG. Further, the mean endorsement rate of response “2- *unsure or equivocal*” was relatively low at 10.2%, suggesting the phrasing of the SCI-CG items allowed the assessors to easily distinguish between the presence and the absence of the symptoms, and supporting the face validity of the measure. Acceptability data from untrained clinicians also suggest that this structured

interview was easy to conduct and relevant to patients with CG, and well as to clinicians treating them. In addition, examination of the psychometric properties of a self report version of the SCI-CG among individuals without CG provided preliminary support for its validity in this population.

In our sample, item 19 ("*Do you often [i.e. at least twice a week] feel pain or think you have other symptoms that [she or he] had?*") and item 20 ("*Do you often [i.e. at least twice a week] think you are hearing her/his voice or seeing him/her?*") were each only endorsed by approximately 10%. Further, item 19 did not seem to correlate with total score, nor to load on any of the five factors, suggesting that experiencing pain or other symptoms that the deceased had may not be a relevant to the construct of CG. However, because this main analysis did not include bereaved individuals without CG, it is possible that despite their low endorsement rates or low sensitivity, these items are in fact highly specific for CG. Future studies with bereaved individuals without CG would help elucidate this.

Given that our main sample was restricted to treatment-seeking individuals with CG who were included only if they scored 30 or above on the ICG, the correlation between SCI-CG and the ICG was remarkably high (r = .57). As anticipated, the SCI-CG correlated less strongly with measures of depressive (r = .44), PTSD (r=.44) and general anxiety symptoms (r = .35). The SCI-CG (excluding item 31) was moderately correlated with functional impairment (r = .42). Similarly, in the smaller sample of individuals without CG, the correlation between the SCI-CG and the ICG was also quite high (r = 0.57), as was the association with grief-related functional impairment (r = 0.47).

Our exploratory factor analysis yielded five distinct but correlated factors: (1) yearning and emotional pain; (2) difficulty accepting the death; (3) emotional numbness, loneliness, and social disconnection; (4) suicidal ideation and meaninglessness; and (5) avoidance and negative affects. These factors did not perfectly align with those reported by Simon et al. [15], who examined the factor structure of CG among 288 individuals with CG, using the 19-item self-rated ICG. However, despite differences in measures, the SCI-CG factors we found had some overlap with those reported in the ICG. For example, our SCI-CG factor 1 (yearning and emotional pain) corresponds to *yearning and preoccupation with the deceased* and *hallucinations of the deceased* previously reported in the ICG. The discrepancies may stem from methodological differences (self-report *vs.* clinician-administered), or could be explained by the fact that the SCI-CG includes symptoms not present in the ICG.

Finally, although direct comparison is limited by methodological differences, our findings appear to be in line with those reported in a recent network analysis study by Robinaugh et al. [30]. In particular, our first factor appears to comprise symptoms from the "feedback loops" that these authors proposed as core of CG, including emotional pain, yearning, intrusive thoughts about the death and the deceased, grief-related avoidance, and grief-related approach behavior.

Our study was limited by the lack of inclusion of a bereaved population without CG in our main analyses, and comparing the performance of the SCI-CG *vs.* ICG to diagnose CG is beyond the scope of the present manuscript. Further studies examining the specificity and

sensitivity of different SCI-CG diagnostic algorithms against the ICG standard cutoff for CG among bereaved individuals with and without CG are therefore warranted. In addition, the treatment seeking nature of our sample may limit the generalizability of our results. The relatively short period of time used for the test-retest reliability (typically two weeks) may have inflated the reliability coefficient as participants may have recalled their previous responses. The use of quasi-dichotomous scoring precluded accurate measurement of CG symptom severity. However, as indicated earlier, the SCI-CG was developed to assess the presence or absence of a range of CG symptoms.

Conclusion

The clinician-rated SCI-CG demonstrates good internal consistency, reliability, and convergent validity in treatment-seeking individuals with CG and good internal consistency and evidence of convergent validity in a sample of individuals without CG. These data suggest that the SCI-CG is a simple to administer, useful tool to assess the presence and severity of CG in research and clinical practice. Diagnostic criteria for CG have yet to be adequately validated, however, the SCI-CG can potentially be used to generate PGD, PCBD, or CG diagnosis and to compare performance of these different proposed criteria sets.

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Table 1

Sociodemographic and Clinical Characteristics of n=281 Treatment Seeking Individuals with Complicated Grief

Gender (Female), % (n)	77.9% (114)
Age, years, Mean (SD)	52.4 (14.8)
Race, % (n) [n=280]	
White	80.7% (226)
Black	11.4% (32)
Other	7.9% (22)
Ethnicity (Hispanic), % (n)	11.7% (33)
Employed, % (n) [n=280]	
Full-Time	40.0% (112)
Part-Time	18.2% (51)
Retired	17.9% (50)
Full-Time Homemaker	3.2% (9)
Unemployed	20.7% (58)
Marital Status, % (n) [n=280]	
Never Married	27.1% (76)
Married	18.9% (53)
Divorced/Separated	18.2% (51)
Widowed	35.7% (100)
Time Since Loss, Years, Median (Range)	2.2 (0.5 – 58.7)
Type of Death	
Non-Violent	65.1% (183)
Violent	34.9% (98)
SCI-CG Score, range 31-93, Mean (SD)	63.6 (9.0)
ICG Score, range 0-76, Mean (SD)	42.7 (8.8)
SIGH-A Score, range 0-56, Mean (SD)	20.5 (8.3)
QIDS-SR Score, range 0-27, Mean (SD)	13.3 (4.2)
DTS Score, range 0-136, Mean (SD)	61.7 (27.4)
WSAS Score, range 0-40, Mean (SD)	21.8 (9.6)

Notes: SCI-CG: Structured Clinical Interview for Complicated Grief; ICG: Inventory of Complicated Grief; SIGH-A: Structured Interview Guide for Hamilton Anxiety; QIDS-SR: Quick Inventory of Depressive Symptoms; DTS: Davidson Trauma Scale; WSAS: Work and Social Adjustment Scale

Table 2

Item Statistics

	Endorsement Rate (%)	Mean (SD) Score	Item-Total Correlation coefficient	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	CG	PGD	PCBD
2. intense feelings sorrow/pain	86.1	2.8 (0.5)	0.29	**0.841**	-0.023	-0.133	-0.010	0.084			✓
1. yearning/longing	88.3	2.8 (0.5)	0.25	**0.758**	0.133	-0.189	-0.008	-0.026	✓	✓	✓
18. see, hear, touch, smell, spend time with deceased belongings	48.8	2.1 (0.9)	0.24	**0.606**	0.017	0.057	0.024	-0.440	✓		
3. thoughts/images of deceased	76.2	2.6 (0.7)	0.21	**0.547**	0.088	-0.265	0.036	0.116	✓		
20. thinking hearing her/his voice, seeing him/her	10.3	1.3 (0.6)	0.18	**0.511**	-0.060	0.109	0.003	-0.137	✓		
16. encounter reminders, physical reactions	35.6	1.8 (0.9)	0.23	**0.431**	0.003	0.047	-0.130	0.207	✓		
15. encounter reminders, intense emotional reaction	73.7	2.6 (0.7)	0.31	**0.393**	-0.046	0.159	0.083	0.249	✓		
4. lost or absorbed in thoughts/daydreams	50.2	2.1 (0.9)	0.35	**0.441**	0.152	0.104	0.082	-0.093			
17. visit cemetery/time with ashes to feel close	47.3	2.1 (0.9)	0.17	**0.391**	0.140	0.003	0.027	-0.393	✓		
14. avoid getting rid of possessions	45.6	2 (0.9)	0.28	**0.226**	0.055	0.053	0.165	0.189	✓		
5. think/worry about how/why died	65.8	2.4 (0.8)	0.19	0.099	**0.599**	-0.229	0.014	0.089	✓		✓
7. shocked/stunned	42.7	1.9 (1)	0.26	0.050	**0.591**	0.179	-0.115	-0.014	✓	✓	✓
6. trouble accepting	56.9	2.2 (0.9)	0.32	0.071	**0.544**	0.017	0.206	-0.057	✓	✓	✓
29. concerned/uncertain about role in the world/ identity	53.7	2.2 (0.9)	0.32	-0.141	0.037	**0.557**	0.346	0.047			✓
31. grief interfering with ability to work/socialize/ function	85.8	2.8(0.5)	0.38	0.257	0.014	**0.589**	-0.039	0.471	✓	✓	✓
30. difficult to pursue plans for future because can't share anymore	55.9	2.2 (0.9)	0.41	0.158	-0.080	**0.564**	0.312	-0.051		✓	✓

	Endorsement Rate (%)	Mean (SD) Score	Item-Total Correlation coefficient	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	CG	PGD	PCBD
23. difficulty trusting others without similar loss	42.4	1.9 (1)	0.30	-0.028	0.295	**0.559**	-0.103	0.080	✓	✓	✓
12. worry about not managing w/out person	38.4	1.9 (0.9)	0.40	-0.072	0.276	**0.522**	0.294	-0.132	✓		
24. difficult to feel close to others	59.8	2.3 (0.9)	0.33	0.040	0.018	**0.552**	-0.009	0.331	✓		✓
8. emotionally numb	52.0	2.1 (0.9)	0.18	0.096	-0.043	**0.519**	-0.060	-0.065	✓	✓	✓
25. lonely, all alone in world	74.0	2.6 (0.8)	0.32	-0.107	0.096	**0.473**	0.355	0.100	✓		✓
28. hard to experience joy/satisfaction	60.9	2.4 (0.8)	0.42	0.158	-0.067	**0.471**	0.323	0.123			
22. wish to die, life not worth living	17.8	1.5 (0.8)	0.40	-0.003	0.032	-0.061	**1.059**	0.041	✓		
21. wish to die, join person	16.0	1.4 (0.8)	0.38	0.223	-0.017	-0.011	**0.729**	-0.028	✓		✓
27. life empty/no purpose	53.4	2.2 (0.9)	0.51	0.065	-0.012	0.466	**0.655**	-0.026	✓	✓	✓
13. avoid anything because it's a reminder	66.9	2.4 (0.9)	0.27	0.000	0.166	0.187	0.051	**0.549**	✓	✓	✓
9. difficulty having positive memories	19.6	1.4 (0.8)	0.04	-0.127	-0.054	0.022	0.050	**0.547**			✓
11. guilty/self-blaming thoughts about death	64.8	2.4 (0.9)	0.18	0.005	0.319	-0.117	0.062	**0.380**	✓		✓
10. bitter or angry about death	76.9	2.6 (0.8)	0.13	-0.038	0.280	-0.006	-0.033	**0.348**	✓	✓	✓
26. envious of others without loss	33.1	1.9 (0.9)	0.20	0.060	0.151	0.084	0.048	**0.179**	✓		
19. feel pain/symptoms deceased had	9.6	1.2 (0.6)	0.07	-0.013	0.252	-0.009	0.003	-0.007	✓		

Notes: CG: Complicated Grief; PGD: Prolonged Grief Disorder; PCBD: Persistent Complex Bereavement Disorder

Items are listed per their factor loadings. Factor loadings retained for each factor are bolded and factor loadings < 0.34 are grayed out.