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Identifying Prolonged Grief Reactions in Children: Dimensional and Diagnostic Approaches

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Abstract

Objective—Children with prolonged grief reactions (PGR) have been found to be at increased risk for depression and functional impairment. Identifying and diagnosing PGR in children is challenging, as there are no available dimensional measures with established thresholds and no diagnostic criteria in the *DSM-IV*. We examine thresholds for the Inventory for Complicated Grief–Revised for Children (ICG-RC) and compare this dimensional approach to the proposed *DSM-5* criteria for *Persistent Complex Bereavement-Related Disorder*. We also identify a screening tool for PGR.

Method—Parentally bereaved children, 8–17 years of age, were assessed at 9, 21, and 33 months after parental death. Receiver Operator Characteristics were used to establish the “best threshold” that would identify children with PGR and evaluate the proposed *DSM-5* criteria cross-sectionally and longitudinally.

Results—A score of 68 or higher on the ICG-RC was found to have high sensitivity (0.942) and specificity (0.965) in differentiating cases with PGR from noncases at 9 months. We also identify a 6-item screening tool that consists of longing and yearning for the deceased, inability to accept the death, shock, disbelief, loneliness, and a changed world view. The proposed *DSM-5* criteria only correctly identified 20% to 41.7% of cases with PGR at different timepoints.

Conclusions—For the identification of youth at risk for PGR, the dimensional approach outperformed the proposed categorical diagnostic criteria. We propose a brief screening scale that,

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if validated, can help clinicians identify bereaved children at risk for PGR, and guide the development of prevention and intervention strategies.

Keywords

children; *DSM-5*; grief; Inventory for Complicated Grief–Revised for Children (ICG-RC); screen

INTRODUCTION

There is increased recognition of a syndrome, which has alternatively been referred to as complicated grief (CG) or prolonged grief (PG), which occurs in about 10% of bereaved adults.^{1–11} This syndrome is associated with functional impairment, increased risk for depression, and physical health morbidity; and has a differential clinical response to interventions that specifically target this syndrome.^{3,4,7,10–13} Similar to adults, we found that 10% of children bereaved by sudden parental death have high and sustained prolonged grief reactions (PGR) nearly 3 years after the death.¹⁴ PGR was associated with 3-fold increased incidence of depression and worsening in functional impairment at home, school, or with peers over time.¹⁴

Despite the accumulating evidence, clinicians and researchers face challenges in the identification, diagnosis, and treatment of at-risk bereaved individuals with PGR. The current edition of the *DSM-IV* classifies bereavement under the V code used for “other conditions that may be a focus of clinical attention.” In the literature, there are two proposed criteria for PG and CG based on studies of adult bereaved samples.^{10,11,15} Current *DSM-5* modifications include a hybrid of these criteria under Persistent Complex Bereavement-Related Disorder (PCBRD) in Section III, requiring further research, and include specifications for children, which have not been previously validated.¹⁶ Thus, it is not clear whether the proposed *DSM-5* criteria are readily applicable to children.

In this paper, we examine dimensional approaches to help clinicians and researchers identify bereaved children at risk for PGR. We use the Inventory for Complicated Grief–Revised for Children (ICG-RC) and longitudinal data from the impact of parental death on children and families to establish cut-offs that can differentiate cases with PGR from non-cases early on following bereavement. We also identify key symptoms that, together, provide a screening tool for PGR. Finally, we evaluate diagnostic approaches and the performance of the proposed *DSM-5* criteria in identifying PGR in bereaved children.

METHOD

Sample

We have previously reported on our sample of 182 bereaved children, < 18 years of age, who lost a parent to suicide, accident, or sudden natural death.¹⁴ In this paper, we address our aims cross-sectionally and longitudinally in 154 of the 182 (84.6%) who had complete data on the ICG-RC at baseline or 9 months (SD=3.8; range 1–19) after the death. Of these, 129 (83.8%) were followed up at 21 months (SD=4.1, range 13–31), and 102 (66.2%) at 33 months (SD=4.5, range 24–43) after parental death. Subjects included (n=154) were less likely to have had a confiding or a supportive conversation with their parent before the death as compared to those with incomplete data on the ICG-RC (n=28) (59% vs. 96%, $\chi^2_1 = 12$, $p = .001$). The sample was 55.2% male with a mean age of 12.4 years (SD=2.9). The majority of children (93.5%) were biological offspring of the deceased parent (i.e., the proband).

Recruitment

Details on the recruitment and representativeness of the sample were published previously.^{14,17–20} Briefly, deceased parents, or probands, were between the ages of 30 and 60 years, had children 7–18 years old, and died within 24 hours from suicide (n=39), accident (n=23), or sudden natural death (n=45). Bereaved families were recruited via coroner's reports (37.1%) and newspaper advertisement (62.9%).

The eligibility rate was similar across types of death with 71% of eligible subjects participating. Probands recruited through the coroner's office and those recruited by advertisement were found similar except for higher rates of alcohol/substance abuse disorders (80% vs. 50.8%, $\chi^2_1 = 8.0$, $p = .005$; number of variables tested=10, Bonferroni corrected $\alpha = 0.005$) in coroner's probands. Finally, the demographic characteristics of the suicides and accidents were similar to those in Allegheny County (metropolitan Pittsburgh).²¹

Constructing diagnostic criteria

Table 1 presents the proposed *DSM-5* criteria for PCBRD and the assessment items that we used to derive the criteria, which were obtained from three sources: ICG-RC; Circumstances of Exposure to Death (CED); and Grief Interview.

Our modified version of the adult Inventory of Complicated Grief,²² the ICG-RC, was used to assess grief in children under 18 years of age.¹⁷ The ICG-RC was administered as a structured interview in this population. The adult ICG-R was used upon follow-up as children turned 18 years or older. The adult ICG-R consisted of 33 items, of which 28 items were retained after establishing their psychometric properties in children.^{17,22} Each of the 28 items is scored on a 5-point Likert scale (1=Almost never [less than once a month], 2=Rarely [monthly], 3=Sometimes [weekly], 4=Often [daily], and 5=Always [several times a day]) with an overall score that could range from 28 to 140.

The CED was used to assess the children's experience surrounding and following the death of their parent.²³ The grief interview included questions that were not assessed in the ICG-RC such as the desire to die in order to be with the deceased. Functional status was determined using the Children's Global Assessment Scale (CGAS)²⁴ or the Global Assessment Scale (GAS) at follow-up.²⁵

Criterion A of the proposed *DSM-5* criteria requires children to have experienced the death of a close relative or friend at least 6 months earlier. Our sample consists of parentally bereaved children; however, they were first assessed at an average of 9 months (range 1 to 19) after the death with 73.4% of the sample assessed 6 months or later after the death, and thus meeting criterion A. We also assess the performance of the proposed criteria at 21 months (range 13 to 31) and 33 months (range 24 to 43) after the death when all subjects met criterion A.

Criteria B and C require at least 1 and 6 symptoms, respectively, to be endorsed on more days than not and to a clinically significant degree. We use a cut-off of 4 on the individual items, which correspond to experiencing the symptom often or always. Some of the symptoms within criteria B and C are captured by more than one item. For these symptoms, we consider a positive response whenever one of the items meets the threshold.

As for criterion D or the impairment criterion, we use a cut-off 70 on the CGAS or GAS, where lower scores correspond to worse functioning. A score of 70 corresponds to difficulty in a single area of functioning or more.

Statistical Analyses

We use univariate statistics (chi-square, t-tests, and analysis of variance [ANOVA]) with Bonferroni correction for multiple comparisons. We examined cut-offs on the continuous ICG-RC score using Receiver Operating Characteristic (ROC) analyses to establish the “best threshold” that would distinguish children with PGR. We previously classified grief reactions in children into three distinct trajectories or classes using Latent Class Growth Modeling (LCGM) based on longitudinal data on the ICG-RC. Children in Class 1 showed a rapid resolution of their grief symptoms; those in Class 2 showed a gradual decrease in grief symptoms; and children in Class 3, or cases with PGR, had high and sustained grief symptoms up to 33 months after the death. These classes constitute the “gold standard” for these analyses where subjects in Class 3 are true “cases” and subjects in Class 1 are true “noncases.”¹⁴ The “caseness” status of subjects in Class 2 is ambiguous. Although these children were distinct from those with PGR, they were still at increased risk for incident depression and functional impairment compared to noncases.¹⁴ Thus, separate ROC analyses were conducted to discriminate Class 3 from Class 1, Class 3 from Class 2, and Class 2 from Class 1. ROC analyses were also conducted to discriminate Class 3 from Classes 1 and 2 combined. We select cut-offs on the ICG-RC as the cut-off at which both sensitivity and specificity were optimal.

We also conducted ROC analyses for each of the 28 items of the ICG-RC to identify items with high sensitivity and specificity at ≥ 4 cut-off, which could be used to screen for PGR. These analyses were conducted at 9, 21, and 33 months after parental death, including and excluding children in Class 2. We do not expect individual items to have high sensitivity in the strict sense; however, we considered any items with sensitivity ≥ 0.5 at any timepoint for inclusion in the ICG-RC Screen.

To evaluate the performance of the proposed *DSM-5* criteria in children, we also restricted analyses to cases and non-cases, namely Classes 1 and 3, respectively. We also conducted analyses where we used the established cut-offs on the ICG-RC to determine caseness (≥ 68) and thus included all subjects. To assess criteria B and C, ROC analyses were conducted with the sum of the number of items that meet ≥ 4 cut-off and obtained sensitivity and specificity at the required number of items to meet criteria. We compared differences in sensitivity and specificity by creating matched-sample tables and used the McNemar’s test for paired proportions²⁶ ($\alpha=0.01$).

RESULTS

ICG-RC cut-offs

ROC analyses resulted with a score of 68 as the cut-off identifying cases with PGR (Class 3) from non-cases (Class 1), with high sensitivity (sens=0.942) and specificity (spec=0.965) (Table 2 and Table S1, available online). This cut-off continued to have high sensitivity and specificity at 21 and 33 months. Similar results were obtained when comparing Class 3 to Classes 1 and 2 combined, although the specificity was lower at 9 months. As ICG-RC scores in Classes 1 and 2 declined at 21 and 33 months, and those in Class 3 remained high, the specificity in discriminating Class 3 from Classes 1 and 2 subjects improved significantly from 0.82 at 9 months to 0.958 ($p < 0.001$) at 21 months and remained high at 33 months. The cut-off also discriminates subjects in Class 3 from those in Class 2 (sens=0.962, spec = 0.551), with high sensitivity and specificity that significantly increased over time (Table 2).

Screening for PGR

ICG-RC items 5, 7, 8, 21, and 24 were able to discriminate Class 3 from Class 1 with sensitivity 0.5 at 9, 21, or 33 months (Table 3 and Tables S2–S3, available online). These items had high specificity (> 0.85) except for item 5, which assesses longing and yearning for the deceased, with specificity of 0.69 at 9 months, which increased significantly at 21 (spec=0.76, $p = 0.01$) and 33 months (spec=0.85, $p < 0.001$). When comparing Class 3 to Classes 1 and 2 combined, an additional item showed sensitivity 0.5 at 9 months (item 4, sens=0.57, spec=0.9, area under the curve [AUC]=0.82, $p < 0.001$) (Tables S4–S6, available online). Together, these six items very accurately identified Class 3 from Class 1 using a score of 14 as the cut-off at 9 (sens = 1, spec = 0.692), 21 (sens = 0.95, spec = 0.845), and 33 months (sens = 1, spec = 0.929) (Table 4). The specificity for the ICG-RC Screen's cut-off increased significantly at 21 ($p = 0.003$) and 33 ($p < 0.001$) months compared to 9 months. Similar results were obtained when comparing Class 3 to Classes 1 and 2 combined (Table 4). The ICG-RC Screen showed high internal consistency (Cronbach's $\alpha = 0.82$).

Evaluation of proposed *DSM-5* criteria

The proposed *DSM-5* criteria correctly identified only 41.7%, 22.2%, and 20% of cases with PGR at 9, 21, and 33 months, respectively (Table 4). However, the criteria had perfect specificity (1.0) at all timepoints. We examined properties of each of the three components (B, C, and D) of the criteria. Criterion B showed high sensitivity at 9 and 21 months, which decreased at 33 months although not statistically significant. However, the specificity of criterion B increased from 9 (spec=0.483) to 21 (spec=0.662, $p = 0.02$) and 33 (spec=0.73, $p < 0.001$) months but only significantly at 33 months. Criterion C showed low to moderate sensitivity ranging from 0.2 to 0.417 but high specificity ranging from 0.988 to 1.0. Criterion D had moderate to high sensitivity ranging from 0.615 to 0.833 and high specificity ranging from 0.758 to 0.797. There were no significant differences in sensitivity and specificity among the different timepoints for criteria C and D. We examined a less stringent cut-off for criterion C to require endorsing two or more symptoms, rather than the six required. This resulted in a statistically significant increase in sensitivity at 9 (0.417 vs. 1.0, $p = 0.02$) and 21 months (0.222 vs. 0.89, $p = 0.03$), but not at 33 months (0.4 vs. 0.6, $p > 0.99$). However, using a less stringent cut-off for Criteria C did not alter the overall performance of the criteria at 9 ($p = 0.25$), 21 ($p = 0.25$), and 33 ($p > 0.99$) months. There were no significant differences in specificity for criterion C (9 months, $p = 0.06$; 21 and 33 months, $p = 0.5$) and the overall criteria using less stringent cut-off ($p > 0.99$). Similar results were obtained when using 68 as the cut-off to define "caseness" (Table S7, available online).

DISCUSSION

We established cut-offs for the ICG-RC and found that a score of 68 or greater, 9 months after the loss of a parent, identifies children with PGR with high sensitivity and specificity. We derived a six-item screening tool, which can help clinicians screen for this condition in bereaved children. This is the first study to evaluate the performance of the currently proposed *DSM-5* criteria for PCBRD in children. We found the proposed criteria to have low to moderate sensitivity in identifying children with PGR at 9, 21, and 33 months after parental death, although the specificity was perfect (1.0) at each timepoint.

Although we used the same items to both define "caseness" and evaluate performance of *DSM-5* criteria, PGR "caseness" was identified using longitudinal data extending up to three years following parental death, which is a major strength of the study. We also examine the ICG-RC cut-offs, identify a screen, and evaluate the performance of the proposed *DSM-5* criteria longitudinally. The limitations of the study include the small number of cases with

PGR at 9 (n=13), 21 (n=9), and 33 (n=6) months. However, our sample size is consistent with the 10% incidence of PGR previously reported.¹⁴ Given the small number of youth with PGR at 33 months, we interpret results from this follow-up point with caution. Another limitation is that we did not examine themes of play and behavior and whether the child understood the meaning and permanence of death. The *DSM-5* criteria modifiers included for children are more applicable to toddlers and very young children. Our sample included children 8 years and older, an age when they understand the meaning and permanence of death. We also did not assess preoccupation with possible death of others close to the child and thus our assessment of the preoccupation with the circumstances of the death item is not optimal. We were not able to evaluate criterion E as we did not assess cultural and religious norms. As for age-appropriate norms, we define “caseness” based on our previously published longitudinal classification of grief in children, which is the first to demonstrate trajectories of grief symptoms in this age group.¹⁴ Finally, the generalizability of our sample is limited to children bereaved from sudden parental death and may not extend to those bereaved from other types of death or other types of relationships.

We established that a score of 68 or higher on the ICG-RC 9 months after parental loss indicates that these children are unlikely to recover spontaneously.¹⁴ Children, who continue to score 68 or higher around two years after a death, are those with a problematic course of grief or PGR (Class 3). This cut-off had a moderate specificity in distinguishing classes 2 (slow decline) and 3 (no decline) at 9 months. However, at the subsequent two time points, this cut-off more sharply differentiated among the groups, which is expected given that our definition of caseness is based on longitudinal trajectories. However, clinicians cannot and should not wait for almost 2 years to distinguish children’s grief trajectories before they intervene as we have previously found both classes 2 and 3 to be at increased risk for depression and functional impairment.¹⁴ Thus, our dimensional approach will help clinicians detect children at risk earlier following bereavement when trajectories of children’s grief reactions could be altered. We also identify a screening tool here, which consists of the items of longing and yearning for the deceased, cannot accept the death, shock, disbelief, loneliness, and a changed world view. These items seem to be the core symptoms of PGR in children that persist beyond the acute grief process. Longing and yearning for the deceased was the most frequently endorsed symptom and showed the lowest specificity at 9 months. This is not surprising as it is normal for bereaved children to long for their parent; however, the persistence of yearning through years 2 and 3 are pathognomonic of PGR. We have administered the ICG-RC and ICG-RC Screen as an interview in children and recommend administering them as such as opposed to self-report. In addition, our first assessment was conducted at an average of 9 months following bereavement and thus it is not clear whether our established cut-offs would have the same predictive ability when used earlier. Future studies are needed to replicate the validity of the ICG-RC and screen as self-reports and the predictive ability of our established cut-offs earlier following bereavement.

The proposed *DSM-5* criteria only correctly identified 20 to 41.7% of cases with PGR at the different timepoints. The components of the criteria with low to moderate sensitivity were C and D. We modified criterion C to require at least two symptoms instead of six, which improved its sensitivity at 9 and 21 months and the sensitivity of the overall criteria at 9 months. Thus, we believe criterion C of the proposed *DSM-5* criteria to be too stringent for children. Looking at the impairment criterion, or criterion D, the sensitivity tended to increase over time although differences were not significant. PGR caseness in our sample was identified based on longitudinal follow-up of three years following parental death where children showed consistently high ICG-RC scores and increased functional impairment over time. Thus, while some children classified with PGR (38.5%) did not meet criteria for functional impairment (CGAS \geq 70) at 9 months, they became functionally impaired with

time. There were no biases in subjects' retention based on CGAS scores, in the overall sample and cases with PGR.

In conclusion, the proposed *DSM-5* criteria are not sensitive enough to detect PGR in children although these criteria are highly specific. Our dimensional approach outperforms the proposed *DSM-5* criteria in identifying children at risk for PGR early on following bereavement. This is consistent with the proposal to incorporate a dimensional component to *DSM-5*, which would help clinicians in early identification and in monitoring severity and treatment.²⁷ We found bereaved children with PGR to be at increased risk for depression and functional impairment.¹⁴ Children bereaved from accident and natural deaths were similar to suicidally-bereaved children in their increased risk for PGR, which is due to the increased rates of psychiatric disorders associated with early parental death.^{14,18} Since interventions for PGR have not been developed for children, we provide clinicians and researchers with some important tools—a measure and a screening tool with clinical cut-offs that identify children at-risk for PGR early on following bereavement and thus in need for further monitoring, prevention, and intervention efforts.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Clinical Guidance

- We introduce the Inventory for Complicated Grief–Revised for Children (ICG-RC), a 28-item instrument to assess grief reactions in children.
- A cut-off of 68 on the ICG-RC identifies children at risk for prolonged grief reactions (PGR).
- We derive the ICG-RC Screen, a six-item screening tool for PGR consisting of longing and yearning for the deceased, inability to accept the death, shock, disbelief, loneliness, and a changed world’s view.
- The dimensional approach, using the ICG-RC, outperforms the proposed *DSM-5* criteria for Persistent Complex Bereavement–Related Disorder in identifying children with PGR.

Table 1
Proposed *DSM-5* Criteria for Persistent Complex Bereavement-Related Disorder

Persistent Complex Bereavement-Related Disorder	Assessment
Criterion A. The person experienced the death of a close family member or close friend at least 12 months ago. In the case of bereaved children, the death may have occurred at least 6 months ago.	Parental death
Criterion B. Since the death at least one of the following symptoms is experienced on more days than not and to a clinically significant degree:	<i>Item 5^a:</i> I very much miss
1. Persistent yearning/longing for the deceased. In young children, yearning may be expressed in play and behavior including separation–reunion behavior with caregivers	<i>Item 1:</i> The death feels upsetting, overwhelming or devastating
2. Intense sorrow and emotional pain in response to the death	<i>Item 2:</i> I think about so much that it can be hard for me to do the things I normally do
3. Preoccupation with the deceased	<i>Circumstances of Exposure to Death:</i> Do you think there may have been something that you could have done to help prevent the death?
4. Preoccupation with the circumstances of the death. In children, this preoccupation with the deceased may be expressed through the themes of play and behavior and may extend to preoccupation with possible death of others close to them	
Criterion C. Since the death at least 6 of the following symptoms are experienced on more days than not and to a clinically significant degree:	
<i>Reactive distress to the death:</i>	
1. Marked difficulty accepting the death. (Note: in children, this is dependent on the child’s capacity to comprehend the meaning and permanence of death)	<i>Item 4:</i> I feel that I cannot accept the death <i>Item 7:</i> I feel that I cannot believe my’s death
2. Feeling shocked, stunned, or emotionally numb over the loss	<i>Item 8:</i> I feel shocked over the death <i>Item 16:</i> I feel like I have become numb since the death
3. Difficulty in positive reminiscing about the deceased	<i>Item 3.</i> Memories of upset me
4. Bitterness or anger related to the loss	<i>Item 6:</i> I feel angry about the death <i>Item 18:</i> I am bitter over the death
5. Maladaptive appraisals about oneself in relation to the deceased or the death (e.g., self-blame)	<i>Circumstances of Exposure to Death:</i> How accountable do you feel for the death?
6. Excessive avoidance of reminders of the loss (e.g., avoiding of individuals, places, or situations associated with the deceased). (Note: in children this may include avoidance of thoughts and feelings regarding the deceased)	<i>Item 11.</i> I avoid reminders of <i>Item 12.</i> I avoid reminders that he/she is dead
<i>Social/identity disruption</i>	
7. A desire to die in order to be with the deceased	<i>Grief Interview:</i> Do you wish you were dead to be with your parent?
8. Difficulty trusting other individuals since the death	<i>Item 9.</i> Ever since the death, it is hard for me to trust people
9. Feeling alone or detached from other individuals since the death	<i>Item 10.</i> Ever since the death, I feel like I don’t care about other people as much and I don’t feel as close to people I care about as I used to
10. Feeling that life is meaningless or empty without the deceased, or the belief that one cannot function without the deceased	<i>Item 14.</i> I feel that life is empty or has no meaning without <i>Item 20.</i> I feel like the future has no meaning or purpose without <i>Item 22.</i> It is difficult for me to imagine life being satisfying without

Persistent Complex Bereavement-Related Disorder	Assessment
11. Confusion about one's role in life or a diminished sense of one's identity (e.g., feeling that a part of oneself died with the deceased)	<i>Item 23.</i> I feel that a part of myself died with
12. Difficulty or reluctance to pursue interests since the loss or to plan for the future (e.g., friendships, activities)	<i>Item 13.</i> Sometimes people who lose a loved one feel that they cannot go back to normal life and be able to make new friends and do new activities. Do you feel that making new friends or doing new activities would be difficult for you?
Criterion D. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning	CGAS 70
Criterion E. The bereavement reaction must be out of proportion or inconsistent with cultural, religious, or age-appropriate norms	Not assessed

Note:

^aInventory for Complicated Grief-Revised for Children (ICG-RC) item.

Table 2
 Cut-Offs on the Inventory of Complicated Grief–Revised for Children (ICG-RC) to Identify Prolonged Grief Reactions in Children

	AUC (SE) ^a	p	Cut-off	Sensitivity	Specificity
ICG-RC scores at 9 months after the death					
Class 3 ^b vs. Class 1	0.994 (0.05)	<.001	68	0.942	0.965
Class 3 ^b vs. Class 1 and 2	0.934 (0.02)	<.001	68	0.962	0.820 ^c
Class 3 ^b vs. Class 2	0.822 (0.05)	<.001	68	0.962	0.551 ^d
Class 2 ^b vs. Class 1	0.927 (0.02)	<.001	45	0.974 ^e	0.629 ^f
ICG-RC scores at 21 months after the death					
Class 3 ^b vs. Class 1	1.00 (0.00)	<.001	68	0.908	1.000
Class 3 ^b vs. Class 1 and 2	0.988 (0.09)	<.001	68	0.900	0.958 ^c
Class 3 ^b vs. Class 2	0.968 (0.02)	<.001	68	0.900	0.889 ^d
Class 2 ^b vs. Class 1	0.959 (0.02)	<.001	45	0.934	0.831 ^f
ICG-RC scores at 33 months after the death					
Class 3 ^b vs. Class 1	0.996 (0.006)	<.001	68	0.801	1.000
Class 3 ^b vs. Class 1 and 2	0.977 (0.02)	<.001	68	0.833	0.967 ^c
Class 3 ^b vs. Class 2	0.939 (0.047)	.001	68	0.833	0.903 ^d
Class 2 ^b vs. Class 1	0.893 (0.03)	<.001	45	0.758 ^e	0.837 ^f

Note:

^a Area Under the Curve (AUC) (Standard Error)

^b Children in this Class are to be discriminated from those in the other Class(es); Significant differences are noted by a superscript letter.

^c $p < 0.001$ for 9 vs. 21 months, $p = 0.001$ for 9 vs. 33 months.

^d $p < 0.001$ for 9 vs. 21 months, $p = 0.007$ for 9 vs. 33 months.

^e $p = 0.04$ for 9 vs. 33 months.

^f $p = 0.004$ for 9 vs. 21 months, $p = 0.003$ for 9 vs. 33 months.

Table 3

Sensitivity and Specificity of Individual Items of the Inventory of Complicated Grief--Revised (ICG-RC) for Children at 9 Months Following Parental Death

Item	Freq ^a	Sens ^b	Spec ^c	AUC ^d	p
1. The death feels upsetting, overwhelming or devastating	10.6	0.31	0.98	0.93	<.001
2. I think about ... ^e so much that it can be hard for me to do the things I normally do	6.7	0.35	0.995	0.95	<.001
3. Memories of ... upset me	5.7	0.27	0.99	0.92	<.001
4. I feel that I cannot accept the death	7.6	0.42	0.995	0.90	<.001
5. I very much miss	51.4	1.00	0.69	0.91	<.001
6. I feel angry about the death	11.4	0.46	0.97	0.91	<.001
7. I feel that I cannot believe the death	14.3	0.62	0.97	0.91	<.001
8. I feel shocked over the death	12.6	0.69	0.99	0.93	<.001
9. Ever since the death, it is hard for me to trust people	7.6	0.27	0.98	0.84	<.001
10. Ever since the death, I feel like I don't care about other people as much and I don't feel as close to people I care about as I used to	2.9	0.15	0.995	0.75	.003
11. I avoid reminders of	2.9	0.04	0.98	0.67	.05
12. I avoid reminders that he/she is dead	6.7	0.23	0.98	0.75	.003
13. Sometimes people who lose a loved one feel that they cannot go back to normal life and be able to make new friends and do new activities. Do you feel that making new friends or doing new activities would be difficult for you?	4.8	0.19	0.995	0.86	<.001
14. I feel that life is empty or has no meaning without	3.8	0.15	0.995	0.79	.001
15. I hear the voice of ...speak to me	1.9	0.05	0.99	0.66	.06
16. I feel like I have become numb (or has no feelings) ^f since the death	3.8	0.15	0.995	0.78	.001
17. I feel that it is unfair that I should live when he/she died	1.0	0.08	1.00	0.72	.01
18. I am bitter (or angry) over the death	4.9	0.15	0.98	0.90	<.001
19. I feel jealous of others who have not lost someone close	6.7	0.42	1.00	0.79	.001
20. I feel like the future has no meaning or purpose without	1.0	0.00	0.99	0.79	.001
21. I feel lonely ever since the death	14.3	0.42	0.96	0.82	<.001
22. It is difficult for me to imagine life being satisfying without	4.8	0.15	0.99	0.84	<.001
23. I feel that a part of myself died with	9.6	0.42	0.98	0.86	<.001
24. I feel that the death made me see the world differently	20.2	0.50	0.91	0.86	<.001
25. I don't feel safe since the death	3.8	0.19	0.995	0.72	.01

Item	Freq ^d	Sens ^b	Spec ^c	AUC ^d	p
26. I feel that I don't have control over things since the death	5.8	0.35	1.00	0.85	<.001
27. I am jumpy or easily startled since the death	2.9	0.08	0.99	0.89	<.001
28. Since the death, my sleep has been disturbed	6.8	0.27	0.99	0.88	<.001

Note: Shaded items constitute the ICC-RC screen. Numbers in bold in the sensitivity column correspond to sens>0.5.

^aFreq=Frequency or % endorsing item at 4.

^bSensitivity.

^cSpecificity

^dArea under the curve (AUC).

^e,"my parent" or the relationship lost.

^fWords between parentheses are for the interviewer to use for younger child.

Table 4

Cut-Off on the Inventory of Complicated Grief–Revised for Children Screen (ICG-RC Screen) to Screen for Prolonged Grief Reactions in Children

	AUC (SE) ^a	<i>p</i>	Cut-off	Sensitivity	Specificity
ICG-RC Screen scores at 9 months after the death					
Class 3 ^b vs. Class 1	0.993 (0.06)	<.001	14	1.000	0.692 ^c
Class 3 ^b vs. Class 1 and 2	0.930 (0.02)	<.001	14	1.000	0.490 ^d
ICG-RC Screen scores at 21 months after the death					
Class 3 ^b vs. Class 1	0.975 (0.02)	<.001	14	0.950	0.845 ^c
Class 3 ^b vs. Class 1 and 2	0.926 (0.04)	<.001	14	0.950	0.647 ^d
ICG-RC Screen scores at 33 months after the death					
Class 3 ^b vs. Class 1	0.996 (0.006)	<.001	14	1.000	0.929 ^c
Class 3 ^b vs. Class 1 and 2	0.969 (0.02)	<.001	14	1.000	0.782 ^d

Note:

^a Area Under the Curve (AUC) (Standard Error).

^b Children in this Class are to be discriminated from those in the other Class(es); Significant differences are noted by a superscript letter.

^c $p=0.003$ for 9 vs. 21 months, $p<0.001$ for 9 vs. 33 months.

^d $p<0.001$ for 9 vs. 21 months, $p<0.001$ for 9 vs. 33 months, $p=0.03$ for 21 vs. 33 months

Table 5
Evaluation of Proposed *DSM-5* Criteria for Persistent Complex Bereavement-Related Disorder

9 months after the death	Sensitivity^a	Specificity^a	Sensitivity^b	Specificity^b
Overall Criteria	0.417 (5/12)	1.000 (83/83)	0.667 (8/12)	0.988 (82/83)
Criterion				
B	1.000 (13/13)	0.483 (42/87)		
C	0.417 (5/12)	0.988 (85/86)	1.000 (12/12)	0.930 (80/86)
D ^c	0.615 (8/13)	0.758 (69/91)		
21 months after the death				
Overall Criteria	0.222 (2/9)	1.000 (70/70)	0.556 (5/9)	1.000 (70/70)
Criterion				
B	0.900 (9/10)	0.662 (49/74)		
C	0.222 (2/9)	1.000 (72/72)	0.890 (8/9)	0.972 (70/72)
D ^c	0.727 (8/11)	0.797 (63/79)		
33 months after the death				
Overall Criteria	0.200 (1/5)	1.000 (58/58)	0.200 (1/5)	0.983 (57/58)
Criterion				
B	0.667 (4/6)	0.730 (46/63)		
C	0.400 (2/5)	1.000 (60/60)	0.600 (3/5)	0.967 (58/60)
D ^c	0.833 (5/6)	0.773 (51/66)		

Note:

^aCriterion C, at least 6 items endorsed.

^bCriterion C, at least 2 items endorsed.

^cCriterion D or functional impairment is measured by the Children's Global Assessment Scale (CGAS) 70.