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Authors

Kaplow, Julie B
Layne, Christopher M
Oosterhoff, Benjamin
et al.

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Validation of the Persistent Complex Bereavement Disorder Checklist: A Developmentally Informed Assessment Tool for Bereaved Youth

Julie B. Kaplow[1], **Christopher M. Layne**[2], **Benjamin Oosterhoff**[1], **Hayley Goldenthal**[3], **Kathryn H. Howell**[4], **Rachel Wamser-Nanney**[5], **Amanda Burnside**[6], **Karen Calhoun**[7], **Daphne Marbury**[8], **Laura Johnson-Hughes**[9], **Molly Kriesel**[9], **Mary Beth Staine**[10], **Marian Mankin**[10], **LaTanya Porter-Howard**[11], and **Robert Pynoos**[1]

[1]Department of Pediatrics, Baylor College of Medicine/Texas Children's Hospital, Houston, Texas, USA

[2]Department of Psychiatry, University of California, Los Angeles, California, USA

[3]Department of Psychology, Northwestern University Feinberg School of Medicine, Chicago, Illinois, USA

[4]Department of Psychiatry, University of Memphis, Memphis, Tennessee, USA

[5]Department of Psychological Sciences, University of Missouri-St. Louis, Missouri, USA

[6]Department of Psychology, Loyola University, Chicago, Illinois, USA

[7]Michigan Institute for Clinical and Health Research, University of Michigan, Ann Arbor, Michigan, USA

[8]St. John Providence Health System, Detroit, Michigan, USA

[9]Starfish Family Services, Livonia, Michigan, USA

[10]Bo's Place, Houston, Texas, USA

[11]Henry Ford Health System, Detroit, Michigan, USA

Abstract

The inclusion of Persistent Complex Bereavement Disorder (PCBD) in the *DSM-5* appendix signifies a call for research regarding the distinguishing features and clinical utility of proposed PCBD criteria. Rigorously constructed tools for assessing PCBD are lacking, especially for youth. This study evaluated the validity and clinical utility of the PCBD Checklist, a 39-item measure designed to assess PCBD criteria in youth aged 8 to18 years. Test construction procedures involved: (a) reviewing the literature regarding developmental manifestations of proposed criteria; (b) creating a developmentally informed item pool; (c) surveying an expert panel to evaluate the clarity and developmental appropriateness of candidate items; (d) conducting focus groups to evaluate the comprehensibility and acceptability of items; and (e) evaluating psychometric

Correspondence concerning this article should be addressed to Julie B. Kaplow, Ph.D., A.B.P.P., Director, The Trauma and Grief Center at Texas Children's Hospital, Associate Professor, Dept. of Pediatrics/Psychology Section. Baylor College of Medicine, Feigin Center, 1102 Bates Ave. C.0235.05, Houston, TX 77030. Julie.Kaplow@bcm.edu.

properties in 367 bereaved youth (M_{age} = 13.49, 55.0% female). The panel, clinicians, and youth provided favorable content validity and comprehensibility ratings for candidate items. As hypothesized, youth who met full PCBD criteria, Criterion B (e.g., preoccupation with the deceased and/or circumstances of the death) or Criterion C (e.g., reactive distress and/or social/identity disruption) reported higher posttraumatic stress and depressive symptoms than youth who did not meet this criteria, η_p^2 = .07–.16. Youth who met Criterion C reported greater functional impairment than youth who did not, η_p^2 = .08–.12. Youth who qualified for the "traumatic bereavement specifier" reported more frequent posttraumatic stress symptoms than youth who did not qualify, η_p^2 = .04. Findings support the convergent, discriminant, and discriminant-groups validity, developmental appropriateness and clinical utility of the PCBD Checklist.

Childhood bereavement is one of the most frequently reported types of adverse life events in clinically referred youth (Pynoos et al., 2014), and is highly prevalent in the general population (Breslau, Wilcox, Storr, Lucia, & Anthony, 2004). In 2011, the worldwide lifetime prevalence of childhood bereavement due to the death of one or both parents (not including the deaths of other loved ones) was 151 million (UNICEF, 2013). The death of a loved one has also been identified as one of the most distressing life events among both adults and youth (Breslau et al., 2004; Kaplow, Saunders, Angold, & Costello, 2010). Although it is unclear whether bereavement independently increases risk for psychiatric disorders in childhood or adolescence (e.g., Dowdney et al. 2000), bereaved youth in the general population appear to be at higher risk than nonbereaved youth for a range of mental and behavioral health problems later in life (e.g., depression and substance use; Berg, Rostila, & Hjern, 2016; Kaplow et al., 2010).

Despite a growing body of research on the potential deleterious effects of bereavement on youth adjustment, few studies have examined the etiology, clinical presentation, developmentally linked manifestations, and incremental predictive utility of maladaptive grief reactions as a potential consequence of childhood bereavement. The recent inclusion of "persistent complex bereavement disorder" (PCBD) as a candidate disorder in the appendix of the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) is a call to action to rigorously evaluate essential features of proposed PCBD criteria across diverse populations, age groups, and settings. These features include the validity, clinical utility, and empirical distinctiveness of PCBD criteria in relation to other established disorders. Pursuing these aims will necessarily require developmentally sensitive assessment tools capable of validly measuring PCBD criteria in children and adolescents (Kaplow, Layne, Pynoos, Cohen, & Lieberman, 2012; Nader & Layne, 2009).

Persistent complex bereavement disorder has been characterized as a "hybrid" disorder, intended to integrate the perspectives of several primarily adult schools of thought regarding the nature and distinguishing features of maladaptive grief (Kaplow, Layne, & Pynoos, 2014). These perspectives include "pathological grief" (e.g., Horowitz, Bonanno, & Holen, 1993), "complicated grief" (e.g., Shear et al., 2011), and "prolonged grief" (e.g., Prigerson et al., 2009). The primary symptom clusters of PCBD (i.e., Criteria B and C) were intended to encompass the above schools of thought by spanning multiple conceptual dimensions (APA,

2013). Criteria B symptoms encompass: (a) separation distress, including persistent intense yearning and longing for the person who died; (b) intense sorrow; (c) preoccupation with the deceased; and/or (d) preoccupation with the circumstances of the death. Criteria C symptoms encompass (a) reactive distress in response to the death, including difficulty accepting the death, difficulty reminiscing, and excessive avoidance of loss reminders (e.g., the deceased's belongings or friends, formerly shared activities); and (b) disruptions in personal and social identity, including feeling like part of oneself has died with the deceased or that life is meaningless (see Table 1 in Supplemental Materials for full descriptions of PCBD criteria).

Criteria for PCBD also reflect emerging findings regarding ways in which the circumstances of the death, and the ensuing interplay between posttraumatic stress and grief reactions, can influence the manifestations and course of adjustment after traumatic bereavement (Pynoos, 1992; see also Kaplow et al., 2012; Kaplow, Layne, Saltzman, Cozza, & Pynoos, 2013; Layne, Pynoos et al., 2001, 2008). The PCBD diagnosis includes a "traumatic bereavement specifier" (TBS) to denote an increased likelihood for a clinical course, characterized by severe persisting distress and functional impairment (see Layne et al., 2009 for a typology of adjustment trajectories). The TBS is to be endorsed if a clinician judges that the death has occurred under traumatic circumstances (defined in *DSM-5* as either homicide or suicide), and is an ongoing source of distressing preoccupations or feelings relating to traumatic features of the death (e.g., gruesome death, intense suffering, malicious intent; APA, 2013). Because the TBS, by definition, involves preoccupation with the circumstances of traumatic deaths (e.g., homicide, suicide), the TBS is theorized to differentially co-occur and covary more strongly with posttraumatic stress symptoms than with other forms of psychological distress (e.g., depression) that are theorized to co-occur with loss, per se, regardless of the circumstances (Kaplow et al., 2012).

Designing a measure to assess PCBD criteria calls for careful developmental considerations (Kaplow et al., 2012), including exploring potential age-related differences in the manifestations, clinical course, and correlates of proposed PCBD symptoms (Kaplow & Layne, 2014; Kaplow, Layne et al., 2014; Nader & Layne, 2009). Although developmental factors may act as key determinants of ways in which children, adolescents, and adults grieve (Kaplow et al., 2012; Nader & Layne, 2009), the great majority of empirical studies of maladaptive grief have used exclusively adult samples, thereby impeding efforts to accurately characterize essential features of grief reactions in childhood (Kaplow, Layne et al., 2014).

Originally developed for adults, The Texas Revised Inventory of Grief (TRIG)–Present Feeling Subscale (Faschingbauer, 1981) is a 13-item self-report measure of children's current feelings about the death (e.g., "I still cry when I think of my___"). The TRIG has been criticized for the restricted variances of its item distributions, presumably because its items capture relatively benign, normative aspects of grief (Neimeyer & Hogan, 2001). Alternatively, a number of studies have utilized the Inventory of Complicated Grief–Revised Child (ICG-RC; Melhem, Moritz, Walker, Shear, & Brent, 2007) to assess maladaptive grief in children. This tool was adapted from the Inventory of Complicated Grief (ICG; Prigerson et al., 1995). The original ICG was developed and used with primarily older (mean age = 62

years), Caucasian (95%) widows (84%), and has been criticized for its restricted construct coverage (Shear et al., 2011). The procedures used to adapt the ICG for use with youth populations (e.g., slightly modified item wordings, pilot testing with eight children bereaved by parental suicide; Melhem et al., 2007) raise questions regarding the adequacy with which a downwardly adapted adult measure can capture potential developmental differences in how PCBD symptoms (and more generally, grief reactions) may manifest in bereaved children and adolescents (Kaplow, Layne et al., 2014; Nader & Layne, 2009). Further problems may arise if the test item pool is restricted in its content coverage, or if test construction procedures themselves involve a comparatively small and uniform sample (e.g., children bereaved solely by parental suicide; Melhem et al., 2007). Finally, authors of a number of studies have attempted to measure "childhood traumatic grief" using the Extended Grief Inventory (EGI; Layne, Savjak, Saltzman, & Pynoos, 2001), a 28-item early prototype measure that captured a variety of grief reactions observed in war-exposed youth (Layne et al., 2008). A Childhood Traumatic Grief subscale consisting of a diverse amalgam of grief reactions (predominantly separation distress; e.g., "I keep wanting to look for the person who died, even when I know he/she is not there") was derived through exploratory factor analysis (Brown & Goodman, 2005). The EGI has since been retired due to methodological limitations. Accordingly, the present study was designed to address these measurement limitations through the combined use of "ground up" developmentally oriented test construction and best-practice test validation procedures that commenced test construction with a diverse sample of bereaved children and adolescents.

The two primary aims of this study were: (a) to create a new, developmentally informed measure of grief, the PCBD Checklist, specifically constructed to assess PCBD criteria in bereaved youth; and (b) to evaluate various types of test validity and clinical utility. Given our goal of applying best-practice test construction procedures (e.g., DeVellis, 2012), we expected five outcomes, articulated here as five a priori study hypotheses: (1) The test construction procedure would result in high ($M > 4$ on a scale of 1 to 5) ratings from an expert panel for test item clarity and developmental appropriateness; (2) The test item pool would receive high ($M > 4$ on a scale of 1 to 5) ratings for clarity, developmental appropriateness, and comprehensibility, by groups of clinicians specializing in childhood bereavement; (3) PCBD criteria would show evidence of discriminant-groups validity (i.e., groups theorized to differ in their respective levels on a latent construct produce significantly different observed test scores on a measure of that construct in the directions hypothesized), such that bereaved youth who met either full PCBD diagnostic criteria, Criterion B, or Criterion C would report higher depressive and posttraumatic stress symptom (PTSS) scores than bereaved youth who met none of these criterion; (4) The TBS would show evidence of convergent and discriminant validity, such that youth who met the TBS (thereby manifesting more distress over the circumstances of the death) would report significantly higher PTSS scores—but not depression scores—than youth who did not meet the TBS; and (5) PCBD criteria would show evidence of incremental validity (over and above the predictive effects of demographic variables, depression, and PTSS) in predicting youth functional impairment in the three developmentally salient life domains of school, family, and peer relationships.

Method

Participants

This study was approved by the Institutional Review Board at the University of Michigan. Participants were recruited in two consecutive study phases. Phase 1 focused on evaluating the clarity, developmental appropriateness, and acceptability of the test item pool (39 items), and refining items as needed through the use of ratings by a panel of content experts (N = 10) and clinicians (N = 46). Phase 1 also utilized semistructured individual interviews with a sample of youth (N = 15) who were attending a summer bereavement camp. Youth (M_{age} = 12.06 years, SD = 3.36; age range: 7–18 years) were 80% female and primarily White (86.7%; the remaining 13.3% were Black). Relationships between the youth and the deceased included death of a father (17.6%), mother (23.5%), brother (11.8%), grandparent (35.3%), and adult family friend (11.8%). Causes of death included sudden natural death (41.2%), anticipated death (52.9%), and accidental death (5.9%).

Phase 2 focused on evaluating the psychometric properties of the PCBD Checklist, including discriminant-groups validity, convergent and discriminant validity, and incremental validity, using test scores collected from a new and diverse sample of youth (N = 367, M_{age} = 13.49 years, SD = 2.76; age range: 8–18 years; 55.0% female). Youth were African American (46.0%), Caucasian (39.2%), biracial (6.5%), other (4.8%), or Asian (0.8%); further, 2.5% of youth were Hispanic. All Phase 2 participants were recruited as part of a five-site (at the time) “practice research network,” comprised of school-based health clinics, grief support centers, community clinics, and academic medical center settings. The aim of the practice research network is to use “common denominator” assessment tools to create a shared data repository with the intent of validating assessment tools for the specific test applications (e.g., specific clinical decisions) and populations for which they will be used (Layne, Kaplow, & Youngstrom, 2017). Intended applications for the PCBD Checklist include risk screening and referral, in-depth clinical assessment including provisional diagnosis, case formulation, treatment planning, monitoring treatment response, treatment outcome evaluation, and posttreatment follow-up (Layne, Kaplow, & Pynoos, 2014).

Inclusion criteria for Phase 2 were: (a) the child experienced the death of a loved one; (b) the child was aged 8 to18 years; and (c) the family spoke English. A survey of all practice-research network sites revealed that only two children did not complete the full PCBD checklist. Both children were comparatively young (i.e., 8 years old), and seemed distracted and/or unable to fully understand the test items. Most participants experienced the death of a parent (n = 116), followed by grandparent (n = 114), other extended family (n = 68), sibling or friend (n = 58), or other (e.g., teacher; n = 11). The most common cause of death was anticipated (n = 166), followed by sudden/natural (n = 89), homicide (n = 61), suicide (n = 40), accident (n = 22), and unknown cause (n = 21). Over half of the participants (56.1%) had experienced multiple deaths (median: 2); among these participants, many ranked the death of a parent (46.0%) or grandparent (36.2%) as the most difficult. Youth were assessed an average of 2.4 years (SD = 3.01) after the focal death.

Procedure

Following guidelines for best-practice test construction (DeVellis, 2012; Haynes, Smith, & Hunsley, 2011), we constructed and validated the PCBD Checklist in two phases, using an eight-step procedure. Test construction commenced with the creation of a test item pool specifically intended to cover each of the proposed PCBD criteria in bereaved youth, giving special attention to capturing children's own grief-related thoughts (e.g., "I think about how things could have been different, so that __ wouldn't have died"), feelings (e.g., "I feel all alone since ___ died"), and behaviors (e.g., "I stay away from things that remind me __ has died") across a large and diverse sample. Thus, Phase 1 included: (1) reviewing the literature for potential developmentally linked manifestations of PCBD criteria (Kaplow et al., 2012); (2) Generating a pool of candidate test items specifically referenced against *DSM-5* PCBD criteria (APA, 2013), and specifically worded for bereaved children and adolescents; (3) recruiting a panel of experts in childhood bereavement/grief to provide quantitative ratings and verbal feedback regarding the developmental appropriateness and clarity of candidate test items; (4) employing child clinical therapists to extensively field test the item pool with bereaved youth in multiple settings, and evaluate its clinical utility; (5) conducting semistructured focus groups with clinicians who work with bereaved youth, to obtain ratings and feedback regarding item performance; (6) conducting interviews with bereaved youth (aged 7 to 18 years), to obtain ratings and feedback regarding the comprehensibility and acceptability of test items; and (7) iteratively refining item wordings and adding new test items as needed over a 2-year period until saturation was reached (i.e., clinicians provided no new suggestions for improvement). Phase 2 then involved (8) forming the revised item pool into a scale, and examining its convergent, discriminant, and discriminant-group validity by administering a paper version of the PCBD Checklist to a new sample of bereaved youth ($N = 367$) across a practice research network.

Measures

Persistent Complex Bereavement Disorder—The PCBD Checklist (Layne et al., 2014) consists of 39 items designed to assess all *DSM-5* PCBD diagnostic criteria (Criterion A–E), in addition to the TBS. Criterion A specifies that the death must have occurred at least 6 months prior and is a necessary precondition for Criteria B and C, which comprise the two symptom clusters. Criterion D specifies that symptoms must cause functional impairment (see Layne, Steinberg, & Steinberg, 2014). Criterion E specifies that grief reactions must differ from cultural, religious, or age-appropriate norms. Nevertheless, because few studies have evaluated whether culture, religion, or age predict the course of grief, or moderate its manifestations in childhood and adolescence, a conservative approach to evaluating Criterion E is recommended. Last, the PCBD diagnosis includes a TBS. Youth qualify for the TBS if the death was: (a) due to either homicide or suicide; and (b) judged to evoke persistent distressing thoughts or feelings relating to traumatic features of the death. Qualifying youth receive a score of 1 for each criterion; others receive a score of 0.

The PCBD Checklist Criterion B subscale consists of 7 items (Cronbach's $\alpha = .85$ in the study sample) reflecting separation distress, intense sorrow, preoccupation with the deceased, or preoccupation with the circumstances of the death. The Criterion C subscale consists of 22 items (Cronbach's $\alpha = .93$ in the study sample) reflecting reactive distress to

the death or social/identity disruption. Youth report how often they experienced each reaction during the last month, on a scale ranging from 0 (*not at all*) to 4 (*all of the time*). The Criterion B and Criterion C subscales were scored in accordance with the *DSM-5* provisional diagnosis and procedures outlined in the scoring manual (Layne et al., 2014), with 0 indicating "does not meet criterion" and 1 indicating "meets criterion". Following procedures established for use with measures of related constructs (e.g., Elhai et al., 2013), participants met Criterion B if at least one symptom was endorsed at a 3 or 4 on the Likert scale, and persisted for longer than 6 months. Participants met Criterion C if at least six symptoms were endorsed at a 3 or 4 on the Likert scale and persisted for longer than 6 months. To qualify for the TBS, the cause of death must be by homicide or suicide, and participants must endorse one or more symptom items at a 3 or 4 on the Likert scale. Last, the PCBD Checklist assesses functional impairment in the domains of family relationships, peer relationships, and school performance using three items referenced to a scale ranging from 0 (*not at all*) to 4 (*all of the time*).

Posttraumatic stress symptoms—We used the 35-item UCLA Posttraumatic Stress Disorder Reaction Index (*DSM-5* version; PTSD-RI; Elhai et al., 2013) to assess child PTSS secondary to the death. Youth reported the frequency with which they experienced PTSS in the past month on a 5-point frequency scale ranging from 0 (*never happens*) to 4 (*happens most of the time*). We calculated a total PTSD-RI score, with higher values reflecting more frequent PTSS. Cronbach's alpha in our study sample was .95.

Depressive symptoms—We used the 13-item Short Mood and Feelings Questionnaire (SMFQ; Angold et al., 1995) to assess child depressive symptoms experienced during the last 2 weeks. The SMFQ evaluates symptoms on a 3-point frequency scale consisting of 0 (*not true*), 1 (*sometimes true*), and 2 (*true*). We calculated a total SMFQ score, with higher values reflecting greater depressive symptoms. Cronbach's alpha in our study sample was .89.

Data Analysis

We first present qualitative and quantitative data gathered from the expert panel, clinician field testing reports, clinician focus groups, and youth interviews, and describe how they were used to evaluate the clarity, developmental appropriateness, acceptability, and clinical utility of the items. Next, we present a series of multivariate analyses of covariance (MANCOVAs) we conducted with SPSS 24.0 to evaluate the discriminant-groups validity of the PCBD diagnosis, the two PCBD symptom clusters (Criterion B and C), and the TBS. Specifically, we examined whether youth who met the PCBD diagnosis, Criterion B, Criterion C, or the TBS scored higher on two external criterion measures (PTSS and depression) compared with those who met neither the full diagnosis, nor Criterion B, Criterion C, or the TBS. We then present the results of MANCOVAs we used to evaluate the convergent and discriminant validity of the PCBD diagnosis, Criterion B, Criterion C, and the TBS in relation to a theorized causal consequence of PCBD symptoms—functional impairment. We did so by testing whether youth who met the PCBD diagnosis, Criterion B, Criterion C, and the TBS differed in their degree of functional impairment compared with those who did not meet these criteria. Finally, we present a test of the incremental validity of

the PBCD diagnosis, Criterion B, Criterion C, and the TBS in predicting functional impairment, by testing for mean differences in scores (after accounting for PTSS and depression) between youth who met either the PCBD diagnosis, Criterion B, Criterion C, or the TBS, and youth who met none of these three criteria. Because no studies to date have tested for differences in PCBD symptoms as a function of age, gender, or race, we used a conservative approach by including these demographic variables as covariates in each MANCOVA model. The results for all models were similar, regardless of whether or not covariates were included. There were no missing data for these analyses.

Results

Phase 1: Polling Content Experts, Clinicians, and Bereaved Youth to Refine the Item Pool

Testing Hypothesis 1: Content expert ratings—The item pool was first reviewed by an expert in test construction (Stephen Haynes, Ph.D., personal communication, 28 October 2012), who evaluated the utility and soundness of the rating scale, clarity of the instructions, face validity, and clarity of each item. After revising candidate test items based on this initial feedback, we recruited a national panel of 10 experts in childhood bereavement from a broad range of professional disciplines (e.g., social work, psychology, psychiatry, nursing) and settings (e.g., university-based clinics, community clinics, organizations serving military families) and asked them to evaluate the item pool via online survey. Content experts rated the developmental appropriateness and clarity of each item for children aged 6 years and older on a 5-point scale, which ranged from 1 (*poor*) to 5 (*excellent*). The content experts also rated the clarity of instructions and response format, and offered qualitative suggestions for improving the clarity, readability, and developmental appropriateness of each item.

Consistent with Hypothesis 1 (i.e., the test construction procedure would result in high ratings from expert panelists for test item clarity and developmental appropriateness), the content experts rated the test instructions ($M = 4.86$; $SD = 0.38$) and response format ($M = 4.50$; $SD = 0.76$) as being clear and suitable for the targeted age range. The developmental appropriateness and clarity of the items also received strong ratings ($M = 4.38$; $SD = 0.54$). The developmental appropriateness of the items was also evaluated using the content validity ratio (Wilson, Pan, & Schumsky, 2012), calculated as: (total panelists rating a given item as 4 or 5 on the developmental appropriateness scale)/(total panelists); this produced a high average rating (0.94 out of a possible 1.0) across items.

Testing Hypothesis 2: Field testing and focus groups with clinicians and bereaved youth—Next, the PCBD checklist was evaluated and field-tested by a team of 10 masters-level clinicians and clinical child psychologists working in an outpatient clinic, who were trained in its administration by one of the authors (JK). Each clinician rated whether the youth being assessed (a) understood, and (b) appeared to feel comfortable responding to the items as a whole, on a 5-point scale ranging from 1 (*poor*) to 5 (*excellent*). Consistent with Hypothesis 2 (i.e., the test item pool would receive high ratings for clarity, developmental appropriateness, and comprehensibility, by groups of clinicians specializing in childhood bereavement), clinicians rated the youth they had assessed as having a good understanding of the test items ($M = 4.71$, $SD = 0.47$) and as feeling comfortable in

responding to the items (M = 4.69, SD = 0.63). Also consistent with Hypothesis 2, clinicians verbally described the item pool as being easy to administer.

The same authors conducted four 2-hr focus groups, each comprised of 8 to 10 clinicians (total N = 36) who work with bereaved youth in various settings, including outpatient clinics, grief support facilities, and school-based mental health clinics. Each group focused on gathering clinician feedback regarding the ease of administration, comprehensibility, clinical utility, and cultural acceptability of the items making up the test item pool. Consistent with Hypothesis 2, clinicians described the item pool as being easy to administer, and stated that their child and adolescent clients appeared to easily understand and accept the items as written. The clinicians also described the items as providing important information they would not have otherwise obtained, and that assisted them in risk screening and case conceptualization.

The same authors conducted semistructured individual interviews with 15 bereaved youth, regarding their comprehension of the items, level of comfort in responding to the items, and impressions of whether relevant information about their grief reactions was missing from the collective set of items. Youth recorded their quantitative ratings on a 5-point scale ranging from 1 (*poor*) to 5 (*excellent*) and also provided verbal feedback regarding test length and format. Consistent with Hypothesis 2, the youth reported very good comprehension of (M = 4.73, SD = 0.46), and comfort in responding to (M = 4.47, SD = 0.83), the candidate test items.

Based on feedback from all sources, we modified candidate test items to enhance the items' developmental appropriateness and ease of comprehension. For example, several items were changed to better reflect ways in which youth described their grief reactions (e.g., replacing "I want to get revenge" with "I want to get back at ___"). The developers also drew on data from focus groups to explore developmentally linked manifestations of *DSM-5* PCBD symptoms (Kaplow et al., 2012). These findings led to further revision of specific items aimed at better capturing age-specific manifestations of identity distress (e.g., feeling different than other kids) and behavioral avoidance (e.g., not wanting to spend time with friends, or do after-school activities).

Phase 2: Evaluating the Validity of the PCBD Checklist

Factor structure of PCBD Criterion B and C—Phase 2 involved quantitative analyses of data gathered from a separate sample of recently bereaved youth (N = 367), to evaluate the convergent, discriminant, discriminant-groups, and incremental validity of various PCBD criteria measured by the PCBD Checklist. Prior to conducting our primary analyses, we used confirmatory factor analyses to examine the factor structure of the two primary PCBD symptom clusters. We first estimated a two-factor measurement model by specifying item-level latent variables representing PCBD Criterion B and C. This model was compared to an alternative model in which only one single latent factor was specified, representing general maladaptive grief, with support for the two-factor model indicated by a significant chi-squared difference test and a comparative fit index (CFI) difference score > .01 (Cheung & Rensvold, 2002). The two-factor model provided a good fit to the data, $\chi^2(366, N = 367) = 789.670$, CFI = .911, Tucker-Lewis Index (TLI) = .904, root mean square error of

approximation (RMSEA) = .055, 90% CI [.050, .060], standardized root mean square residual (SRMR) = .047, which was significantly better than the unidimensional model, $\chi^2(377) = 850.695$, CFI = .898, TLI = .890, RMSEA = .059, 90% CI [.053, .064], SRMR = .047; $\Delta\chi^2(1) = 61.025$, $p < .001$, ΔCFI = .013. Standardized estimates for the factor loadings in the two-factor were all significant and ranged from .50 to .82, and the covariance between the latent variables was .90 (see Supplemental Material).

Preparatory analyses—Table 1 presents descriptive statistics for key study variables. Whereas approximately half of the participants (48.8%) met Criterion B, only 19.1% met Criterion C, and approximately 15.3% qualified for the TBS. Approximately 18.0% of participants met full diagnostic criteria for PCBD. *T* tests and chi-square analyses were used to compare demographic variables (age, gender, race/ethnicity, circumstance of the death, relationship to the deceased) of the youth who met each PCBD criterion with the youth who did not (see Supplementary Material). After accounting for multiple testing via false discovery rate (FDR; Benjamini & Hochberg, 1995), there were no age differences between youth who qualified for PCBD Criterion B, Criterion C, the PBCD diagnosis, or the TBS. Further analyses revealed that youth bereaved by the death of a friend or sibling (31.0%) were more likely to qualify for the TBS than youth bereaved by the death of someone other than a friend or sibling (12.3%), $\chi^2(1, N = 367) = 13.26$, $p < .001$. Initial analyses also revealed that youth bereaved by the death of a grandparent (7.1%) were less likely to qualify for the TBS than youth bereaved by the death of someone other than a grandparent (35.4%), $\chi^2(1, N = 367) = 17.66$, $p < .001$. Finally, youth who met Criterion B, Criterion C, or who qualified for the TBS did not significantly differ on any demographic variable or the cause of death, compared with youth who met none of these three criteria.

Testing Hypotheses 3 and 4: Evaluating discriminant groups, convergent validity, and discriminant validity—We used four MANCOVAs to test mean differences in PTSS and depressive symptoms (after controlling for age, gender, and race/ethnicity) among youth who met the PCBD diagnosis, Criterion B, Criterion C, or who qualified for the TBS, compared with youth who met none of these criteria. Table 2 presents overall model statistics, means, standard deviations, and effect sizes. We found a significant Box's M for all four models (ranging from 25.39 to 52.39, *p*s < .001 to .008), indicating that the covariance matrices are unequal, and thus used Pillai's Trace test to evaluate overall model significance (Tang & Algina, 1993). Effect sizes and null hypothesis tests for all models were identical to those produced by Wilk's lambda. The overall model for each criterion reached significance (see Table 2). Consistent with Hypothesis 3 (i.e., PCBD criteria would show evidence of discriminant-groups validity) and providing support for the discriminant-groups validity of the PCBD diagnosis and of its two PCBD symptom clusters, youth who met the PCBD diagnosis, Criterion B, or Criterion C reported higher PTSS and depressive symptoms compared to youth who did not meet criterion.

Consistent with Hypothesis 4 (i.e., the TBS would show evidence of convergent and discriminant validity), evidence for the convergent and discriminant validity of the TBS emerged from the finding that youth who qualified for the TBS reported higher levels of PTSS, but not higher depressive symptoms. Effect sizes for PCBD Criterion B and the TBS

on the dependent variables fell within the small to medium range (*d*s = 0.01 to 0.13), whereas the effect sizes for Criterion C were generally large (*d* > 0.13; Cohen, 1988; see Table 2).

Testing Hypothesis 5: Evaluating incremental validity in the prediction of functional impairment—In a last step, we used four additional MANCOVAs to evaluate the incremental validity of the PCBD diagnosis and diagnostic criteria. We did so by examining whether the PCBD diagnosis, Criterion B subscale scores, Criterion C subscale scores, or the TBS explained unique variance in school, family, or peer functioning, after accounting for the predictive effects of demographic characteristics, PTSS, and depressive symptoms. Table 3 presents overall model statistics, means, standard deviations, and effect sizes. Box's M was significant for each model (ranging from 60.63 to 172.63, all *p*s < .001) indicating that the covariance matrices were unequal; Pillai's Trace was thus used to evaluate model significance. Levene's test indicated univariate heterogeneity of variances for each outcome, *F*s = 4.53 to 9.40, *p*s < .001, so bootstrapping procedures (*N* = 1,000) were used to probe univariate effects (Erceg-Hurn & Mirosevich, 2008). In support of Hypothesis 5, the overall model reached significance for both the PCBD diagnosis and Criterion C symptom cluster, providing evidence for the incremental validity of the PCBD diagnosis and Criterion C in that they explained unique variance in functional impairment across the three life domains of family relationships, peer relationships, and school performance (see Table 3). Specifically, youth who met the PCBD diagnosis or Criterion C reported significantly worse functioning in school, with peers, and with family than youth who did not meet PCBD diagnosis or Criterion C. The relative size of this effect fell in the medium range. However, contrary to Hypothesis 5, the overall model did not reach significance for Criterion B or for the TBS.

Discussion

The PCBD Checklist, a measure designed to assess PCBD criteria in youth aged 8 to 18 years, was developed using best-practice test construction procedures to enhance test validity, developmental and cultural sensitivity, and clinical utility (DeVellis, 2012; Haynes et al., 2011). Consistent with Hypotheses 1 and 2, all test items received high ratings by various experts on clarity, comprehensibility, and developmental appropriateness. Further, information gathered from focus groups with clinicians, and interviews with bereaved youth, also supported the clarity, developmental appropriateness, and acceptability of the items. In support of Hypothesis 3, we found evidence for the discriminant-groups validity of the full PCBD diagnosis and of its two symptom clusters, such that participants who met either Criterion B or C reported significantly higher depressive and posttraumatic stress symptoms than those who met neither criterion. These findings are consistent with those of studies that have documented elevated comorbidity of PTSD and depressive symptoms among bereaved youth who were experiencing intense grief reactions (e.g., Layne, Pynoos et al., 2001; Layne et al., 2008).

Consistent with Hypothesis 4, we found evidence for the convergent and discriminant validity of the TBS. Youth who qualified for the TBS scored higher on measures of PTSS (but not depression) than youth who did not qualify. This finding of differential associations

aligns with the intent in the *DSM-5* that the TBS serve as a marker of risk for severe persisting grief reactions (APA, 2013). This finding also points to the potential specificity of the TBS as a marker of risk for severe persisting distress over the circumstances of the death (i.e., PTSS), but not general distress or sadness over the loss, per se (e.g., depression). Nevertheless, the caveat should be raised that predictive effects can become inflated if predictor and criterion variables share similar thematic content (e.g., avoidance of distressing reminders associated with PCBD Criterion C may correlate with avoidance of distressing reminders associated with PTSD). Taken together, these findings and our associated caveat underscore the need to carefully delineate the boundaries—both conceptually and empirically—between bereavement-related reactive distress on one hand, and PTSS on the other (Layne et al., 2017).

Last, we found partial support for Hypothesis 5 (i.e., PCBD criteria would show evidence of incremental validity in predicting youth functional impairment) in that PCBD Criterion C (but not Criterion B or the TBS) predicted unique variance in three outcomes (functional impairment in the three developmentally salient domains of family relationships, peer relationships, and school performance). Contrary to Hypothesis 5, neither Criterion B nor the TBS showed evidence of incremental validity in predicting unique variance in the three forms of functional impairment.

This evidence of differential associations between two facets of the PCBD diagnosis (Criterion B and Criterion C) and theorized outcomes of PCBD symptoms (functional impairment) suggests that the Criterion B and Criterion C symptom clusters are meaningfully distinct given that they are not functionally interchangeable. Such results parallel those of a recently published study of war-exposed bereaved adolescents, in which a prototype “precursor” measure of PCBD Criterion C grief reactions covaried significantly more strongly with four PTSD factor scores and with a measure of depression than did a prototype measure of Criterion B grief reactions (Claycomb et al., 2016). Taken together, these findings suggest that the range of grief reactions captured by PCBD possesses a multifaceted structure (Layne et al., 2014) and thus merit further study as a multidimensional construct (Kaplow, Layne, et al., 2014).

Moreover, the finding that the TBS did not predict impaired functioning with family, friends, and at school raises the question of whether it predicts clinically significant impairment. As a caveat, this lack of association with impairment may be due to a methodological artifact arising from the TBS criterion itself, given that youth bereaved by deaths other than suicide or homicide may nevertheless develop clinically significant impairment. This observation raises questions regarding the potential clinical utility of modifying the TBS to include a broader range of death circumstances that are also theorized to contain traumatogenic elements. For example, in multiple studies, youth bereaved by anticipated deaths reported higher levels of maladaptive grief and PTSS than youth bereaved by sudden natural deaths (Kaplow, Howell, & Layne, 2014; Saldinger, Cain, & Porterfield, 2003). Nevertheless, traumatic deaths due to homicide or suicide have been linked to greater impairment in adults than nonviolent deaths (Rynearson & Salloum, 2011). Such findings raise the question of whether associations between circumstances of the death and grief reactions may vary as a function of age and/or developmental stage. In other words, it may be that children and

adults exhibit differential responses to distinct types of deaths (Kaplow et al., 2012; Nader & Layne, 2009). Studies that further explore this possibility, as well as the potential mechanisms that may explain such differential associations, are needed.

The inclusion of the TBS in PCBD thus invites much-needed scientific study of the relative contributions of different facets of the death (cause, predictability, malicious intent, suffering, etc.) to maladaptive grief reactions across the lifespan; and by extension, to the risk those grief reactions convey for severe persisting distress and functional impairment at specific developmental stages (Kaplow & Layne, 2014; Nader & Salloum, 2011). The inclusion of the TBS also raises important questions regarding the interplay of PTSD and grief, and the ways in which these constructs may mutually influence one another (i.e., PTSD stemming from traumatogenic elements of the death may inhibit grief processing; grief reactions may similarly inhibit processing of traumatogenic aspects of the death; Layne, Kaplow, Oosterhoff, Hill, & Pynoos, in press).

The introduction of a developmentally sensitive measure of PCBD that is constructed to adhere to best-practice procedures carries useful implications for paraprofessional organizations, mental health practice, and public policy. Such measures can furnish bereavement support centers with tools needed to screen and refer highly distressed youth who may benefit from specialized intervention (i.e., therapy as opposed to peer support alone; Kaplow, Layne, & Pynoos, in press). In turn, school districts can use properly designed tools for “in house” needs assessment, strategic planning, and advocacy, by estimating prevalence rates of bereaved youth who are experiencing significant distress and impairment (Layne et al., 2017). Mental health clinics can also use developmentally appropriate assessment tools to guide case formulation and treatment planning, by using individualized test profiles to tailor intervention according to each youth’s needs and strengths (Layne et al., 2017).

Study limitations include a comparatively narrow range of external criterion variables (PTSS and depression) and a cross-sectional study design, both of which precluded both causal inference and the rigorous testing of predictive validity. In addition, this paper evaluated only a limited range of different types of validity (content validity, convergent and discriminant validity, discriminant-groups validity, and incremental validity), underscoring the need for ongoing evaluation of test reliability, validity, clinical utility, and internal structure (DeVellis, 2012). An additional limitation is found in the observation that the PCBD Checklist is designed to measure maladaptive grief reactions in youth as presented in proposed *DSM-5* criteria. Nevertheless, it is possible that the *DSM-5* criteria do not encompass the full range of maladaptive grief reactions that youth may exhibit. In addition, unlike other diagnostic constructs (e.g., depression), grief is theorized to be an inherently adaptive process that generally does not manifest as clinically significant distress (Kaplow & Layne, 2014; Layne et al., in press). The fact that a relatively high percentage of youth (approximately 18%) in this sample met criteria for PCBD may reflect relatively high rates of PCBD in urban populations, where bereavement (including traumatic bereavement due to homicide and suicide) tends to be more common. Alternatively, this high prevalence rate may be indicative of a potentially “overinclusive” diagnosis, in which some of the criteria may constitute normative grief reactions. Thus, developing clear theoretical and empirical

distinctions between adaptive versus maladaptive grief, and constructing measures capable of capturing these distinctions, is essential to reduce two major risks: the risk of *overpathologizing* normal grief reactions (false positives), and conversely, the risk of *underdiagnosing* actual positive cases of youth who truly struggle with maladaptive grief reactions and need specialized clinical services (false negatives; see Kaplow et al., 2013; Kaplow & Layne, 2014).

Additionally, school, family, and peer functioning were each assessed with a single-item self-report measure. An important and related area of further research involves the careful examination of the clinical course of PCBD and related grief reactions, including the frequency, intensity, and timing (i.e., time elapsed since the death) of specific PCBD symptoms and their respective associations with indicators of adaptive versus maladaptive functioning. For example, certain symptoms, such as intense sorrow, may be normative in the more immediate aftermath of the death. In addition, future studies could benefit from a careful examination of the cumulative effects of multiple losses. For example, we found that experiencing a higher number of losses was associated with greater functional impairment across all domains, including family, school, and peer domains (rs = .19 to .23, ps < .001). Given that the PCBD Checklist instructs participants to only respond about one loss, examining the intersection between multiple losses and PCBD criteria presents a conceptual challenge that will require careful methodological design and rigorous investigation. Future research can also profitably incorporate a broader array of external criterion variables, including measures of anxiety, risk-taking behaviors, and positive youth development, to more rigorously evaluate convergent and discriminant validity (e.g., Layne, Greeson, et al., 2017).

Future studies can also better clarify the specific pathways through which different types of grief reactions may arise, including the roles of theorized causal precursors, causal consequences, moderators, and mediators, to produce different causal consequences (Layne, Steinberg et al., 2014). A particularly fruitful area of future research concerns understanding the role of youths' socioenvironmental contexts, including culture-specific aspects of mourning, in facilitating or suppressing grief reactions (Kaplow et al., 2012). Such efforts show promise for informing theory-building, case formulation, and intervention planning. In particular, such advances can assist in prescribing intervention components that are most effective in therapeutically reducing different dimensions of maladaptive grief reactions (given evidence that PTSS and maladaptive grief reactions differentially respond to different treatment components; Grassetti et al., 2014), as well as facilitating adaptive grief reactions (Kaplow et al., in press). Efforts to embed this work within an integrative theoretical, psychometric, empirical, and clinical framework, including a developmental lifespan theory of grief, are underway (Kaplow & Layne, 2014; Layne et al., in press).

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th. Arlington, VA: Author; 2013.

Angold A, Costello EJ, Messer SC, Pickles A, Winder F, Silver D. The development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. International Journal of Methods in Psychiatric Research. 1995; 5:237–249. Retrieved from http://onlinelibrary.wiley.com.

Benjamini Y, Hochberg Y. Controlling the false discovery rate: A practical and powerful approach to multiple testing. Journal of the Royal Statistical Society, Series B. 1995; 5:289–300. Retrieved from http://www.jstor.org.

Berg L, Rostila M, Hjern A. Parental death during childhood and depression in young adults: A national cohort study. Journal of Child Psychology and Psychiatry. 2016; 57:1092–1098. https://doi.org/10.1111/jcpp.12560. [PubMed: 27058980]

Breslau N, Wilcox HC, Storr CL, Lucia VC, Anthony JC. Trauma exposure and posttraumatic stress disorder: A study of youths in urban America. Journal of Urban Health. 2004; 81:530–544. https://doi.org/10.1093/jurban/jth138. [PubMed: 15466836]

Brown E, Goodman R. Childhood traumatic grief: An exploration of the construct in children bereaved on September 11. Journal of Clinical Child and Adolescent Psychology. 2005; 34:248–259. https://doi.org/10.1207/s15374424jccp3402_4. [PubMed: 15901225]

Cheung GW, Rensvold RB. Evaluating goodness-of-fit indexes for testing measurement invariance. Structural Equation Modeling. 2002; 9:233–255. https://doi.org/10.1207/S15328007SEM0902_5.

Claycomb MA, Charak R, Kaplow JB, Layne CM, Pynoos RS, Elhai JD. Persistent Complex Bereavement Disorder symptom domains relate differentially to PTSD and depression: A study of war-exposed Bosnian adolescents. Journal of Abnormal Child Psychology. 2016; 44:1361–1373. https://doi.org/10.1007/s10802-015-0107-7. [PubMed: 26695010]

Cohen, J. Statistical power analysis for the behavioral sciences. 2nd. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.

DeVellis, RF. Scale development: Theory and applications. Thousand Oaks, CA: Sage; 2012.

Dowdney L. Childhood bereavement following parental death. Journal of Child Psychology and Psychiatry. 2000; 41:819–830. https://doi.org/10.1111/1469-7610.00670. [PubMed: 11079425]

Elhai JD, Layne CM, Steinberg AM, Brymer MJ, Briggs EC, Ostrowski SA, Pynoos RS. Psychometric properties of the UCLA PTSD Reaction Index. Part II: Investigating factor structure findings in a national clinic-referred youth sample. Journal of Traumatic Stress. 2013; 26:10–18. https://doi.org/10.1002/jts.21755. [PubMed: 23417874]

Erceg-Hurn DM, Mirosevich VM. Modern robust statistical methods: An easy way to maximize the accuracy and power of your research. American Psychologist. 2008; 63:591–601. https://doi.org/10.1037/0003-066X.63.7.591. [PubMed: 18855490]

Faschingbauer, T. The Texas Inventory of Grief–Revised. Houston, TX: Honeycomb Publishing; 1981.

Grassetti SN, Herres J, Williamson A, Yarger HA, Layne CM, Kobak R. Narrative focus moderates symptom change trajectories in group treatment for traumatized and bereaved adolescents. Journal of Clinical Child & Adolescent Psychology. 2014; 44:933–941. https://doi.org/10.1080/15374416.2014.913249. [PubMed: 24927497]

Haynes, SN., Smith, GT., Hunsley, JD. Scientific foundations of clinical assessment. New York, NY: Taylor & Francis; 2011.

Horowitz MJ, Bonanno GA, Holen A. Pathological grief: Diagnosis and explanations. Psychosomatic Medicine. 1993; 55:260–273. https://doi.org/10.1097/00006842-199305000-00004. [PubMed: 8346334]

Kaplow JB, Howell KH, Layne CM. Do circumstances of the death matter? Identifying socioenvironmental risks for grief-related psychopathology in bereaved youth. Journal of Traumatic Stress. 2014; 27:42–49. https://doi.org/10.1002/jts.21877. [PubMed: 24478197]

Kaplow JB, Layne CM. Sudden loss and psychiatric disorders across the life course: Toward a developmental lifespan theory of bereavement-related risk and resilience. American Journal of Psychiatry. 2014; 171:807–810. https://doi.org/10.1176/appi.ajp.2014.14050676. [PubMed: 25082485]

Kaplow JB, Layne CM, Pynoos RS. Persistent Complex Bereavement Disorder as a call to action: Using a proposed *DSM-5* diagnosis to advance the field of childhood grief. Traumatic Stress Points. 2014; 28 Retrieved from https://www.istss.org.

Kaplow, JB., Layne, CM., Pynoos, RS. Treatment of Persistent Complex Bereavement Disorder in children and adolescents. In: Prinstein, M.Youngstrom, E.Mash, E., Barkley, R., editors. Treatment of childhood disorders. 4th. New York, NY: Guilford Publications, Inc; (in press)

Kaplow JB, Layne CM, Pynoos RS, Cohen J, Lieberman A. *DSM-5* diagnostic criteria for bereavement-related disorders in children and adolescents: Developmental considerations. Psychiatry. 2012; 75:242–265. https://doi.org/10.1521/psyc.2012.75.3.243.

Kaplow JB, Layne CM, Saltzman WR, Cozza SJ, Pynoos RS. Using multidimensional grief theory to explore deployment, reintegration, and death on military youth and families. Clinical Child and Family Psychology Review. 2013; 16:322–340. https://doi.org/10.1007/s10567-013-0143-1. [PubMed: 23760905]

Kaplow JB, Saunders J, Angold A, Costello EJ. Psychiatric symptoms in bereaved versus non-bereaved youth and young adults: A longitudinal, epidemiological study. Journal of the American Academy of Child and Adolescent Psychiatry. 2010; 49:1145–54. https://doi.org/10.1016/j.jaac.2010.08.004. [PubMed: 20970702]

Layne, CM., Beck, CJ., Rimmasch, H., Southwick, JS., Moreno, MA., Hobfoll, SE. Promoting "resilient" posttraumatic adjustment in childhood and beyond: "Unpacking" life events, adjustment trajectories, resources, and interventions. In: Brom, D.Pat-Horenczyk, R., Ford, J., editors. Treating traumatized children: Risk, resilience, and recovery. New York, NY: Routledge; 2009. p. 13-47.

Layne, CM., Kaplow, JB., Pynoos, RS. Persistent Complex Bereavement Disorder (PCBD) Checklist – Youth Version 1.0. Los Angeles, CA: University of California, Los Angeles; 2014.

Layne CM, Kaplow JB, Oosterhoff B, Hill R, Pynoos R. The interplay of trauma and bereavement in adolescence: Integrating pioneering work and recent advancements. Adolescent Psychiatry. (in press).

Layne, CM., Kaplow, JB., Youngstrom, EA. Applying evidence-based assessment to childhood trauma and bereavement: Concepts, principles, and practices. In: Landholt, MA.Cloitre, M., Schnyder, U., editors. Evidence-based treatments for trauma-related disorders in children and adolescents. Cham, Switzerland: Springer International Publishing AG; 2017.

Layne CM, Pynoos RS, Saltzman WR, Arslangaic B, Black M, Savjak N, Houston R. Trauma/grief-focused group psychotherapy: School-based postwar intervention with traumatized Bosnian adolescents. Group Dynamics: Theory, Research, and Practice. 2001; 5:277–290. https://doi.org/10.1037/1089-2699.5.4.277.

Layne CM, Saltzman WR, Poppleton L, Burlingame GM, Pasalic A, Durakovic E, Pynoos RS. Effectiveness of a school-based group psychotherapy program for war-exposed adolescents: A randomized control trial. Journal of the American Academy of Child and Adolescent Psychiatry. 2008; 47:1048–1062. https://doi.org/10.1097/CHI.0b013e31817eecae. [PubMed: 18664995]

Layne, CM., Savjak, N., Saltzman, WR., Pynoos, RS. The Extended Grief Inventory. University of California at Los Angeles and Brigham Young University; 2001. Unpublished manuscript

Layne CM, Greeson JKP, Kim S, Ostrowski SA, Reading S, Vivrette RL, Pynoos RS. Links between trauma exposure and adolescent high-risk health behaviors: Findings from the NCTSN Core Data Set. Psychological Trauma: Theory, Research, Practice, and Policy. 2014; 6(Suppl 1):S40–S49. 2014. https://doi.org/10.1037/a0037799.

Layne CM, Steinberg JR, Steinberg AM. Causal reasoning skills training for mental health practitioners: Promoting sound clinical judgment in evidence-based practice. Training and Education in Professional Psychology. 2014; 8:292–302. https://doi.org/10.1037/tep0000037.

Melhem NM, Moritz G, Walker M, Shear MK, Brent D. Phenomenology and correlates of complicated grief in children and adolescents. Journal of the American Academy of Child & Adolescent Psychiatry. 2007; 46:493–499. https://doi.org/10.1097/chi.0b013e31803062a9. [PubMed: 17420684]

Nader KO, Layne CM. Maladaptive grieving in children and adolescents: Developmentally linked differences in the manifestation of grief. Stress Points. 2009; 23:12–15. Retrieved from http://istss.org.

Nader K, Salloum A. Complicated grief reactions in children and adolescents. Journal of Child & Adolescent Trauma. 2011; 4:233–257. https://doi.org/10.1080/19361521.2011.599358.

Neimeyer, RA., Hogan, N. Quantitative or qualitative? Measurement issues in the study of grief. In: Stroebe, M.Hansson, R.Stoebe, W., Schut, H., editors. Handbook of bereavement research. Washington, DC: American Psychological Association; 2001. p. 89-118.

Prigerson HG, Horowitz MJ, Jacobs SC, Parkes CM, Aslan M, Goodkin K, Maciejewski PK. Prolonged grief disorder: Psychometric validation of criteria proposed for *DSM-5* and *ICD-11*. PLoS Medicine. 2009; 6:e1000121. https://doi.org/10.1371/journal.pmed.1000121. [PubMed: 19652695]

Prigerson HG, Maciejewski PK, Reynolds CF III, Bierhals AJ, Newsom JT, Fasiczka A. Inventory of complicated grief: A scale to measure maladaptive symptoms of loss. Psychiatry Research. 1995; 59:65–79. https://doi.org/10.1016/0165-1781(95)02757-2. [PubMed: 8771222]

Pynoos RS. Grief and trauma in children and adolescents. Bereavement Care. 1992; 11:2–10. https://doi.org/10.1080/02682629208657280.

Pynoos RS, Steinberg AM, Layne CM, Liang LJ, Vivrette RL, Briggs EK, Fairbank J. Modeling constellations of trauma exposure in the National Child Traumatic Stress Network core data set. Psychological Trauma: Theory, Research, Practice, and Policy. 2014; 6:S9–S17. https://doi.org/10.1037/a0037767.

Rynearson, EK., Salloum, A. Restorative retelling: Revising the narrative of violent death. In: Neimeyer, RA.Harris, DL.Winokuer, HR., Thornton, GF., editors. Grief and bereavement in contemporary society. New York, NY: Routledge; 2011. p. 177-188.

Saldinger A, Cain AC, Porterfield K. Managing traumatic stress in children anticipating parental death. Psychiatry. 2003; 66:168–181. https://doi.org/10.1521/psyc.66.2.168.20613. [PubMed: 12868295]

Shear MK, Simon N, Wall M, Zisook S, Neimeyer R, Duan N, Keshaviah A. Complicated grief and related bereavement issues for *DSM-5*. Depression and Anxiety. 2011; 28:103–117. https://doi.org/10.1002/da.20780. [PubMed: 21284063]

Tang KL, Algina J. Performance of four multivariate tests under variance covariance heteroscedasticity. Multivariate Behavioral Research. 1993; 28:391–405. https://doi.org/10.1207/s15327906mbr2804_1. [PubMed: 26801140]

United Nations International Children's Emergency Fund (UNICEF). Statistics by area/HIV/AIDS: Orphan estimates. 2013. Retrieved from http://www.childinfo.org/hiv_aids_orphanestimates.php

Wilson FR, Pan W, Schumsky DA. Recalculation of the critical values for, Lawshe's content validity ratio. Measurement and Evaluation in Counseling and Development. 2012; 45:197–210. https://doi.org/10.1177/0748175612440286.

Table 1

Descriptive Statistics for Phase 2 Study Variables

Variable	Range	*n*	%	*M*	*SD*
PCBD diagnosis	0–1	66	18.0		
Criterion B	0–1	179	48.8		
Criterion C	0–1	70	19.1		
TBS	0–1	56	15.3		
School functioning	0–4			1.21	1.37
Family functioning	0–4			1.12	1.35
Peers functioning	0–4			0.78	1.17
PTSD symptoms	0–75			26.65	18.78
Depressive symptoms	0–26			7.78	6.47

Notes: PCBD = Persistent Complex Bereavement Disorder; PTSD = posttraumatic stress disorder; TBS = traumatic bereavement specifier.

Table 2

Multivariate Analysis of Covariance Predicting Posttraumatic Stress Symptoms and Depressive Symptoms from Persistent Complex Bereavement Disorder (PCBD) Criteria

Symptom Cluster	Criteria Not Met		Criteria Met					
	M	***SE***	***M***	***SE***	***F***	***df***	***N***	η_p^2
				PCBD Diagnosis				
PTSS	6.67	0.35	12.76	0.79	50.20*	1, 362	367	.13
Depression	23.02	1.04	41.92	2.32	56.27*	1, 362	367	.14
Pillai trace[a], *F*	.16, 32.85*							
				Criterion B				
PTSS	12.58	2.10	29.73	1.09	51.50*	1, 362	367	.13
Depression	4.28	0.74	8.57	0.38	26.34*	1, 362	367	.07
Pillai trace[a], *F*	.13, 25.92*							
				Criterion C				
PTSS	20.05	1.07	39.97	1.61	108.38*	1, 362	367	.16
Depression	5.83	0.37	11.86	0.56	81.52*	1, 362	367	.14
Pillai trace[a], *F*	.26, 30.67*							
				Traumatic Bereavement Specifier				
PTSS	23.99	1.14	33.08	2.07	14.96*	1, 362	367	.04
Depression	7.49	0.39	8.18	0.71	0.73	1, 362	367	.01
Pillai trace[a], *F*	.06, 10.32*							

Note. All analyses controlled for age, gender, race/ethnicity. PTSS = posttraumatic stress symptoms.

[a] $F(2,364)$.

* $p < .05$.

Table 3

Multivariate Analysis of Covariance Predicting School, Family, and Peer Functioning from Persistent Complex Bereavement Disorder (PCBD) Criteria

Symptom Cluster	**Criteria Not Met**		**Criteria Met**					
Domain of Functioning	***M***	***SE***	***M***	***SE***	***F***	***df***	***N***	η_p^2
			PCBD Diagnosis					
School	0.98	0.07	1.95	0.16	36.97*	1, 360	367	.08
Family	0.96	0.07	1.74	0.17	24.69*	1, 360	367	.05
Peer	0.58	0.06	1.51	0.15	34.63*	1, 360	367	.09
Pillai trace[a], *F*	.12, 14.96*							
			Criterion B					
School	0.88	0.09	1.47	0.11	3.85	1, 360	367	.01
Family	0.92	0.10	1.28	0.10	2.62	1, 360	367	.01
Peer	0.57	0.07	0.95	0.11	3.50	1, 360	367	.02
Pillai trace[a], *F*	.01, 1.49							
			Criterion C					
School	0.86	0.08	1.79	0.12	37.84*	1, 360	367	.10
Family	0.82	0.08	1.69	0.13	30.38*	1, 360	367	.08
Peer	0.44	0.07	1.38	0.11	47.64*	1, 360	367	.12
Pillai trace[a], *F*	.16, 21.96*							
			Traumatic Bereavement Specifier					
School	1.06	0.07	1.42	0.14	5.34*	1, 360	367	.02
Family	1.06	0.08	1.14	0.14	0.53	1, 360	367	.00
Peer	0.69	0.07	0.89	0.12	1.79	1, 360	367	.01
Pillai trace[a], *F*	.02, 1.82							

Note. All analyses controlled for depressive symptoms, posttraumatic stress symptoms, age, gender, race/ethnicity.

[a] $F(3,363)$.

* $p < .05$.