CONFIRMING THE DISTINCTIVENESS OF
COMPLICATED GRIEF FROM DEPRESSION AND
ANXIETY AMONG ADOLESCENTS

LET DILLEN and JOHNNY R. J. FONTAINE
Department of Personnel Management, Work and Organisational
Psychology, Ghent University, Ghent, Belgium

LENI VERHOFSTADT-DENÈVE
Department of Developmental, Personality and Social Psychology,
Ghent University, Ghent, Belgium

Studies in adult populations have shown that symptoms of complicated grief (CG) consti-
tute a form of bereavement-related distress distinct from symptoms of depression and anxiety. The purpose of this article is to replicate these findings in two samples of bereaved adolescents by investigating the latent structure of symptoms of CG, anxiety, and depression measured by self-report questionnaires. The first study (N = 245) focuses on one of the most prevalent losses in adolescence, namely the death of a grandparent. In the second study (N = 351) the authors further the examination of the distinctiveness question by inspecting not only the latent structure of CG, depression, and anxiety but also whether the distinctiveness of the emerging latent structure holds across subgroups of bereaved adolescents suffering different types of losses. Confirmatory factor analyses in both studies confirm the distinctiveness of CG from depression and anxiety in a younger population.

Received 15 June 2007; accepted 7 August 2008.

We thank the Fund for Scientific Research-Flanders (Belgium) for funding this research, the adolescents for participating in this study, and the psychology graduate students of the Ghent University for assisting in the data collection. Finally, we are grateful to the Children and War Foundation for providing the kind permission to use and translate the Traumatic Grief Inventory for Children (TGIC), and to Mariken Spuij, Paul Boelen, and Yvonne Stikkelbroek from Utrecht University for their kind permission to use the Inventory of Complicated Grief-Youth (ICG-Y).

Address correspondence to Let Dillen, Department of Personnel Management, Work and Organisational Psychology, Ghent University, H. Dunantlaan 2, B-9000 Ghent, Belgium. E-mail: Let.Dillen@UGent.be
During the past decades consensus has arisen that a syndrome of complicated grief (CG) captures the protracted and debilitating grief reactions that are experienced by a significant minority (10 to 15%) of bereaved adults. CG is defined as a syndrome encompassing symptoms, such as chronic and disruptive yearning, pining and longing for the deceased, trouble accepting the death, inability to trust others, excessive bitterness related to the death, uneasiness to move on, numbness and detachment, feeling that life is empty, cognitions about a bleak future, and being agitated, that have been causing significant impairments in functioning for at least six months (Jacobs, Mazure, & Prigerson, 2000; Prigerson & Maciejewski, 2005; Prigerson et al., 1999). Since its introduction in the late 1990s (Prigerson et al., 1999), a growing number of independent studies with samples varying in age, type of bereavement, and type of kinship with the deceased has demonstrated that symptoms of CG form a unidimensional entity that can reliably be distinguished from depressed and anxious forms of bereavement-related distress and that predicts mental and physical health impairments (see Prigerson & Maciejewski, 2005, for an overview).

In light of this sizable evidence in favor of CG, voices are raised to include CG as a new diagnostic category in the next edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 2000). Particularly important in this regard are studies that demonstrate that CG represents symptoms that are not captured by disorders already existing in the DSM. Two major\(^1\) approaches are currently taken to examine the distinctiveness of CG. First, using exploratory and (more recently) confirmatory factor analytic techniques various researchers have shown that CG symptoms cluster apart from symptoms of depression and anxiety (Boelen & Prigerson, 2007; Boelen & van den Bout, 2005; Boelen, van den Bout, & de Keijser, 2003; Chen et al., 1999; Ogrodniczuk et al., 2003; Prigerson, Bierhals et al., 1996; Prigerson, Frank et al., 1995; Prigerson, Shear et al., 1996; Ritsher & Neugebauer, 2002). Moreover, Boelen and van den Bout showed that this distinctiveness was stable across groups of bereaved (viz., men vs. women, violent vs. non-violent losses,

\(^1\)Apart from the factor analytic and the incremental validity studies, proponents of CG also underline that existing treatments of depression and PTSD are not effective in the case of CG (e.g., Reynolds et al., 1999).
recent vs. non-recent losses, and various kinship groups). A second line of evidence comes from studies that examine the incremental validity of CG, showing that CG predicts psychological (dys)functioning over and above other bereavement-related distress forms, such as depression and PTSD (among others: Boelen & Prigerson, 2007; Bonanno et al., 2007; Prigerson et al., 1997). In sum, studies from both approaches provide convergent support that CG represents a unique aspect of bereavement-related distress that is not captured by other distress forms. An important hiatus, however, is that much of the research on CG is performed on bereaved adults.

Contrasting sharply with the burgeoning literature on CG in adults, is the relatively little empirical work on CG in younger populations (viz., children and adolescents). Studies on bereavement in children and adolescents, however, point toward the heightened presence of mental health problems (inter alia: Cerel, Fristad, Verducci, Weller, & Weller, 2006; Cerel, Fristad, Weller, & Weller, 1999; Dowdney, 2000; Kaffman & Elizur, 1996; Lutzke, Ayers, Sandler, & Barr, 1997; Pfeffer, Karus, Siegel, & Jiang, 2000; Silverman & Worden, 1993; Stoppelbein & Greening, 2000), which for a minority (approximately 20%) of the bereaved children and adolescents show a severely debilitating course (Dowdney, 2000; Worden & Silverman, 1996). Moreover, a longitudinal research program in late adolescent friends and acquaintances of 26 suicide victims underscored the occurrence of a CG reaction that was similar to adults (Melhem et al., 2004a, 2004b). This research provided also first evidence of the incremental validity of CG from depression and PTSD. First, the incidence of CG in this sample was found to be independent from depression and PTSD. Second, CG at baseline predicted onset or course of depression (even after controlling for baseline depression) and PTSD at 12–18 months (even after controlling for PTSD at baseline; Melhem et al., 2004b). Although CG shared some risk factors with depression and PTSD, each of the syndromes had their unique predictors (Melhem et al., 2004a). Notwithstanding the importance of this work, it is limited by its restriction to adolescents bereaved of a friend or acquaintance by suicide and its inference of CG from the Texas Revised Inventory of Grief (TRIG; Fashingbauer, Zisook, & DeVaul, 1987), a self-report instrument originally designed to assess general grief symptoms in adults. Recently Melhem and colleagues (Melhem, Moritz, Walker, Shear, & Brent,
2007) furthered their examination of CG using a modified version of the standard adult CG questionnaire, the Inventory of Complicated Grief—Revised (ICG–R: Prigerson & Jacobs, 2001), in 129 children between 7 and 18 years old who were bereaved of a parent due to suicide, accident or sudden natural death. Findings provided convergent support for the occurrence of a CG largely comparable to adult CG, for its incremental validity, and hence for its distinctiveness. However, the restriction to sudden parental death only, limits the generalizability of the findings to other types of losses.

Apart from these encouraging findings on the validity of an adult-like CG reaction in younger bereaved, Cohen and colleagues (Cohen, Goodman, Brown, & Mannarino, 2004; Cohen, Mannarino, Greenberg, Padlo, & Shipley, 2002) formulated a different approach to conceptualize the debilitating grief reactions in children and adolescents, namely the construct of childhood traumatic grief (CTG). CTG is defined as “the encroachment of trauma symptoms on the child’s ability to grieve” (Cohen et al., 2002, p. 311), because “thoughts and reminders of the death […], the actual loss […], or changes resulting from the death […] can trigger traumatic thoughts, images, or memories that interfere with pleasant or comforting memories of the loved one” (Brown & Goodman, 2005, p. 249). The construct was validated in 83 children between 8–18 years old who had lost a father in the terrorist attacks on September 11, 2001 (Brown & Goodman, 2005). Although the symptoms of CTG seem similar to the those of CG, Melhem et al. (2007) noted that the high correlation between CTG and PTSD ($r = .73, p < .005$) makes it unclear whether CTG is distinct from PTSD. Furthermore, some authors (Spuij, Stikkelbroek, Goudena, & Boelen, 2008) suggested that the specific phenomenology of grief problems is less pronounced in CTG, as its focus is primarily on the PTSD symptoms that interfere with the ability to grieve. It is suggested that CTG may portray a specific manifestation of the broader construct of CG.

Because the phenomenology of grief complications is not well understood in younger populations (Melhem et al., 2004a, 2004b; Oltjenbruns, 2001; Tremblay & Israel, 1998), we undertook two cross-sectional studies in Belgium in order to enhance knowledge on CG in younger bereaved, particularly in bereaved adolescents. More concretely, we sought to test whether the distinctiveness of CG symptoms and bereavement-related depressive and anxiety
symptoms previously found in adult studies (Boelen & van den Bout, 2005; Boelen, van den Bout, & de Keijser, 2003; Chen et al., 1999; Ogrodniczuk et al., 2003; Prigerson, Bierhals et al., 1996; Prigerson, Shear et al., 1996) will hold for adolescents. Replication of this distinctiveness within younger groups is important in light of the determination of generalizability of previous findings (Lichtenthal, Cruess, & Prigerson, 2004; Pfefferbaum et al., 2006) and hence in light of the discussion whether or not CG should be included in the psychiatric taxonomies as a new diagnostic entity. In accordance with the work of Boelen and van den Bout (2005) and more recently of Boelen and Prigerson (2007), we wanted to evaluate the comparative fit of two competing models of the latent structure of bereavement-related symptoms. In the first model (the unitary model), anxiety, depression, and CG symptoms are viewed as part of one overall bereavement-related distress syndrome. In the second model (the three-factor model), CG, anxiety, and depression symptoms are considered as distinct symptom clusters.

**Study 1**

As the first studies attesting of distinctiveness of CG in adolescents were focused on very specific and possibly traumatic losses (bereavement by suicide or by sudden parental loss; Melhem et al., 2004a, 2004b, 2007), furthering the examination to other groups of bereaved adolescents is highly needed. One of the most prevalent and first bereavements that youngsters are confronted with involves the death of one of their grandparents (e.g., Harrison & Harrington, 2001; Ros & Visser, 1995). Furthermore, in Belgium, grandparents are important educators for preschool children as well as for children of school age (Burssens et al., 2004). As such, in this first study we sought to replicate the distinctiveness of CG, depression, and anxiety symptoms in adolescents who were bereaved of one of their grandparents.

**Method**

**PROCEDURE**

As part of a practical assignment for a course of developmental psychology at Ghent University each psychology graduate student was asked to invite one friend, acquaintance, or family member
who met the inclusion criteria to participate in a broader research project on grief in children and adolescents. Inclusion criteria were set on being 14 through 18 years old and being bereaved of a grandparent at the age of 10 years or older. After parent and adolescent agreed to participate and consequently signed the informed consent form, the trained graduate student planned a home visit, during which the adolescent filled out a set of questionnaires.

PARTICIPANTS

The study group consisted of 245 adolescents bereaved of one of their grandparents. The participants’ mean age was 16.4 years ($SD=1.3$). Most participants (65.7%) were female. The majority (77.1%) lived in a two-parent headed household, whereas 7.3% with a single parent (in 6.1% of the cases this involved a mother-headed household, and in 1.2% of the cases a father-headed household). Three participants (1.2%) indicated that they lived in an otherwise structured household (e.g., living on their own). More than half of the participants (59.9%) lost their grandfather, whereas 25.7% lost their grandmother; the remaining 14.3% did not specify which grandparent they lost.

INSTRUMENTS

The Traumatic Grief Inventory for Children (TGIC: Dyregrov et al., 2001) is an adapted version of the adult ICG–R (Prigerson & Jacobs, 2001), whose reliability and validity have been established in adults. The TGIC is a 23-item self-report questionnaire designed to measure maladaptive symptoms of grief in children and youngsters. Respondents are asked to rate on a 5-point Likert scale from 1 (almost never) to 5 (always) the degree to which the symptoms applied to them in the past month. The total raw score (adding the 23 item scores) gives an indication of the maladaptive grief severity. Cronbach’s $\alpha$ for this study was .91, attesting to the reliability of the scale.

To assess symptoms of depression and anxiety we used respectively the Beck Depression Inventory for Youth (BDI-Y) and the Beck Anxiety Inventory for Youth (BAI-Y) of the Beck Youth Inventories of Emotional and Social Impairment (Beck, Beck, & Jolly, 2001; Beck, Beck, Jolly, & Steer, 2005). The BDI-Y and BAI-Y are both 20-item self-report questionnaires to assess respectively symptoms of depression and symptoms of anxiety in children and youngsters (7–18 years old). Respondents are asked
to rate on a Likert scale from 0 (never) to 3 (always) the frequency with which they experienced each of the enumerated symptoms in the past two weeks. For each questionnaire a total raw score is calculated by adding the 20 item scores, with a higher total score reflecting higher levels of symptomatology. Cronbach’s α’s of .90 and .87 in this study designated high internal consistency of respectively BDI-Y and BAI-Y.

Translation of the three measures into Dutch was done according to the guidelines specified by the International Test Commission (Hambleton, 1994), using the translation back-translation procedure (Brislin, 1980) in combination with a committee approach (van de Vijver & Lueng, 1997).

STATISTICAL ANALYSIS

To evaluate the latent structure of the post-loss symptoms we conducted confirmatory factor analyses (CFA) using MPLUS Version 4.1 (Muthén & Muthén, 1998–2006). To reduce the sample size to number of estimated parameters ratio we opted to perform the CFA on item parcel level instead of item level. Additional advantages of using parcels are that parcel scores are more likely to be strongly related to the latent factor, and that idiosyncratic wording, method effects and distributional violations associated with single items are less likely (e.g., Bagozzi & Heatherton, 1994; Marsh & Hau, 1999). Because unidimensionality is considered as a prerequisite for item parceling (e.g., Bagozzi & Heatherton, 1994), a preliminary step in our data analysis was the inspection of the internal structure of the three measures. This was done with SPSS 12.0 by using a series of exploratory factor analyses (EFA, principal axis factoring) with VARIMAX rotation. Provided that the constructs were unidimensional, three item parcels per construct were composed based on the item-to-construct balance principle (Little, Cunningham, Shahar, & Widaman, 2002).

As a next step we performed CFA on the nine item parcels. Following recommendations in SEM-literature (Bollen & Long, 1993; Hu & Bentler, 1999), we relied on four measures of model fit to evaluate the fit of the two proposed models (viz., the unitary and the three-factor model). More concretely, we examined (a) the root mean square error of approximation (RMSEA), (b) the standardized root mean square residual (SRMR), (c) the comparative fit index (CFI), and (d) the Tucker-Lewis index (TLI). For RMSEA
and SRMR values less than .05 represent good fit, values of .05 to .08 represent moderate fit, and values of .08 to .10 represent adequate fit (Brown & Cudeck, 1993). For CFI and TLI, values greater than .90 are considered consistent with a good model (Bentler, 1990; Stevens, 1996). Finally, to compare the goodness of fit of the competing (nested) models, we used the Akaike and Bayesian information criterion (AIC and BIC, respectively), with smaller values indicating better model fit.

**Results and Discussion**

**PRELIMINARY ANALYSES**

The mean TGIC\(^2\) score was 36.90 ($SD = 10.97$; range 23–73). The mean scores for the BAI-Y and BDI-Y were respectively 15.95 ($SD = 7.03$; range 0–40) and 11.47 ($SD = 6.82$; range 0–37). Compared with norm data provided by Beck et al. (2001, 2005), the anxiety scores for the majority of the adolescents (66.5%) were in the average severity range, for 19.8% in the mildly elevated range, for 11.6% in the moderately elevated range, and for 2.1% in the extremely elevated range. A comparable distribution of the scores on the severity continuum was obtained when the depression scores were compared with the norm data of Beck et al. (2001, 2005);\(^3\)

\(^2\)To date there are no normative data available for the TGIC with which to compare the scores of our sample.

\(^3\)These normative data are obtained based on U.S. samples; comparable data for Belgium are still lacking.

\(^4\)Information on the exploratory factor analyses of the TGIC, BDI-Y, and BAI-Y can be requested from the corresponding author.

\(^4\)As a consequence item parcels were created for each construct with factor loadings as guidelines: parcels 1–3 representing TGIC, parcels 4–6 representing BDI-Y, and parcels 7–9 representing BAI-Y.

**CONFIRMATORY FACTOR ANALYSES**

The unitary model with all item parcels loading on one factor did not fit the data: $\chi^2(27) = 486.910$, $CFI = .702$, $TLI = .603$, $SRMR = $.075.
RMSEA = .264, and SRMS = .148. The three-factor model with parcels loading on three distinct but correlated factors had good fit estimates: $\chi^2(24) = 35.175$, CFI = .993, TLI = .989, RMSEA = .044, and SRMS = .028.\(^5\) Furthermore, the AIC and BIC values were lower in the three-factor model (respectively 9523.400 and 9596.926) than in the unitary model (respectively 9969.135 and 10032.158), indicating that the three-factor model was significantly better than the unitary model. The factor loadings of the three-factor model are presented in Table 1. Correlations between factors were .48 for complicated grief with depression, .41 for complicated grief with anxiety, and .83 for depression with anxiety.

**Study 2**

The findings of Study 1 confirm the distinctiveness of symptoms of CG from symptoms of bereavement-related depression and anxiety in a younger sample. However, a potential limitation of the study was its exclusive focus on the loss of a grandparent. Although most adolescents in Belgium live relatively nearby their grandparents and have close contact with them, in most cases the death of a grandparent does not change the family relationships (Webb, 2002). The grief reactions within this sample might

---

\(^5\)These findings were corroborated by a reanalysis on item instead of parcel level. In accordance with Boelen, van den Bout and de Keijser (2003), we conducted a principal axis factoring (PAF) with VARIMAX rotation on a selected pool of items. We selected the ten items of the TGIC, five items of the BDI-Y, and five items of the BAI-Y that were most highly correlated with each scale’s total score: for TGIC: items 1 (preoccupation with thoughts about deceased), 2 (upsetting memories), 4 (missing), 5 (wishing for protection by the deceased), 6 (revisiting places connected to deceased), 8 (angry about death), 16 (unfair that you are still alive), 18 (lonely since death), 20 (sadness impairs functioning), 22 (intrusive thoughts); for BDI-Y: items 10 (bad things happen), 13 (doing things badly), 14 (feeling bad about what one does), 18 (feeling sad), 19 (feeling empty); and for BAI-Y: items 6 (afraid for making mistakes), 8 (afraid of getting hurt), 13 (worrying about people being mad at you), 15 (worrying), 19 (afraid about bad things happening). The analysis showed the emergence of three factors with eigenvalues of 6.40, 2.95, and 1.36, accounting for 45.68% of the variance. The first factor accounted for 22.22% of the variance. Symptoms of CG loaded highly on this factor, with factor loadings ranging from .485 to .807 and no loadings above .312 on the two other factors. The second factor accounted for 12.42% of the variance. All symptoms of anxiety and one symptom of depression (BDI-Y item 13) loaded highly on this factor, with loadings ranging from .484 to .682 and no loadings above .39 on the other factors. The third factor accounted for 11.04% of the variance. All symptoms of depression (except one) loaded highly on this factor, with loadings ranging from .493 to .725 and no loadings higher than .312 on the other factors.
therefore not be representative of adolescents bereaved by the death of other loved ones (e.g., a parent or sibling).

In the second study we sought to replicate and extend the findings of Study 1 by recruiting a sample of adolescents who were bereaved of a wide variety of loved ones. The advantage of such an heterogeneous sample is that it provides the opportunity to address whether the distinctiveness of the three symptom clusters holds across subgroups, as was already demonstrated in adults by Boelen and van den Bout (2005). Finally, to further explore the generalizability of the findings from Study 1, we used a different measure of CG. Although the TGIC (Dyregrov et al., 2001) is an adapted version of adult ICG–R (Prigerson & Jacobs, 2001), the translated version of the TGIC has not yet been validated in independent studies.

### Method

#### PROCEDURE

Data were available from 351 adolescents originally recruited—along different pathways—for a research program on

---

**TABLE 1** Factor Loadings for Symptoms of Complicated Grief (CG), Depression, and Anxiety from Confirmatory Factor Analysis Among 245 Bereaved Adolescents (Study 1)

<table>
<thead>
<tr>
<th>Parcels</th>
<th>Factor 1 (CG)</th>
<th>Factor 2 (Depression)</th>
<th>Factor 3 (Anxiety)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGIC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 1</td>
<td>.861</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 2</td>
<td>.876</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 3</td>
<td>.862</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI-Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 4</td>
<td>.852</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 5</td>
<td>.864</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 6</td>
<td>.857</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAI-Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 7</td>
<td>.875</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 8</td>
<td>.840</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 9</td>
<td>.838</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* TGIC = Traumatic Grief Inventory for Children; BDI-Y = Beck Depression Inventory-Youth; BAI-Y = Beck Anxiety Inventory-Youth.
the phenomenology of grief in children and adolescents. The first group (the home visit sample) was recruited via media publicity, direct mailing of self-support organizations to their members, contact with victim services, and an announcement among psychology graduate students at Ghent University to introduce the research to acquaintances who met the inclusion criteria. Children and adolescents were eligible for the research program if they were bereaved of a first-grade relative (parent or sibling), the bereavement had occurred more than six months ago, and they were between 8 and 19 years old. Information about the study was summarized in two leaflets: one for the child/adolescent and one for the parent(s). After the parent(s) and child/adolescent agreed to participate and gave informed consent/assent, a trained graduate student or Let Dillen (the first author) planned a home visit. During this home visit the child/adolescent and parent filled in a set of questionnaires. After the home visit the child/adolescent received a movie ticket and the parent(s) received an information booklet about grief specially developed for the broader research project. We attained 127 children and adolescents; participants attending primary school \( n = 54 \) were excluded for the present analyses.

The second group (the school sample) was recruited via two Belgian secondary schools. After receiving consent of the principals, letters with information about the study were distributed to the pupils and their parents. The assessment was conducted at school in multi-class groups during regular school days under supervision of trained graduate students or Let Dillen (the first author). At the beginning of the assessment purpose, general instructions, confidentiality, and voluntariness were underlined. The test booklet contained a separate sheet with contact information of services and of the researchers in case pupils would have questions or problems related to the investigated topics. Pupils who had submitted a refusal note from their parents or declined of their own will were taken care of by a school counsellor in an adjacent room. We gathered data on 610 adolescents, of which 372 reported a significant bereavement experience. Of this subsample 94 adolescents were excluded, as they had more than 5% missing values on one of the three measures central for the present study, ending up with a sample of 278 adolescents.
PARTICIPANTS

In total 351 adolescents (36.6% males) with a mean age of 14.8 years ($SD = 1.8$; range 12–19 years) were included in the final data set. The majority of the adolescents (75.6%) lived in a two-parent headed household, whereas 22.4% in a single-parent headed household, and 2.0% in an otherwise organized household. Only six adolescents (2%) had a foreign nationality. Ninety-four (26.8%) adolescents were bereaved of a first-grade relative (of which 21 of their mother, 43 of their father, 20 of their sibling) and 257 (73.2%) of someone else (of which 158 [45%] lost a grandparent, 31 [8.8%] a friend, and 68 [19.4%] another person, such as a teacher, another family member, a neighbor). These deaths were caused by violent means (viz., accident, suicide, or homicide, $n = 64, 18.3\%$) or by nonviolent means, namely illness ($n = 286, 81.7\%$). On average these deaths occurred 3.1 years ago ($SD = 2.7$; range 0–12 years); for 167 (47.6%) adolescents up to two years had passed since the death, whereas for 183 (52.1%) adolescents the death had occurred more than two years ago. Adolescents were on average 11.5 years ($SD = 3.0$; range 5–17 years) old at the time of the loss.

MEASURES

Grief symptomatology was measured by the Inventory of Complicated Grief-Youngsters (ICG-Y: Spuij, Boelen, & Stikkelbroek, 2005), a recently developed adolescent version of the Dutch version of the adult ICG–R (Boelen, de Keijser, & van den Bout, 2001; Boelen, van den Bout, de Keijser, & Hoijtink, 2003). The ICG-Y is a 32-item self-report questionnaire designed to measure the proposed symptom criteria of CG together with other potentially maladaptive responses to bereavement in adolescents aged 12–18 years. Adolescents indicate on a 3-point Likert scale, from 1 (almost never) to 3 (often) how frequently they experienced the enumerated symptoms in the past month. Summing up the first 30 items results in a total score (ranging from 30–90), which gives an indication of the severity of maladaptive grief symptoms: a higher score designating more severe grief symptoms. As the ICG-Y is only recently developed, no reports on psychometric evaluation are yet available. However, reliability and validity of the adult version, namely the Dutch version of the ICG–R, were extensively demonstrated (Boelen et al.,
In the present study, the ICG-Y yielded a Cronbach’s $\alpha$ of .95, attesting to good reliability.

In accordance with Study 1, the Beck Anxiety Inventory for Youth (BAI-Y) and Beck Depression Inventory for Youth (BDI-Y) were used to assess respectively symptoms of anxiety and symptoms of depression in youngsters (7–18 years old; Beck et al., 2001, 2005). Cronbach’s $\alpha$‘s for BAI-Y and BDI-Y in this second study were in order .90 and .92, demonstrating good internal consistency.

**STATISTICAL ANALYSES**

In a first step we evaluated the latent structure of the post-loss symptoms by means of CFA using MPLUS Version 4.1 (Muthén & Muthén, 1998–2006) on item parcel level (for details on procedure see Study 1). In a second step we examined the invariance of the model that emerged from the first step across subgroups by means of multiple group analyses in MPLUS Version 4.1 (Muthén & Muthén, 1998–2006). For each set of subgroups we tested the fit of a restrictive model in which the factor loadings, indicator intercepts, and correlations between the factors are constrained to be equal across subgroups; this model contains the necessary constraints to compare latent means across subgroups. To assess the fit of this model we used the same fit indices as in the first step, namely RMSEA, CFI, TLI, and SRMR (see Study 1). We compared the same subgroups as Boelen and van den Bout (2005) in their adult sample, namely subgroups of bereaved differing on time passed since bereavement, cause of death, sample, gender, and kinship to the deceased. In a third step, we inspected whether—apart from structural (in)variance—the subgroups differed in their mean levels of anxiety, depression, and CG symptomatology. To this end we examined latent means (means of factor scores) as these are better indicators of the true differences than the observed means because they are not associated with measurement error (Hancock, 1997). This is done by fixing the latent mean for one of the groups (the reference group) to zero. The estimated latent mean for the other group represents the mean difference in the construct between the two groups.
Results and Discussion

PRELIMINARY ANALYSES

The mean ICG-Y6 score was 43.79 ($SD = 11.54$; range 30–88). The mean scores for the BAI-Y and BDI-Y were respectively 14.76 ($SD = 8.04$; range 0–51) and 12.36 ($SD = 8.79$; range 0–51). With regard to anxiety symptomatology (BAI-Y), the majority of the adolescents (respectively 72.4%) scored within the average severity level when compared to the normative data provided by Beck et al.7 (2001, 2005), 16.2% within the mildly elevated level, 8.2% within the moderately elevated level, and only 3.2% within the extremely elevated level. With regard to depressive symptomatology (BDI-Y), the distribution of the adolescents on the symptom severity continuum was comparable to the anxiety symptomatology; when comparing with the normative data provided by Beck et al. (2001, 2005) the majority (72.8%) of the adolescents scored within the average severity range, 12.3% within the mildly elevated range, 11.1% within the moderately elevated range, and only 3.8% within the extremely elevated range.

Exploratory factor analyses demonstrated that the ICG-Y, BDI-Y, and BAI-Y were unidimensional.8 As a consequence item parcels were created for each construct with factor loadings as guidelines: parcels 1–3 representing ICG-Y, parcels 4–6 representing BDI-Y, and parcels 7–9 representing BAI-Y.

CONFIRMATORY FACTOR ANALYSES

The fit indexes clearly indicated that the one-factor model did not fit the data: $\chi^2(27) = 1004.837$, $CFI = .637$, $TLI = .516$, $RMSEA = .332$, and $SRMS = .159$. The three-factor model, however, with parcels loading on three distinct but correlated factors had good fit estimates, $\chi^2(24) = 28.110$, $CFI = .998$, $TLI = .998$.

---

6Up until now norm data for the ICG-Y are not yet available.
7These normative data are obtained based on U.S. samples; up till now norm data for Belgium are still lacking.
8Information on the exploratory factor analyses of the ICG-Y, BDI-Y, and BAI-Y can be requested from Let Dillen (the first author).
RMSEA = .023, and SRMS = .015, and was significantly better than the unitary model, as demonstrated by the lower values for AIC and BIC (respectively 12817.160 and 12896.813) than the one-factor model (respectively 13787.887 and 13856.161). Table 2 shows the factor loadings of this model. The correlation of the CG factor with the depression factor was .56 and with the anxiety factor was .39. The correlation between the depression and the anxiety factor was .81.

MULTIPLE GROUP ANALYSES AND LATENT MEAN COMPARISONS

Multiple group analyses examined the invariance of the three-factor model across subgroups of bereaved, namely across mourners less than two years versus more than two years removed from their loss (Model 1), victims from violent versus non-violent losses (Model 2), school sample versus home visit sample (Model 3), boys versus girls (Model 4), and children who lost a first-grade relative versus children who lost some other loved one (Model 5). The analyses indicated that across different subgroups the three-factor structure was invariant with equal factor loadings, intercept indicators, and correlations between the factors. For all the subgroups this restrictive model yielded adequate to good fit estimates: for Model 1 (time), $\chi^2(57) = 59.521$, CFI = .999, TLI = .999, RMSEA = .016, and SRMS = .070; for Model 2 (death cause): $\chi^2(57) = 73.304$, CFI = .994, TLI = .992, RMSEA = .042, and

9These findings were corroborated by a reanalysis on item instead of parcel level. In accordance with Boelen, van den Bout and de Keijser (2003), we conducted a principal axis factoring (PAF) with VARIMAX rotation on a selected pool of items. We selected the ten items of the ICG-Y, five items of the BDI-Y, and five items of the BAI-Y that were most highly correlated with each scale’s total score; for ICG-Y, items 1 (something that destroys everything), 9 (being overwhelmed), 14 (life is meaningless), 21 (bleak future), 22 (loneliness), 23 (life is worthless), 24 (part of me died), 27 (loss of control), 28 (impairment in functioning), 29 (feeling tense); for BDI-Y, items 1 (life is bad), 3 (I am bad), 11 (I am stupid), 15 (hating oneself), 20 (life will be bad); and for BAI-Y: items 6 (afraid about making mistakes), 7 (nervousness), 10 (worrying about future), 14 (worrying about losing control), 19 (afraid bad things might happen). The analysis showed the emergence of three factors with eigenvalues of 7.20, 2.95, and 1.32, accounting for 49.86% of the variance. The first factor accounted for 25.10% of the variance. Symptoms of CG loaded highly on this factor, with factor loadings ranging from .615 to .746 and no loadings above .26 on the two other factors. The second factor accounted for 13.09% of the variance. All symptoms of depression loaded highly on this factor, with loadings ranging from .614 to .705 and no loadings above .33 on the other factors. The third factor accounted for 11.67% of the variance. All symptoms of anxiety loaded highly on this factor, with loadings ranging from .546 to .690 and no loadings higher than .24 on the other factors.
SRMS = .081; for Model 3 (sample): $\chi^2(57) = 60.494$, CFI = .999, TLI = .998, RMSEA = .019, and SRMS = .059; for Model 4 (gender): $\chi^2(57) = 69.960$, CFI = .995, TLI = .994, RMSEA = .037, and SRMS = .071; and for Model 5 (kinship): $\chi^2(57) = 48.276$, CFI = 1.000, TLI = 1.004, RMSEA = .000, and SRMS = .052.

The finding that the three-factor structure is invariant across groups that differ on the factors of time since death, cause of death, sample, gender, and kinship to the deceased, however, does not necessarily imply that the levels of anxiety, depression, and complicated grief symptomatology are equal across these subgroups. As shown in Table 3, adolescents bereaved of a loved one by violent means had significantly higher levels of anxiety, depression, and CG symptomatology than those bereaved by non-violent means; however, the Cohen’s $d$ values indicate that the size of these effects was rather small. Adolescents bereaved of a first-grade relative showed significantly higher CG scores than those bereaved of other loved ones; according to Cohen’s $d$ this difference was of medium size (Cohen’s $d = .71$). These two groups, however, did not significantly differ in their levels of anxiety and depression symptomatology (as expected given the composition of the samples

**TABLE 2** Factor Loadings for Symptoms of Complicated Grief (CG), Depression, and Anxiety from Confirmatory Factor Analysis among 351 Bereaved Adolescents (Study 2)

<table>
<thead>
<tr>
<th>Parcels</th>
<th>Factor 1 (CG)</th>
<th>Factor 2 (Depression)</th>
<th>Factor 3 (Anxiety)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICG-Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 1</td>
<td>.922</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 2</td>
<td>.938</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 3</td>
<td>.928</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI-Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 4</td>
<td></td>
<td>.866</td>
<td></td>
</tr>
<tr>
<td>Parcel 5</td>
<td></td>
<td>.910</td>
<td></td>
</tr>
<tr>
<td>Parcel 6</td>
<td></td>
<td>.904</td>
<td></td>
</tr>
<tr>
<td>BAI-Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parcel 7</td>
<td></td>
<td></td>
<td>.918</td>
</tr>
<tr>
<td>Parcel 8</td>
<td></td>
<td></td>
<td>.804</td>
</tr>
<tr>
<td>Parcel 9</td>
<td></td>
<td></td>
<td>.866</td>
</tr>
</tbody>
</table>

*Note.* ICG-Y = Inventory of Complicated Grief-Youth; BDI-Y = Beck Depression Inventory-Youth; BAI-Y = Beck Anxiety Inventory-Youth.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Time</th>
<th>Cause</th>
<th>Sample</th>
<th>Gender</th>
<th>Kinship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta M$</td>
<td>$\Delta M/SE$</td>
<td>$d$</td>
<td>$\Delta M$</td>
<td>$\Delta M/SE$</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.383</td>
<td>-1.215</td>
<td>-.14</td>
<td>-1.026</td>
<td>-2.675</td>
</tr>
<tr>
<td>Depression</td>
<td>-.283</td>
<td>-0.810</td>
<td>-.09</td>
<td>-1.152</td>
<td>-2.560</td>
</tr>
<tr>
<td>CG</td>
<td>-.580</td>
<td>-1.458</td>
<td>-.17</td>
<td>-1.480</td>
<td>-2.825</td>
</tr>
</tbody>
</table>

*Note. CG = Complicated Grief; Time = 0–2 years have passed since loss (reference group) versus more than 2 years have passed since loss; Cause = violent (reference group) versus non-violent deaths; Sample = school sample (reference group) versus home visit group; Gender = boys (reference group) versus girls; Kinship = first-grade relatives (reference group) versus other kinships; $d =$ Cohen’s $d$. 


comparison of the latent means between the school sample and the home visit sample showed a similar pattern). Girls reported significantly higher anxiety symptom levels than boys (a rather small effect), but did not significantly differ with regard to depression and CG symptomatology. Finally, no significant differences were found in latent means between adolescents who were 0–2 years and those more than 2 years removed from their loss.

Discussion

During the past decade there is growing interest in CG as a possible new diagnostic category. However, most of our knowledge on CG is based on studies in adult samples. A group of bereaved that is largely neglected in the research and the debate on CG concerns the younger bereaved. It is in light of this lacuna that we conducted two cross-sectional studies on bereaved adolescents. Findings from both studies parallel earlier findings in adult populations. First, in our preliminary analyses on the internal structure of the TGIC and the ICG-Y, we were able to replicate that CG symptoms form a unidimensional cluster of symptoms as was described by Prigerson and colleagues (Jacobs et al., 2000; Prigerson & Maciejewski, 2005; Prigerson et al., 1999) and was found in several adult samples (e.g., Boelen et al., 2001; Boelen, van den Bout, de Keijser et al., 2003). Second, the results from the CFA in Study 1 as well as in Study 2 showed that symptoms of CG are distinct from rather than part of one cluster with symptoms of anxiety and depression. These results are in line with earlier studies on bereaved adults (Boelen & Prigerson, 2007; Boelen & van den Bout, 2005; Boelen, van den Bout, & de Keijser, 2003; Chen et al., 1999; Ogrodniczuk et al., 2003; Prigerson, Bierhals et al., 1996; Prigerson, Frank et al., 1995; Prigerson, Shear et al., 1996; Ritsher & Neugebauer, 2002). Whereas Melhem and colleagues (2004a, 2004b) provided evidence for the replicability of CG’s distinctiveness in adolescents by demonstrating its incremental validity in a highly specific sample of bereaved youngsters, we further substantiated this evidence by demonstrating CG’s structural distinctiveness of symptoms of anxiety and depression in more heterogeneous samples (on the plane of cause and kinship). This distinctiveness however does not imply independence; the correlations of the CG factor with the depression and anxiety
factors were moderate (respectively, .48 and .41 in Study 1, and .56 and .39 in Study 2), indicating that the symptom clusters represent distinguishable but related constructs. As in adults CG in adolescents can co-occur with depression and anxiety, but also contains symptoms that are not captured by these diagnoses (Prigerson & Maciejewski, 2005). More importantly, the current findings show that CG’s distinctiveness does not only apply to adolescents but also across subgroups of bereaved adolescents. As such, we were able to replicate the invariance of the three-factor structure already demonstrated in bereaved adults by Boelen and van den Bout (2005). In line with their results, we also found that—even though the structure was invariant across subgroups—complicated grief levels differed significantly for subgroups varying on the factors of nature of the death cause and kinship, but did not significantly differ for subgroups varying on the plane of time passed since bereavement and gender. However, not all effects (with the exception of the effect of kinship) were of considerable size.

Altogether, the findings from both Study 1 and Study 2 attest to the distinctiveness of CG from other distress-related symptoms, such as anxiety and depression, in adolescents. Nevertheless, some limitations should be kept in mind when interpreting the results. First, using snow-ball sampling method (Study 1, and home visit sample in Study 2) and convenience samples (school sample in Study 2) it is likely that we did not attain the more severely affected bereaved youngsters. In both studies the majority of the participants had symptom scores for depression and anxiety that were in the average severity level, compared with data from age and gender specific norm groups (Beck et al., 2001, 2005). Therefore it would be informative to replicate these findings in referred or clinical samples. In addition, these diverse sampling methods did not allow assessment of response rates. Second, although we used two new and promising questionnaires for measuring CG in the young bereaved, which were both inspired by the widely used ICG-r (Prigerson & Jacobs, 2001) and which showed promising initial psychometric qualities (e.g., high Cronbach’s α’s), the use of such experimental grief measures clearly has its limitations. More work is needed to substantiate the psychometric characteristics and the domain representativeness of both measures. It is indeed possible that the TGIC and ICG-Y—being inspired
The adult ICG–R (Prigerson & Jacobs, 2001; Prigerson, Maciejewski et al., 1995)—do not assess all aspects of CG in adolescents. Third, following the advice of Byrne (1998) that “[a]ssessment of model adequacy must be based on multiple criteria that take into account theoretical, statistical, and practical considerations” (p.119), we recommend that—as recently accentuated in adult research and previously done by Melhem and colleagues (Melhem et al., 2004a, 2004b, 2007)—future studies in younger bereaved should also take into account the question on incremental validity of CG. Fourth, as normative data of the TGIC and ICG-Y are still lacking, we could not determine whether adolescents met criteria for syndromal levels of CG. As such we were unable to address the issue of distinctiveness on disorder level, which is a major concern in terms of the addition of the new diagnosis of CG to DSM-V (Goodkin et al., 2005). Lastly, in light of the discussion about inclusion of CG in the DSM-V, the criteria of CG have been revised and CG has been renamed in prolonged grief disorder (PGD; Prigerson, Vanderwerker, & Maciejewski, 2008). Although the majority of the CG criteria are maintained in the criteria set of PGD, it would be interesting for future studies on CG/PGD in adolescents to also include the new criteria of PGD.

This study is one of the first we know of to look at CG—as defined by Prigerson and colleagues (Prigerson & Maciejewski, 2005; Prigerson et al., 1999)—in a heterogeneous sample of adolescents. The findings show that the internal structure and distinctiveness of CG in adolescents bear resemblance to what is known from adult populations. However, based on the aforementioned limitations, further research to establish the validity of CG, the psychometric characteristics of the TGIC and ICG-Y, and the temporal course of CG in this age group is highly needed. As Goodkin and colleagues (2005) argued, more work is necessary on the relation of CG to other clinical disorders. Of particular importance is the relation between CG, PTSD, and CTG (Lichtenthal et al., 2004; Melhem et al., 2004b; Pfefferbaum et al., 2006; Prigerson et al., 1999; Stroebe et al., 2000).

In sum, the present findings resemble earlier findings in adult populations and complement as such the literature contending that CG constitutes a distinct clinical entity. This distinctiveness further implies that the current focus within the DSM on depressive and
anxious symptoms in bereavement-related distress might overlook patterns of complications in bereaved adolescents.

References


Complicated Grief in Adolescents


Copyright of Death Studies is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.