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Inventory of Complicated Grief: A scale to measure maladaptive symptoms of loss

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Abstract

Certain symptoms of grief have been shown (a) to be distinct from bereavement-related depression and anxiety, and (b) to predict long-term functional impairments. We termed these symptoms of "complicated grief" and developed the Inventory of Complicated Grief (ICG) to assess them. Data were derived from 97 conjugally bereaved elders who completed the ICG, along with other self-report scales measuring grief, depression, and background characteristics. Exploratory factor analyses indicated that the ICG measured a single underlying construct of complicated grief. High internal consistency and test-retest reliabilities were evidence of the ICG's reliability. The ICG total score's association with severity of depressive symptoms and a general measure of grief suggested a valid, yet distinct, assessment of emotional distress. Respondents with ICG scores >25 were significantly more impaired in social, general, mental, and physical health functioning and in bodily pain than those with ICG scores ≤ 25 . Thus, the ICG, a scale with demonstrated internal consistency, and convergent and criterion validity, provides an easily administered assessment for symptoms of complicated grief.

Keywords: Depression; Bereavement; Factor analysis

1. Introduction

Conjugal bereavement is one of the more common misfortunes besetting those who survive to old age. While 14.2% of men over the age of 65 are widowers, nearly half of all women ≥ 65 years of age are widows. Among those who survive ≥ 85 years, 81.3% of women, compared with 40.5% of men, are widowed (U.S. Bureau of the Census, 1993). Not only is widowhood among the most frequently encountered of all life events (Stroebe and Stroebe, 1993), but bereavement is consistently described as being among the most stressful (e.g.,

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Holmes and Rahe, 1967; Osterweis et al., 1984; Irwin and Weiner, 1987; Shuchter and Zisook, 1987; Stroebe and Stroebe, 1993).

Given the stress associated with widowhood, particularly when accompanied by the multiple losses encountered in late life, it is not surprising that bereavement greatly increases an individual's risk of exhibiting depressive symptoms, if not a major depressive episode (Lund et al., 1985; Brown and Harris, 1989; Bruce et al., 1990; Clayton, 1990; Zisook and Shuchter, 1993). Aside from other forms of emotional disturbance, such as anxiety (Bornstein et al., 1973; Parkes and Weiss, 1983; Jacobs et al., 1990), widowhood has also been shown to be a risk factor for impaired immune function (e.g., natural killer cell activity: Irwin et al., 1987), more physician visits (Mor et al., 1986), poorer physical health (Helsing and Szklo, 1981; Arens, 1982-83; Reissman and Gerstel, 1985; Kaprio et al., 1987), suicide (Kaprio et al., 1987), and mortality (Kraus and Lilienfeld, 1959; Jones, 1987; Smith, 1990).

Still, the morbidity and mortality secondary to bereavement-related emotional distress has not been the topic of systematic investigation. More specifically, with the exception of our own preliminary reports (Prigerson et al., 1995a, 1995b), the long-term complications associated with symptoms of grief have not been studied. In the absence of research on the consequences associated with symptoms of grief, the distinction between normal and more pathological forms of grief cannot be made.

A major impediment to the study of the risk factors for, the prevalance of, and the outcomes associated with certain symptoms of grief has been the absence of a scale to assess symptoms of *complicated grief*, by which we mean the symptoms that we would expect, based on clinical experience and empirical study, to find associated with longterm functional impairments. Below we describe why our earlier work suggested the need to develop such a scale.

Our recent research among conjugally bereaved elders has shown that certain symptoms of grief form a unified component of emotional distress that is clearly distinguishable from the symptoms of depression and anxiety (Prigerson et al., 1995a, 1995b). Such symptoms as irritability, nervousness, tenseness, and restlessness were best characterized as symptoms of anxiety, while those of sad mood, apathy, and guilt were best characterized as symptoms of depression. A third group of symptoms, however, appeared to constitute a uniquely grief-specific profile: preoccupation with thoughts of the deceased, searching and yearning for the deceased, disbelief about the death, crying, being stunned by the death, and not accepting the death.

In addition to the fact that they formed a distinct cluster of symptoms, the above symptoms of grief were found to predict long-term dysfunction. In one study, mean baseline levels of griefrelated symptoms (after adjustment for baseline levels of depressive symptoms) were found to predict impairments of global functioning, sleep, mood, and self-esteem at 18 months after spousal loss (Prigerson et al., 1995b). In another study, the chosen symptoms of grief were found to predict both grief and depressive symptomatology at 12and 18-months after spousal loss, again after adjustment for baseline levels of depression (Prigerson et al., 1995a). In these two studies, subjects who had met criteria for a major depressive episode were treated with the antidepressant nortriptyline. As further evidence of the distinctiveness of grief and the need for grief-specific treatment, we found that subjects who had received nortriptyline declined significantly in their levels of depressive and anxiety-related symptomatology, but they did not have significantly greater resolution of their grief-related symptomatology over time than did untreated subjects. The results of these two studies and those of others suggest that certain symptoms of grief, left untreated or even when treated with nortriptyline, tend to persist (Faschingbauer et al., 1987; Pasternak et al., 1991, 1993; Thompson et al., 1991) and to predict longer term functional impairments.

Because of the persistence of and morbidity associated with certain symptoms of grief, we perceived a need for a scale that could accurately measure symptoms of complicated grief. The extant scales of grief measure symptoms of grief in general (i.e., both normal and pathological) rather than symptoms of grief expected to be particularly maladaptive. As a consequence, the most commonly used grief scales are overinclusive with respect to complicated grief.

For example, scales such as the Texas Revised Inventory of Grief (TRIG: Faschingbauer et al., 1987) include benign symptoms of grief that would not be expected to be associated with enduring morbidity. Statements such as "No one will ever take the place in my life of the person who died" and "Things and people around me still remind me of the person who died" would not be expected to be associated with maladaptation to the loss. The TRIG asks the respondent about crying in three separate statements, a procedure that seems redundant for the isolation of a unique set of indicators of complicated grief. In addition, the Grief Measurement Scale (GMS; Jacobs et al., 1987) includes symptoms associated with anxiety disorders, such as statements about a dread of impending doom, fear of losing control of one's feelings, and feeling tense, nervous, and fidgety. Furthermore, the GMS contains depressive items (the Center for Epidemiologic Studies Depression Scale) as one of its three subcategories of symptoms. We believe that depressive items should be extracted from a specifically grief-focused scale. In these ways, the most prominent grief scales appear to contain superfluous items for the assessment of complicated grief and may also confound the assessment of complicated grief by including measures of general grief, depression, and anxiety.

At the same time, extant grief scales may also be underinclusive with respect to symptoms of complicated grief. Scales such as the TRIG and the GMS omit most, if not all, of the more potentially threatening symptoms of grief. Symptoms such as survivor guilt, bitterness over the death, jealousy of others who have not experienced a similar loss, distraction to the point of disruption in the performance of one's normal activities, and lack of trust in others as a consequence of the loss have not been assessed in existing scales of grief. The TRIG also does not include auditory and visual hallucinations, and neither the TRIG nor the GMS contains an item to assess pain in the same parts of the body as that experienced by the deceased (the so-called "identification" symptoms associated with grief-related facsimile illness).

These foreboding grief-related symptoms seem more likely to reflect greater difficulty accepting the death and to predispose the bereaved to enduring complications in the adjustment to bereavement.

At present, there is no instrument to isolate the symptoms of complicated grief. In fact, no universally accepted definition or description of complicated grief exists, nor does complicated grief appear as an established clinical entity in official diagnostic manuals (Kim and Jacobs, 1991; Marwit, 1991; Prigerson et al., 1995b). The rationale behind the development of the Inventory of Complicated Grief (hereafter, the ICG) was to identify grief-related symptoms that could help to discriminate between uncomplicated and complicated grievers (the latter being those individuals who report severe levels of presumably maladaptive aspects of grief). This article describes the scale's development and provides a psychometric evaluation.

2. Methods

2.1. Subjects

The ICG was given to 97 widowed elders who had been recruited as part of a program of research that was designed to study sleep physiological changes in major depression and bereavement, and that included both a bereavement and a healthy control substudy. Seventy of the participants from the original bereavement substudy were recontacted to see if they would be willing to assist in the piloting of the ICG. Eligibility criteria for the original study specified that only individuals with medical problems that were wellcontrolled (with medications not known to have psychotropic effects) and appeared to be stable could be accepted into the study. All subjects had been interviewed with the Lifetime Version of the Schedule for Affective Disorders and Schizophrenia (Spitzer and Endicott, 1977) at entry into the original study. Subjects found to have had a personal history of psychiatric disorder other than minor depression or anxiety had been excluded. Subjects were not permitted to be receiving psychiatric treatment outside of that administered as part of the protocol. All 70 subjects who had

participated in the bereavement substudy agreed to participate in the follow-up assessment for the present study. Participants completed the ICG, the Beck Depression Inventory (BDI; Beck, 1967), the TRIG, and a sociodemographic questionnaire.

Along with the bereavement substudy, 27 subjects who had been recruited as part of the "healthy comparison" group for the original study were also identified as having been or become bereaved. The healthy comparison subjects recruited into the original study were elderly volunteers (≥ 60 years of age) whose sleep logs, routine laboratory tests, medical and psychiatric histories, and physical and neurological examinations indicated no evidence for present or past psychiatric illness, cognitive impairment, or present or past neurological illness affecting the central nervous system, including sleep disorders. In particular, scores on the Hamilton Rating Scale for Depression (Hamilton, 1960) were required to be <7 on the first 17 items of the scale (single rater). In essence, the comparison subjects were elderly persons who were free of mental and physical impairment — which might suggest that they were, indeed, more intact than the average 60- to 80year-old.

All 27 of the healthy comparison subjects completed the ICG and its related materials, along with that study's ongoing follow-up self-report assessment battery. Because most of the comparison subjects had not been widowed recently (years from spousal death — comparison subjects: mean = 15.3, SD = 8.5; bereavement subjects: mean = 2.8, SD = 1.3; t = 5.82, df = 95, P < 0.001), and were selected for their successful aging, they provided a reasonable reference group that would enable us to explore levels of grief expected to be reported at times further removed from the death of the spouse.

The original bereavement study participants were not necessarily a group of "complicated grievers," nor were the healthy comparison subjects, who had been widowed for an average of 15 years, necessarily a group of "uncomplicated grievers." Nevertheless, the data suggested that this dichotomy was in some sense valid (see Table 1). First, the mean level of complicated grief symptomatology for the bereavement study participants was significantly higher than that for the healthy comparison subjects who had been widowed. Moreover, while 13 of 64 (20%) bereaved subjects with information on all items of the ICG met our criteria for "syndromal" levels of complicated grief, not a single healthy comparison subject met these criteria (a discussion of criteria for syndromal levels, or "cases," of complicated grief appears at the end of the Results section). Thus, a significant minority of the bereavement substudy participants were complicated grievers, while none of the healthy comparison subjects were found to have clinically significant levels of complicated grief.

The combined group of bereavement and healthy comparison subjects (n = 97) included 27 men and 70 women (see Table 1). There were no significant differences between the bereavement and healthy comparison subjects in the percentage of men and women ($\chi^2 = 0.002$, df = 1, P = NS; approximately 27% and 73%, respectively, for both groups), racial composition, depression (BDI total scores), religiosity, or percentage distribution of Protestants, Catholics, and Jews. Significant differences between the bereaved and healthy comparison subjects on the analyzed measures revealed that aside from having been widowed longer, the comparison subjects were also older than the bereavement substudy subjects (comparison subjects: mean age = 81.63 years, SD = 6.15; bereavement subjects: mean age = 66.9 years, SD = 6.15; t = 10.57, df = 95, P < 0.001).

2.2. Selection of items included in the original ICG

As described earlier, the ICG was an outgrowth of research that found certain symptoms of grief to be distinct from the symptoms of depression and anxiety and, as a group, to predict several types of enduring functional impairments. The seven symptoms that were found to have loaded highly on the grief factor were: preoccupation with thoughts of the deceased, crying, searching and yearning for the deceased, disbelief about the death, being stunned by the death, and not accepting the death (see Prigerson et al., 1995b). To these symptoms, we added grief-related symptoms that we expected, based on our clinical experience with bereaved populations, to characterize potentially maladap-

Variables	Bereaved	_		Healthy subjects	subjects		Difference test	: test	Correlation
	Mean	SD	u	Mean	SD	n	Test	Ρ	coefficient"
Age (years) Education	66.90	6.15	70	81.63	6.15	27	10.57 ^b 8.78	0.001 NS	-0.240*b -0.046°
Less than high school	1%		-	11%		~			
High school	44%		31	33%		. 6			
Partial college; technical school	30%		21	19%		Ś			
College graduate	14%		10	19%		5			
Postgraduate work	10%		7	18%		Ś			
Gender							0.02	NS	-0.005°
Males	27%		19	26%		7			
Females	73%		51	74%		20			
Race							0.02	NS	0.116°
White	96%		67	%96		26			
Nonwhite	4%		e	4 %		-			
Rcligion							1.07	SN	
Protestant	48%		32	55%		11			-0.028 ^c
Catholic	46%		31	40%		80			0.023°
Jewish	3%		2	5%		-			-0.008°
Other/none	3%		2	%0		0			0.102°
Beck Depression Inventory	7.40	9.08	68	7.83	5.28	23	0.28a	NS	0.667***b
Time from loss (years)	2.83	1.33	69	15.25	8.50	16	5.82a	0.0001	-0.270* ^b
Inventory of Complicated Grief									
(ICG)	17.74	12.42	65	10.28	6.55	25	-3.69 ^b	0.0003	
Complicated grievers ^d	20%		13	%0		0		0.016 ^c	
Texas Revised Inventory of Grief	36.77	10.77	69	26.77	10.63	26	-4.07 ^b	0.0002	0.867*** ^b
Grief Measurement Scale ^e	8.43	8.34	32	ł	ì	-	I	1	0.696*** ^b

Table 1 Descriptive statistics of the respondents subjects completed the Grief Measurement Scale. "Complicated grievers are respondents with a score >25 on the ICG, among the 88 respondents with complete ICG data. For ICG total scores: 0 = never and 4 = always.

tive aspects of grieving. Thus, to the initial pool of items, we added symptoms that represented: preoccupation with thoughts of the deceased that would make it difficult to do the things one normally would do, anger over the death, distrust and detachment from others as a consequence of the death, pain in the same parts of the body as that experienced by the deceased before the death, avoidance of reminders of the deceased, feeling that life is empty without the deceased, auditory and visual hallucinations of the deceased, survivor guilt, loneliness, bitterness about the death, and envy of others who have not lost someone close.

2.3. Response format

Subjects were asked to report the frequency (0 = never; 1 = rarely; 2 = sometimes; 3 = often;4 = always) with which they currently experienced each of the emotional, cognitive, and behavioral states described in the ICG. This response format differs from that of the TRIG which asks respondents to indicate whether they believe the statement to be anywhere from "mostly true" to "mostly false." Because we were interested in measuring emotional states, we considered it more relevant to ask respondents how often they felt a certain way rather than to ask them to determine the "truth" of the given statement. Asking respondents to report the frequency of an emotional or cognitive state has been found by Horowitz et al. (1979) to be an effective means by which to assess the impact of events. Furthermore, we chose to ask respondents to evaluate the approximate frequency of each emotion or behavior at the time of the assessment because subjects, particularly elderly subjects, claim to have difficulty recalling feelings for periods of more than a few days (Horowitz et al., 1979).

2.4. Derivation of the scale

Using the data obtained from the 97 subjects who completed the ICG, we performed principal axis factoring with iterated communalities using squared multiple correlations (using SAS) to explore the underlying factor structure of the items that made up the ICG (Snook and Gorsuch, 1989). This exploratory factor-analytic technique was used to determine whether the ICG items formed one or several components of complicated grief. For example, if the symptoms suggestive of a posttraumatic stress disorder (e.g., avoidance of reminders of the deceased and preoccupation with thoughts of the deceased to the point of distraction) were found to load on one factor, while those suggesting psychotic features of grief (auditory or visual hallucinations and reporting the same symptoms as those experienced by the deceased) were found to load on another factor, then this would help to clarify the underlying dimensions of complicated grief. A scree plot of the eigenvalues obtained for the emergent factors was used to determine the amount of variance explained in the data by each factor and the number of underlying factors present.

Aside from determining the underlying factor structure of items in the scale, we also sought to determine whether specific items proved to be good indicators of the emergent factors. TETRAD II (Spirtes et al., 1994) was used to "purify" the scale so that it would include only those items that proved to be unique indicators of the latent construct we labeled "complicated grief." Using the correlation matrix of all 22 original items of the ICG, TETRAD II's Purify option identified impurities in the measurement of complicated grief. The results of the Purify procedure yielded a unidimensional, or pure, measurement model of complicated grief, pruned of all items that it found to be impure at a significance level of P < 0.5. By pruning the ICG of impure indicators, we created a scale that would enable us to make a differential diagnosis of complicated grief to help distinguish it from other bereavement-related emotional disorders such as depression¹.

Other analyses used to determine which items should be retained in the scale were the loadings obtained from the factor analyses (with factor

¹ A single factor model entails vanishing TETRAD constraints for all values of the factor loadings; these constraints are of the form $\rho(ij) \rho(kl) = \rho(ik) \rho(jl)$. The Purify procedure searches for subsets of the original set of indicators that satisfy the entailed vanishing TETRAD constraints. The constraints are tested jointly at a given significance level using a Bonferroni-adjusted Wishart test. The significance level does not directly provide information about the reliability of the search procedure as a whole.

loadings <0.40 considered grounds for subsequent omission) and the increase in Cronbach's α coefficient obtained from the deletion of each item. Any item whose removal resulted in an increase in the scale's overall internal consistency would be considered for deletion. Item discriminability (i.e., the extent to which the item was associated with having high levels of complicated grief) was examined using each item's correlation with the ICG total score and factor loadings resulting from the exploratory factor analyses.

2.5. Psychometric properties

We then examined the psychometric properties of the resulting scale. Internal consistency of the final pool of complicated grief items was assessed with Cronbach's α coefficient. Test-retest reliabilities were computed for subjects with repeated assessments. Because all subjects on whom we obtained repeated assessments were those who were receiving treatment for their depression (n = 33), we used only those subjects in a state of stable remission (i.e., the follow-up and continuation subjects, excluding those in acute treatment: n = 28) to examine test-retest reliability. It should be noted that only 18 of the 19 ICG items were available among this subset of respondents.

Concurrent validity was assessed through an examination of correlations between the BDI, the Grief Measurement Scale (Jacobs et al., 1987), and the TRIG "present" totals (the TRIG "present" asks respondents how they currently feel about the death; whereas the TRIG "past" asks respondents how they felt at the time of the death). In addition, quality of life measures of general health, mental health, physical health, social functioning, role performance, and bodily pain (Medical Outcomes Shortform [MOS: Stewart and Ware, 1988]) were used to determine the threshold ICG total score above which the respondent would have a significantly more compromised quality of life. For these analyses, we used the bereavement substudy group because among these participants we could compare those scoring above and below the ICG threshold within a more recent and uniform time from loss. Responses to the subject's evaluation of the ICG were used as evidence of the scale's face validity.

3. Results

3.1. Testing for subfactors of complicated grief

The results of the exploratory factor analysis (Table 2) revealed that the ICG items were best characterized as one factor. When the results of models with more than one factor were examined and compared with those that had constrained the model to have all items load on a single factor, the findings indicated that all of the items loaded highly (standardized regression coefficients ≥ 0.50) on the first factor. The scree plot provided further evidence in support of a single underlying construct within our scale to measure complicated grief, with virtually all the variance in the data being accounted for by the first factor (Fig. 1) (eigenvalue = 10.015, $R^2 = 0.999$). These results strongly suggested that the ICG was measuring a single underlying construct — one intended to measure complicated grief.

3.2. Removal of poor indicators of complicated grief

Given the evidence that indicated that all 22 items loaded on a single factor of complicated grief, we then used TETRAD II to purify the scale to determine whether all the 22 original ICG items constituted a unidimensional (i.e., pure) measurement model of complicated grief. Unlike the factor analysis, in which an item could have loaded highly on several factors at once, TETRAD II's Purify procedure removed any item not found to be a unique indicator of the latent construct (i.e., complicated grief). Contrary to the results of the earlier analyses, the Purify procedure indicated that several items needed to be "pruned" to create a pure scale of complicated grief.

For theoretical reasons, we then tested the purity of a model that deleted several questionable indicators of complicated grief. The crying item was removed because it conceivably could have been an indicator of depression and, thereby, would not have proved a unique indicator of complicated grief. The measure of thinking about the deceased was discarded in favor of its more pathological variant, that of preoccupation to the point of distraction (i.e., thoughts of the deceased might not themselves be maladaptive, but if it became preoccupation to the point of disruption in the items

Table 2				
Factor loadings	for	Inventory	of Complicated	Grief

Item	3	Factor loadings
1.	I feel the urge to cry when I think about the person who died	0.67
2.	I find myself thinking about the person who died	0.51
3.	I think about this person so much that it's hard for me to do the things I normally do	0.79
4.	Memories of the person who died upset me	0.72
5.	I feel I cannot accept the death of the person who died	0.74
6.	I have feelings that it is unfair this person died	0.74
7.	I feel myself longing for the person who died	0.73
8.	I feel drawn to places and things associated with the person who died	0.70
9.	I can't help feeling angry about his/her death	0.78
10.	I feel disbelief over what happened	0.73
11.	I feel stunned or dazed over what happened	0.83
12.	Ever since he/she died, it is hard for me to trust people	0.69
13.	Ever since he/she died, I feel as if I have lost the ability to care about other people or I feel	
	distant from people I care about	0.61
14.	I feel lonely a great deal of the time ever since he/she died	0.68
15.	I have pain in the same area of my body or have some of the same symptoms as the person	
	who died	0.54
16.	I go out of my way to avoid reminders of the person who died	0.58
17.	I feel that life is empty without the person who died	0.72
18.	I hear the voice of the person who died speak to me	0.51
19.	I see the person who died stand before me	0.51
20.	I feel that it is unfair that I should live when this person died	0.62
21.	I feel bitter over this person's death	0.80
22.	I feel envious of others who have not lost someone close	0.50



Fig. 1. Scree plot of eigenvalues for the factors emerging from the Inventory of Complicated Grief data on 97 late-life spousally bereaved individuals.

performance of one's normal routines, then we would expect it to be associated with greater maladaptation to the loss). The final item deleted was the measure of feeling that the death was unjust. This item did not appear to offer a unique contribution over and above the measures of bitterness and anger concerning the loss. When the Purify procedure was run on a model that had removed the above-mentioned items, it indicated that the scale needed no further pruning because all the remaining measures were found to be pure indicators of the latent construct.

Thus, the final ICG scale contained 19 items. It should be noted that the results reported for the ICG totals refer to the totals for the ICG with 19, not the original 22, items. In addition, although TETRAD II's Purify procedure indicated that the auditory hallucination item should be removed while the visual hallucination item should be retained, we chose to retain the auditory hallucinations item; we thought it might measure a slightly different aspect of complicated grief than that of visual hallucinations, and we also found some evidence to suggest that there may be gender differences in the form that hallucinations may take (e.g., men's auditory hallucination mean score = 1.5, SD = 0.76; women's auditory hallucination mean score = 1.24, SD = 0.62; t = 1.72, df = 95, P = 0.09).

In addition, although the Purify procedure indicated that the loneliness item be removed because it was partially correlated with the BDI, we chose to retain this item for two primary reasons: (1) Loneliness in the original analyses (Prigerson et al., 1995b) had loaded highly on both the complicated grief and depression factors (i.e., 0.56 and 0.51, respectively), suggesting it may be an important element of both disorders. (2) Analyses conducted on the loneliness item revealed that while widowers did not decline significantly over time from loss with respect to loneliness, and that loneliness was unrelated to the various quality of life measures for widowers, this was not the case for the widows. The loneliness item was found to decline significantly over time from loss among the widows (r = -0.39, P = 0.001) and was significantly associated with the MOS measures of social functioning (r = -0.58, P = 0.009), general health (r = -0.55, P = 0.02), physical health (r = -0.63, P = 0.02)P = 0.004), and mental health (r = -0.49, P = 0.03). Thus, those widows whose sense of loneliness did not decline over time from loss would appear to be at greater risk for complications of bereavement, thereby making loneliness a good prognostic indicator of complicated grief reactions.

We then examined the increase in Cronbach's α (the measure of internal consistency) obtained from the deletion of each item (Table 3). In line with the results of the factor analyses, which indicated that all items of both the 22-item ICG and the 19-item ICG were fairly good indicators of the latent construct of complicated grief due to their high loadings on the one factor, Cronbach's α did not increase with the deletion of a single item. This indicated that the internal consistency of the ICG would not have been improved by removal of any of the remaining 19 items.

The item-total correlations (Table 3) were all

near or above 0.50, with the item assessing the feeling of being stunned or dazed having the highest correlation with the ICG total score (r = 0.79), followed by feeling bitter over the death (r = 0.75)and preoccupation with thoughts of the deceased to the point of distraction (r = 0.75). The lowest item-total correlations were for the items measuring feeling envious of others who have not lost someone close (r = 0.49), and visual (r = 0.50) and auditory (r = 0.51) hallucinations. The lower associations between the ICG total score and the hallucinations items, however, may have been a function of the infrequency with which these items were endorsed.

3.3. Psychometric properties

Reliability. The internal consistency of the 19item ICG was high (Cronbach's $\alpha = 0.94$; Table 3). It should be noted that the overall internal consistency of the scale had improved slightly (from Cronbach's α of 0.923 to 0.936) with the deletion of the three items from the 22-item ICG. Testretest reliabilities were computed for the 28 subjects who had repeated 6-month ICG assessments and were in a steady state of depressive symptomatology. Among these subjects, the ICG's testretest reliability was 0.80.

Validity. The concurrent validity (Table 1) of the ICG was assessed in relation to other scales. The ICG total score showed a fairly high association with the BDI total score (r = 0.67, P < 0.001), the TRIG score (r = 0.87, P < 0.001), and the GMS score (r = 0.70, P < 0.001).

When the original bereavement study participants who had ICG scores > 25 (i.e., top 20%) were compared with those who reported ICG scores ≤ 25 , the former group (containing the "cases" of complicated grief) was found to have significantly worse scores than the latter group (the comparison subjects) on nearly all of the MOS quality of life measures (see Table 4). Those with ICG scores > 25 had significantly worse scores on the general health (t = 2.51, df = 28, P = 0.02), mental health (t = 3.70, df = 28, P < 0.0001), physical health (t = 2.49, df = 9, P = 0.04), and bodily pain measures (t = -20.57, df = 28, P = 0.02), with a trend for more impaired role per-

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1.I think about this person won died upset me0.9310.7301.670.8732.Memories of the person who died upset me0.9320.6742.270.8843.I feel (annot exect) the death of the person who died0.9330.6531.9751.1643.I feel (annot exect) the death0.9330.6531.871.1235.I feel (annot exect) the death0.9330.6531.921.1246.I can't help feeling angry about his/her death0.9330.6531.921.1247.I feel farwn to places and things associated with the person who died0.9330.6531.921.1247.I feel farwn to places and things associated with the person who died0.9330.6531.921.1247.I feel sunned or dazed over what happened0.9330.6531.921.1247.I feel sunned or dazed over what happened0.9330.6531.921.1248.I feel sunned or dazed over what happened0.9330.6531.921.1249.Ever since he/she died, I feel as if I have lost the ablity to care about other people or I0.9330.6531.520.83710.Ever since he/she died, I stead for me to truty people0.9330.6542.691.13611.I feel distant from people I care about0.9330.6542.691.13612.I have pain in the same area of my body or have some of the same symptoms as the0.9330.6541.660.9330.651 </th <th>Items</th> <th></th> <th>α value</th> <th>Pearson r^a</th> <th>Mean</th> <th>SD</th> <th>u</th>	Items		α value	Pearson r ^a	Mean	SD	u
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erson who died 0.933 0.633 1.75 died 0.932 0.662 2.89 died 0.933 0.627 2.31 leath 0.931 0.731 1.87 leath 0.932 0.663 1.92 leath 0.932 0.633 1.52 leath 0.932 0.693 1.92 ned 0.933 0.674 1.80 to trust people 0.933 0.618 1.53 to trust people 0.933 0.624 2.69 v or have some of the same symptoms as the 0.933 0.676 2.46 of the person who died 0.933 0.514 1.31 ne 0.933 0.676 2.46 0.936 speak to me 0.933 0.676 2.46 ne 0.933 0.676 2.46 speak to me 0.933 0.676 1.74 ne 0.933 0.621 1.51 ne 0.936 0.790 0.744 1.65 st someone close 0.936 0.930 0.740 1.74 ne 0.936 0.790 0.790 <t< td=""><td>7</td><td>-</td><td>0.932</td><td>0.674</td><td>2.27</td><td>0.984</td><td>76</td></t<>	7	-	0.932	0.674	2.27	0.984	76
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tacd with the person who died 0.933 0.627 2.31 leath 0.931 0.731 1.87 leath 0.932 0.693 1.92 ned 0.930 0.794 1.80 to trust people 0.933 0.653 1.52 to trust people 0.933 0.618 1.53 to the same symptoms as the 0.933 0.624 2.69 v or have some of the same symptoms as the 0.934 0.564 1.51 on who died 0.935 0.540 1.26 on who died 0.935 0.514 1.31 ne 0.935 0.514 1.31 ne 0.935 0.514 1.31 ne 0.935 0.501 1.32 ne 0.936 0.754 1.65 st someone close 0.936 0.790 0.754 l 0.936 0.790 0.764 1.74	र्च	I feel myself longing for the person who died	0.932	0.662	2.89	1.059	67
death 0.31 0.731 1.87 $16ath$ 0.932 0.693 1.92 192 0.930 0.794 1.80 192 0.933 0.653 1.52 152 0.933 0.618 1.53 152 0.933 0.618 1.53 152 0.933 0.618 1.53 151 0.933 0.618 1.53 151 0.933 0.624 2.69 151 0.933 0.540 1.26 126 0.934 0.564 1.51 161 0.932 0.676 2.46 161 0.935 0.514 1.31 162 0.933 0.621 1.32 161 0.933 0.676 2.46 162 0.933 0.676 2.46 161 0.933 0.514 1.31 162 0.933 0.676 2.46 162 0.933 0.676 2.46 162 0.933 0.676 1.74 161 0.933 0.621 1.51 162 0.930 0.754 1.65 1636 0.936 0.936 0.790 174 0.936 0.790 0.740 174 0.936 0.790 0.740	5.	I feel drawn to places and things associated with the person who died	0.933	0.627	2.31	1.149	76
0.932 0.693 1.92 ned 0.930 0.794 1.80 to trust people 0.933 0.653 1.52 \circ lost the ability to care about other people or I 0.933 0.618 1.53 \circ r since he/she died 0.933 0.618 1.53 \circ or have some of the same symptoms as the 0.933 0.624 2.69 \circ of the person who died 0.934 0.564 1.51 \circ n who died 0.932 0.676 2.46 \circ speak to me 0.933 0.621 1.31 \circ meone close 0.933 0.621 1.31 \circ st someone close 0.936 0.790 0.754 1.65 \circ n one of this person died 0.936 0.936 0.490 1.74	و.	I can't help feeling angry about his/her death	0.931	0.731	1.87	1.124	97
and 0.930 0.794 1.80 to trust people 0.933 0.653 1.52 to trust people 0.933 0.618 1.53 t ot trust people 0.933 0.618 1.53 t of the ability to care about other people or I 0.933 0.618 1.53 t since he/she died 0.933 0.618 1.53 t or have some of the same symptoms as the 0.935 0.540 1.26 of the person who died 0.932 0.564 1.51 on who died 0.935 0.514 1.31 on who died 0.935 0.514 1.31 of the person died 0.933 0.621 1.32 of the person died 0.933 0.621 1.32 of the person died 0.933 0.621 1.32 of this person died 0.930 0.754 1.65 st someone close 0.936 0.490 1.74	7.	I feel disbelief over what happened	0.932	0.693	1.92	1.124	67
to trust people 0.933 0.653 1.52 c lost the ability to care about other people or I 0.933 0.618 1.53 r since he/she died 0.933 0.618 1.53 v or have some of the same symptoms as the 0.935 0.540 1.26 of the person who died 0.932 0.544 1.51 on who died 0.932 0.564 1.51 on who died 0.935 0.514 1.31 on who died 0.935 0.514 1.31 of the person died 0.935 0.501 1.32 when this person died 0.933 0.621 1.51 of stat someone close 0.936 0.790 1.74	œ	I feel stunned or dazed over what happened	0.930	0.794	1.80	1.027	16
\cdot lost the ability to care about other people or 1 0.933 0.618 1.53 τ since he/she died 0.933 0.624 2.69 γ or have some of the same symptoms as the 0.935 0.540 1.26 σ of the person who died 0.932 0.564 1.51 σ no who died 0.932 0.514 1.31 σ speak to me 0.935 0.514 1.31 σ when this person died 0.933 0.621 1.52 σ 0.933 0.621 1.32 σ 0.933 0.621 1.31 σ 0.936 0.754 1.65 σ 0.936 0.790 1.74 σ 0.936 0.790 1.74	9.	Ever since he/she died, it is hard for me to trust people	0.933	0.653	1.52	0.951	96
r since he/she died 0.933 0.618 1.53 v or have some of the same symptoms as the 0.933 0.624 2.69 v or have some of the same symptoms as the 0.935 0.540 1.26 of the person who died 0.932 0.564 1.51 on who died 0.935 0.514 1.31 on who died 0.935 0.514 1.31 ne 0.935 0.501 1.32 when this person died 0.933 0.621 1.51 st someone close 0.936 0.754 1.65 1 0.936 0.790 0.754 1.65	10.						
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y or have some of the same symptoms as the 0.935 0.540 1.26 of the person who died 0.934 0.564 1.51 on who died 0.935 0.676 2.46 speak to me 0.935 0.514 1.31 ne 0.935 0.501 1.32 when this person died 0.933 0.621 1.51 st someone close 0.936 0.490 1.74	11.		0.933	0.624	2.69	1.136	96
0.935 0.540 1.26 of the person who died 0.934 0.564 1.51 on who died 0.932 0.676 2.46 speak to me 0.935 0.514 1.31 ne 0.935 0.501 1.32 when this person died 0.933 0.621 1.51 st someone close 0.936 0.490 1.74 1 0.936 0.936 0.754 1.65	12.						
of the person who died 0.934 0.564 1.51 on who died 0.932 0.676 2.46 speak to me 0.935 0.514 1.31 ne 0.935 0.501 1.32 when this person died 0.933 0.621 1.32 st someone close 0.936 0.490 1.74		person who died	0.935	0.540	1.26	0.711	67
on who died 0.932 0.676 2.46 speak to me 0.935 0.514 1.31 ne 0.935 0.501 1.32 when this person died 0.933 0.621 1.51 when this person died 0.936 0.754 1.65 st someone close 0.936 0.490 1.74	13.	I go out of my way to avoid reminders of the person who died	0.934	0.564	1.51	0.879	67
speak to me 0.935 0.514 1.31 ne 0.935 0.501 1.32 when this person died 0.933 0.621 1.51 when this person died 0.930 0.754 1.65 st someone close 0.936 0.490 1.74	14.	I feel that life is empty without the person who died	0.932	0.676	2.46	1.137	76
ne 0.935 0.501 1.32 when this person died 0.933 0.621 1.51 0.930 0.754 1.65 st someone close 0.936 0.490 1.74	15.	I hear the voice of the person who died speak to me	0.935	0.514	1.31	0.667	67
when this person died 0.933 0.621 1.51 0.930 0.754 1.65 0.754 1.65 st someone close 0.936 0.490 1.74 I 0.936 0.936 0.936	16.	I see the person who died stand before me	0.935	0.501	1.32	0.670	76
0.930 0.754 1.65 st someone close 0.936 0.490 1.74 1 0.936	17.		0.933	0.621	1.51	0.933	95
st someone close 0.936 0.490 1.74 1 0.936	18.	I feel bitter over this person's death	0.930	0.754	1.65	1.010	92
	.61	I feel envious of others who have not lost someone close	0.936	0.490	1.74	1.036	92
	Stand	ardized Cronbach's α value for ICG total	0.936				

^aAll items significant at the P < 0.0001 level.

Variables	Complic	cated griev	ers	Uncom	Uncomplicated grievers			df	Р
	Mean	SD	n	Mean	SD	n			
General health ^a	14.39	5.79	8	18.78	3.58	22	2.51	28	0.0182
Bodily pain ^a	3.75	1.58	8	2.41	1.14	22	-2.57	28	0.0159
Mental health ^a	15.75	5.04	8	24.05	3.71	22	4.92	28	0.0001
Physical health ^a	2.88	1.55	8	4.73	1.08	22	3.70	28	0.0009
Social functioning ^a	3.88	1.81	8	5.55	0.96	22	2.49	9	0.0361
Role performance ^a	1.00	1.07	8	1.55	0.60	22	1.78	28	0.0862
Depression ^b	18.3	15.2	13	4.8	3.9	55	-3.16	66	0.0079

Table 4 Comparison of quality of life and role performance between complicated grievers and uncomplicated grievers

Note. Complicated grievers were respondents whose scores on the Inventory of Complicated Grief (ICG) were >25; uncomplicated grievers were respondents whose ICG scores were ≤ 25 . Sample size was reduced in some cases due to missing data on the Medical Outcomes Short Form. These analyses were only conducted on the bereavement substudy group. Complicated grievers did not differ significantly from uncomplicated grievers with respect to time from loss. ^aMedical Outcomes Short Form; ^bBeck Depression Inventory.

formance (t = 1.78, df = 28, P = 0.09). In addition, complicated grievers had significantly greater severity of depressive symptoms (t = -3.16, df = 66, P = 0.008). It should be noted that the "cases" of complicated grief did not differ significantly from the "controls" with respect to time from loss in the bereavement substudy group used in this set of analyses.

By contrast, respondents in the upper 20% of TRIG scores did not have significantly worse scores on the social and role functioning or bodily pain measures of the MOS than did the respondents below that threshold, indicating that the ICG better discriminated maladaptive grief than did the TRIG. In addition, while the general, mental, and physical health scores were significantly worse in subjects in the upper 20% of TRIG scores, compared with those below this threshold, each of these domains was orders of magnitude less significant than the estimates obtained with the ICG. Furthermore, the top 20% of the TRIG scores did differ significantly with respect to time from loss (t = 3.01, df = 93, P = 0.004), with the more severe TRIG scores appearing sooner after the loss and then lessening as more time had elapsed since the death.

Respondents were asked to compare the ICG questions to the TRIG questions and to offer their impressions of both scales. Based on these comments, the ICG appeared to have adequate face validity and to be well tolerated. The vast majority of respondents (85%) preferred the ICG to the TRIG. We received comments such as "the ICG questions were more comprehensive and easier for me to understand and respond to," "the choice of words asking how often rather than true or false is easier to think about," and "the wording and choice of feelings seemed closer to bringing out my feelings." However, other respondents were less positive about the ICG, stating that the TRIG was "not as personal" and "seemed to express my feelings more clearly." Overall, we were satisfied with the respondents' evaluations of the ICG and felt assured that respondents were able to answer the questions posed without excessive difficulty.

4. Discussion

The absence of a scale to assess putative markers of complicated grief has made it difficult to investigate the risk factors for and consequences of grief's more maladaptive symptoms. To the extent that complicated grief is found to be associated with concurrent and long-term morbidity, there appears to be a need for the accurate identification and treatment of those who report high levels of these symptoms. With the development of the ICG, we now have a heuristic tool that allows for the identification of those who may be suffering extensively from symptoms of complicated grief.

With respect to the statistical tests performed in the construction of the scale, the factor analysis, scree plot, and change in Cronbach's α coefficients resulting from item deletions indicated that there was essentially one factor, or latent construct, to the ICG. Three items were removed from the scale. The crying item was deleted because we wanted only unique indicators of complicated grief to assist in differentiating it from depressive symptoms. The potentially benign item asking the respondent about the frequency of thoughts about the deceased was removed because the more ominous notion of intrusive thoughts that actually impeded normal functioning was captured elsewhere. The item referring to the unjustness of the death was dropped because it did not appear to contribute any information over and above that contained in the measures of bitterness and anger over the loss.

The application of relatively new statistical software (TETRAD II: Spirtes et al., 1994) enabled us to arrive at a set of pure indicators of complicated grief. In this way, the final 19-item ICG had removed any items that may have overlapped with other forms of bereavement-related distress, such as depression. Although the removal of such items reduced the range of indicators of complicated grief, it facilitated the determination of a differential diagnosis for complicated grief.

The items referring to being stunned or dazed by the loss, feeling bitter over the death, and being preoccupied with thoughts of the deceased to the point of distraction had the highest correlations with the ICG total score. This suggests that the elements of shock, functionally debilitating intrusive thoughts about the deceased, and resentment because the spouse died are the best items to differentiate persons with complicated grief from those with uncomplicated grief. A sense of being stunned, or dazed by the loss resembles the "psychic numbing" that is characteristic of experiencing traumatic distress. Moreover, intrusive, unbidden thoughts about the deceased, associated functional impairments, and hostility are all symptoms used in making a diagnosis of posttraumatic stress disorder in accord with DSM-IV criteria (American Psychiatric Association, 1994). Thus, complicated grief may be a variant of posttraumatic stress disorder. The symptoms of avoidance of reminders of the deceased, survivor guilt, somatic complaints (particularly identification symptoms), a sense of detachment from significant others, and hallucinations bolster the claim that the ICG may be measuring the symptoms analogous to those of posttraumatic stress disorder that occur secondary to spousal loss. Future treatment strategies to reduce complicated grief might, then, test treatments of proven efficacy for posttraumatic stress disorder for their efficacy at reducing symptoms of complicated grief.

We sought to determine the threshold ICG score above which one would be considered to have syndromal levels of complicated grief. To establish a threshold score for determining syndromal levels of complicated grief, we compared the group above with the group below various cutting points to determine if they differed significantly on measures of quality of life. Because individuals reporting ICG total scores >25 were found to have significantly worse general, mental and physical health, social functioning, and bodily pain, as well as depression, we concluded that this score should be the criterion for distinguishing between complicated and uncomplicated grief reactions. The fact that ICG scores > 25 represented 20% of the bereaved study group's responses enhanced confidence in the validity of this score as a cutting point, given that the 20% prevalence rate for estimates of "complications of bereavement" has been fairly well-established in the literature (cf. Jacobs, 1993).

Still, the validity of an ICG score >25 as the threshold for distinguishing syndromal from subsyndromal levels of complicated grief needs to be evaluated in future research. We acknowledge that having data from a healthy comparison group that could have been matched with the bereavement substudy group at an earlier time from loss would have been preferable to our data in which the bereavement and healthy control substudies differed with respect to time from loss. Such a design clearly would not have confounded adaptability with time from loss. Nevertheless, in our analyses that did compare scores above and below an ICG of 25, we were able to compare both groups at the same general time from loss in the bereavement substudy respondents. We believe that the significant differences in quality of life that emerged between the cases of complicated grief and the comparison subjects among this very limited number of respondents attest to the strength of the ICG as a screening tool for discriminating between complicated and uncomplicated grievers.

As further evidence that the ICG assessed complicated grief rather than grief in general, despite the very close association between the ICG and TRIG total score means (r = 0.87, P < 0.01), the results revealed the ICG to perform significantly better than the TRIG at differentiating persons with a wide range of functional impairments. Furthermore, because the upper fifth of the TRIG scores were closer to the time of the death than the scores in the remaining four-fifths, it may be that the TRIG symptoms are reflective of the ephemeral grief reactions that eventually resolve with the passage of time. The lack of difference in time from loss between the "cases" of complicated grief and the bereavement substudy "controls" suggests that time may not be an important factor in the presentation of symptoms of complicated grief. Consequently, symptoms of complicated grief do not appear to resolve spontaneously and suggest a need for active intervention.

4.1. Conclusions

The ICG was shown to be a reliable scale for the assessment of individuals who experience high levels of potentially maladaptive aspects of grief, with very high scores on measures of both internal consistency and consistency over time. While the associations between the ICG total score, the level self-reported depressive symptomatology of (assessed by the BDI), and the TRIG provided evidence in support of the scale's concurrent validity, the ability of the ICG to differentiate between complicated and uncomplicated grievers with respect to measures of quality of life helps to establish its criterion-related validity. Respondents indicated that the ICG was well-tolerated and provided a fairly thorough assessment of their feelings of grief. Research will also be needed to replicate the findings of this preliminary scale among younger subjects and among those persons who are grieving losses other than widowhood. Future studies should include a substantial number of individuals assessed in the first few months after the loss and followed longitudinally to track complicated grief reactions over time. Further work is planned to address the following issues: the extent to which complicated grief is predictive of longterm morbidity; the optimal timing for the assessment of complicated grief; physiological, social, religious, and psychological correlates of complicated grief; the need for further validation of ICG thresholds for syndromal levels of complicated grief; and ultimately the development and study of therapies for its treatment.

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Appendix: Inventory of Complicated Grief

			Holly Price	gerson, Ph.D.,		plicated Grief (ICG) Reynolds, III, M.D., Ellen Frank, F	۶h.D.			
				Subject Na	ne:					
			ID Number:	. Г. Г	Today's [(To be completed by offic		onth Day			
			PLEASE fill in th	ne circle ne	<u>xt to the answer which</u>	best describes how you fe	eel right now	1		
1. I think abou	t this perso	n so much th	at it's hard for me t	o do the th	ings I normally do	11. I have pain in the sa		y body or have sor	me of the san	ne symptoms as
	never	··· rarely	sometimes	often	always	the person who die				
2. Memories o	f the person	n who died up	oset me			· > never	· rarely	ି sometimes	⊖ often	ି always
	never	rarely	sometimes	often	always	12. I go out of my way to	o avoid remin	ders of the person	who died	
3. I feel I cann	ot accept th	e death of th	e person who died.			ා never	rarely	sometimes	often	always
	never	rarely	sometimes	often	 always 	13. I feel that life is emp	ty without the	e person who died		
4. I feel myself	longing fo	r the person :	who died			never	rarely	sometimes	\odot often	⊖ always
	never	rarely	sometimes	often	always	14. I hear the voice of the	ne person wh	o died speak to me	9	
C. I do al daawaa	to places o		sociated with the p	areon who	died	never	rarely	sometimes	:: often	⊖ always
	never	ing mings as	sometimes	⊡ often	always	15. I see the person wh	o died stand l	before me		
		,		- onon	uu, -	never	rarely	sometimes	often	always
6. I can't help	-				1 - hurring	16. I feel that it is unfair	that I should	live when this per	son died	
1	never	rarely	sometimes	often	always	never	rarely	sometimes	often	ା always
7. I feel disbel	ief over wh	at happened.								- , -
	never	rarely	sometimes	often	always	17. I feel bitter over this	•		often	
8. I feel stunn	ed or dazed	l over what ha	appened			 never 	rarely	sometimes	onen	ା always
	never	rarely	sometimes	often	ା always	18. I feel envious of oth	ers who have	not lost someone		
9. Ever since	s/he died it	is hard for m	e to trust people			never	rarely	sometimes	ା often	ି always
	never	rarely	sometimes	often	always	19. I feel lonely a great	deal of the tir	ne ever since s/he	died	
		feel like I hav ople I care ab	ve lost the ability to out	care about	other people or	.` never	: rarely	sometimes	often	o always
	ି never	o rarely	sometimes	often	always					