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Circumstances of Death and Complicated Grief: Indirect Associations Through Meaning Made of Loss

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ABSTRACT

Losses by violent means and the loss of primary attachment figures may increase the likelihood of developing a chronic and severe grief response (referred to as complicated grief, or CG). Path analysis was used to examine the relationships between these risk factors and CG symptoms. College student participants filled out online questionnaires relating to their bereavement. Analyses provided support for statistical models whereby meaning made of the loss fully mediated the association between cause of death and CG symptoms and partially mediated the association between relationship to the deceased and CG symptoms. Although based on cross-sectional data, these findings provide additional support for meaning-oriented understandings of adaptation to loss.

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Bereavement; cause of death; complicated grief; meaning making; relationship to the deceased

Bereavement is one the most stressful life experiences (Holmes & Rahe, 1967). Most bereaved individuals are able to recover from loss and return to baseline levels of functioning, but 10–20% of individuals experience chronic and severe grief reactions labeled complicated grief (CG), or prolonged grief disorder (Prigerson, Vanderwerker, & Maciejewski, 2008). CG is characterized by intense yearning for the deceased, feeling a lack of meaning after the loss, an inability to trust others, and impairment in daily functioning. It has been shown to be distinct from depression and PTSD (Boelen & van den Bout, 2005; Boelen, van den Bout, & de Keijser, 2003) and to uniquely predict poor mental and physical health outcomes (Boelen et al., 2003; Bonnano et al., 2007). In addition, longitudinal studies have shown that compared to more normative reactions to loss, CG reactions are more chronic in nature, persisting for years when untreated, and are associated with increased risk for cancer, heart problems, high blood pressure, and suicidal ideation (de Groot & Kollen, 2013; Prigerson et al., 1997). Thus, identifying risk factors for developing CG may help to pinpoint those who are at greatest risk, assist in the development of CG interventions, and perhaps shed light on the etiological mechanisms that lead to these difficulties (Burke & Neimeyer, 2013; Currier, Neimeyer, & Berman, 2008).

Several factors have been found to increase the likelihood of developing CG, including loss of primary attachment figures, difficulties making some meaning of the loss, and violent causes of death. Specifically, individuals who lost a first-degree relative have been shown to be much more likely to experience elevated CG symptoms compared to those who lost a friend or distant family member (Prigerson et al., 2002). More severe grief reactions have also been noted for losses of more intimate and emotionally close relationships (Robak & Weitzman, 1998; Servaty-Seib & Pistole, 2006). In addition, difficulties in making meaning of a loss (the process of making sense or finding significance in the loss) have been shown to be associated with greater CG symptoms (Holland, Currier, & Neimeyer, 2006) and poorer adjustment (Davis, Nolen-Hoeksema, & Larson, 1998; Park, 2010). Losses by violent means (i.e., suicide, homicide, accident) may also be especially difficult because they: (a) are inherently violent (e.g., often involving disfigurement of the body and other potentially traumatic stimuli), (b) represent an act of volition (i.e., someone is responsible for the death), and (c) violate cherished beliefs about the safety and predictability of the world (Ryneerson, 1994). In support of this view, research findings have shown that those who experience a loss from a violent cause of death experience more severe CG symptoms than those bereaved by a natural cause of death (e.g., heart attack, stroke, or cancer; Currier, Holland, Coleman, & Neimeyer, 2008). Individuals who do not develop CG after a loss may be more successful at using appropriate accommodation and assimilation strategies to reconcile the discrepancy between global meaning (i.e., overall beliefs, values, goals) and novel evaluations of the stressful incident (Park, 2010).

Meaning made of loss has been shown to be associated with both cause of death and relationship to the deceased. Individuals bereaved by violent causes have greater difficulty making sense and finding some benign or positive significance in the loss compared to those bereaved by natural causes (Currier et al., 2008; Holland, Currier, Coleman, & Neimeyer, 2010). Notably, one study found that a one-item measure of meaning made of loss significantly mediated the association between cause of death and CG symptoms (Currier, Holland, & Neimeyer, 2006). In addition, individuals who lost a first-degree relative have been shown to make less meaning of their losses compared to those who lost an extended family member or friend (Holland, Currier, & Neimeyer, 2014).

The present study expands upon the meditational model used by Currier et al. (2006) by looking at other variables that have been shown to be related to meaning made of loss and CG. Specifically, this study seeks to examine the relationship between circumstances of a death (i.e., cause of death, relationship to the deceased), meaning made of the loss, and CG using path analysis in a college student sample. It has been estimated that roughly 60% of students experience the loss of a friend or family member while they are in college. A substantial number of these students (21%) report that their losses have had long-term effects on them, indicating that CG may present a

problem in this population (Cox, Dean, & Kowalski, 2015). We hypothesize that meaning made of loss will mediate the association between objective circumstances of the loss and CG. Specifically, it is expected that those bereaved by violent causes (i.e., homicide, suicide, fatal accident) and those who have lost a first-degree relative will be less likely to make meaning out of the loss and in turn will experience more severe CG symptoms.

Methods

Participants and procedures

Upon institutional review board approval, 741 undergraduate participants were recruited at a large southern research university via posted fliers, university-based online notices, and in-person class announcements. Students received research credit for their participation. For most participants, the survey took 45 min to 1 hr to complete. Researchers used an online university-sponsored software program for the survey. All participants received a unique identification code to prevent taking the survey twice. Participants provided informed consent online by reading a detailed description of the study and its potential risks and benefits and then providing their electronic signature. Although several messages were received from potential participants inquiring about the study, this study involved limited interaction between research team members and research participants.

Eligibility requirements for the study required participants to (a) report having a loved one die in the past 2 years, (b) be 18 years or older, and (c) be willing to complete online surveys about their loss experience. A total of 741 participants completed the survey. Participants' mean age was 21.64 ($SD = 6.11$), and the sample was comprised of mostly women (79.6%). Most of the participants were either Caucasian (45.2%) or African American (39.0%), followed by Hispanic/Latino (7.0%), Asian American (3.6%), Native American/Native Alaskan (1.4%), and "other" race or ethnicity (3.8%). The age and gender makeup of this sample is consistent with psychology majors in the university. The majority of the sample experienced the loss of an extended family member (59.30%), followed by a friend (19.70%), immediate family member (13.40%), and other nonfamily member (7.60%). The most common causes of death were natural anticipated (41.2%), natural sudden (21.2%), accident (16.3%), homicide (6.5%), suicide (5.4%), and other causes of death (9.4%).

Measures

Inventory of Complicated Grief-Revised (ICG-R)

CG symptoms were assessed using the Inventory of Complicated Grief-Revised (ICG-R; Prigerson & Jacobs, 2001), which includes 30 items rated

on a 5-point scale. Items are worded as declarative statements that represent particular symptoms associated with CG (e.g., *I feel myself longing and yearning for _____; I think about _____ so much that it can be hard for me to do the things I normally do*). Responses to these items range from 1 (*never*) to 5 (*always*), with higher scores indicating more severe CG symptoms. The ICG-R has been shown to have high internal consistency ($\alpha = 0.94\text{--}0.95$) and test–retest reliability ($r = .92$; Boelen, van den Bout, de Keijser, & Hoijsink, 2003; Burke, Neimeyer, & McDevitt-Murphy, 2010). The internal consistency was high for this sample ($\alpha = 0.96$). It has also been shown to predict a range of negative outcomes above and beyond symptoms of depression, general anxiety, and PTSD (Bonanno et al., 2007; Prigerson et al., 1997).

Integration of Stressful Life Experiences Scale (ISLES)

The Integration of Stressful Life Experiences Scale (ISLES; Holland et al., 2010) is a 16-item measure that assesses the degree to which participants made meaning of a stressful life event. Example items include, “I have made sense of this event” and “My beliefs and values are less clear since this event.” Participants were explicitly instructed to respond to these items with regard to their recent loss. Responses range from 1 (*strongly agree*) to 5 (*strongly disagree*), and items were scored so that higher scores indicated greater meaning made of the event. The ISLES has been shown to have strong internal consistency ($\alpha = 0.94\text{--}0.96$), moderate test–retest reliability ($r = .57$), and convergent validity with previously used 1-item assessments of meaning making (Holland et al., 2010). Internal consistency for this sample was high ($\alpha = 0.94$). Higher scores on the ISLES have also been found to be associated with less severe CG symptoms (Holland et al., 2010). Evidence supporting the incremental validity of ISLES scores has come from studies showing that less meaning made of stress is uniquely associated with greater PTSD symptoms and psychiatric referrals (Currier, Holland, Chisty, & Allen, 2011) and poorer perceived health (Holland et al., 2014), even after statistically controlling for other routinely assessed risk factors.

Depending on the research question being asked, the ISLES may be scored as a total sum or as two separate subscales, representing Comprehensibility (i.e., the extent to which a stressful life event makes sense within existing meaning structures) and Footing in the World (i.e., the extent to which one’s worldviews, values, and beliefs still make sense in the aftermath of a stressor; Holland et al., 2010). Since we did not hypothesize any specific differences between these subscales in the context of this study, we have focused our analyses on total ISLES scores.

Plan of analysis

Path analysis was used to examine the overall model. Analyses were conducted in Mplus version 7.11 (Muthén & Muthén, 2012). The cause of death

variable was dichotomized into two categories: violent versus natural or other. Causes of death that include accidents, homicides, and suicides were coded as violent, and causes of death as a result of natural, anticipated (e.g., cancer), natural, sudden (e.g., heart attack), and other causes (e.g., perinatal death) were coded as natural or other. The relationship to the deceased variable was also split into two categories: first-degree relationships versus non-first-degree relationships. Deceased individuals who were spouses or partners, parents, siblings, or children were coded as first-degree relatives, while all other relationships (i.e., extended family members and friends) were coded as non-first-degree relationships. Cause of death and relationship to the deceased were specified as independent variables in the model. Meaning made of loss was specified as the mediating variable, and complicated grief symptoms were treated as the dependent variable, each of which was represented by a total summed score on the ISLES and ICG-R, respectively. The indirect effects of cause of death and relationship to the deceased on CG symptoms via meaning made of loss were examined. Statistically significant indirect effects and weakened direct paths in the presence of meaning made of loss (specified as the mediator) would support our hypothesis.

Parameters were estimated using a maximum likelihood robust (MLR) procedure, which is robust in the face of nonnormality. Missing data were handled using full information likelihood. The overall model was evaluated using the following indices of model fit: the chi-square test of model fit, the comparative fit index (CFI; Bentler, 1990), the Tucker Lewis index (TFI; Hu & Bentler, 1999) and the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993). CFI and TFI values above .90 are generally considered to be indicative of good model fit. RMSEA values below .06 indicate good model fit. Values between .07 to .08 and .09 to .10 indicate reasonable fit and mediocre fit, respectively, and RMSEA values greater than .10 indicate poor model fit (MacCallum, Browne, & Sugawara, 1996).

The invariance of the model was assessed across gender and race or ethnicity. To test for invariance, we constrained structural paths to be equivalent for men and women, and then again for Caucasians and racial or ethnic minorities. A chi-square difference test was used to examine the decrease in fit of the constrained model. A nonsignificant result indicates that there are no significant differences overall between the models. A significant result indicates that the modification indices need to be examined to determine which parameters may vary across the different groups. Age and parents' number of years of education were included as covariates in the model. These demographic variables were selected based on the existing literature on CG. Specifically, in the general population, women, those with lower socioeconomic status, and people over the age of 60 have been found to exhibit higher rates of CG (Kersting, Braehler, Glaesmer, & Wagner, 2011).

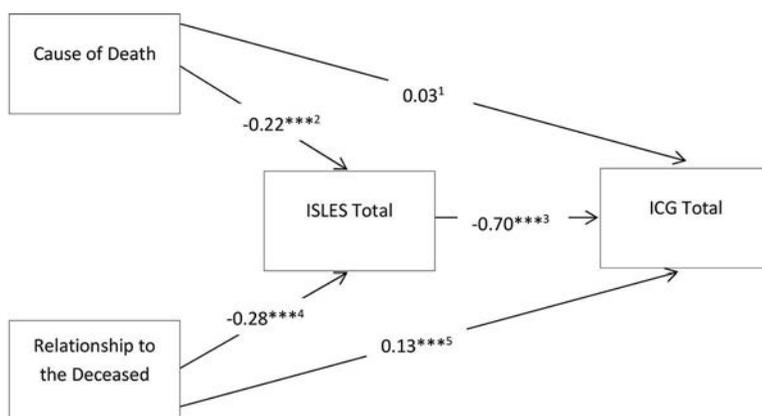
Results

Preliminary analyses

To create the dichotomous cause of death variable, violent causes of death were coded as 1 and nonviolent causes of death were coded as 0. To create the relationship to the deceased variable, loss of immediate relationships was coded as 1 and loss of other relationships was coded as 0. Point-biserial correlations were conducted for the dichotomous variables. Losing someone to a violent cause of death was associated with having made less meaning of the loss ($r = -0.27, p < .01$) and greater CG symptoms ($r = 0.22, p < .01$). Losing an immediate family member was also associated with having made less meaning of the loss ($r = -0.26, p < .001$) and greater CG symptoms ($r = 0.30, p < .001$). Having made more meaning of the loss was associated with fewer CG symptoms. Individuals who reported higher CG symptoms were more likely to be women ($t(739) = -2.08, p < .05$) and to be younger ($t(736) = -12, p < .001$).

Path analysis findings

The full model (see Figure 1) was just-identified, and therefore provided a perfect fit to the data, $\chi^2(0) = 0.00, p < .001$; CFI = 1.00; SRMR = 0.00; RMSEA = 0.00, 90% CI = 0.00–0.00. As can be seen in Figure 1 a violent cause of death was associated with less meaning made of the loss (Estimate = $-.22, p < .001$). Greater meaning made of loss was in turn associated with lower levels of CG symptoms (Estimate = $-.70, p < .001$). Notably, the indirect pathway from cause of death to CG symptoms through ISLES scores was found to



Note: * $p < .05$, ** $p < .05$, *** $p < .001$. Standard errors for each path are as follows: ¹0.03, ²0.03, ³0.02, ⁴0.04, ⁵0.03. The correlation between Cause of Death and Relationship to the Deceased was significant ($r = .12, p < .05$).

Figure 1. Path model with standardized coefficients.

be statistically significant (Estimate = .15, $p < .001$), indicating that meaning made of loss statistically mediated the association between cause of death and CG. Although the total effect of cause of death on CG was statistically significant (including direct and indirect pathways; Estimate = .18, $p < .001$), the direct effect of violent cause of death on CG was no longer statistically significant (Estimate = .03, $p = .24$) after accounting for indirect effects through meaning made of loss. This pattern of results suggests that meaning made of loss fully mediates the association between violent causes of death and increased CG symptomatology.

Losing an immediate family member (compared to the loss of an extended family member or friend) was related to less meaning made of the loss (Estimate = $-.28$, $p < .001$). The total effect of relationship to the deceased on CG symptoms (including direct and indirect paths) was also significant with those who lost an immediate family member, showing higher levels of CG symptoms compared to those who lost an extended family member or friend (Estimate = .32, $p < .001$). There was also a significant indirect pathway from relationship to the deceased to CG symptoms through ISLES scores (Estimate = .20, $p < .001$). The direct effect of losing an immediate family member on CG symptoms was still found to be statistically significant (Estimate = .13, $p < .001$) even after accounting for the indirect effects through meaning made of loss. The presence of significant direct and indirect effects for the association between loss of an immediate family member and increased CG symptoms suggests that meaning made of loss may only partially mediate this association.

Model invariance was tested with the Satorra-Bentler scaled chi-square difference test (Satorra, 2000). The test was not statistically significant when comparing the model for men and women ($\chi^2(9) = 4.79$, $p = .85$), indicating that the model was not significantly different as a function of gender. The test was also not statistically significant when comparing Caucasians with ethnic minority individuals ($\chi^2(9) = 11.16$, $p = .26$).

Age and years of education were examined as covariates in the model. Older individuals were more likely to have made meaning of the loss (Estimate = .18, $p < .001$) and were less likely to develop CG symptoms (Estimate = $-.05$, $p < .05$). Years of education was not significantly related to either meaning made of the loss (Estimate = .04, $p = .18$) or CG symptoms (Estimate = .02, $p = .48$).

Discussion

This study examined meaning made of loss as a potential mediator between objective circumstances of a death and complicated grief (CG) symptoms. These findings show that meaning made of loss, as measured by the Integration of Stressful Life Events Scale (ISLES), acted as a significant mediator

between objective risk factors (i.e., cause of death and relationship to the deceased) and the development of CG symptoms. More specifically, meaning made of the loss fully mediated the association for cause of death, in that the direct effect of violent causes of death on CG symptoms was no longer statistically significant after accounting for the indirect effect through meaning made of loss. In contrast, meaning made of loss seemed to act as a partial mediator for relationship to the deceased, with the loss of an immediate family member still being significantly associated with higher levels of CG, above and beyond indirect effects through meaning made of loss.

The finding that meaning made of the loss mediates the association between objective circumstances of the loss and CG is consistent with our initial hypothesis and fits with previous studies. For example, Currier et al. (2006) found that a one-item measure of meaning making mediated the relationship between cause of death and CG. The present findings also add to a broader literature that has shown that being able to explain and understand stressful events is a robust predictor of better psychological health, including less psychiatric stress, less workplace burnout, and fewer PTSD symptoms (Currier et al., 2011, 2013; Holland et al., 2010). Overall, the current study provides additional support for Park's (2010) Meaning-Making Model. In particular, this model proposes that when difficult life events challenge our basic beliefs about the world, successful adaptation largely depends upon one's ability to make meaning of the event and reconcile the discrepancy between global meaning (i.e., overall beliefs, values, goals) and appraisals of the stressor.

Also consistent with Currier et al. (2006) findings, meaning made of the loss fully mediated the association between cause of death and CG symptoms. However, it only partially mediated the association between relationship to the deceased and CG, indicating that there are likely other important variables that may explain this link. Although we can only speculate, one additional explanatory variable could be subjective closeness to the deceased. For example, the loss of a sibling may have been more likely to result in greater difficulty with meaning making if the sibling lived in the same household with the bereaved growing up and they remained in close contact, compared to a situation where they lived in separate households or felt distant from one another. Dependency on the deceased before their death is another variable not measured in this study that could potentially further explain the association between the loss of an immediate family member and increased CG. Notably, dependency (both in general and specific to the deceased) has been shown to uniquely identify those with a chronic grief trajectory (Bonanno et al., 2002; Denckla, Mancini, Bornstein, & Bonanno, 2011). Attachment style may also play a significant role, as insecure attachment in children is predictive of future CG symptoms as an adult (Lobb et al., 2010).

The mediational model tested in this study was also a good fit across genders and racial/ethnic groups. This finding fits with previous research showing that meaning made of stress (as assessed by the ISLES) predicts adjustment to difficult life events similarly for men and women (Lancaster & Carlson, 2015). Other studies have also shown that meaning making is an important process cross-culturally, including both racial and ethnic minorities in the United States (Wang, Koh, & Song, 2014) and individuals in other countries (Currier et al., 2013; Tuval-Mashiach & Dekel, 2014). This suggests that being able to make sense of an event is an important process that people from different cultures engage in when faced with stressful life events. Different cultures may arrive at different meanings or look for different answers, but the importance of finding meaning in stressful life events appears to be a relatively universal phenomenon.

Age was found to be a protective factor in our sample. Older individuals made more meaning of their loss and experienced less CG. This finding is consistent with previous findings of meaning made of loss as measured by the ISLES (Holland et al., 2014). It could be that older individuals are more likely to have experienced a greater number of stressful life events, resulting in a more skilled and efficient meaning making processes. Such an explanation would fit with previous longitudinal research showing that, as they age, adults are more efficient in their coping and invest less energy in a variety of coping strategies, including positive reappraisal and logical analysis (Brennan, Holland, Schutte, & Moos, 2012). It should be noted, however, that our sample was made up of college students, so it is difficult to generalize these findings to older adults. Future research should focus on meaning making across the lifespan.

There are several limitations to this study. First, this study utilized a cross-sectional design, and so causal statements about the role of meaning made of loss cannot be made. Although it was theorized that meaning made of loss predicts the development of CG, it could be that elevated CG results in less meaning made of loss. Future studies should examine these constructs using a longitudinal design to determine the directionality of this association. Second, this sample was comprised of college students at one university and only represents a narrow set of the population of bereaved individuals. Future research should try to replicate these findings across groups that differ with regard to age, socioeconomic status, level of education, and geographic location. Third, this study used an online survey methodology, which could have affected some of the results. Previous research comparing online and offline surveys with bereaved participants suggests that online approaches may tend to yield more diverse samples with greater variability. However, levels of meaning made of loss and severity of grief have been found to be similar for Internet-based versus paper-and-pencil surveys (Tolstikova & Chartier, 2010). Fourth, in this study, relationship to the deceased was examined as

an independent variable, in the absence of a more fine-grained assessment of subjective closeness to the deceased. A more nuanced measure of relational closeness or quality may explain why meaning made of the loss was only a partial mediator between relationship to the deceased and CG. Finally, the degree of trauma associated with violent causes of death may fall along a continuum that varies depending on exposure to the event. Future research should examine if there is a difference in meaning making and CG for individuals who only hear about the death compared to individuals who witnessed the death firsthand.

These results have important clinical implications. Specifically, assessment tools and interventions have been developed that are based on a model of grief that views meaning making as a crucial determinant of adjustment to loss. These findings provide empirical evidence for such a model, and by extension, they indirectly support clinical applications based on a meaning-oriented theoretical model. From an assessment standpoint, the ISLES is a relatively brief measure that has been used to track changes in a treatment context (Holland, Chong, Currier, O'Hara, & Gallagher-Thompson, 2015; Holland, 2016), and these results provide additional support for its use with bereaved clients who have experienced a range of losses in terms of relationship to the deceased and cause of death. In terms of treatment, numerous bereavement interventions have been developed that emphasize the importance of meaning-making, including life review, retelling the death narrative, reworking the continuing bond, and empty chair work, just to name a few (Neimeyer & Holland, 2015). This study provides further support for the notion that meaning made of loss may be a relevant target for bereavement interventions, particularly those that involve violent causes of death and the loss of primary attachment figures.

Notes on contributors

Vincent Rozalski, MA, is a doctoral practicum student working with Dr. Jason Holland at the University of Nevada, Las Vegas. His research and clinical interests include loss, trauma, complicated grief, PTSD, and their etiology and treatment in a variety of populations.

Jason M. Holland is a licensed clinical psychologist and Assistant Professor at the University of Nevada, Las Vegas. He graduated with his doctorate in Clinical Psychology in 2008 from the University of Memphis and completed his internship at the Palo Alto VA (PAVA), specializing in geropsychology. Upon graduation, he worked as a postdoctoral fellow at PAVA and Stanford University. His program of research focuses on stressful late-life transitions, such as bereavement, caregiving, and coping with a debilitating illness. Holland has published more than 60 peer-reviewed articles on these topics and currently serves as the associate editor for *Death Studies*.

Robert A. Neimeyer, PhD, is a Professor of Psychology, University of Memphis, where he also maintains an active clinical practice. Neimeyer has published 30 books, including *Techniques of grief therapy: Creative practices for counseling the bereaved*, and serves as Editor of the

journal *Death Studies*. The author of nearly 500 articles and book chapters and a frequent workshop presenter, he is currently working to advance a more adequate theory of grieving as a meaning-making process.

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