

Prolonged Grief Symptoms and Growth in the First 2 Years of Bereavement: Evidence for a Nonlinear Association

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Abstract

Bereavement can be a significant life stressor that precipitates both negative and constructive changes. The primary aim of this study was to examine the nature of the association between prolonged grief (PG) symptoms and posttraumatic growth (PTG) in a large sample ($N = 617$) of individuals who had experienced a range of losses over the previous 2 years. When accounting for demographic factors (age, gender, ethnicity, and educational background), loss-related circumstances (cause of death, relationship to deceased, and months since loss), and assumptive worldviews (benevolence, meaningfulness, and self-worth), PG symptoms were found to be curvilinearly associated with perceptions of growth. In particular, participants who reported symptoms in an intermediate range perceived the highest levels of growth, whereas participants with relatively lower and higher levels of grief reported lower levels of growth. These findings suggest a nonlinear relationship between grief and growth and highlight the need for sensitivity with respect to PTG for clinicians working with sufferers of prolonged grief.

Keywords

consequences of trauma, posttraumatic stress disorder, traumatic brain injury, PTSD/TBI, anxiety disorders, other diagnoses (e.g., depression, substance abuse), survey

Bereavement can be distinguished from other major life events by its inevitable and repeated occurrence for many individuals. Although most people are fairly resilient and experience only transitory distress after a loss, research documents considerable bereavement-related difficulties for a substantial subset (Bonanno et al., 2002). Specifically, a large number of studies conducted over the past two decades on prolonged grief (PG) symptomatology (previously termed “traumatic grief” and “complicated grief”) indicate that 10% to 15% of the bereaved experience a chronic struggle to come to terms with their loved one’s death (for reviews, see Lichtenthal, Cruess, & Prigerson, 2004; Prigerson & Maciejewski, 2008). Persons who experience such severe grief reactions are characterized by intense and persistent separation distress (e.g., yearning/longing for the deceased) and multiple cognitive, behavioral, emotional, and (possibly) spiritual difficulties related to the loss of the attachment relationship. For example, individuals experiencing clinical levels of PG symptoms often report trouble accepting the death, inability to trust others, excessive anger about the death, disconnection from others, uneasiness about moving on with life, feeling life has become meaningless without the deceased, and sense of hopelessness about the future.

Research has supported the distinctness of PG symptoms from normative grief reactions (Boelen & van den Bout, 2008). In addition, severity of PG symptoms has been linked

with a variety of impairments in social and personal functioning in bereaved samples, such as activity restriction (Monk, Houck, & Shear, 2006), insomnia (Hardison, Neimeyer, Gillies, & Lichstein, 2005), and decreased quality of life (Ott, 2003). In another longitudinal investigation, Prigerson and colleagues (1997) also found that PG symptoms at 6 months after the loved one’s death increased the risk for hypertension, cardiac issues, cancer, and suicidal ideation over the second year of bereavement, above and beyond the effects of depression. Although PG can co-occur with other loss-related psychiatric conditions (Onrust & Cuijpers, 2006), the symptoms for this condition have been distinguished from the symptomatology of depression and posttraumatic stress disorder (PTSD; Boelen, van de Schoot, van den Hout, de Keijser, & van den Bout, 2010) and demonstrated incremental validity in predicting deleterious psychological and medical outcomes beyond the effects of these other bereavement-related diagnoses (Bonanno et al., 2007).

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Notwithstanding the importance of studying negative outcomes among the bereaved, researchers and clinicians are increasingly recognizing that loss can provide a special context for positive intra- and inter-personal changes as well (for a review of the model that guided this study, please see Calhoun, Tedeschi, Cann, & Hanks, 2010). In fact, recent PsychINFO searches using the terms “bereave*” and “growth,” “positive change,” or “benefit-finding” generated more than 120 peer-reviewed articles published between 1990 and 2010. Although the majority of this work has been theoretical in nature, several empirical investigations have documented the occurrence of posttraumatic growth (PTG) for persons coping with different types of bereavement (Armstrong & Shakespeare-Finch, 2011; Cadell, Regehr, & Hemsworth, 2003; Engelkemeyer & Marwit, 2008; Shakespeare-Finch & Armstrong, 2010; Wagner, Knaevelsrud, & Maercker, 2007). Consistent with positive outcomes from struggling with trauma, these studies highlight the possibility of significant improvements in the quality of one’s relationships, view of the future, self-perception of strength, appreciation of life, and depth of spirituality/existential awareness among bereaved persons (Calhoun et al., 2010; Taku, Cann, Calhoun, & Tedeschi, 2009; Tedeschi & Calhoun, 2004). Focusing on a sample of individuals who were bereaved over the previous 2 years by a range of relationships and circumstances, the primary purpose of this study was to examine the nature of the association between perceptions of PTG and the severity of PG symptoms.

One of the tenets of Calhoun and colleagues’ (2010) model for bereavement is that the loss needs to challenge one’s assumptive worldviews to some degree for growth to occur (Janoff-Bulman, 1989, 1992). In keeping with notions of meaning making in general (see Park, 2010, for review), Calhoun et al. propose that PTG in part involves a griever’s attempts to reorganize his or her core beliefs to better match the situational meaning of the bereavement experience. Although research suggests that bereavement does not invariably shatter grievers’ fundamental meaning systems (Currier, Holland, & Neimeyer, 2009; Mancini, Prati, & Bonanno, 2011), assumptive worldviews have been negatively linked with distress (Currier et al., 2009; Matthews & Marwit, 2004) but positively associated with growth (Engelkemeyer & Marwit, 2008) in other bereaved samples. Hence, it appears that without some distress resulting from a possible discrepancy between one’s global beliefs (e.g., benevolence of others, meaningfulness of world, sense of self-worth) and the appraised meaning of the loss, bereaved persons may not be compelled to engage in the necessary self-reflection and cognitive processing of the loss for substantive changes to occur. As such, the secondary aim of this study was to further assess Calhoun et al.’s suggestions about the impact of assumptive worldviews on PTG among the participants in the study.

When considering the specific role of PG symptoms in personal growth, Calhoun et al. (2010) suggest that grievers will likely experience concomitant states of both PG

symptoms and PTG and that PTG will not always reflect lower levels of symptomatology. However, it might also be hypothesized that beyond a certain level of PG symptoms, most griever will become overwhelmed and too preoccupied with their difficulties to recognize positive changes and/or engage in growth-inducing processes and activities. Research on other life stressors has in fact yielded inconsistent findings as to the nature of associations between positive consequences of coping with adversity (Helgeson, Reynolds, & Tomich, 2006). In accordance with Tedeschi and Calhoun’s (2004) general theoretical propositions, one explanation for this pattern is that the association between PTG and distress could be nonlinear in nature. Namely, PTG could more frequently occur within an intermediate range of difficulties in which a person’s adaptive resources have been challenged, but not overwhelmed to a point where serious maladjustment will ensue following the stressful experience. Although this possibility has yet to be tested for PTG and PG symptoms in the context of bereavement, curvilinear associations were recently documented between PTG and PTSD symptoms among survivors of assault (Kleim & Ehlers, 2009), war captivity (Solomon & Dekel, 2007), and several other potentially traumatic events (McCaslin et al., 2009).

Focusing on an Internet-based sample, Butler and colleagues (2005) similarly found that individuals who experienced intermediate levels of posttraumatic stress related to the 9/11 terrorist attacks reported significantly greater PTG than participants with low and more severe levels of symptomatology. Although there can be drawbacks to relying on convenience sampling procedures, Butler et al. highlight the usefulness of such an approach for investigating the intersection between PTG and different types of distress. In the one study on PTG and grief symptoms conducted to this point (to our knowledge), Engelkemeyer and Marwit (2008) found a significant inverse correlation, suggesting that growth tended to occur with lower levels of grief. In addition, they failed to find a salient link between grief and growth when accounting for the effects of assumptive worldviews. However, Engelkemeyer and Marwit did not assess for PG symptoms or report a statistical test for a curvilinear association. In addition, they exclusively sampled bereaved parents for the study—a particular subgroup at heightened risk for difficulties with meaning making and elevated PG symptoms on the whole (Keese, Currier, & Neimeyer, 2008; Lichtenthal, Currier, Neimeyer, & Keese, 2010).

The present study will examine two of the central tenets of Calhoun et al.’s (2010) recent assertions about the occurrence of PTG in the context of bereavement. First, we will assess the impact of assumptive worldviews on PG symptoms and PTG. Considering other empirical findings (Currier et al., 2009; Engelkemeyer & Marwit, 2008; Matthews & Marwit, 2004), we hypothesized that positive beliefs about benevolence, meaningfulness, and self-worth would be negatively correlated with PG symptoms but positively linked with growth in the present sample. We will also expand on Engelkemeyer and Marwit and others’ work by investigating

a possible nonlinear relationship between PTG and PG symptoms. Based on the Calhoun et al.'s theoretical contributions and empirical work with survivors of other life-event stressors (Butler et al., 2005; Kleim & Ehlers, 2009; McCaslin et al., 2009; Solomon & Dekel, 2007), it was hypothesized that a significant curvilinear association between PTG and PG symptoms would emerge for the diverse group of bereaved participants in the present sample.

Method

Participants

Following institutional review and approval of the project, 671 individuals were recruited from undergraduate psychology courses at a large Southern research university between 2006 and 2009. Data were collected electronically via an online subject pool system sponsored by the institution's psychology department. All of the losses included in this study had occurred between 3 and 24 months from the time of the study, reflecting a period in which growth could occur and for which many participants could also still be grappling with consequences of their loved one's death (Prigerson et al., 2008).

The average age in the sample was 21.34 years ($SD = 5.91$, range = 18 to 56 years), and the majority of participants were women ($n = 549$, 81.8%). The ethnic backgrounds of the participants were African American ($n = 317$, 47.2%), Caucasian ($n = 295$, 44.0%), Asian American ($n = 19$, 2.8%), Hispanic/Latino ($n = 10$, 1.5%), Pacific Islander ($n = 4$, 0.6%), Native American ($n = 3$, 0.4%), and "Other" ($n = 23$, 3.4%). Almost half of the sample had someone in their family of origin graduate from college ($n = 312$, 47.2%), highlighting that a sizeable subset of the group were first-generation college students.

The average number of months elapsed since bereavement was 10.46 ($SD = 7.75$). In terms of participants' relationships to the deceased, 95 (14.2%) had lost a member of the nuclear family (parent, sibling, child, or spouse/partner), 415 (61.8%) had lost an extended family member (grandparent, aunt/uncle, cousin, or other family), and 161 (24.0%) had lost a close friend. More than half of these losses occurred via natural anticipated (e.g., cancer; $n = 288$, 42.9%) and natural sudden causes (e.g., heart attack; $n = 138$, 20.6%). However, a substantial portion of the sample participants lost loved ones to violent death, including accidents (e.g., motor vehicle accident; $n = 114$, 17.0%), homicide ($n = 40$, 6.0%), and suicide ($n = 36$, 5.4%). A smaller portion of the sample participants identified "other causes" for the loved one's death (e.g., perinatal loss; $n = 55$, 8.2%)

Measures

Participants' perceptions of personal growth were assessed with the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). The PTGI is a widely used 21-item

instrument that assesses retrospective accounts of positive changes following a significant life-event stressor. Participants completed the PTGI with respect to their recent loss experience. Consistent with Tedeschi and Calhoun's (2004) initial theoretical propositions, recent factor analytic work by Taku and colleagues (2008) supported either a one- or five-factor solution for the measure. Hence, from a measurement standpoint, the PTGI might yield a total score and/or five domain scores that reflect particular types of positive changes. The current study focused on the total PTGI scores for participants. All PTGI items were scored on a 6-point scale according to the individual's perception of change pertaining to the recent loss of their loved one (0 = *no change*, 5 = *very great change*). The PTGI demonstrated strong internal consistency in the current sample ($\alpha = .88$).

Assumptive worldviews were assessed with the World Assumptions Scale (WAS; Janoff-Bulman, 1989), a 32-item self-report instrument that generates three primary subscales related to benevolence, meaningfulness, and self-worth. In the present study, items were rated on a 5-point scale (0 = *strongly disagree*, 4 = *strongly agree*). Sample items from the subscales include: "The good things that happen in this world far outnumber the bad," and "Human nature is basically good" (benevolence); "Generally, people deserve what they get in this world," and "The course of our lives is largely determined by chance" (meaningfulness); "I am usually satisfied with the kind of person I am," and "I usually behave in ways that are likely to maximize good results for me" (self-worth). The WAS has been used extensively in a variety of research contexts, demonstrating good reliability in several studies (Dekel, Solomon, Elklit, & Ginzburg, 2004; Elklit, Shevlin, Solomon, & Dekel, 2007; Janoff-Bulman, 1989). In support of the measure's construct validity, the WAS has been shown to account for trauma-related symptoms (Dekel et al., 2004; Elklit et al., 2007) and to differentiate survivors of bereavement from nonbereaved people (Matthews & Marwit, 2004; Schwartzberg & Janoff-Bulman, 1991). The full WAS yielded an alpha of .83 in the present sample; benevolence ($\alpha = .80$), meaningfulness ($\alpha = .69$), and self-worth ($\alpha = .81$) showed acceptable levels of internal consistency as well.

The Inventory of Complicated Grief—Revised (ICG-R; Prigerson & Jacobs, 2001) was used to assess PG symptoms. The ICG-R is composed of 31 declarative statements, such as, "I feel like I have become numb since the death of [the deceased]," and "Ever since [the deceased] died I feel like I have lost the ability to care about other people or I feel distant from people I care about," to which responses are made on a 5-point scale describing the frequency of symptoms (e.g., *never* = 1, *always* = 5). This instrument has displayed high internal consistency (.94) and good temporal stability (.92) over a period ranging from 9 to 28 days (Boelen, van den Bout, De Keijser, & Hoijtink, 2003). Research has also provided support for the validity of the ICG-R. For example, diagnoses based on the measure yielded a sensitivity of .93 and a specificity of .93 in the case

of interview-determined PG symptoms (Barry, Kasl, & Prigerson, 2002). In addition, ICG-R items have correlated with a range of potentially serious mental and physical health consequences of bereavement (Hardison et al., 2005; Latham & Prigerson, 2004; Ott, 2003; Prigerson et al., 1997). A recent study also suggests that PG symptoms (as measured by the ICG-R) are distributed along a continuum, highlighting the potential utility of studying a fuller range of PG symptoms in this study (Holland, Neimeyer, Boelen, & Prigerson, 2009). The ICG-R yielded a Cronbach's alpha of .96 in the present sample.

Plan of Analysis

We initially examined bivariate correlations between assumptive worldviews (benevolence, meaningfulness, and self-worth), PG symptoms, and PTG. In order to test the hypothesis that PG symptoms would be curvilinearly related to PTG, we performed a multiple regression analysis in which scores on the PTGI served as the dependent variable and scores on the ICG-R (as a main effect and quadratic) were the primary independent variables of interest. We also included a number of important statistical controls in the model, including gender (men = -1, women = 1), race (-1 = Caucasian, 1 = ethnic and racial minority), age, family education (-1 = high school diploma or less, 1 = at least an associate's degree), cause of death (-1 = natural, 1 = violent), relationship to the deceased (-1 = extended family/friends, 1 = immediate family), months since the loss, and assumptive worldviews (benevolence, meaningfulness, and self-worth). All continuous independent variables were centered by subtracting the mean score prior to conducting this multivariate analysis.

Results

The mean scores for the WAS subscales were as follows: benevolence = 17.78 ($SD = 5.61$), meaningfulness = 22.56 ($SD = 6.64$), and self-worth = 30.30 ($SD = 7.22$). The mean ICG-R score in the sample was 39.55 ($SD = 19.44$). A series of univariate analyses revealed negative correlations between PG symptoms and benevolence, $r(671) = -.19, p < .001$, and self-worth, $r(671) = -.22, p < .001$. In addition, PG symptoms were slightly positively correlated with meaningfulness in the sample, $r(671) = .08, p = .03$. As hypothesized, levels of PTG were also significantly linked with benevolence, $r(671) = .12, p < .001$; meaningfulness, $r(671) = .14, p < .001$; and self-worth, $r(671) = .28, p < .001$, in the sample. In addition, PG symptoms and PTG were significantly correlated among the bereaved participants, $r(671) = .28, p < .001$.

As presented in Table 1, results from the multiple regression analysis revealed that PG symptoms were significantly related to PTG as both a main effect and as a quadratic term, both $ps < .001$. To better understand these findings, a graph

Table 1. Multiple Regression Analysis With Posttraumatic Growth as the Dependent Variable ($N = 671$)

	β	SE	P
Intercept	57.273	1.931	<.001
Gender	0.384	1.292	.767
Race	1.077	1.025	.294
Age	-0.449	0.177	.011
Family education	-2.503	0.995	.012
Cause of death	1.677	1.106	.130
Relationship to deceased	2.785	1.502	.064
Time since loss	0.104	0.133	.434
Benevolence	0.584	0.199	.003
Meaningfulness	0.024	0.162	.881
Self-worth	0.844	0.163	<.001
PGD symptoms	0.467	0.056	<.001
PGD symptoms squared	-0.007	0.002	<.001

Note: PGD = prolonged grief disorder. Continuous variables are centered about their mean, and dichotomous variables are coded as -1 and +1. Thus, the intercept can be interpreted as the unweighted grand mean for the sample.

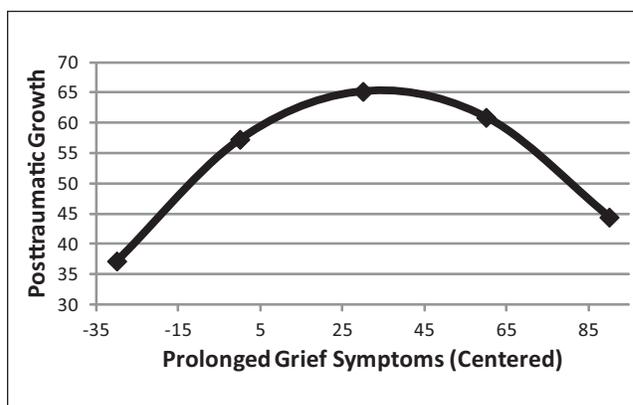


Figure 1. This graph depicts the curvilinear association between PG symptoms and PTG as identified in the regression analysis. In this graph, scores on the ICG-R are centered about the mean score. Four points were plotted that roughly correspond to the interquartile ranges found in the data.

was plotted representing the curvilinear association between the two constructs (see Figure 1). Consistent with our study hypothesis, an inverted U-shaped curve was found, whereby very low levels of PG symptoms corresponded to relatively low levels of PTG, intermediate levels of PG symptoms were associated with relatively higher levels of PTG, and higher levels of PG were linked with lower levels of PTG.

It is also notable that several of the other study factors included in the regression model emerged as being statistically significant. Specifically, younger persons in the sample and those who grew up in families with less education tended to report somewhat higher levels of PTG. In addition, when controlling for the effects of PG symptoms and the other

study variables, persons with more positive beliefs about benevolence and greater self-worth perceived significantly more positive changes resulting from the loved one's death.

Given recent findings about the type of loss being predictive of growth (Armstrong & Shakespeare-Finch, 2011), it should be noted that we also considered the possibility that the association between PG and PTG might differ depending on the cause of death (natural vs. violent). In particular, we reran our analyses and included a two-way interaction term (PG \times Type of Loss) as well as a 3-way interaction term (PG \times PG \times Type of Loss). Neither of these interactions was statistically significant, indicating that the association between PG and PTG was not significantly different for losses due to natural and violent causes among the bereaved individuals in this study.

Discussion

In keeping with Calhoun and colleagues' (2010) recent suggestions about coping with bereavement and studies on the consequences of other potential traumas (Butler et al., 2005; Kleim & Ehlers, 2009; McCaslin et al., 2009; Solomon & Dekel, 2007), this study mainly provided evidence for a curvilinear link between PG symptoms and growth. In particular, even after controlling for the effects of demographic factors, key loss-related circumstances, and assumptive worldviews, persons with intermediate levels of PG symptoms had the highest probability of perceiving growth and individuals with relatively higher or lower levels of PG symptoms tended to report less growth.

This finding supports the conventional wisdom that personal transformation frequently emerges from suffering, but the likelihood of positive change in the context of bereavement is lessened under conditions of overwhelming distress related to the loved one's death. Such an explanation fits with findings from a recent mixed-methods study with bereaved parents that many individuals with heightened PG symptoms perceive a total absence of positive outcomes resulting from their loss experiences (Lichtenthal et al., 2010). With regard to participants who indicated low levels of grief and growth, in accord with Calhoun et al.'s (2010) hypotheses, these nondistressed participants were likely not compelled to attach significance to the loss or search for new meanings and direction in life. However, given the lack of both qualitative and follow-up information regarding perceptions of growth in this study, it is difficult to draw definitive conclusions about this group. Future research would do well to further expand on these findings and elucidate the factors that contribute to perceptions of low growth among individuals with high and low levels of PG symptoms.

Although not a primary aim of this study, it should also be noted that, consistent with Engelkemeyer and Marwit's (2008) findings, assumptive worldviews were associated with both PG symptoms and PTG in this study. Individuals who reported less positive beliefs about benevolence and

their own self-worth had greater PG symptoms in the sample. In addition, when controlling for PG symptoms and other study variables, benevolence and self-worth were uniquely linked with more growth in response to the loved one's death. These results converge with Calhoun et al.'s (2010) model as well, which posits that the successful revision of core meaning systems frequently serves as a critical pathway for PTG. However, in view of the negative correlations with PG symptoms and the nonlinear link between grief and growth documented in this study, important questions remain as to how different assumptive worldviews and changes in global beliefs actually serve to reduce or exacerbate PG symptoms. A recent investigation by Mancini et al. (2011) found that preloss assumptive worldviews were an important protective factor, but the nature of beliefs after the death had little impact on distress symptoms. Given the cross-sectional nature of our design, we could not examine how participants' preloss beliefs affected their responses to bereavement or how changes in participants' meaning systems contributed to processes of grieving and growing in the sample. Addressing these questions represents another important direction for future research.

Other results also indicated that certain demographic factors figured prominently in participants' perceptions of growth at the time of the study. When controlling for other factors, younger individuals and those with fewer formal educational achievements in their families of origin were shown to report higher levels of growth. These findings converge with Butler and colleagues' (2005) correlates of PTG following the September 11 terrorist attacks but should still be interpreted tentatively given the overrepresentation of young adults and limited range of educational levels in the present sample. An unanticipated finding in this study was the lack of a link between growth and both relationship to the deceased and cause of death in the multivariate analysis. This null finding runs counter to results of a prior study indicating greater PTG for losses of nuclear family members (Armstrong & Shakespeare-Finch, 2011) and violent types of loss (Currier, Malott, Schallert, Sandy, & Neimeyer, in press). However, this previous work did not account for the impact of PG symptoms in the analysis, which could serve to mediate the association to some degree between bereavement-related circumstances and PTG.

From a clinical standpoint, these results highlight the need for sensitivity about PTG on the part of clinicians working with prolonged and distressed grievers. Particularly for individuals with heightened PG symptoms, psychotherapy may focus primarily on the alleviation of distress and facilitation of adaptive coping strategies. In so doing, clinicians should not expect their clients to necessarily grow over the therapeutic process. Such a goal could be viewed by bereaved clients who are already feeling overwhelmed as an additional burden and possibly lead to more distress. However, as the symptoms of PG are reduced, the present results indicate that the possibility for growth might increase. At this stage,

clinicians may consider shifting their focus to discern and affirm positive changes, as clients emotionally and cognitively process the loved one's death and come to terms with their postloss reality.

Several limitations should be discussed that might have affected the present conclusions. In particular, the cross-sectional nature of the study precludes any causal claims from being made. In addition, the fact that our study relied on information collected from a convenience sample that was largely comprised of young adults with equivalent levels of education (i.e., college students) limits the generalizability of the results. The majority of individuals in the sample also had not lost close family relationships (i.e., the deceased were more often extended family and close friends). Although our broad sampling procedure allowed us to investigate a curvilinear effect, study findings might not apply as well to specific populations of bereaved persons at risk for PG symptoms and difficulties making meaning of their losses (e.g., loss of spouse, sibling, or child). Consistent with general trends in bereavement research, there was also an overrepresentation of women in the sample. Although gender was not found to significantly predict growth in this study, it is possible that the pattern of results may have differed had the sample included a larger proportion of men. Finally, it is noteworthy that different patterns of findings may emerge for different types of stressors, as past studies have found varying levels of growth for different stressors (Shakespeare-Finch & Armstrong, 2010) and, in some cases, high levels of growth even in the context of highly stressful life events (e.g., following childhood sexual abuse; Shakespeare-Finch & de Dassel, 2009).

Notwithstanding these limitations, this investigation further supports the role of assumptive worldviews in bereavement adaptation and provides preliminary evidence for a curvilinear association between PG and growth—two findings that have important implications for future theoretical, clinical, and empirical work in this domain.

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