

Closeness and Conflict With the Deceased: Exploring the Factor Structure of the Quality of Relationships Inventory in a Bereaved Student Sample

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Abstract

With mounting empirical evidence that interpersonal closeness and conflict with the deceased prior to death are significant predictors of grief reactions following loss, accurate empirical examination of these two constructs is of high importance. Despite the utility of the Quality of Relationships Inventory (QRI) in numerous domains of research, the original instrument was not constructed with a predeath, mourner–decedent relationship in mind. Therefore, this study clarified the factor structure of a modified QRI focusing on major dimensions of the predeath relationship with the deceased—dynamics that could have strong implications for the survivor’s bereavement trajectory. An exploratory factor analysis of 386 bereaved adults revealed two salient factors, deemed closeness and conflict. These results suggest that the modified bereavement version of the QRI, designated the Quality of Relationships Inventory–Bereavement version, is well positioned to advance research in thanatology, with possible limitations noted in the range of relationships to which it is applicable.

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Researchers studying bereavement arising from numerous causes of death have found perceived closeness to the deceased to be associated with higher distress throughout the course of bereavement (Dyregrov, Frykholm, Lilled, Broberg, & Holmberg, 2003; Servaty-Seib & Pistole, 2007). Such findings support the claim that differences in the severity of grief reactions are likely to follow more accurately the closeness of the personal relationship rather than the degree of genetic relatedness or kinship (Brent et al., 1992; Cleiren, Diekstra, Kerkhof, & van der Wal, 1994). The latter, owing to its ease of measurement, is far more commonly studied (Burke & Neimeyer, 2013). The utility of kinship as an adequate predictor of grief reactions has been challenged by findings that for some emerging adults, the loss of a friend elicits more severe reactions than the loss of an extended family member (Holland & Neimeyer, 2011; Servaty-Seib & Pistole, 2007). In other studies, relationship category was not a significant predictor of grief reactions (Servaty-Seib & Pistole, 2007). By contrast, two studies examining interpersonal closeness to the deceased found that those who reported greater closeness were more likely to have complicated grief, somatic reactions, and, to a lesser degree, depression (Herberman Mash, Fullerton, & Ursano, 2013; Mash, Fullerton, Shear, & Ursano, 2014).

Similar to interpersonal closeness, the argument that relational conflict prior to a loved one's death is linked to problematic grief reactions can be traced back to psychoanalytic theory. Psychoanalytic theories of grief posit that the loss of a conflicted relationship is associated with prolonged or "pathological" grief, presumably because it complicates resolving attachment issues with the deceased and releasing the lost person through eventual emotional disconnection or *de-athesis* (Freud, 1917/1957). This argument was partially supported by Parkes and Weiss (1983) who found that widowed persons who reported higher levels of marital conflict were significantly less likely to return to effective functioning 24 to 48 months after the death of the spouse and had higher levels of anxiety, guilt, and depression than bereaved spouses in the low-conflict group. However, such findings fall short of validating the psychoanalytic assumption that this poorer outcome was the result of narcissistic identification with the lost figure, which instead is incorporated into the mourner's ego in an attempt not to "let go" of the conflicted relationship. Instead, the conjunction of relational conflict and bereavement complication, while a valid empirical observation, might well be accounted for by other factors, as noted below.

Other investigators not associated with a psychoanalytic perspective have also reported data linking conflict and complication in bereavement.

For example, in their survey of 540 bereaved parents, Feigelman, Jordan, and Gorman (2009) found greater grief difficulties for those survivors who had negative relationships with their deceased children than for those who reported positive relationships prior to the loss. Most recently, Klingspon, Holland, Neimeyer, and Lichtenthal (2015) reported that distress about “unfinished business” (conflict, unresolved issues, etc.) with the deceased was a strong predictor of complicated grief in a large college student sample. Here again, however, the explanation for this conjunction remains an open question. For example, relationships fraught with greater negativity in life might well engender greater guilt or unresolved anger in survivors or leave mourners struggling to square their senses of grief over the death and relief that the problematic person is no longer a physical presence in their lives. Having access to a reliable measure of relational conflict could therefore help bereavement researchers identify this phenomenon in a way that permits its closer study, including the investigation of the possible mechanisms by which conflict complicates adaptation to loss.

With mounting evidence that closeness is a better predictor of grief reactions following losses of many kinds and that high levels of interpersonal conflict engender a protracted and “pathological” grief reaction, the accuracy and brevity with which these two constructs are empirically examined is of high importance. One measure that examines relationship quality through the lens of interpersonal closeness and conflict is the Quality of Relationships Inventory (QRI; Pierce, Saranson, & Saranson, 1991). Despite the utility of the QRI in assessing the quality of relationship between the respondent and another indexed individual, the original instrument was not constructed with a predeath, mourner–decedent relationship in mind. The original QRI utilizes a three-factor structure comprising support, depth, and conflict; yet despite numerous studies examining the factor structure of this relational measure, consensus remains elusive (Marques, Pinheiro, Matos, & Marques, 2015; Matos, Pinheiro, & Marques, 2013; Nakano et al., 2002; Neves & Pinheiro, 2009; Reiner, Beutel, Skaletz, Braühler, & Stoübel-Richter, 2012; Verhofstadt, Buysee, Rosseel, & Peene, 2006). Thus, further studies of different samples are needed to clarify the factor structure of this widely implemented measure of relationship quality. Moreover, the QRI has yet to be used in research on bereaved populations, where it could permit more sophisticated study of the predeath relationship between the respondent and the decedent—dynamics that may have strong implications for the survivor’s bereavement trajectory. Additionally, having the ability to empirically measure the respondent–decedent relationship quality in a parsimonious fashion is imperative given the likely distress that respondents are contending with at the time this relationship is assessed in research or clinical contexts. Therefore, this study seeks to clarify the factor structure of a modified QRI that is parsimonious and tailored to the experience of interpersonal loss through death.

Method

Participants

Following institutional ethics review and approval, 386 participants who experienced a relatively recent loss through death were recruited from undergraduate psychology courses at a large research university between 2015 and 2016. These data were collected anonymously and electronically through an online research participant pool system sponsored by the institution's Department of Psychology. Participants received course credit for their participation. The vast majority of the losses experienced by participants occurred between 1 week and 24 months from the commencement of the study—a period commonly employed in bereavement research in which participants could still be grappling with the consequences of a close other's death (Prigerson, Vanderwerker, & Maciejewski, 2008). However, given that the aim of this study was not to assess bereavement-related outcomes, but rather the factor structure of the QRI in a bereaved population, participants who endorsed experiencing a loss outside of the typical 24-month target window were not excluded from the analysis. A detailed representation of participant background information and characteristics of the death is presented in Table 1.

Measures

QRI. The QRI (Pierce et al., 1991) is a questionnaire consisting of 25 items, which asks about specific dimensions of a relationship with a particular individual. For the purposes of this study, items on the QRI were modified to inquire about the predeath relationship between the respondent and the decedent. Therefore, the present-tense language of the original QRI was modified to a past-tense structure, such that questions were tailored to the experience of loss through death (e.g., “To what extent *could* you turn to this person for advice about a problem?” “How often *did* you need to work to avoid conflict with this person?”). In their initial validation of the QRI, Pierce et al. (1991) identified a three-factor structure comprised of scales examining levels of interpersonal Support (7 items), Depth (6 items), and Conflict (12 items). Using the modified language employed in this study, the Support subscale evaluates the perceived provision and availability of support prior to the deceased's passing. The Depth subscale examines the extent to which the relationship was believed to be positive and important. The Conflict subscale assesses the degree to which the relationship was perceived as conflictual or ambivalent in nature prior to the decedent's death. Each item is assessed on a 4-point Likert-type scale ranging from 1 (*not at all*) to 4 (*very much*).

Pierce et al. (1991) used a principal factor analysis (and direct oblimin rotation) and obtained a three-factor solution, illustrating high internal consistency for each of the three factors, with α coefficients of .88 for the Support and

Table 1. Demographic and Death-Related Characteristics of Sample.

Characteristic	Range	M (SD)	% (n)
Age	18–56	20.91 (5.18)	
Gender			
Female			70.7 (273)
Male			29.3 (113)
Race/ethnicity			
Non-Hispanic White			41.2 (159)
Black/African American			23.6 (91)
Hispanic			13.5 (52)
Asian			9.1 (35)
Other/multiethnic			12.7 (49)
Relationship to deceased			
Immediate family			8.3 (32)
Extended family			62.7 (242)
Friend			27.2 (105)
Unreported			1.8 (7)
Cause of death			
Natural, anticipated			43.3 (167)
Natural, sudden			26.9 (104)
Accident			15.3 (59)
Suicide			7.3 (28)
Homicide			5.2 (20)
Other/unspecified			2.1 (8)
Time since loss ^a			
Less than 1 month			5.6 (22)
1–12 Months			40.6 (146)
13–24 Months			38 (156)
More than 24 months			15.8 (61)

Note. n = 386.

^aOne participant did not record a response for time since loss.

Conflict subscales and .86 for the Depth subscale. Some additional investigations with ethnically and culturally diverse samples have obtained synonymous results to the original validation (Marques et al., 2015; Neves & Pinheiro, 2009; Reiner et al., 2012; Verhofstadt et al., 2006), whereas other studies that utilized similarly diverse samples and relationship-types found a two-factor solution—results that clearly depart from the QRI’s originally proposed factor structure (Matos et al., 2013; Nakano et al., 2002).

Analytic Plan

Exploratory factor analysis (EFA) is used frequently as a multistep statistical technique, applied to situations in which researchers seek to explain a larger set of measured variables with a smaller set of latent constructs. As its name implies, EFA is used heuristically to explore and identify the factor structure for a set of variables (Henson & Roberts, 2006). Although researchers may have some conceptualization of what factors may be present in the data, such as when items are developed to measure specific constructs, EFA does not generally take *a priori* theory into strong consideration (Henson & Roberts, 2006). Therefore, results of an EFA are the sole product of the mechanics and mathematics of a selected methodology (Kieffer, 1999). Furthermore, an EFA can be applied to a data set consisting of a sample that had been underrepresented or absent in previous analyses in order to examine the appropriateness of the factor structure for that sample (Henson & Roberts, 2006).

The present study examined the factor structure of the modified, bereavement-specific QRI, by conducting an EFA using principle axis factoring with iterated oblique (promax) rotation. All data were analyzed using SPSS, Version 24.0 for Mac (SPSS Inc., Chicago, IL).

Results

Data Screening

Data were screened according to the standards outlined by Tabachnick and Fidell (2013). Using linear regression, multivariate outliers were identified by computing a Mahalanobis distance for each case. Using a threshold value of $\chi^2 = 15.01$, $\alpha = .001$, and $df = 2$, no cases emerged for consideration as a multivariate outlier or extreme case. Thus, all 386 responses were retained and considered for analysis.¹

To enhance the utility of the data, we employed a number of validating questions such as “If you are reading this, please select ‘once every week.’” If cases failed to meet this criterion, the data were omitted in a listwise manner. Subsequently, a missing values analysis was employed to investigate the occurrence and prevalence of missing data. Results of this analysis indicated no missing values for the measures under investigation in this study.

The frequency distribution of each of the items on the QRI was examined and found to be within acceptable ranges, that is, no items had kurtosis values exceeding ± 2.0 . However, three items, all of which assess levels of interpersonal conflict, were positively skewed, with values marginally exceeding ± 2.0 . It was anticipated that a number of items assessing interpersonal conflict would be positively skewed given that most individuals do not have protracted, conflictual relationships with deceased friends or family. Our primary analyses are robust to

violations of normality as evident across these three items (Norris & Aroian, 2004; Zygmunt & Smith, 2014).

Factor Analysis

Initial considerations regarding the appropriateness of factor analysis of the QRI were examined. The Kaiser–Meyer–Olkin measure of sampling accuracy was adequate (.94), and Bartlett’s test of sphericity was statistically significant, $\chi^2(276) = 6,882.05$, $p < .001$. Values along the diagonal of the anti-image correlation matrix all exceeded .50, and off-diagonal values were small. Lastly, all communalities were above the threshold of .30, demonstrating that each item shared common variance with other items. After considering these indicators, an EFA was conducted using all items of the QRI.

Model 1. Based on interpretation of a scree plot and consideration of the number of factors with eigenvalues greater than 1, two factors were initially indicated for possible extraction from principal factor analysis. Subsequently, a parallel analysis was conducted using O’Connor’s (2000) recommendations, with results yielding two factors containing eigenvalues greater than the 95th percentile of the distribution of random data eigenvalues, further substantiating a two-factor solution. The first factor accounted for 40.2% of the variance in QRI scores, whereas the second factor explained 22.5% of the variance. This two-factor solution accounted for 62.6% of the variance.

A two-factor solution using promax rotation was examined to investigate factor loadings across items. Items were retained in the analysis if the rotated factor loading was greater than $\pm .30$ (Hair, Anderson, Tatham, & Black, 1998). On this basis, all items were retained. However, the item “How critical of you was this person?” had a relatively low-factor loading on both factors (with values of .37 and .44 for Factor 1 and Factor 2, respectively). As a result, this item was eliminated.

Model 2. After eliminating the item “How critical of you was this person?,” a second-factor analysis was employed, utilizing the same analytic process used to derive the first model. Similar to model 1, a two-factor solution was identified, explaining 63.5% of the total variance of the QRI. These two factors were weakly correlated (.19). Individual items and factor loadings for this model are presented in Table 2.

Factor 1, labeled Closeness, was comprised of 13 items and accounted for 40.5% of the variance across scores. The items loading on this factor relate to the level of depth and dependability in the relationship between the respondent and the deceased. Factor 2, labeled Conflict, was comprised of 11 items and accounted for 23.1% of the variance. These 10 items pertain to experiences of interpersonal dissention, distress, and the degree to which a conflictual

Table 2. Factor Loadings of 23 Items of the QRI With a Two-Factor Solution.

QRI Items	Factor	
	1	2
11. How significant was this relationship in your life?	.86	
18. To what extent could you count on this person to listen to you when you were very angry at someone else?	.86	
10. How positive a role did this person play in your life?	.85	
3. To what extent could you count on this person for help with a problem?	.85	
8. To what extent could you count on this person to help you if a family member very close to you died?	.84	
12. If this person were still alive, how close would your relationship be with this person in 10 years?	.84	
13. If this person were still alive, how much would you miss this person if the two of you could not see or talk with each other for a month?	.82	
1. To what extent could you turn to this person for advice about a problem?	.82	
21. To what extent could you really count on this person to distract you from your worries when you feel under stress?	.82	
5. To what extent could you count on this person to give you honest feedback, even if you might not want to hear it?	.78	
17. How much did you depend on this person?	.72	
15. If you wanted to go out and do something this evening, how confident are you that this person would have been willing to do something with you?	.70	
16. How responsible did you feel for this person's well-being?	.51	
20. How angry did this person make you feel?		.89
22. How often did this person make you feel angry?		.89
4. How upset did this person sometimes make you feel?		.87
6. How much did this person make you feel guilty?		.79
2. How often did you need to work to avoid conflict with this person?		.71
9. How much did this person want you to change?		.64
23. How often did this person try to control or influence your life?		.63
19. How much would you have liked this person to change?		.61
24. How much more did you give than you got from this relationship?		.60
7. How much did you have to give in this relationship?		.55

Note. $n = 386$. QRI items are listed in the order of the strength of their factor loading. Items with factor loadings below .30 are not reported. Factor 1 = closeness; Factor 2 = conflict; QRI = Quality of Relationships Inventory.

Table 3. Descriptive Statistics and Reliability Coefficients for Two Proposed QRI Subscales.

	Items	Minimum	Maximum	M (SD)	α
Model 2					
Closeness	13	13.00	52.00	32.28 (11.77)	.96
Conflict	10	10.00	40.00	14.43 (5.93)	.89
Final model (QRI-B)					
Closeness	8	8.00	32.00	21.00 (7.76)	.95
Conflict	5	5.00	20.00	6.96 (3.11)	.88

Note. QRI-B = Quality of Relationships Inventory–Bereavement version.

relationship existed between the respondent and the deceased. Composite scores were created to represent the Closeness and Conflict factors by summing item-level scores (see Table 3). Internal consistency of the subscales was high; coefficient α values ranged from .96 for Closeness to .89 for Conflict. Descriptive statistics for these two subscales are presented in the top half of Table 3.

In pursuit of parsimony. Participant burnout and attrition are common problems in the field of psychological research. Psychological measures that accurately and adequately capture the nuances of the construct they intend to measure are further enhanced by their brevity. When measures are parsimonious, participants are less likely to feel overburdened by the number of items they are tasked with responding to, leading to both higher participation rates and decreased response resistance which, in turn, fosters higher quality data (Streiner, Norman, & Cairney, 2015). Those who have experienced a loss through death, particularly a loss that is more recent (occurring within the last two years) or more traumatic or violent in nature, may have less psychological attention to afford to researchers. Therefore, we further examined the factor structure of the QRI to identify the least number of items in each factor, without jeopardizing the strong psychometric properties that were recognized in our second model.

One statistical procedure that explores all possible abbreviated versions of a measure or subscale and their corresponding psychometric properties is ALPHAMAX (Hayes, 2005). ALPHAMAX is a macro written for SPSS that allows the user to find a psychometrically satisfying subset of k items within a measure or subscale that either maintains or enhances the internal consistency of the original scale and retains the subjective validity of the full scale, such as face and content validity (Hayes, 2005). Following Hayes's (2005) recommendations for applying the ALPHAMAX macro, a final, parsimonious QRI model was identified. As evident in Table 4, Factor 1, Closeness, was comprised of eight items accounting for 47.0% of the variance across scores. Factor 2, Conflict, was comprised of five items accounting for 25.6% of the variance. This final two-

Table 4. Parsimonious Model: Factor Loadings of 13 Items of the QRI-B With a Two-Factor Solution.

QRI items	Factor	
	1	2
11. How significant was this relationship in your life?	.87	
12. If this person were still alive, how close would your relationship be with this person in 10 years?	.86	
18. To what extent could you count on this person to listen to you when you were very angry at someone else?	.85	
10. How positive a role did this person play in your life?	.84	
8. To what extent could you count on this person to help you if a family member very close to you died?	.84	
13. If this person were still alive, how much would you miss this person if the two of you could not see or talk with each other for a month?	.83	
21. To what extent could you really count on this person to distract you from your worries when you feel under stress?	.83	
3. To what extent could you count on this person for help with a problem?	.81	
4. How upset did this person sometimes make you feel?		.90
20. How angry did this person make you feel?		.83
6. How much did this person make you feel guilty?		.80
2. How often did you need to work to avoid conflict with this person?		.73
24. How often did this person try to control or influence your life?		.63

Note. $n = 386$. QRI-B items are listed in the order of the strength of their factor loading. Items with factor loadings below .30 are not reported. Factor 1 = closeness; Factor 2 = conflict; QRI-B = Quality of Relationships Inventory–Bereavement version.

factor solution accounted for 72.5% of the total variance across scores, and the two factors were negligibly correlated (.12). Coefficient α values were high for both subscales, with a value of .95 for Closeness and .88 for Conflict. Furthermore, the scores for both the Closeness and Conflict factors in this abbreviated model were highly correlated with our second model's Closeness and Conflict scores, with correlation coefficients of .99 and .93, respectively. Composite scores were created for the two subscales, and their descriptive statistics are included in the bottom half of Table 3. For the sake of clarity in future studies using this modification of the measure, we have designated this

two-factor, 14-item scale, the Quality of Relationships Inventory—Bereavement version, or QRI-B.

Discussion

These findings corroborate those of other researchers who also found a two-factor structure for the QRI. In their examination of the QRI with a sample of 187 Japanese women, Nakano et al. (2002) obtained a two-factor solution: A support factor composed of 14 items and a conflict factor consisting of 11 items. Similarly, utilizing a sample of Portuguese adolescents, Matos, Pinheiro, and Marques (2013) revealed a two-factor structure, comprised of 24 items assessing two distinct dimensions: support/depth and conflict. However, other studies that include samples from diverse backgrounds and relationship types have found a three-factor solution (Marques et al., 2015; Neves & Pinheiro, 2009; Reiner et al., 2012; Verhofstadt et al., 2006), similar to the factor structure of the original QRI (Pierce et al., 1991). Despite the disparate results evidenced in these diverse studies, the findings presented here of a two-factor solution (Closeness and Conflict) are supported by a theoretical understanding of the response items that permit the evaluation of two distinct relational dynamics constructs—psychological closeness and conflict. Moreover, two of the factors identified in the original factor structure of the QRI (available support and interpersonal depth; Pierce et al., 1991) can be, to a large extent, interpreted as aggregating into one, larger construct of psychological closeness. Furthermore, after a careful inspection of item content loading on Factor 1 in this study, our findings support the more parsimonious interpretation of this factor assessing closeness, which intuitively subsumes themes of support and depth within the overall construct. Thus, the label Closeness was applied to this new subscale in the context of bereavement research.

This study is the first to examine the factor structure of a modified, bereavement-specific QRI, termed the QRI-B to specify its tailoring to a bereaved sample, and the proposed two-factor solution presented here (Closeness and Conflict) is consistent with findings from nonbereaved samples. Recent research has consistently identified closeness as a potent predictor of grief outcomes (e.g., Burke & Neimeyer, 2013), however kinship remains a viable predictor as well. Future research efforts should include both of these variables and examine their possible relationship to one another, such as investigating whether closeness mediates or moderates the relationship between kinship and grief outcomes. As noted earlier, previous research in the field of thanatology has employed ad hoc, intuitive measures of closeness and conflict, the validity and reliability of which are unsubstantiated. The ability to measure predeath relationship dynamics between the mourner and decedent is of critical importance given their probable relation to bereavement outcomes and trajectories. Therefore, the findings presented here are useful for enhancing the assessment of predeath

relationship quality between the mourner and decedent—aspects that greatly come to bear on grief outcomes. The abbreviation of the QRI-B to a mere 14 items retaining the Closeness and Conflict subscales, which retain excellent internal consistency and minimal intercorrelation with one another, should further promote use of the scale in bereavement research and practice. In addition to empirically assessing how close and conflictual the relationship was with the decedent—important factors in their own right—the QRI-B could identify mourners likely to experience complications in their bereavement adaptation due to high levels of one or both constructs, whose grief experiences could then be studied using qualitative research methods to tease out possible mechanisms that explain this effect. Alternatively, quantitative assessment of other factors implicated with bereavement outcome such as the mourner's attachment style (Kosminsky & Jordan, 2016) or meaning making regarding the loss (Neimeyer, 2016) could help establish theoretical factors that mediate or moderate this association.

Limitations

Although successful efforts were made to recruit a bereaved college student sample, aged 18 to 56 years, which was notably diverse in ethnicity and types of loss, the majority of these data were derived from a sample of emerging adults. Moreover, although the sample was found to be representative of the undergraduate student population in age, gender, and household income, it is possible that it was positively biased toward those respondents who were interested or concerned about the topic of bereavement and who needed to fulfill course requirements. Another limitation of this study was the inadvertent omission of a QRI item (How much do you argue with this person?), originally positioned within the conflict subscale. From a theoretical standpoint, this item would saliently load onto Factor 2, conflict, although its conceptual redundancy with other items on this subscale could well have argued for its deletion as items were pared down to produce a streamlined version of the QRI-B that retained the psychometric strengths of the longer measure. Future research should nonetheless retain this item when examining the factor structure of the full QRI.

Beyond these technical limitations, it is important to signal one further potential conceptual limitation, which derives from the character of the original QRI itself, namely, that the scale might not be appropriate for all types of significant relationships. For example, items pertaining to turning to the person for advice or help, or giving more than one got, might be inappropriate when applied to an unborn child, a toddler, someone with severe disabilities, or a family member with dementia, although all of these relationships could obviously be mourned. On the other hand, the complexity of real-world relationships, in which pregnancies can be difficult or resented, family life can be riven by conflict and role reversal at all ages, and caregiving can be exhausting and sometimes alienating, argues for studying the roles of closeness and conflict in a broad range of preloss

relationships, rather than presuming their irrelevance. Used thoughtfully, we believe the QRI-B can make a contribution to such study. When the QRI-B is employed, we suggest modifying the instructions to indicate whether the respondent should consider a specific time frame prior to the death or the full duration of the relationship. This determination should be made based on the nature of the study and the research question. For example, relationship quality may be influenced by protracted end-of-life issues, such as caregiving in the context of a terminal illness. Thus, it would be important to clarify whether the assessment of relationship quality refers to a period that may not be representative of the relationship as a whole.

Conclusion

The original validation and factor analysis of the QRI yielded three salient factors (support, depth, and conflict; Pierce et al., 1991). However, findings from the current factor analysis indicate that two distinct factors underlie the QRI in a bereaved sample who were describing their Closeness to and Conflict with the deceased, factors of high relevance to the prediction and treatment of complications in bereavement. Moreover, the items within each factor were highly internally consistent. The majority of the original QRI items were retained in our second model, with only two items (Item 21, “How much do you argue with this person?” as noted previously in the Limitations section and Item 14, “How critical of you was this person?”) being excluded. In the final, parsimonious model, 12 items from the original QRI were omitted, which concurrently increased the capacity to capture variance in QRI scores and enhanced each factor’s interitem reliability. Therefore, for future research that seeks to identify predeath levels of closeness and conflict within a mourner–decedent relationship and with an emphasis on brevity, utilization of the final, parsimonious model, termed the QRI-B, is recommended.

The present project is the first to generate reliability evidence and examine the factorial validity of a psychometrically documented measure of the relational constructs of interpersonal closeness and conflict—specifically as they bear on the survivor’s relationship with a decedent. These data point to the usefulness of the QRI-B in future research that assesses predeath relational dynamics between the bereaved and the deceased paying particular attention to pre-death levels of interpersonal closeness and conflict. The QRI therefore seems well positioned to advance research in bereavement as well as to contribute to the clinical assessment of postmortem factors that could compound the suffering of grieving individuals following the death of their loved one.

Declaration of Conflicting Interests

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Note

1. Because of a possible concern that older adults might respond differently than the predominantly young adult sample with whom they were combined, the analyses were rerun including only participants 45 years of age or younger ($n=368$). However, results for the latter analyses were essentially identical to those obtained with the full sample. For this reason, only the results on the entire sample are reported.

References

- Brent, D. A., Perper, J., Moritz, G., Allman, C., Friend, A., Schweers, J., . . . Harrington, K. (1992). Psychiatric effects of exposure to suicide among the friends and acquaintances of adolescent suicide victims. *Journal of the American Academy of Child & Adolescent Psychiatry, 31*, 629–639.
- Burke, L. A., & Neimeyer, R. A. (2013). Prospective risk factors for complicated grief: A review of the empirical literature. In H. S. M. S. Stroebe, J. van der Bout & P. Boelen (Eds.), *Complicated grief: Scientific foundations for healthcare professionals*. New York, NY: Routledge.
- Cleiren, M., Diekstra, R. F., Kerkhof, A. J., & van der Wal, J. (1994). Mode of death and kinship in bereavement: Focusing on “who” rather than “how.”. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*. Retrieved from <http://psycnet.apa.org/psycinfo/1994-41119-001>
- Dyregrov, A., Frykholm, A. M., Lilled, L., Broberg, A. G., & Holmberg, I. (2003). The Göteborg discotheque fire, 1998. *Scandinavian Journal of Psychology, 44*, 449–457.
- Feigelman, W., Jordan, J. R., & Gorman, B. S. (2009). How they died, time since loss, and bereavement outcomes. *OMEGA—Journal of Death and Dying, 58*, 251–273.
- Freud, S. (1957). Mourning and melancholia. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 14, pp. 243–258). London, England: Hogarth Press. (Originally published 1917).
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
- Hayes, A. F. (2005). *A computation tool for survey shortening applicable to composite attitude, opinion and personality measurement scales*. Paper presented at the meeting of the Midwestern Association for Public Opinion Research in November. Chicago, IL.
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research common errors and some comment on improved practice. *Educational and Psychological Measurement, 66*, 393–416.
- Herberman Mash, H. B., Fullerton, C. S., & Ursano, R. J. (2013). Complicated grief and bereavement in young adults following close friend and sibling loss. *Depression and Anxiety, 30*, 1202–1210.
- Holland, J. M., & Neimeyer, R. A. (2011). Separation and traumatic distress in prolonged grief: The role of cause of death and relationship to the deceased. *Journal of Psychopathology and Behavioral Assessment, 33*, 254–263.

- Kieffer, K. M. (1999). An introductory primer on the appropriate use of exploratory and confirmatory factor analysis. *Research in the Schools, 6*, 75–92.
- Klingspon, K. L., Holland, J. M., Neimeyer, R. A., & Lichtenthal, W. G. (2015). Unfinished business in bereavement. *Death Studies, 39*, 387–398.
- Kosminsky, P., & Jordan, J. R. (2016). *Attachment-informed grief therapy*. New York, NY: Routledge.
- Marques, D., Pinheiro, M. R., Matos, A. P., & Marques, C. (2015). Confirmatory factor analysis of the QRI Father's Version in a Portuguese sample of adolescents. *Procedia—Social and Behavioral Sciences, 165*, 267–274.
- Mash, H. B. H., Fullerton, C. S., Shear, M. K., & Ursano, R. J. (2014). Complicated grief and depression in young adults: Personality and relationship quality. *The Journal of Nervous and Mental Disease, 202*(7), 539–543.
- Matos, A. P., Pinheiro, M. R., & Marques, D. (2013). *The quality of interpersonal relationship with the father: Adaptation and validation of the Quality of Relationships Inventory (QRI), on a sample of Portuguese adolescents*. Paper presented on First World Congress of Children and Youth Health Behaviors, Viseu, Portugal.
- Nakano, Y., Sugiura, M., Aoki, K., Hori, S., Oshima, M., Kitamura, T., & Furukawa, T. A. (2002). Japanese version of the Quality of Relationships Inventory: Its reliability and validity among women with recurrent spontaneous abortion. *Psychiatry and Clinical Neurosciences, 56*, 527–532.
- Neimeyer, R. A. (2016). Meaning reconstruction in the wake of loss: Evolution of a research program. *Behaviour Change, 33*, 65–79.
- Neves, C., & Pinheiro, M. (2009). The quality of interpersonal relationships with friends, adaptation and validation of the Quality of Relationships Inventory (QRI) in a sample of college students. *Exdra, 2*, 9–31.
- Norris, A. E., & Aroian, K. J. (2004). To transform or not transform skewed data for psychometric analysis: That is the question! *Nursing Research, 53*(1), 67–71.
- O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*, 396–402.
- Parkes, C. M., & Weiss, R. S. (1983). *Recovery from bereavement*. New York, NY: Basic Books.
- Pierce, G. R., Saranson, I. G., & Saranson, B. R. (1991). General and relationship-based perceptions of social support: Are two constructs better than one? *Journal of Personality and Social Psychology, 61*, 1028–1039.
- Prigerson, H. G., Vanderwerker, L. C., & Maciejewski, P. K. (2008). A case for inclusion of prolonged grief disorder in DSM-V. In M. Stroebe, R. Hansson, H. Schut & W. Stroebe (Eds.), *Handbook of bereavement research and practice* (pp. 165–186). Washington, DC: American Psychological Association.
- Reiner, I., Beutel, M., Skaletz, C., Braühler, E., & Stöubel-Richter, Y. (2012). Validating the German version of the Quality of Relationship Inventory: Confirming the three-factor structure and report of psychometric properties. *PLoS One, 7*(5), e37380.
- Servaty-Seib, H. L., & Pistole, M. C. (2007). Adolescent grief: Relationship category and emotional closeness. *OMEGA—Journal of Death and Dying, 54*, 147–167.
- Streiner, D. L., Norman, G. R., & Cairney, J. (2015). *Health measurement scales: A practical guide to their development and use* (5th ed.). New York, NY: Oxford University Press.

- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson Education.
- Verhofstadt, L. L., Buysse, A., Rosseel, Y., & Peene, O. J. (2006). Confirming the three-factor structure of the Quality of Relationships Inventory within couples. *Psychological Assessment, 18*, 15.
- Zygmunt, C., & Smith, M. R. (2014). Robust factor analysis in the presence of normality, violations, missing data, and outliers: Empirical questions and possible solutions. *The Quantitative Methods for Psychology, 10*, 40–55.

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