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Latent profiles of coping and subjective views in parentally bereaved children: Predicting depression symptoms, intrusive grief, and suicidality over time

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Abstract

Childhood bereavement is a public health issue with significant mental health implications, including depression, intrusive grief, and suicidality. Theories suggest that children's malleable processes, like coping and subjective views of themselves and their environment, influence adaptation to bereavement. Protective processes may mitigate mental health risks, while risk processes may exacerbate them. Using a sample of support-seeking, parentally-bereaved children (8–16 years; $M = 11.39$, $SD = 2.43$; 53% male; 67% White), this study employs latent profile analysis to identify baseline patterns of coping and subjective views; and examines how profile membership predicts depression symptoms, intrusive grief, and suicidality at 14-month and six-year assessments. Three profiles were identified: *Low Protective-High Risk* (34%), *High Protective-Low Risk* (23%), and *High Protective-High Risk* (43%). Profile membership predicted depression symptoms. Children in the *Low Protective-High Risk* profile showed higher depression symptoms than those in the other profiles 14-months later, while children in the *High Protective-Low Risk* profile unexpectedly showed higher depression symptoms six-years later compared to those in the *Low Protective-High Risk* profile. Profile membership did not predict intrusive grief or suicidality. Findings underscore the importance of person-centered approaches in understanding adaptation following parental death and raise questions about the association between baseline childhood protective processes and long-term depression symptoms.

Keywords: Childhood bereavement; coping; latent profile analysis; mental health; parental death

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Introduction

Childhood bereavement is a critical public health issue, with one in 12 children in the United States experiencing the death of a parent before age 18 (Judi's House, 2024). Parental death is one of the most profound adverse childhood experiences (Yamamoto et al., 1996) and a leading form of trauma associated with markedly higher risk of developing and sustaining mental health problems (Ajnakina et al., 2018; Berg et al., 2016; Burrell et al., 2021) including depression (McKay et al., 2021; Simbi et al., 2020), intrusive grief (Kaplow et al., 2012; Melhem et al., 2007, 2011; Sandler et al., 2024; Shear et al., 2007), and suicidality (Hua et al., 2019; Kwak & Ahn, 2020).

Bereaved children are more likely to be diagnosed with and hospitalized for depression compared to their non-bereaved peers, with this increased risk extending through childhood, adolescence, and adulthood (Berg et al., 2016; Keyes et al., 2014; Melhem et al., 2007; Pham et al., 2018). Children's grief is linked with functional impairment (Melhem et al., 2007, 2011, 2013) and poorer mental health including internalizing problems (Sandler et al., 2023), depression (Melhem et al., 2011, 2013; Sandler et al., 2023), and suicidality (Hill et al., 2019; Melhem et al., 2007; Sandler et al., 2021). Although grief generally decreases over time, that is not the case for all children. For example, 10% of children bereaved from the sudden death of a parent experience sustained high levels of grief for up to three years later (Melhem et al., 2011). Bereaved children are also at higher risk for suicidality and death by suicide, with this risk potentially lasting up to 25 years (Burrell et al., 2018; Guldin et al., 2015; Jakobsen & Christiansen, 2011; Kuramoto et al., 2013; Rostila et al., 2016). Demographic factors are associated with mental health outcomes in bereaved children. Specifically, age, sex, and cause of parental death have been linked with a higher risk for children developing depression, maladaptive grief reactions, and suicidality (Burrell et al., 2018; Coffino, 2009; Guldin et al., 2015; Hill et al., 2020; Kuramoto et al., 2013).

However, not all bereaved children experience problematic mental health or grief outcomes. There is variability in how children adapt to the death of a parent, with some showing remarkable resilience while others struggle (Kaplow et al., 2023; Lin et al., 2004). This variability underscores the importance of understanding individual differences in adaptation and examining the specific, malleable processes that influence resilience and risk for mental health problems in bereaved children. By understanding the differences in underlying malleable processes, support can be

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tailored to strengthen these processes toward preventing the development of mental health problems and fostering resilience in parentally bereaved children.

The Contextual Resilience Framework (Sandler et al., 2007) provides valuable insights into the variability of bereaved children's mental health outcomes by focusing on children's coping strategies and subjective views of themselves and their environment. This framework explains the processes that influence resilient adaptation by identifying protective and risk processes that promote or hinder children's healthy functioning, address motivational needs, and foster developmentally- and culturally-appropriate competencies. Guided by this framework, a scoping review identified multiple research studies focused on protective and risk processes associated with mental health problems in bereaved children, including children's coping and subjective views of themselves and their environment (Hoppe et al., 2025b). Children's coping processes include behaviors for managing stress. Protective coping processes, such as higher levels of emotional expression and active, interpersonal, and positive coping, have been linked with fewer mental health problems, including depression, intrusive grief, and suicidality (Howell et al., 2016; Sandler et al., 2023; Tein et al., 2006; Wolchik et al., 2009). Children's subjective views include the ways in which children see themselves as individuals and interpret their environment as it relates to them. Protective subjective views, such as higher levels of self-efficacy, self-control, self-worth, a more positive view of parenting from the surviving caregiver, and lower levels of perceived threat from environmental stressors, have been linked with fewer mental health problems in bereaved children (Haine et al., 2006; Hoppe et al., 2025a; Lin et al., 2004; Raveis et al., 1999; Tein et al., 2006; Weber et al., 2021; Wolchik et al., 2006, 2008).

While this scoping review relied on a variable-centered approach, which focuses on associations between variables across a population (i.e., how one variable relates to another variable), there is an opportunity to bolster our understanding of the childhood bereavement experience by incorporating a person-centered approach. A person-centered approach, such as latent profile analysis, uses exploratory methods to identify distinct subgroups or profiles within a population based on individual patterns of responses (Bergman & Magnusson, 1997; Masyn, 2013; Von Eye & Bergman, 2003). This method uncovers hidden heterogeneity within a population and offers insights into how distinct subgroups are related to specific outcomes. Applying latent profile analysis, this study identified and grouped parentally bereaved children based on similar patterns of protective and risk processes, providing insight into the diverse ways children process and adapt following a parental death. Such information is valuable for both advancing theoretical understanding and developing more personalized and effective interventions (Rothwell, 2005; Supplee et al., 2013). Although several studies have investigated profiles of protective and risk processes to predict depression and suicidality in other populations (Tandon et al., 2013; Wojcieszak et al., 2021), no studies have identified how distinct profiles of protective and risk processes predict depression, intrusive grief, and suicidality or other outcomes for bereaved children and adolescents.

Informed by the child-level processes associated with mental health outcomes (i.e., depression, intrusive grief, and suicidality) identified in a scoping review (Hoppe et al., 2025b), the current study used latent profile analysis to identify profiles of coping and subjective views within a sample of support-seeking, parentally-bereaved children. The study also examined whether these patterns predict depression symptoms, intrusive grief, and suicidality 14-months and six-years later. Since latent profile analysis is an exploratory technique, the number of profiles and their patterns of children's coping and subjective views were not known in advance. However, two or more meaningful profiles were anticipated to emerge with varying patterns of protective and risk-related processes. For example, we expected distinct profiles of children characterized by higher levels of protective processes, another with elevated risk processes, and additional profiles showing either high or low levels of both protective and risk processes. It was anticipated that individuals with profiles characterized by higher protective and lower risk processes would have lower levels of depression symptoms, intrusive grief, and suicidality outcomes over time compared to individuals with profiles characterized by lower protective and higher risk processes.

Method

Participants and procedures

The current study sample included 244 support-seeking, parentally-bereaved children (54% male and 46% female) between the ages of eight and 16 years ($M = 11.39$; $SD = 2.43$) at baseline who participated in a randomized controlled trial (RCT) of the Family Bereavement Program (FBP). The ethnic and racial distribution was 67% non-Hispanic White, 16% Hispanic, 7% Black, 3% Native American, 1% Asian or Pacific Islander, and 6% other. The cause of parental death for this sample was 74% illness, 15% accident, and 11% violent homicide or suicide. All study procedures were approved by the University's Institutional Review Board and study procedures are described in detail elsewhere (Sandler et al., 2003) and briefly below.

The FBP was designed to promote positive parenting (Sandler et al., 2003; Tein et al., 2006), child adaptive coping strategies (Ayers et al., 2013–2014), resilience (Sandler et al., 2013; Zhang et al., 2022), and positive mental health outcomes (Sandler et al., 2018). Participants in the RCT were recruited from community agencies that had contact with bereaved children (e.g., schools, churches, hospices) and media presentations in Phoenix, Arizona. Interested families were screened for eligibility and those who met inclusion criteria (see Sandler et al., 2003) were invited to participate. Prior to the baseline assessment, procedures for protecting confidentiality were explained, caregivers signed informed consent, and children signed informed assent forms. Then, families were randomly assigned to either receive the 12-week FBP intervention ($n = 135$ children; 57.7%) or a literature control group ($n = 109$ children; 42.3%). Participants received compensation at each assessment. Specific to the current study, participants were assessed at baseline (between four and 30 months after the parental death; $M = 10.81$; $SD = 6.35$), 14-months post-baseline (90% retention), and six-years post-baseline (89% retention).

Measures

Latent profile analysis indicators: children's coping and subjective views of self and environment

Interpersonal support. The 14-item support-seeking subscale of the Children's Coping Strategies Checklist (CCSC; Ayers et al., 1998a; $a = .84$) measures children's self-reported coping efforts through

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seeking support from others (e.g., "You asked your caregiver for help in figuring out what to do").

Sharing emotions with their caregiver. The 10-item Sharing Emotions with Parent (Ayers et al., 1998b; $a = .74$) scale measures children's self-reported perceptions of their surviving caregiver being an empathic, understanding, helpful, and comforting person to share negative feelings with (e.g., "Sometimes your [parent/guardian] doesn't really understand your feelings").

Hope. The 6-item Children's Hope Scale (CHS; Snyder et al., 1995; $a = .91$) measures children's self-reported dispositional tendency toward a hopeful outlook (e.g., "I can think of many ways to get the things in life that are most important to me").

Self-esteem. The 6-item global self-worth subscale from the Harter's Self Perception Profile for Children (Harter, 1985; $a = .79$) measures children's self-reported self-esteem (e.g., "Some kids like the kind of person they are but other kids are often not as happy with themselves").

Positive coping. The positive coping scale ($a = .87$) was assessed using a composite from two positively correlated scales ($r = .49$), including the 24-item active coping subscale of the Children's Coping Strategies Checklist (Ayers et al., 1998a; $a = .85$) and the 7-item General Coping Efficacy scale (Sandler et al., 2000; $a = .73$) to measure children's self-reported comfort in managing their stressors (e.g., "You did something to make things better" or "Overall, how well do you think that the things you did during the last month since the parental death worked to make the situation better?").

Avoidant coping. The 12-item avoidant coping subscale was taken from the Children's Coping Strategies Checklist (Ayers et al., 1998a; $a = .78$) and measures children's self-reported avoidant actions, repression, and wishful thinking (e.g., "When you had problems since [parental death], you tried to stay away from things that made you upset").

Emotion inhibition. The 11-item Active Inhibition Scale developed for the FBP study (Ayers et al., 1989; $a = .89$) measures children's self-reported active inhibition of their emotional expression to avoid revealing their affective state to another (e.g., "You've tried to hide any bad feelings that you've had").

Fear of abandonment. The 14-item Fear of Abandonment Scale (Kurdek & Berg, 1987; $a = .82$) measures children's self-reported fears and worries of being left alone (e.g., "How much do you worry about what might happen to you if no one was left to take care of you?").

Unknown control. The 12-item unknown control subscale of the Connell Locus of Control scale (Connell, 1985; $a = .85$) measures children's self-reported uncertainty about why good or bad things happen to them (e.g., "Many times I can't figure out why good things happen to me").

Perceived threat. The 32-item Threat Appraisal Scale (Program for Prevention Research, 1999; Sheets et al., 1996; $a = .81$) measures children's self-reported perception of threat in their environment (e.g., "You thought that someone you care about didn't want to see you").

Outcome variables

Depression symptoms. The 27-item Children's Depression Inventory (CDI; Kovacs, 1981; $a = .93$) includes children's self-reported depression symptoms that occurred within the past two weeks (e.g., "I feel like crying every day"). The CDI was used at the 14-month assessment of depression. The major depressive episode subscale of the Diagnostic Interview Schedule for Children (DISC-IV; Shaffer et al., 2004), assesses children's self-reported depression symptoms within the past month (e.g., "Depressed or irritable mood"). The DISC-IV was used for the six-year assessment of depression.

Intrusive grief. The 9-item Intrusive Grief Thought Scale (Program for Prevention Research, 1999; $a = .93$ at 14-month assessment; $a = .90$ at six-year assessment) measures children's self-reported disruptive, negative, or intrusive grief-related experiences (e.g., "I think about the death when I don't want to").

Suicidality. A 7-item dichotomous variable of suicidality was created by the FBP methodology team (Sandler et al., 2016; Zhang et al., 2021) to measure children's suicide risk at the six-year assessment. The suicidality variable includes all items that indicate suicidal thoughts, suicidal attempts, and self-harm from the Child Behavior Checklist (Achenbach, 1991a–b; e.g., "Talks about killing self"), Young Adult Behavior Checklist (Achenbach & Rescorla, 2003; "Deliberately harms self or attempts suicide"), Youth Self Report (Achenbach, 1991b; "I deliberately try to hurt or kill myself"), Young Adult Self Report (Achenbach & Rescorla, 2003; "Talk about killing self/I think about killing myself"), and DISC-IV (Shaffer et al., 2004; "Thoughts of death, suicide ideation, suicide attempt or plan"). Children who endorsed any of the seven suicide risk items were categorized as having suicide risk (Yes = 1), while those who did not were categorized as not having suicide risk (No = 1).

Covariates

Given associations between demographic and bereavement outcomes (Coffino, 2009; Kaplow et al., 2023), the following variables were tested as potential covariates: children's age, sex (*male* = 0, *female* = 1), relationship to the deceased caregiver (*father* = 0, *mother* = 1), cause of the parental death (*illness* = 0, *accident* = 1, *violent* = 2), and months since parental death. Baseline internalizing symptoms (Child Behavior Checklist; Achenbach, 1991a–b; $a = .87$) were controlled for in predictive analyses of depression symptoms and suicidality. Baseline intrusive grief (Intrusive Grief Thoughts Scale; Program for Prevention Research, 1999; $a = .88$) was controlled for in predictive analyses of intrusive grief. Additionally, past research has shown that the FBP intervention group had significantly lower mental health problems, intrusive grief, and suicidal ideation over time compared to the control group (Sandler et al., 2021, 2023; Zhang et al., 2021), thus group membership was also controlled for in analyses.

Data analysis

Statistical analyses were conducted to explore baseline patterns of coping and subjective views in support-seeking, parentally bereaved children. This study used latent profile analysis and examined whether identified patterns predict depression symptoms, intrusive grief, and suicidality at the 14-month and six-year assessments using a three-step Bolck-Croon-Hagenaars approach (BCH; Asparouhov & Muthén, 2014). Means and standard

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deviations were calculated for all variables. Univariate and multivariate outliers, residual normality, linearity, homoscedasticity, multicollinearity, skewness, kurtosis assumptions were met (Tabachnick & Fidell, 2006). Next, bivariate correlations were conducted to determine covariates for depression symptoms, intrusive grief, and suicidality outcomes. The variables that were correlated with the mental health outcomes were controlled for in the respective predictive analyses in addition to controlling for children's baseline internalizing symptoms for depression symptoms and suicidality outcomes, baseline intrusive grief for intrusive grief outcomes, and intervention group assignment. Analyses were conducted in Mplus, used full information maximum likelihood estimation to address missing data, and controlled for clustering for nested data. Continuous variables, except for children's age, were converted to standardized values for ease of graphic presentation and interpretation.

Latent profile analysis is an exploratory technique, so the optimal number of profiles is not known in advance. Thus, the optimal number of profiles were determined by comparing models with an increasing number of profiles in terms of model fit indices, classification quality, subgroup size, and interpretability (Masyn, 2013). To identify the best fitting model, a holistic interpretation of four indices was used: Bayesian Information Criterion (BIC), Sample Size-adjusted BIC (SABIC), and Adjusted Lo-Mendell-Rubin test (adjusted LMR). As is typical, decreasing SABIC and BIC values with each added profile were considered indicators of better model fit and model fit was deemed concluded when *p*-values of the adjusted-LMR tests were no longer significant (Berlin et al., 2014). After the appropriate number of profiles was determined, a three-step BCH approach (Asparouhov & Muthén, 2014) was used to explore profile differences in depression symptoms, intrusive grief, and suicidality at the 14-month and six-year assessments, over and above effects of the covariates. The three-step BCH approach takes the classification uncertainty into account for examining the association of the profiles with the covariates and outcomes. First, the latent profile model is estimated, and individuals are characterized into profiles based on observed patterns in the data. Next, classification probabilities are calculated, capturing uncertainty in profile assignments. Finally, covariates and outcome variables are introduced, and the three-step BCH method applies a correction for classification errors to ensure accurate and unbiased associations between latent profiles and external variables. Model constraints were also applied to compare adjusted means of the mental health outcomes across latent profiles, while controlling for covariates.

Results

Latent profile analysis

A single-profile baseline model was used as a starting point and the number of profiles was increased incrementally to determine the optimal number of profiles. Table 1 presents the summary of model fit for six different profile solutions, ranging from one to six profiles. As the number of profiles increased, the Log Likelihood, BIC, and SABIC values decreased, entropy values increased, and LMR p-values were no longer significant after the third profile was added. Based on the model fit indices, the four-profile solution was the best fitting model; however, the smallest class size included only nine cases, limiting interpretability of findings. After further examination, these nine cases in the four-profile solution originated from the same profile in the three-profile solution but were separated into a distinct profile due to their more extreme values. Thus, while the four-profile solution indicated better model fit, the three-profile solution was retained for this study for theoretical meaning and substantive interpretability.

Table 1. Goodness-of-fit statistics for 1-6 profile solutions

Profiles	Loglikelihood	BIC	SABIC	Smallest Profile (*n*)	Entropy	LMR
1	−3440.17	6990.29	6926.89	244		
2	−3288.52	6747.46	6649.19	84	0.81	0.016
3	−3223.14	6677.15	6544.02	56	0.76	0.309
4	−3162.72	6616.78	6448.78	9	0.81	0.119
5	−3128.75	6609.31	6406.44	9	0.83	0.374
6	−3101.76	6615.81	6378.06	6	0.84	0.754

Note. BIC = Bayesian Information Criterion; SABIC = Sample Size Adjusted Bayesian Information Criterion; LMR = Adjusted Lo-Mendell-Rubin Test

The distribution probability of the three profiles of children's coping and subjective views is shown in Figure 1 and the *z*-score mean for each indicator variable is listed in Table 2. Higher scores on processes theoretically related to lower mental health problems, including interpersonal support, sharing emotions with caregivers, hope, self-esteem, and positive coping, are considered protective. Conversely, higher scores on processes theoretically related to higher mental health problems, including avoidant coping, emotion inhibition, fear of abandonment, unknown control, and perceived threat, are considered risk.

Profile 1, representing 34% ($n = 84$) of the sample, was labeled *Low Protective-High Risk* since bereaved children scored below the sample mean (i.e., below average) for all protective processes and above the sample mean (i.e., above average) for most risk processes. Specifically, the *Low Protective-High Risk* profile consisted of children with below average levels for protective processes including self-esteem, hope, positive coping, sharing emotions with caregiver, and interpersonal support, alongside above average levels for risk processes including fear of abandonment, perceived threat, and emotion inhibition, and relatively average levels of avoidant coping and unknown control.

Profile 2, encompassing 23% ($n = 56$) of the sample, was labeled *High Protective-Low Risk*, since bereaved children scored above average for most protective processes and below average for all risk processes. Specifically, the *High Protective-Low Risk* profile consisted of children with above average levels for protective processes including sharing emotions with caregiver, hope, and self-esteem, average positive coping, below average levels for interpersonal support; alongside below average risk-related processes including unknown control, fear of abandonment, avoidant coping, emotion inhibition, and perceived threat from the stressors they encounter. It is important to acknowledge that although bereaved children in this profile scored below average on interpersonal support and average on positive coping, which are protective processes, the profile was labeled *High Protective-Low Risk* because it predominantly reflected high protective and low risk processes, with interpersonal support being the only exception.

Finally, profile 3, consisting of 43% ($n = 104$) of the sample was labeled *High Protective- High Risk* because bereaved children scored above average for all protective and most risk processes. Specifically, the *High Protective-High Risk* profile consisted of children with above average levels of protective processes including positive coping, self-esteem, interpersonal support, and hope, and average levels of sharing emotions with their caregiver. These

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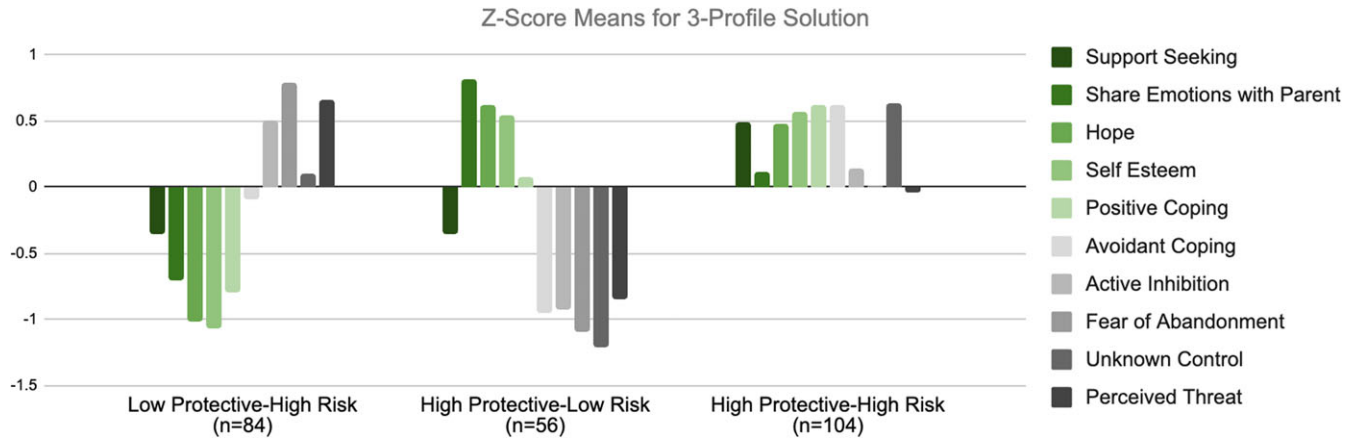

Figure 1. *Z*-score means for latent profile analysis indicator variables.

Table 2. Z-score means for indicator variables per profile

	Profile 1: *Low Protective-High Risk* ($n = 84$)	Profile 2: *High Protective-Low Risk* ($n = 56$)	Profile 3: *High Protective-High Risk* ($n = 104$)
Interpersonal Support	−0.35	−0.36	0.49
Sharing Emotions with Caregiver	−0.71	0.82	0.11
Hope	−1.02	0.62	0.48
Self-esteem	−1.07	0.54	0.56
Positive Coping	−0.80	0.08	0.62
Avoidant Coping	−0.10	−0.95	0.63
Emotion Inhibition	0.50	−0.93	0.13
Fear of Abandonment	0.78	−1.09	0.003
Unknown Control	0.09	−1.22	0.63
Perceived Threat	0.66	−0.85	−0.04

children also had above average levels of risk processes including avoidant coping and unknown control, and average levels of emotion inhibition, fear of abandonment, and perceived threat. See Table 3 for descriptive statistics on demographic characteristics for each profile.

Profiles as predictors for longitudinal mental health outcomes

The three identified profiles were tested as predictors for longitudinal mental health outcomes, including depression symptoms, intrusive grief, and suicidality at the 14-month and six-year assessments. Preliminary analyses indicated several demographic variables to control for in addition to baseline internalizing symptoms and intervention group (see Table 4). Specifically, depression symptoms at the 14-month and six-year assessments were correlated with children's sex; intrusive grief at the 14-month assessment was correlated with children's age; and intrusive grief at the six-year assessment was correlated with children's sex and cause of parental death. Finally, suicidality at the six-year assessment was correlated with baseline internalizing symptoms. Thus, the respective demographic variables as well as baseline internalizing symptoms for depression symptoms and suicidality outcomes, baseline intrusive grief for intrusive grief outcomes, and intervention group variables were controlled for when profiles were tested to predict mental health outcomes over time.

Results indicated that the profile membership significantly predicted depression symptoms at the 14-month and six-year assessments. Specifically, and when comparing adjusted means, the *Low Protective-High Risk* profile showed significantly higher levels of depression symptoms compared to the *High Protective-Low Risk* and *High Protective-High Risk* profiles at the 14-month assessment. At the six-year assessment, the *High Protective-Low Risk* profile surprisingly showed significantly higher levels of depression symptoms compared to the *Low Protective-High Risk* profile. Post-hoc analyses of internalizing symptoms at six years confirmed this pattern. Contrary to hypotheses, none of the profiles predicted intrusive grief or suicidality outcomes in parentally bereaved children over time (see Table 5).

Discussion

The most important findings from this study were that it identified three distinct baseline profiles of coping and subjective views of self and the environment in a sample of support seeking, parentally bereaved children; and found that profile membership at baseline predicted depression symptoms at the 14-month assessment in the expected direction and in the unexpected direction at the six-year assessment. The findings will be discussed in terms of the implications of the prevalence of protective and risk processes in bereaved children, theoretical interpretations of how profile membership relates to 14-month and six-year mental health outcomes, future research directions, intervention implications, and study limitations.

The largest proportion of bereaved children (43%) were grouped into the *High Protective-High Risk* profile, while fewer children were grouped into the *High Protective-Low Risk* profile (23%) compared to the *Low Protective-High Risk* profile (34%). This finding is inconsistent with the notion that most bereaved children follow a stable, low problem outcome trajectory (Bonanno & Diminich, 2013; Galatzer-Levy et al., 2018). Rather, the high prevalence of children with *High Protective-High Risk* profiles indicates that most children have some protective processes but also experience multiple challenges in adaptation to parental death, aligning with

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Table 3 Demographic Characteristics Associated with Profiles

	Total Sample ($N = 244$)	Profile 1: *Low Protective-High Risk* ($n = 84$)	Profile 2: *High Protective-Low Risk* ($n = 56$)	Profile 3: *High Protective-High Risk* ($n = 104$)
Child Race/Ethnicity (*n*, %)				
Hispanic	37 (16%)	15 (18%)	4 (7%)	18 (17%)
Non-Hispanic White	164 (67%)	54 (65%)	42 (75%)	68 (65%)
Black	15 (7%)	4 (5%)	3 (5%)	8 (8%)
Native American	10 (3%)	4 (5%)	1 (2%)	5 (5%)
Asian or Pacific Islander	3 (1%)	1 (1%)	0 (0%)	2 (2%)
Other	14 (6%)	5 (6%)	6 (11%)	3 (3%)
Child Age (M, *SD*)				
Years (ranged 8-16)	11.39 (*2.43*)	11.44 (*2.31*)	12.64 (*2.21*)	10.68 (*2.37*)
Child Sex (*n*, %)				
Male	130 (53%)	34 (45%)	35 (63%)	61 (59%)
Female	114 (47%)	50 (60%)	21 (37%)	43 (41%)
Time Since Death (M, *SD*)				
Months (ranged 3-29)	9.77 (*5.70*)	10.39 (*5.78*)	9.59 (*5.10*)	9.38 (*5.94*)
Parental Death Cause (*n*, %)				
Illness	178 (74%)	57 (71%)	50 (89%)	71 (68%)
Accident	36 (15%)	13 (16%)	2 (4%)	21 (20%)
Violent	26 (11%)	10 (13%)	4 (7%)	12 (12%)
Deceased Relationship to Child (*n*, %)				
Father	147 (64%)	46 (59%)	32 (60%)	69 (70%)
Mother	83 (36%)	32 (41%)	21 (40%)	30 (30%)

Note. Sample sizes differ due to occasional missing values.

arguments that stable, low problem outcome trajectories are less common when multiple adjustment domains are considered (Infurna & Luthar, 2016, 2017, 2018). In line with coping flexibility research (Huang et al., 2023), bereaved children with a *High Protective-High Risk* profile may initially use avoidant coping to manage their immediate distress before engaging in active coping strategies. Future research should explore how children develop resilience following adversity by studying the combinations of processes children use to adapt to the stressful situations they encounter.

Theoretically, it was expected that bereaved children with a *Low Protective-High Risk* profile would experience more mental health problems compared to the children in the other profiles, as their high levels of risk processes would not be mitigated by protective processes. In contrast, bereaved children in the *High Protective-Low Risk* profile would experience fewer mental health problems compared to those in the *Low Protective-High Risk* profile, as their multiple strong protective processes would support their wellbeing with minimal risk processes that could undermine it. Finally, children with a *High Protective-High Risk* profile showed both strong protective processes that may help buffer mental health problems as well as high levels of risk processes associated with mental health problems. As a result, their mental health outcomes, compared to the other profiles, would depend on the extent to which the protective processes effectively buffered the negative impact of risk processes.

As expected, children in the *Low Protective-High Risk* profile had higher levels of depression symptoms compared to the *High Protective-Low Risk* and *High Protective-High Risk* profiles at the 14-month assessment, after controlling for baseline covariates. Additionally, the results show that children with a *High Protective-High Risk* profile benefit from protective processes that help offset the negative effects of risk processes over a year later as compared with children with a *Low Protective-High Risk* profile. This finding adds to findings on protection and risk processes using a variable-centered approach (Hoppe et al., 2025b), demonstrating how bereaved children with distinct, multidimensional profiles of protective and risk processes have different levels of depression symptoms over time.

Contrary to hypotheses, children in the *High Protective-Low Risk* profile had higher depression symptoms at the six-year assessment compared to those in the *Low Protective-High Risk* profile. This was consistent with post-hoc findings using another measure of a similar construct (i.e., internalizing symptoms). While children with a *High Protective-Low Risk* profile initially appeared protected from higher depression symptoms at the 14-month assessment, the below average baseline levels of interpersonal support (e.g., limited support from others) and average positive coping (e.g., limited confidence to manage future stressors) observed in the *High Protective-Low Risk* profile may have left children vulnerable to later stressors. Between the baseline and six-year assessments, children in the sample experienced key developmental transitions, including shifts from middle childhood to adolescence and adolescence to young adulthood. During these transitions, interpersonal support becomes increasingly important for development and mental health. It may be that limited access to strong relationships with family, peers, and mentors heightened depression risk over time (Scardera et al., 2020; Van Harmelen et al., 2016). Additionally, stable and positive life experiences with minimal stressors contribute to long-term wellbeing for bereaved children (Tein et al., 2006; West et al., 1991). The combination of lower interpersonal support and average positive coping in this profile may have made it more difficult for these children to effectively manage the demands of potentially normative developmental transitions, leading to increased depression symptoms at the six-year assessment.

The lower depression symptoms at six-year assessment in children with a *Low Protection-High Risk* profile compared to those with a *High Protection-Low Risk* profile aligns with findings from the Kauai Longitudinal Study (Werner, 2005), which showed that adolescents facing adversity with initially limited protective resources could achieve resilient outcomes in adulthood. These resilient outcomes were linked to developmental milestones such as securing stable jobs, building strong relationships, attaining higher education, and participating in community activities in adulthood. These longitudinal findings suggest that children's coping and subjective views are malleable and can strengthen over time when they receive improved support and security in their environment. Although this explanation was not tested in this study, Werner's (2005) findings point to the importance of establishing a strong support system of peers, family members, and mentors following a parent's death, as such support may provide social stability and foster positive experiences for the bereaved child. Community bereavement organizations that offer peer support programs, or other community activities that provide

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Table 4. Bivariate correlations for potential covariates and outcome variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Child Age	1	.01	.03	−.07	.03	−.01	−.06	−.07	.11	.08	.04	.001	.07
2. Child Sex	.01	1	−.02	.12	.10	.14*	−.03	−.10	−.10	−.07	−.10	−.03	−.07
3. Intervention Group	.03	−.02	1	.06	.00	−.08	−.05	−.02	.06	.09	.01	.15*	.14*
4. Months Since Death	−.07	.12	.06	1	.07	−.03	−.05	−.03	−.17**	−.11	−.15*	−.11	−.09
5. Deceased's Relation to Child	.03	.10	.00	.07	1	.12	.15*	−.07	.01	.13	−.03	.14*	.10
6. Parental Death Cause	−.01	.14*	−.08	−.03	.12	1	−.02	−.02	−.05	.03	−.05	.04	.04
7. Internalizing	−.06	−.03	−.05	−.05	.15*	−.02	1	−.02	−.04	−.05	−.05	−.05	−.05
8. Intrusive Grief	−.07	−.10	−.02	−.03	−.07	−.02	−.02	1	−.06	.001	−.07	−.07	.01
9. Depression M14	.11	−.10	.06	−.17**	.01	−.05	−.04	−.06	1	.43**	.92**	.45**	.45**
10. Depression Y6	.08	−.07	.09	−.11	.13	.03	−.05	.00	.43**	1	.40**	.82**	.84**
11. Intrusive Grief M14	.04	−.10	.01	−.15*	−.03	−.05	−.05	−.07	.92**	.40**	1	.43**	.44**
12. Intrusive Grief Y6	.00	−.03	.15*	−.11	.14*	.04	−.05	−.07	.45**	.82**	.43**	1	.76**
13. Suicidality Y6	.07	−.07	.14*	−.09	.10	.04	−.05	.01	.45**	.84**	.44**	.76**	1

Note. * Correlation is significant at the .05 level (2-tailed). ** Correlation is significant at the .01 level (2-tailed). Unless otherwise indicated by M14 or Y6, all study variables were baseline assessments. M14 = months post-baseline assessment. Y6 = six-year post-baseline assessment.

Table 5. Profile mean comparisons for outcome variables

Variable	Comparison	Adjusted Means Comparison	Estimate	SE	Estimate/SE	*p*-value
Depression M14	*Profile 1* vs *Profile 2*	.54 vs. −.59	1.13	.31	3.69	.001
	Profile 1 vs *Profile 3*	.54 vs. −.18	.72	.30	2.42	.02
	Profile 2 vs *Profile 3*	−.59 vs. −.18	−.41	.30	−1.35	.18
Depression Y6	*Profile 1* vs *Profile 2*	−.47 vs. .28	−.75	.33	−2.28	.02
	Profile 1 vs *Profile 3*	−.47 vs. −.11	−.37	.35	−1.04	.31
	Profile 2 vs *Profile 3*	.28 vs. −.11	.38	.33	1.16	.25
Grief M14	*Profile 1* vs *Profile 2*	1.08 vs. 2.37	−1.28	2.16	−.59	.53
	Profile 1 vs *Profile 3*	1.08 vs. 1.41	−.32	1.21	−.27	.79
	Profile 2 vs *Profile 3*	2.37 vs. 1.41	.96	2.14	.45	.65
Grief Y6	*Profile 1* vs *Profile 2*	−.21 vs. .17	−.38	.24	−1.60	.11
	Profile 1 vs *Profile 3*	−.21 vs. −.05	−.17	.28	−.60	.55
	Profile 2 vs *Profile 3*	.17 vs. −.05	.21	.33	.63	.53
Suicidality Y6	*Profile 1* vs *Profile 2*	.10 vs. .08	.02	.13	.15	.88
	Profile 1 vs *Profile 3*	.10 vs. .24	−.14	.10	−1.42	.16
	Profile 2 vs *Profile 3*	.08 vs. .24	−.16	.16	−.97	.33
Internalizing Y6	*Profile 1* vs *Profile 2*	−.11 vs .07	−.18	.37	−.49	.62

Note. The adjusted means is calculated from the regression between profiles and outcomes, after controlling for covariates; the higher the value for the adjusted means, the higher the symptoms; M14 = 14-month post-baseline assessment; Y6 = six-year post-baseline assessment; Profile 1 = Low Protective-High Risk; Profile 2 = High Protective-Low Risk; and Profile 3 = High Protective-High Risk.

social outlets and mentors for children, may be particularly beneficial in this regard.

Interestingly, profile membership did not predict intrusive grief or suicidality outcomes at either the 14-month or six-year assessments. These null findings may be due to the relatively low rates of these outcomes in the study sample, which limited the statistical power to detect significant effects. Specifically, only a small portion of children in the sample reported high levels of intrusive grief at the 14-month (26%; $n = 55$) and six-year (11%; $n = 23$) assessments, and suicidality at the six-year assessment (10%; $n = 21$). Future research with larger samples may be needed to explore these relations further.

These unexpected and null findings suggest that baseline assessments, even when they include profiles of multiple protective and risk processes, may not reliably predict long-term outcomes for bereaved children. A scoping review (Hoppe et al., 2025b), indicates that most associations between protective and risk processes are based on cross-sectional or short-term longitudinal studies. Similarly, in a review of stress-exposed samples, Kalisch and colleagues (2017) found little support for baseline protective

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processes as prospective predictors of mental health problems. This is also consistent with two prior studies with the current dataset, where protective processes measured at baseline did not directly predict longitudinal outcomes six-years later (O'Hara et al., 2024; Wolchik et al., 2008), but instead their effects were mediated through other processes in longitudinal cascading mediation models. These consistencies across studies highlight the need for prospective longitudinal research to examine how protective and risk processes change or how later developmental experiences shape long-term adjustment.

Three methodological approaches could help clarify these dynamics: Latent Transition Analysis (LTA), Growth Mixture Modeling (GMM), and longitudinal cascading mediation models. LTA can assess profile stability by estimating the likelihood that a child remains in the same adaptation profile or transitions to another over time. GMM can model trajectories of bereaved children's protective and risk processes, such as adverse event occurrences and threat appraisals, which may influence the course of their mental health. Finally, longitudinal cascading mediation models can explore mediational pathways, examining how specific protective or risk processes at intermediate time points (e.g., interpersonal support or negative life experiences at 14-months) explain, for example, why bereaved children with a *High Protective–Low Risk* at baseline experienced higher depression symptoms six years later.

The implications for interventions suggest that programs incorporating elements to strengthen coping skills and foster positive views of self and the environment may reduce risk processes and be most effective in preventing depression among bereaved children. Programs should consider that while some children may already possess multiple protective processes, others may require targeted support to develop these resources or mitigate risk processes. Evidence-based bereavement interventions, like the Family Bereavement Program (FBP; Sandler et al., 2013), Multidimensional Grief Therapy (MGT; Kaplow et al., 2013, 2023), and Trauma and Grief Component Therapy (TGCT; Alvis et al., 2024), have demonstrated the benefits of strengthening multiple protective processes while reducing risk processes. For instance, the FBP found that its effect on reducing child mental health problems at the 11-month assessment was mediated by increases in protective processes (e.g., positive coping) and decreases in risk processes (e.g., threat appraisals; Tein et al., 2006). In addition to child-focused interventions, caregiver-targeted programs can further strengthen positive parenting behaviors, such as warmth, listening, responsiveness, and consistent discipline. As a key predictor and mediator of bereaved children's long-term coping and mental health, positive parenting fosters an environment that reinforces children's protective processes, promoting resilience (Alvis et al., 2023; Hoppe et al., 2025b, 2025; Jiao et al., 2021; Zhang et al., 2021).

Several limitations must be considered. While the sample size was sufficient for identifying profiles, a larger sample could have improved statistical power, particularly for detecting effects related to intrusive grief and suicidality, and allowed for greater examination of underrepresented demographic groups (e.g., non-White children, deaths due to accidents or violence). Additionally, the sample was drawn from support-seeking families, potentially limiting generalizability, as some families face barriers to accessing bereavement support (e.g., travel, language, time constraints). The sole reliance on child-reported survey data is another limitation, as self-report measures may be influenced by biases such as social desirability and cognitive constraints; future research should incorporate multi-informant and multi-method approaches to improve data reliability. Finally, individual, familial, and cultural factors likely shape bereavement adaptation in ways not fully captured in this study. For instance, family norms around emotional expression, preexisting mental health conditions, and systemic influences may affect children's coping, subjective views, and profile membership. Future research should explore these contextual influences to better understand bereavement processes across diverse backgrounds and experiences.

This study highlights the value of a person-centered approach in understanding the heterogeneity of bereaved children's adaptation and the multidimensional nature of protective and risk processes in shaping mental health outcomes over time. Our findings contribute to the literature by demonstrating how distinct adaptation profiles vary in their prevalence and differential prediction of short- and long-term mental health outcomes. These results also underscore the importance of adopting a developmental perspective when evaluating protective and risk processes, as their effects may shift over time. Future research should continue to explore the dynamic nature of these processes to better inform the field and contribute to tailored interventions that support bereaved children's adaptive development.

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Competing interests. The authors declare none.

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