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Benefit Finding and Quality of Life in Caregivers of Childhood Cancer Survivors: The Moderating Roles of Demographic and Psychosocial Factors

Molly H. Gardner, PhD, Sylvie Mrug, PhD, David C. Schwebel, PhD, Sean Phipps, PhD, Kimberly Whelan, MD, and Avi Madan-Swain, PhD

Departments of Hematology and Oncology, Children's National Medical Center, Washington, DC (Dr. Gardner); Department of Psychology, University of Alabama at Birmingham, Birmingham, Alabama (Drs. Mrug and Schwebel); Department of Psychology, St. Jude Children's Research Hospital, Memphis, Tennessee (Dr. Phipps); Department of Pediatrics, Division of Pediatric Hematology and Oncology, University of Alabama at Birmingham, Birmingham, Alabama (Drs. Whelan and Madan-Swain)

Abstract

Background—Benefit finding, or finding positive outcomes in the face of adversity, may play a role in predicting quality of life (QoL) among caregivers, but mixed results suggest that other factors may moderate this relationship.

Objective—This study examined demographic and psychosocial moderators of the association between benefit finding and QoL among caregivers of childhood cancer survivors.

Methods—Caregivers of childhood cancer survivors (n=83) completed measures of benefit finding, QoL, coping, optimism, social support, caregiving demand, posttraumatic stress, and demographics.

Results—The relationship between benefit finding and QoL was moderated by caregiver age, marital status, socioeconomic status, geographic location, acceptance and emotion-focused coping, optimism, caregiving demand, and posttraumatic stress. Benefit finding was more strongly related to QoL among caregivers with fewer demographic/psychosocial resources.

Conclusions—Results suggest that finding benefits in the cancer experience may have a greater positive impact for caregivers with relatively fewer demographic and psychosocial resources, and may have less of an impact for caregivers with relatively greater resources. Findings further point to the complex nature of QoL among caregivers of childhood cancer survivors.

Implications for Practice—Results may aid clinicians in identifying caregivers at particular risk for low QoL. They may be counseled to find benefits in their experience or provided with resources to strengthen other factors that impact QoL.

Correspondence: Molly H. Gardner, PhD, Departments of Hematology and Oncology, Children's National Medical Center, 111 Michigan Avenue NW, Washington, DC 20010, (mgardner1@childrensnational.org).

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Introduction

Caregivers of children with cancer face numerous challenges throughout treatment and into survivorship, including managing complex in-home medical treatment regimens,¹ taking time off work, managing lasting medical effects from treatment,² and continued involvement in children's medical care.³ These responsibilities may lead to increased distress even into the survivorship period.⁴⁻⁶ In addition, caregivers of children with cancer generally experience decreased quality of life (QoL) compared to normative samples and mothers of children without cancer.⁷⁻⁹ With increasing childhood cancer survival rates due to improved medical treatment,¹⁰ focus on the QoL of children and caregivers is of great importance to ensure positive well-being following a cancer diagnosis, particularly considering that greater well-being is associated with longevity and reduced mortality among healthy adults, and a weaker but positive association among adults with diseases, including cancer.¹¹

Models of stress and coping have been developed to explain an individual's response to stressful situations. For example, Wallander and Varni's^{12,13} disability-stress-coping model can be used to explain the interaction among various risk and resilience factors that promote one's adjustment (e.g., QoL). This model posits that both specific illness-related factors and general stressors impact adjustment, defined as a combination of mental, physical, and social outcomes. In this model, risk factors including illness variables (e.g., severity of illness), functional independence (e.g., how well one is able to communicate) and psychosocial factors (e.g., daily stress). Resilience factors in the model include individual factors (e.g., personality), social factors (e.g., social support), and stress processing factors (e.g., coping), which impact an individual's adjustment outcome. As such, QoL of caregivers of children diagnosed with cancer can be viewed as an adjustment outcome impacted by these varied risk and resilience factors. Importantly, these factors can interact with each other in promoting or inhibiting adjustment. The current study examined in particular psychosocial risk factors as well as individual, social, and stress processing resilience factors that may impact QoL among caregivers of childhood cancer survivors, with particular attention on the variable of benefit finding and how this may interact with other variables to impact QoL, discussed below.

Regarding risk factors, research points to several demographic and psychosocial risk factors that may negatively impact the QoL of caregivers of childhood cancer survivors. Among individual factors, lower income has been associated with worse QoL both directly and by leading to more caregiving strain, which negatively impacts QoL.^{8,14} Single caregivers have lower QoL compared to married/partnered caregivers,^{15,16} perhaps due to increased caregiving duties.¹⁷ Finally, Ovayolu and colleagues¹⁵ showed that caregivers who live in rural settings have reduced QoL compared to those residing in urban settings. For stress processing factors, increased caregiver strain has been associated with worse QoL among caregivers of children with cancer.¹³ Stress is also related to worse QoL,¹⁵ and stress additionally mediated the link between caring for a child with cancer and worse QoL.¹⁸ Avoidant coping has been linked with reduced QoL.¹⁹

There are additionally several social factors that may promote positive psychological outcomes (i.e., resilience factors). Increased social support has been associated with better

QoL among adults with cancer and caregivers.²⁰ Among caregivers of adults with breast cancer, active coping, a stress processing variable, was associated with better QoL but avoidant coping was related to worse QoL.¹⁹ Finally, individual factors may promote QoL, as more optimistic caregivers are prone to better well-being.²¹

A variable that has been less studied in relation to caregivers' QoL is benefit finding. Benefit finding, similar to posttraumatic growth and stress-related growth, is conceptualized as experiencing positive outcomes in the face of adversity and is a way of finding meaning and adapting to adversity, in particular to medical conditions.²² Researchers suggest that benefit finding involves a cognitive reorganization of one's world-view following an adverse event,²³ and is common among adults, children, and caregivers in the domains of changed life perspective, emotional growth, and family integration^{24,25} It is possible that appreciating the benefits of having a child with cancer acts as a stress processing resilience factor in stress and coping models to help parents cope with the challenges of survivorship and attain higher QoL, but empirical evidence is mixed. Some studies found positive associations between benefit finding and QoL among cancer survivors,^{26,27} caregivers of children in the intensive care unit,²⁸ and caregivers of adults with cancer.²⁹ However, other studies found no associations between benefit finding and QoL among breast cancer survivors,³⁰ and parents of childhood cancer survivors.³¹ One explanation for these discrepancies is that benefit finding may not translate into better QoL for all survivors or their caregivers, but that benefit finding is more important for QoL for caregivers at greater risk for worse QoL. Support for this hypothesis was provided by McMillen and colleagues,³² who reported a stronger relationship between benefit finding and well-being among those who experienced more severe disasters, suggesting that individuals who are more vulnerable to poor QoL may profit more from finding benefits in challenging situations.

Because little research to date has examined moderators of the association between benefit finding and QoL, we examined two types of moderators – demographic and psychosocial variables. These variables have been studied as potential risk factors for reduced quality of life in stress and coping models with inconsistent results, further suggesting the presence of moderating relationships. For example, low caregiver education was associated with low QoL among caregivers of brain tumor survivors,³³ but others found no associations between caregiver education/income and QoL.³⁴ Other demographic characteristics of caregivers such as younger age, being single, or living in a rural area may make caregivers more vulnerable to poor QoL and moderate the relationship between benefit finding and QoL. Several psychosocial variables may increase risk to poor QoL and increase the importance of benefit finding including caregiving stress, ineffective coping strategies, low social support, and low optimism.^{14,18-21}

In summary, benefit finding may be an important resilience factor promoting QoL among caregivers of childhood cancer survivors, but its role may vary based on caregivers' demographic and psychosocial characteristics. We conducted an exploratory investigation of the moderating roles of the following demographic variables: caregiver age, marital status, socioeconomic status (SES), and geographic location. Further, we explored the moderating roles of the following psychosocial variables, as these are potential risk factors for poor QoL: optimism, or the extent to which one has favorable expectations;³⁵ coping strategies;

posttraumatic stress symptoms, defined as physical or psychological responses of caregivers to a serious illness;³⁶ caregiving demand/burden, meaning responsibilities of caregivers and/or physical and psychological responses to the caregiving task;³⁷ and social support, or provisions from provisions from relationships with others.³⁸ We hypothesized stronger positive relationships between benefit finding and QoL among caregivers more vulnerable to poor QoL – those who were younger, single, with lower SES, residing in rural locations, less optimistic, used less effective coping strategies, experienced more posttraumatic stress symptoms or caregiving burden, and received less social support.

Methods

Participants

This study utilized a cross-sectional correlational design. Eighty-three caregivers of childhood cancer survivors participated. Ninety-four caregivers were approached to participate, 2 declined, and 9 agreed to participate but did not return the questionnaires (88% participation rate). Demographic data for both children and caregivers are presented in Table 1. Inclusion criteria included (1) child off-treatment for cancer for 1 year; and (2) caregiver spoke English.

Procedure

Caregivers of childhood cancer survivors treated at a large tertiary care facility in the southeast U.S. were recruited during outpatient follow-up oncology clinic visits at the same facility. Eligible families were mailed a letter describing the purpose of the study prior to their clinic appointment and were provided the opportunity to participate. After providing informed consent, caregivers completed the questionnaires. Study completion took approximately 30 minutes, and participants were compensated modestly for their time. The study was approved by the university Institutional Review Board (IRB).

Measures

Caregivers completed 8 questionnaires, detailed below.

Quality of Life—QoL was measured by World Health Organization Quality of Life BREF,³⁹ a 26-item measure assessing four domains: physical, psychological, social, and environmental QoL. Participants rated the frequency/intensity of items within the past month (e.g., Do you have enough energy for everyday life?) on 5-point scales ranging from “very poor” (1) to “very good” (5), “very dissatisfied” (1) to “very satisfied” (5), “not at all” (1) to “an extreme amount” (5) and “never” (1) to “always” (5). The scales were averaged for overall QoL score (Cronbach’s alpha=.95). This measure demonstrates both discriminant and construct validity.⁴⁰

Benefit Finding—Caregivers completed the Benefit Finding Questionnaire,²² a 17-item measure of perceived benefits from a having a child with cancer (e.g., brought my family closer together; helped me become a stronger person). Responses were recorded using a 5-point scale ranging from “not at all” (1) to “extremely” (5), and averaged to create a total benefit finding score, with higher scores indicating greater benefit finding (Cronbach’s

alpha=.96). Among adult samples, benefit finding correlates positively with positive emotions and inversely with distress.

Coping—Caregivers completed 52 items from the COPE assessing how people manage challenges.⁴¹ Caregivers were asked how they coped with having had a child with cancer (e.g., I try to get advice from someone about what to do), rated on a four-point scale from “I don’t do this at all” (1) to “I do this a lot” (4). The items load onto four factors: Active, Emotion-Focused, Avoidant, and Acceptance Coping, each with 8-16 items (Cronbach’s alpha=.75 to .88).⁴² Higher scores indicate greater use of each strategy. This measure demonstrates appropriate convergent and discriminant validity.⁴¹

Caregiving Burden—Caregiver burden (also known as caregiving demand) was measured using the Caregiving Burden Inventory,³⁷ a 24-item measure assessing five domains of caregiving burden: time-dependence, developmental, physical, social, and emotional burden. Caregivers rated items on a 5-point scale ranging from “never” (1) to “always” (5). Responses were averaged for a total burden score with higher scores indicating greater burden (Cronbach’s alpha=.91). This scale also demonstrates good construct validity.³⁷

Post-traumatic Stress—Caregivers completed the Post-Traumatic Stress Disorder Checklist-Civilian Version,³⁶ a 17-item measure covering re-experiencing, avoidance, and hyperarousal symptoms. Participants rated the extent to which they have been bothered by problems/complaints in the last month due to having had a child with cancer (e.g., Repeated, disturbing memories, thoughts, or images of a stressful experience in the past). Items were rated on a five-point scale ranging from “not at all” (1) to “extremely” (5), and averaged for a total severity score (Cronbach’s alpha=.95). This scale demonstrates high convergent validity.⁴³

Optimism—Caregivers completed the Life-Orientation Test-Revised,³⁵ a 6-item instrument measuring individual differences in generalized optimism. Participants rated statements reflecting their level of optimism (e.g., In uncertain times, I usually expect the best). Questions were answered on a five-point rating scale ranging from “I disagree a lot” (1) to “I agree a lot” (5). After reversing negatively worded items, responses were averaged with higher scores representing higher levels of optimism (Cronbach’s alpha=.83). This measure demonstrates differential concurrent validity with pessimism.⁴⁴

Social Support—Caregivers completed the Social Provisions Scale,³⁸ a 24-item measure assessing six supportive functions: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. Participants considered their current relationships and rated their agreement with how much support they receive (e.g., There are people I can depend on to help me if I really need it). Responses were rated on a four-point scale ranging from “strongly disagree” (1) to “strongly agree” (4). After reversing negatively worded items, responses were averaged for a total social provisions score (Cronbach’s alpha=.84). This measure demonstrates positive correlations with other social support measures.³⁸

Demographic and disease variables—Caregivers provided demographic information, including the child's age, gender, and ethnicity. Caregivers reported on their own age, relationship to the child, ethnicity, education level, family's annual income, family composition, marital status, and zip code from which urban/rural designation was determined by US Census data. Ethnicity was recoded into a dichotomous variable (minority/White). Education level was used as a continuous variable ranging from did not complete high school to completed advanced degree. Mother and father education were averaged, and standardized education was averaged with standardized family income ($r = .68$, $p < .001$) to yield a composite measure of SES. Marital status was recoded into a dichotomous variable (married/not married).

Medical information was extracted from the child's medical chart, including diagnosis (coded as leukemia, brain tumor, or other cancer diagnosis), age at diagnosis (years), treatment length (months), number of treatment modalities (dichotomized into 1 modality/ 2 modalities), relapse (coded as relapsed/did not relapse), and time since treatment ended (years). The child's disease/treatment intensity was measured with the Intensity of Treatment Rating-2,⁴⁵ ranging from "least intensive" (1) to "most intensive" (4) based on diagnosis, stage/risk level, and treatment modality. After establishing initial reliability with an oncology nurse practitioner (25% of participants; $\kappa = .93$) and resolving differences through discussion, the first author completed these ratings for all participants.

Data Analysis Plan

Missing data were examined (<1% of data points) and imputed using the expectation maximization algorithm. Distributions of variables were normal. Correlations among variables were examined. Prior to the main analyses, interaction terms were computed as products of benefit finding with each demographic and psychosocial variable; all variables were first centered to mean of 0. Descriptive statistics were explored.

Main analyses involved a series of multiple regressions predicting QoL from benefit finding, each demographic or psychosocial variable, and their interaction. Because of the small sample size, each demographic and psychosocial variable that was hypothesized to interact with benefit finding was analyzed in a separate model. This resulted in a total of 12 regression equations. For each of the 12 regressions, benefit finding and SES (the only demographic variable correlated with QoL) were entered in Step 1. Then, one demographic or psychosocial variable and its interaction with benefit finding was added in Step 2 for each regression. Significant interactions were followed with tests of simple slopes for benefit finding at high vs. low levels of the moderator (defined as $\pm 1SD$ for continuous variables, as recommended by Cohen and colleagues⁴⁶). Assumptions of multiple regressions were evaluated, and no violations of normality, linearity or homoscedasticity were found.

Results

Preliminary Analyses

As shown in Table 1, children were on average 14.01 years ($SD = 5.19$) at the time of study and included about equal proportions of males and females. Slightly less than half ($n = 35$;

42%) had a diagnosis of leukemia, 13 had a diagnosis (16%) of solid brain tumor, and 35 (42%) had a different diagnosis included Wilm's tumor (n=8), non-Hodgkin's lymphoma (n=7), Hodgkin's lymphoma (n=6), neuroblastoma (n=5), rhabdomyosarcoma (n=3), retinoblastoma (n=2), osteosarcoma (n=1), nasopharyngeal carcinoma (n=1), Ewing's sarcoma (n=1), and other sarcoma (n=1). On average, children were 5.93 years old (SD=4.76) at the time of diagnosis and 5.71 years past completing medical treatment (SD=4.31). The average treatment intensity was moderate. Caregivers were mostly females from non-rural geographic locations. Median family annual income was \$70,000. Most caregivers were married.

Correlations between QoL and demographic, medical, and psychosocial variables are presented in Table 1. Higher SES was correlated with better QoL (moderate effect). Among medical variables, child diagnosis of brain tumor was associated with lower QoL (moderate effect). Among psychosocial variables, greater benefit finding, social support, and optimism were related to higher QoL, all at moderate to large effect sizes; avoidant coping, caregiving burden, and post-traumatic stress were associated with lower QoL, also at moderate to large effect sizes. Table 2 presents correlations of all predictor variables that were included in the main analyses, including benefit finding and all demographic variables and psychosocial factors hypothesized to moderate the link between benefit finding and QoL.

Main Analyses

A series of 12 multiple regressions predicting QoL are presented in Table 3. At Step 1, which was the same for all regressions, benefit finding and SES explained a significant proportion of variance in QoL ($R^2 = .28, p < .05$), and benefit finding uniquely predicted higher QoL. In Step 2 of the regressions involving demographic variables, age, marital status, rural location and SES interacted with benefit finding to predict QoL. For psychosocial variables in Step 2, emotional and avoidant coping, optimism, caregiving burden and post-traumatic stress symptoms also interacted with benefit finding, whereas active coping, acceptance coping and social support did not. Social support predicted higher QoL over and above benefit finding and SES, but active and acceptance coping did not. Most groups of variables entered at Steps 2 predicted QoL above SES, with additional variance explained ranging between 4 to 33% ($ps < .05$), with the exception of the analyses involving caregiver age, active coping, and acceptance coping.

The significant interactions between benefit finding and demographic and psychosocial variables are depicted in Figures 1 and 2, respectively. Finding greater benefits was associated with higher QoL more strongly among younger compared to older caregivers ($\beta = .56, p < .001$, vs. $\beta = .21, p = .009$). Additionally, benefit finding was related to higher QoL among single but not married caregivers ($\beta = .57, p < .001$, vs. $\beta = .18, p = .11$), among those with low but not high SES ($\beta = .53, p < .001$, vs. $\beta = .20, p = .10$), and those residing in rural but not urban locations ($\beta = .67, p < .001$, vs. $\beta = .17, p = .11$).

Additionally, finding greater benefits was associated with higher QoL more strongly among caregivers who utilized more avoidant coping than those using less ($\beta = .61, p < .001$ vs. $\beta = .23, p = .014$) and among those using more emotion-focused coping than less ($\beta = .77, p < .001$ vs. $\beta = .30, p = .001$). Additionally, benefit finding was related to higher QoL among

those with low but not high levels of optimism ($\beta = .42, p < .001$ vs. $\beta = .10, p = .45$), those with high but not low caregiving burden ($\beta = .52, p < .001$ vs. $\beta = .11, p = .28$), and those experiencing high but not low posttraumatic stress ($\beta = .56, p < .001$ vs. $\beta = .12, p = .21$).

Discussion

This study aimed to clarify the relationships between benefit finding and QoL due to inconsistent relationships between these constructs among cancer survivors and their caregivers in previous research. Specifically, we investigated under what conditions benefit finding may be related to QoL by examining individual, social, and stress-processing variables of caregivers of childhood cancer survivors as potential moderators of the link between benefit finding and QoL. We hypothesized that the relationship between benefit finding and QoL may be stronger among individuals more vulnerable to poor QoL due to individual or psychosocial characteristics. The results generally supported our hypotheses and showed that benefit finding was related to QoL more strongly or only among caregivers who were younger, unmarried, had low SES, and lived in rural areas, and those with greater posttraumatic stress and caregiving burden, who utilized more emotional and avoidant coping strategies, and those who were less optimistic. In terms of resilience models, the results suggest that finding benefits may act as a resilience factor by playing a more important role in the well-being of caregivers with relatively low psychosocial and demographic resources (i.e., demographic profiles previously associated with worse QoL), consistent with research suggesting that lower demographic resources may put caregivers at risk for reduced QoL.

Specifically, among caregivers of children with cancer and among cancer patients themselves, younger caregivers were at increased risk for worse QoL,^{8,47} potentially because older caregivers utilize more adaptive forms of coping. Similarly, caregivers with higher SES and those who were married also reported higher QoL in other studies,²⁰ suggesting that these caregivers possess greater resources to foster QoL, such as disposable income and stable social support. These findings also are in line with personality literature suggesting that individuals who possess greater resources utilize more active forms of coping strategies,⁴⁸ which may enhance QoL. Furthermore, our results show that caregivers who are single, have low SES, and reside in rural locations (i.e., caregivers with fewer resources) may profit more from benefit finding, perhaps helping them appreciate and make the most of the resources they have, increasing QoL. By contrast, QoL of caregivers who were married, had high SES, and lived in urban settings was not affected by benefit finding.

Among psychosocial variables, benefit finding was related to higher QoL for those who were less optimistic, experienced more caregiving burden, and reported more posttraumatic stress, groups with relatively fewer psychosocial resources which may put them at increased risk for poor QoL. Indeed, relationships between reduced QoL or worse general adjustment and high burden, more posttraumatic stress, decreased optimism and reduced satisfaction with life have been shown among caregivers of adults with cancer.⁴⁹⁻⁵¹ Thus, benefit finding may help compensate for lower levels of psychosocial resources by increasing awareness and appreciation of resources and what one has gained through the cancer experience. However, benefit finding was unrelated to QoL for caregivers with high optimism, low

burden, and low stress, perhaps because these caregivers already possessed sufficient resources to manage their experiences.

Furthermore, finding benefits was more strongly associated with better QoL for caregivers who used avoidant and emotion-focused coping. Compared to more active types of coping, avoidant and emotion-coping strategies put caregivers of children with cancer and other chronic conditions at risk for poor well-being.^{52,53} Our results suggest that finding benefits helps buffer against the negative outcomes of using ineffective strategies, perhaps through compensatory mechanisms of providing more useful ways of coping. In fact, coping skills interventions have been shown to improve QoL among caregivers of cancer patients,⁵⁴ and it is possible that similar effects could be achieved through interventions focused on benefit finding.

Incorporating these results into a stress and coping framework confirms the relationship between psychosocial risk factors and QoL as well as individual, social, and stress processing factors that may promote resilience and thus improved QoL. For example, SES, an individual factor, was positively related to QoL, as were benefit finding, optimism, and social support, which represent social and individual factors. Further, avoidant coping, caregiving burden, and posttraumatic stress, which represent stress processing factors, negatively impacted QoL. Importantly, and the purpose of the current study, our results suggest that there may be unique interrelationships among risk and resilience factors in promoting QoL. Specifically, benefit finding, a resilience factor, showed a stronger relationship with adjustment outcomes only for particular caregivers who possessed either higher risk factors (e.g., low SES) or lower resilience factors (e.g., high posttraumatic stress, use of maladaptive coping strategies, lower optimism). These results help extend stress and coping frameworks by pointing to the importance of investigating interrelationships among risk and resilience factors that may impact caregivers' adjustment, particularly QoL.

Contrary to predictions, active coping and acceptance coping were unrelated to QoL and did not moderate the relationship between benefit finding and QoL. Others have found that QoL is negatively affected by the use of maladaptive strategies, but is unrelated to the use of adaptive coping strategies^{53,55} Together, these results suggest that the use of negative coping strategies leads to worse QoL, perhaps through ineffectively managing difficulties, but that using adaptive strategies may not necessarily enhance QoL. Thus, benefit finding may buffer against negative QoL outcomes among those who utilize maladaptive strategies (e.g., emotion-focused and avoidant coping), but may help caregivers whether or not they use adaptive coping strategies.

Similar to effective coping, benefit finding did not moderate the relationship between social support and QoL in our sample. Instead, benefit finding and social support made unique contributions to QoL. Indeed, Kim and colleagues²⁹ found that benefit finding and social support were independently important in adult caregivers' well-being. It could be that benefit finding and social support uniquely promote QoL, such that caregivers who are able to make meaning of the cancer experience and feel supported in this endeavor experience the greatest outcomes in well-being.

There are several limitations of the present study. The sample size was modest and therefore it was not possible to examine all main effects and interactions in a single model. The multiple analyses did not account for overlap among the predictors and may have inflated Type I error. However, given the paucity of research on the role of benefit finding in QoL and factors that may moderate this relationship, this analytic approach allowed us to examine multiple demographic and psychosocial variables that may affect the role of benefit finding in well-being, shedding light on previous mixed results and providing valuable directions for future research. Additionally, the observed relationships were generally of small to moderate magnitude. It should also be noted that caregivers generally utilized low levels of avoidant coping and experienced low levels of caregiving burden and posttraumatic stress symptoms. The restricted range on these variables may have attenuated the effects of these variables. There are likely additional variables that are important in predicting QoL that may interact with benefit finding, such as spiritual coping and illness impact.^{56,57} These variables should be investigated in future research.

Additionally, the cross-sectional design does not support causal inferences about the relationships among the studied variables. It is likely that finding benefits predicts increased QoL over time, as shown among caregivers of adults with cancer.²⁶ However, it is also possible that QoL influences perceptions of benefit finding. Longitudinal or intervention research is necessary to more clearly elucidate the temporal sequencing and causal associations among the variables. Furthermore, the use of self-report data may make the results susceptible to shared-method variance. Despite this limitation, however, results suggest differential effects of benefit finding on QoL depending on levels of moderating variables, supporting the validity of the results. Furthermore, the study was not designed to examine child characteristics in relation to benefit finding and caregivers' QoL, which should be addressed in future research. Our sample included mostly female caregivers recruited from a single cancer survivorship clinic, so the results may not generalize to other types of caregivers, medical populations, and geographic locations. Finally, restricting participants to English speakers limits the generalizability of the findings, and a more heterogeneous sample should be recruited in future research.

Despite these limitations, the results of the study have several implications. From a care provision standpoint, our results suggest that benefit finding may be particularly important for caregivers who utilize maladaptive coping strategies or have fewer demographic resources. Nurses and other healthcare providers serve an important role in first identifying caregivers who may be at increased risk for reduced QoL following the diagnosis of a child with cancer, such as those with fewer demographic resources. After identification, our results suggest several avenues for promoting QoL in this population. First, healthcare providers can assist in helping families to increase their psychosocial resources, such as through referrals to mental health practitioners to strengthen the use of effective coping and minimize the use of maladaptive coping, or referral to support groups or assisting families in accessing their broader support networks to increase social support. Nurses and other healthcare providers can additionally help identify parents who may be experiencing post-traumatic stress symptoms or who have negative attributions, and refer them for services to help them deal with trauma and develop more optimistic beliefs. The second implication of our findings is that helping caregivers process any benefits that have come out of their

experiences may improve quality of life, at least for some of them. Anecdotally, many caregivers discuss positive outcomes from their experience with various practitioners. Healthcare providers may be able to help patients identify specific areas of benefit and support and encourage this way of thinking to promote positive well-being. Not all caregivers are initially open to this way of thinking, and therefore in some cases, motivational interviewing may be effective to determine readiness for discussion of positive outcomes or help with making meaning from their experiences with cancer. Motivational interviewing is a technique utilizing an empathic approach to help individuals resolve ambivalence about change and assist them in the development of internal motivation to make various changes in one's life.⁵⁸

From a research standpoint, the results suggest that QoL has a complex relationship with risk and protective factors, and that benefit finding is differentially important for caregivers with varied resource levels. Further, benefit finding may be a useful variable to include when assessing the stress and coping of caregivers of childhood cancer or other populations. Future research should utilize heterogeneous samples to increase the generalizability of the observed relationships. Further, larger sample sizes would improve exploration of which factors and interactions with benefit finding make the strongest unique contributions to QoL. The use of longitudinal designs to more clearly elucidate the directionality among benefit finding and QoL is warranted.

In conclusion, this study is among the first to address the complex interplay of benefit finding with other variables in relation to QoL. Caregivers with relatively low demographic and psychosocial resources (i.e., younger, unmarried, rural, and of low SES; with low optimism, more distress and maladaptive coping) report higher QoL when they are able to find benefits in their experience. By contrast, caregivers who have relatively greater demographic and psychosocial resources do not appear to gain better QoL from benefit finding. Future research should further explore the relationships among these variables and potentially target benefit finding or other factors promoting well-being among low-resource caregivers to improve their QoL.

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Figure 1.
Interactions of benefit finding and demographic moderators on QoL.

Figure 2.
Interactions of benefit finding and psychosocial moderators on QoL.

Table 1

Descriptive statistics of demographic, medical, and psychosocial variables, and correlations with QoL

	M/% (range) ^f	SD	Correlation with QoL
<i>Child Variables</i>			
Age	14.01 (4-27)	5.19	0.05
Female ^d	48%	-	-0.07
Minority ^d	33%	-	-0.09
Diagnosis of leukemia ^d	42%	-	0.16
Diagnosis of brain tumor ^d	16%	-	-0.34 ^e
Diagnosis of "other" cancer	42%	-	0.09
Multiple treatment modalities ^d	52%	-	-0.21
Age at diagnosis (years)	5.93 (0-17)	4.76	-0.01
Time since treatment (years)	5.71 (1-16)	4.31	-0.01
Treatment length (months)	19.82 (1-61)	13.60	0.00
Treatment intensity	2.55	0.77	-0.17
Experienced relapse ^d	13%	-	-0.16
<i>Caregiver Variables</i>			
Age	43.39 (21-61)	8.01	0.01
Female ^d	86%	-	-0.05
Minority ^d	25%	-	0.10
Rural location ^d	28%	-	-0.03
Socioeconomic status ^c	0.00	0.92	0.27 ^e
Caregiver Married ^d	80%	-	0.02
<i>Psychosocial Variables</i>			
Benefit Finding ^b			0.50 ^e
Active coping ^a	2.78	0.55	0.20
Emotion coping ^a	2.46	0.67	0.01
Avoidant coping ^a	1.23	0.32	-0.38 ^e
Acceptance coping ^a	2.79	0.39	-0.02
Optimism ^b	3.85	0.85	0.44 ^e
Caregiving burden ^b	1.64	0.52	-0.53 ^e
Post-traumatic stress ^b	1.53	0.68	-0.62 ^e
Social support ^a	3.57	0.37	0.58 ^e
QoL ^a	4.01	0.66	--

Abbreviations: QoL, quality of life

^aScale range 1-4^bScale range 1-5

^c Created by averaging z-scored education and income

^d dichotomous

^e $p < .05$

^f range provided for relevant variables

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Table 2

Intercorrelations among variables retained for multiple regression analyses.

Predictor Variable	1	2	3	4	5	6	7	8	9	10	11	12
<i>Caregiver Variables</i>												
1. Age	1.00											
2. Married	.16	1.00										
3. Socioeconomic status	.37 ^a	.11	1.00									
4. Rural location	-.19	.07	-.27 ^a	1.00								
<i>Psychosocial Variables</i>												
5. Benefit finding	-.02	.03	.21	-.09	1.00							
6. Active coping	.24 ^a	-.18	.29 ^a	-.10	.22 ^a	1.00						
7. Emotion coping	.10	-.15	.16	.10	.29 ^a	.46 ^a	1.00					
8. Avoidant coping	-.03	-.13	-.18	.08	.00	.06	.27 ^a	1.00				
9. Acceptance Coping	.01	-.27 ^a	.18	.03	.19	.51 ^a	.50 ^a	.20	1.00			
10. Optimism	.16	.09	.22 ^a	-.11	.36 ^a	.21	-.10	-.16	.11	1.00		
11. Caregiving burden	-.04	-.25 ^a	-.18	-.05	-.17	.01	.16	.39 ^a	.22 ^a	-.21	1.00	
12. Posttraumatic stress	-.05	-.08	-.15	-.11	-.16	.01	.18	.50 ^a	.20	-.31 ^a	.49 ^a	1.00
13. Social Support	.03	.07	.44 ^a	-.11	.47 ^a	.23 ^a	.17	-.30 ^a	.23 ^a	.43 ^a	-.21	-.32 ^a

^a
p < .05

Table 3

Multiple regressions predicting QoL.

Predictors	β	R^2
Step 1		.28 ^a
Socioeconomic status	.18	
Benefit finding	.47 ^a	
Step 2a		.04
Caregiver age	.00	
Caregiver age X benefit finding	-.21 ^a	
Step 2b		.06 ^a
Married	-.02	
Married X benefit finding	-.25 ^a	
Step 2c		.08 ^a
Rural location	-.08	
Rural location X benefit finding	.29 ^a	
Step 2d		.04 ^a
Socioeconomic status X benefit finding	-.19 ^a	
Step 2e		.03
Active coping	.05	
Active coping x benefit finding	.16	
Step 2f		.11 ^a
Emotion coping	-.15	
Emotion coping X benefit finding	.31 ^a	
Step 2g		.18 ^a
Avoidant coping	-.38 ^a	
Avoidant coping X benefit finding	.24 ^a	
Step 2h		.03
Acceptance coping	-.14	
Acceptance coping x benefit finding	.08	
Step 2i		.11 ^a
Optimism	.28 ^a	
Optimism X benefit finding	-.22 ^a	
Step 2j		.24 ^a
Caregiving burden	-.44 ^a	
Caregiving burden X benefit finding	.24 ^a	
Step 2k		.33 ^a
Post-traumatic stress symptoms	-.51 ^a	
Post-traumatic stress symptoms X benefit finding	.23 ^a	

Predictors	β	R^2
Step 21		.12 ^a
Social support	.43 ^a	
Social support x benefit finding	-.03	

Abbreviations: QoL, quality of life.

^a $p < .05$.