

# Benefit Finding Scale for Children: Preliminary Findings from a Childhood Cancer Population

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**Objective** To describe the development of a brief measure of benefit finding for children. Data regarding the psychometrics and validity of the instrument were examined in a sample of children with cancer. **Methods** A cross-sectional sample of children with cancer ( $N = 199$ , ages 7–18 years) completed the Benefit Finding Scale for Children (BFSC) along with measures of adaptive style, optimism/pessimism, post-traumatic stress symptoms, and health-related quality of life. **Results** The BFSC was found to be a unidimensional measure with excellent internal reliability. Benefit finding was not related to age or gender, but differed as a function of race/ethnicity. No differences were found by diagnostic category, but a significant relationship was found with age at diagnosis and time elapsed since diagnosis. Small, but significant positive correlations were found with measures of optimism and self-esteem, and a negative correlation with anxiety. No relation was found between benefit finding and post-traumatic stress symptoms or other domains of health-related quality of life. **Conclusion** The BFSC shows promise as a measure of benefit finding in children. The measure could be readily adapted for other populations of children experiencing trauma.

**Key words** childhood cancer; benefit finding; post-traumatic growth; post-traumatic stress; optimism.

The onset of a serious illness has been recognized as both a potentially traumatic event for the patient and his/her family, as well as a potential catalyst for growth and positive change. The expanding literature on post-traumatic stress disorder (PTSD) or post-traumatic stress symptomatology (PTSS) in medically ill populations has been paralleled by research on the constructs of post-traumatic growth or benefit finding in the same groups of patients (Kangas, Henry, & Bryant, 2002; Sears, Stanton, & Danoff-Burg, 2003). The diagnosis of cancer, perhaps because of the often life-threatening implications, has been a particular focus of research on both PTSD and post-traumatic growth (Kangas et al., 2002; Sears et al., 2003; Tomich & Helgeson, 2004). Although there has been considerable study of PTSD and PTSS in childhood cancer populations (Brown, Madan-Swain, & Lambert, 2003; Stuber, Kazak, Meeske, & Barakat, 1998), studies of benefit finding and post-traumatic growth following cancer have been conducted almost exclusively in adult cancer populations. Perhaps the primary reason for the lack of research on benefit finding in children has been

the absence of age-appropriate measures of the construct. In this article, we introduce a new measure of benefit finding for children, and present some preliminary data on the psychometrics and validity of the instrument.

Taylor (1983) was the first to describe the positive changes women reported in their lives as a result of breast cancer, and subsequent research has confirmed that, despite the obvious stressors, many cancer patients also report gains, such as a deepened sense of purpose, closer relationships with family and friends, a reappraisal of their life's priorities, and an enhanced spiritual life (Affleck & Tennen, 1996; Antoni et al., 2001; Carver & Antoni, 2004; Cordova, Cunningham, Carlson, & Andrykowski, 2001; Sears et al., 2003; Tomich & Helgeson, 2004). Studies have also begun to identify the predictors and consequences of benefit finding. There is some evidence to suggest positive physiological effects of benefit finding, and that benefit finding early in a disease course is associated with better long-term adjustment (Bower & Segerstrom, 2004; Carver & Antoni, 2004; Cruess et al., 2000; Katz, Flasher, Cacciagapaglia, &

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Nelson, 2001). However, there are also studies showing no relationship between early benefit finding and later adjustment (Cordova et al., 2001; Sears et al., 2003) and one study suggesting that benefit finding can negatively impact subsequent quality of life (Tomich & Helgeson, 2004).

The construct of benefit finding would appear particularly salient to children with cancer, given the typically low levels of distress, and positive adjustment demonstrated by this population (Canning, Canning, & Boyce, 1992; Noll et al., 1999; Phipps & Srivastava, 1997; Phipps, Steele, Hall, & Leigh, 2001; Worchel et al., 1988). Not only do children with cancer report low levels of distress, but they often demonstrate significantly better emotional functioning than healthy comparison groups, in terms of self-reported depression, anxiety, and self-esteem (Canning et al., 1992; Phipps & Srivastava, 1997; Phipps et al., 2001; Worchel et al., 1988). Accepted at face value, these findings suggest that there may be some benefit in the childhood cancer experience. However, researchers have attempted to explain these findings as reflective of bias in the self-report of children with cancer, or as a result of denial, avoidant coping, or a repressive adaptive style (Phipps, 2005). A construct such as benefit finding offers an alternative mechanism to explain the observed positive adjustment, a pathway that has yet to be explored. For this line of research to move forward, appropriate assessment instruments must be developed.

In considering development of a new instrument for children, an issue is the conceptual and terminological confusion in the adult literature, where a number of terms have been used interchangeably, including: benefit finding, post-traumatic growth, and meaning-making (Antoni et al., 2001; Tedeschi & Calhoun, 1996; Tomich & Helgeson, 2004). Much of the prior research does not discriminate between the terms, and the terminology used often appears arbitrary, or a function of the name of the assessment tool. However, other investigators have suggested that these are distinct constructs that should not be used synonymously (Davis, Nolen-Hoeksema, & Larson, 1998), a position that we share. Thus, the current study focuses on the more circumscribed construct of benefit finding. In contrast to post-traumatic growth, a measure of benefit finding does not require an assumption of prior experience of traumatic stress, nor does it explicitly require a positive change or growth experience. For example, increase in instrumental social support might be perceived as a direct benefit of illness, regardless of whether the patient experienced

any trauma, or a change in attitudes or values. Moreover, from a developmental perspective, the terminology of benefit finding appears more concrete, precise, and less cognitively demanding.

Several slightly differing 'Benefit Finding' scales, have been used in prior adult studies, and have generally been treated as unidimensional measures (Antoni et al., 2001; Mohr et al., 1999; Tomich & Helgeson, 2004). In this article we describe the development of a new, brief measure of benefit finding for children that was piloted in a sample of children with cancer. We present the initial psychometric properties of the instrument, and as a preliminary examination of its' validity, we assess the relationship of benefit finding to the personality constructs of adaptive style and optimism/pessimism, and to the clinical outcomes of post-traumatic symptoms and health-related quality of life.

## Method

### Participants

Children were recruited from outpatient clinics at a major children's oncology center. Children who were between the ages of 7 and 18 years, English speaking, with a primary diagnosis of malignancy, and no known cognitive deficits were eligible. Patients were recruited who were at least 1 month from diagnosis, with no upper limit to time elapsed since diagnosis. Sampling procedures were designed to obtain a broad cross-section of patients in terms of diagnosis, and to obtain relatively equal numbers of patients in four groups differing in time elapsed since diagnosis: 1–6 months; 7–18 months; 19 months–5 years; and >5 years from diagnosis. Of the 339 patients we approached, 249 (73%) were initially enrolled. Of the enrolled participants, 35 returned incomplete information and 15 withdrew before completing all materials leaving a sample of 199 children with complete datasets. Participants did not differ significantly from recruited non-participants in terms of age, gender, race, or diagnostic category.

The demographic and medical background of the sample was representative of the institutional population. The mean age was 12.35 years (SD 3.4), and the sample was 52% male. By race, 77% self-identified as Caucasian, 19% African-American and 4% other minority. Socioeconomic status was broadly distributed, with 21% level I, 40% level II, 24% level III, and 15% in levels IV and V, according to the Hollingshead four factor index (Hollingshead, 1975). Diagnostic breakdown was as follows: leukemia 29.1% ( $n = 58$ ); Hodgkin's disease and non-Hodgkin's lymphoma's 15.1% ( $n = 30$ );

non-CNS solid tumors 33.7% ( $n = 67$ ); and brain tumors 22.1% ( $n = 44$ ). A total of 52 (26.1%) were within 6 months of diagnosis; 47 (23.6%) were between 7 months and 18 months from diagnosis; 47 (23.6%) were between 19 months and 5 years from diagnosis; and 53 (26.6%) >5 years from diagnosis. A total of 71 patients (36%) were still in active treatment and 128 (64%) were off treatment at the time of their participation in the study.

### Procedure

Eligible patients were identified from lists of outpatient clinic schedules and recruited during outpatient clinic visits. The study was approved by our institutional review board, and informed consent (and child assent) was obtained according to institutional guidelines. Patients and parents were asked to complete a one-time survey involving a battery of self-report measures. Research assistants were available to assist patients/parents in completion of the forms as needed. Only the relevant child self-report data is reported here.

### Measures

*The Benefit Finding Scale for Children (BFSC)*. This instrument was created by the authors for this study. Several previously published adult measures were reviewed by the authors and used as a basis for item development. In particular, the benefit finding scales used by Antoni et al. (2001) and Tomich and Helgeson (2004), which were in turn adapted from an item set reported by Behr (Behr, Murphy, & Summers, 1991), were used as models, as was the benefit finding subscale from a measure reported by Mohr et al. (1999). Items from these measures were examined for their relevance to children. A group of pediatric psychologists and trainees in clinical psychology reviewed the items and sought consensus on their relevance and appropriateness for children. Several items were chosen and adapted with minor re-wording, and other items were created to capture comparable issues thought to be more appropriate for children. Each of the 10 items chosen depicted a potential benefit of illness, and each was answered on a 5-point likert scale ranging from 'not at all true for me' to 'very true for me'.

*Children's Social Desirability Scale (CSD)* (CSD, Crandall, Crandall, & Katkovsky, 1965; Phipps & Srivastava, 1997). The CSD, a measure of social desirability, is also construed as a measure of defensiveness and used in categorizing child adaptive style (Phipps & Srivastava, 1997). It consists of items representing

behaviors and attitudes that are socially desirable but improbable (e.g., "I always do as I am told"; "I never tell a lie"). Items are answered in a yes/no format. We utilized a revised 25-item version that has been used previously in populations of children with cancer (Phipps & Srivastava, 1997). The internal reliability ( $\alpha$ ) of this version was .823 in the current study.

*The State-Trait Anxiety Inventory for Children (STAIC)*, Spielberger, 1973). This is a widely used and well-validated measure of anxiety in children. Only the trait scale was administered. It consists of 20 anxiety-related statements that are responded to on a 3-point scale (hardly ever, sometimes, often). Internal reliability ( $\alpha$ ) in the current study was .882.

*The Youth Life Orientation Test (YLOT)*, Ey et al., 2005). The YLOT is a measure of dispositional optimism that was developed as a child analogue of the widely used Life Orientation Test (Carver & Scheier, 1985). This 16-item measure contains seven optimism and seven pessimism items (with two filler items). As with the comparable adult measure, scores can be calculated for optimism, pessimism, and 'global optimism' (which is the sum of optimism and inverse of the pessimism score). In the current study, internal consistency for optimism, pessimism, and global optimism were .732, .803, and .833, respectively.

*Children's Health Questionnaire, Children's Form (CHQ)*, Landgraf, Abetz, & Ware, 1999). The CHQ is a generic measure of health-related quality of life. This widely used instrument has adequate reliability and considerable validity data. Items are responded on a 4 or 5-point likert scale depending on the subscale. Of the 12 available subscales, 7 were examined in the current study: physical functioning; general health; pain; mental health; general behavior, self-esteem, and impact on family.

*UCLA PTSD Index for DSM-IV (PTSDI)*, Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998). This is a revised version of a measure formerly known as the PTSD Reaction Index (Pynoos et al., 1987). The Reaction Index measure was designed to assess DSM-III-R PTSD criteria, and the PTSDI has been revised for the DSM-IV. Excellent internal reliability and test-retest reliability have been reported, and considerable data is available regarding its' validity for screening, clinical evaluation, and treatment outcome evaluation (Steinberg, Brymer, Decker, & Pynoos, 2004). We used a 22-item version that was made specific for childhood cancer. In the current study, internal reliability (Coefficient  $\alpha$ ) for the total scale was excellent (.912). Reliability for the subscales of

Re-experiencing (.778) and Numbing/Avoidance (.821) was good, while for as the Arousal subscale reliability was marginal (.651).

## Results

### Psychometric Analysis of the BFSC

The items of the BFSC were analyzed using Principal Component Analysis. This produced a single component with an eigenvalue greater than one, suggesting a unidimensional measure. This sole component accounted for 41% of the variance, and all items had factor loadings of  $>.5$ . The internal reliability (Chronbach's  $\alpha$ ) of the 10-item scale was .834, with all but one item having item-total correlations  $>.4$ . Scores were skewed somewhat toward higher reports of benefit finding, with the mean for all items  $>3$  on the 1 to 5 scale, and three items with mean  $>4$ . Nevertheless, there was adequate distribution across the range of possible scores, and the total score was reasonably normally distributed with a moderate negative skew. The scale items and their descriptive statistics are presented in Table I.

### Relationship of BFSC to Demographic and Medical Variables

BFSC scores did not differ as a function of age ( $r = .04$ ,  $p > .5$ ) or by gender [males  $M = 36.9$ ,  $SD = 7.9$ ; females  $M = 37.9$ ,  $SD = 7.7$ ,  $t(196) = -.96$ ,  $p > .30$ ]. A significant difference emerged by race/ethnicity [ $F(2,197) = 4.3$ ,  $p < .05$ ]. Post hoc analysis indicated that African American children ( $M = 39.7$ ,  $SD = 6.1$ ) reported greater benefit finding than did Caucasian children ( $M = 36.5$ ,  $SD = 8.1$ ;  $p < .05$ ). There were no significant differences based on SES group, although there was a trend for those in Hollingshead levels IV and V to report greater benefits

( $M = 39.4$ ,  $SD = 6.2$ ) than children in levels I and II ( $M = 36.9$ ,  $SD = 7.3$ ;  $p = .12$ ).

Benefit finding did not differ as a function of diagnostic category, nor were there any trends observed. There was also no difference between those that were still in active treatment ( $M = 37.5$ ,  $SD = 7.0$ ) and those who were off therapy ( $M = 37.4$ ,  $SD = 8.2$ ,  $p > .50$ ). There was a significant positive correlation of the BFSC and age at diagnosis ( $r = .25$ ,  $p < .001$ ). In an exploratory analysis we created three groups of patients, those diagnosed at under 6 years of age; between 6 and 11 years of age; at 12 years or older. A clear linear trend was observed, with the youngest patients at diagnosis reporting the lowest benefits ( $M = 35.0$ ,  $SD = 8.7$ ), differing significantly from the oldest, who showed the greatest benefit finding ( $M = 39.3$ ,  $SD = 7.9$ ;  $p < .01$ ), with the 6–11 year group intermediate ( $M = 37.6$ ,  $SD = 7.1$ ). Time elapsed from diagnosis also emerged as a significant predictor of BFSC scores. A significant negative correlation was observed ( $r = -.23$ ,  $p < .001$ ), indicating that benefit finding declined with increasing time from diagnosis. However, given the strong inverse correlation between age at diagnosis and time since diagnosis ( $r = -.68$ ,  $p < .001$ ), the relative importance of age at diagnosis versus time since diagnosis is difficult to appreciate.

### Relation of Benefit Finding to Personality Variables and Clinical Outcomes

The BFSC scale was not significantly related to social desirability or the construct of defensiveness as measured by the CSD, although there was a slight positive trend ( $r = .13$ ,  $p = .07$ ). There was a small, but significant negative correlation of the BFSC with the STAIC ( $r = -.16$ ,  $p < .05$ ). A significant positive correlation was found with the YLOT measure of optimism

**Table I.** Reliability Analysis

	Factor loading	Mean	Standard deviation	Range	Item-total correlation
Having had my illness					
Has helped me become a stronger person	.65	3.79	1.2	0–5	.53
Has helped me learn who my real friends are	.55	3.39	1.5	0–5	.45
Has helped me know how much I am loved	.58	4.42	1.0	0–5	.46
Has helped me make some new best friends	.50	3.35	1.5	0–5	.34
Has helped me learn to deal better with my problems	.75	3.19	1.3	0–5	.65
Has helped me be more patient	.64	3.15	1.4	0–5	.53
Has taught me to be more loving of others	.65	3.72	1.2	0–5	.54
Has brought my family closer together	.63	3.80	1.4	0–5	.51
Has taught me what is really important in life	.72	4.25	1.1	0–5	.60
Has taught me to be happy and enjoy good things when they happen	.72	4.30	1.1	0–5	.60
Total	Eigenvalue 4.1	37.35	7.8	12–50	Coefficient $\alpha$ .834



( $r = .29$ ,  $p < .001$ ), but not with pessimism ( $r = -.09$ ,  $p > .2$ ). There was no relation observed between benefit finding and post-traumatic stress, as correlations between the BFSC and all PTSDI subscales and total score were non-significant and near zero. In examining the health-related quality of life outcomes as measured by the CHQ, only the self-esteem subscale showed a significant correlation with the BFSC ( $r = .20$ ,  $p = .005$ ). Descriptive data regarding study measures and their correlations with the BFSC are summarized in Table II.

## Discussion

This is an initial report of a new measure of benefit finding designed for children. The BFSC appears to be a unidimensional measure, and has excellent internal consistency reliability. In a sample of children with cancer, scores on this measure did not differ as a function of age or gender. Significant differences were found by race/ethnicity, with African-American children reporting greater benefits than Caucasian children. Although there were no significant differences based on SES, there was a non-significant trend for children from lower SES strata to report greater benefit finding. No significant differences were found by cancer diagnostic category, but a positive correlation was found with age at diagnosis, and a negative correlation with time elapsed since diagnosis. Small, but significant positive correlations were found with measures of optimism and self-esteem, and a negative correlation with trait anxiety. No relation was found between benefit finding and

post-traumatic stress symptoms or other domains of health-related quality of life.

Several of the findings reported here mirror those previously observed in studies of benefit finding in adults. For example, Tomich and Helgeson (2004) reported higher levels of benefit finding in women following the diagnosis of breast cancer among minority women and those from lower SES. They speculate that this could be related to a tendency for minority and low SES women to use more religious coping in adjusting to their illness, which in turn involves greater use of positive reframing (Tomich & Helgeson, 2004). They also suggest that minority and low SES women must deal more frequently with hardships and thus simply have more practice in trying to construe something positive from a negative experience. An extension of this that might be particularly relevant to minority and low SES children during the treatment phase of their cancer, is that there is often a degree of separation from their natural environment with its' associated hardships (poverty, neglect, violence) and entry into a setting that is, ironically, more secure and characterized by contact with multiple supportive helping professionals.

Prior research with women with breast cancer has suggested that benefit finding is positively associated with disease severity (Cordova et al., 2001, Tomich & Helgeson, 2004). This is consistent with research suggesting that greater benefit finding is associated with greater experience of trauma (Cordova et al., 2001; Park, Cohen, & Murch, 1996; Taylor, 1983). In a recent pediatric study (to our knowledge the only other study to address this construct in children), post-traumatic growth in childhood cancer survivors was not related to physician ratings of treatment intensity, but was positively associated with survivor ratings of perceived life threat and PTSS (Barakat, Alderfer, & Kazak, 2006). Given our retrospective design, we did not obtain an index of disease severity. Diagnostic category, which was unrelated to benefit finding, does not appear to be a good proxy for severity. The clear absence of relationship between post-traumatic stress symptoms and benefit finding in our sample is in contrast to the prior pediatric study and adult studies reporting a positive relationship between the experience of trauma and benefit finding. This must be interpreted cautiously however, given our cross-sectional design. We obtained only a current report of PTSS, which may be a poor proxy for trauma experienced at the time of diagnosis or early treatment. Delineating the relationship of trauma to subsequent benefit finding will require a longitudinal design.

**Table II.** Study Measures; Mean, Standard Deviations, and Correlations with BFSC

	Mean	Standard deviation	Correlation with BFSC
1. CSD	11.2	4.9	.13
2. STAIC	32.2	7.5	-.16*
3. YLOT optimism	23.5	3.5	.29**
4. YLOT pessimism	14.1	4.7	-.09
5. UCLA PTSDI	17.5	13.7	-.00
6. CHQ physical functioning	75.3	25.7	-.03
7. CHQ general health	59.6	16.3	.06
8. CHQ pain	69.6	25.8	.13
9. CHQ behavior	76.6	14.5	.12
10. CHQ mental health	72.8	19.1	.03
11. CHQ self-esteem	74.5	17.1	.20**
12. CHQ impact on family	71.7	24.9	.02

BFSC, Benefit Finding Scale for Children; CSD, Children's Social Desirability Scale; STAIC, State-Trait Anxiety Index for Children; YLOT, Youth Life Orientation Test; PTSDI, Post-traumatic Stress Disorder Inventory; CHQ, Children's Health Questionnaire.

Prior studies with adults have suggested that benefit finding is generally unrelated to indices of distress (Antoni et al., 2001; Cordova et al., 2001; Sears et al., 2003), and this is consistent with our finding that the BFSC was not significantly correlated with measures of post-traumatic stress symptoms or the mental health and behavior domains of the CHQ. It appears that reports of positive experiences do not simply imply an absence of negative experiences or distress, but that these are relatively independent domains. This is analogous to current views regarding positive and negative emotions (Watson, Clarke, & Tellegen, 1988). The positive relation observed between benefit finding and optimism is not surprising, and, in combination with the absence of a correlation with pessimism, lends further credence to the relative independence of positive and negative outcomes. The small positive correlation of benefit finding with self-esteem has been noted in prior adult studies going back to the initial report of Taylor (1983). Taylor suggested that benefit finding reflects a patient's cognitive adaptation to the threats of illness, and serves to bolster self-esteem.

The current finding regarding age at diagnosis and benefit finding is consistent with the one prior pediatric report (Barakat et al., 2006) and is consistent with a developmental framework that suggests older patients are more likely to remember and appreciate experiences related to their illness and treatment. The findings regarding relationship between benefit finding and time elapsed since diagnosis are interesting, and do not have a precedent in the adult literature. Tedeschi and Calhoun (1996) found that benefit finding was largely unrelated to the passage of time. Antoni et al. (2001) found that benefit finding increased in the year following diagnosis of breast cancer in women who received a stress management intervention, but was unchanged in a standard care control group. A possible explanation for the current findings is that they relate to the instrumental benefits of treatment, and the supportive connection to a treating institution. While patients are in treatment or receiving close follow-up, they experience more support and perceived benefit, and as they become long-term survivors and have less contact with their treatment facility these benefits are lost. Unfortunately, given the strong correlation between age at diagnosis and time since diagnosis in this cross-sectional sample, it is difficult to appreciate the relative impact of these factors, which would be best assessed in a longitudinal design.

There are a number of limitations to the present study. The sample included only patients with cancer, and findings must be interpreted within that context.

However, the items are generic, and we believe that with a reworded introduction and adaptation of the initial sentence stem, the instrument would be appropriate for other illnesses, or other non-illness contexts involving trauma, such as accidents and natural disasters. The participation rate for the study is also a concern, as from the sample of 339 patients approached, only 73% agreed to participate initially, and only 59% completed all study measures. Participants and non-participants did not differ significantly on the demographic and medical factors that were evaluable, but selection on other factors may have biased the sample. Given that the more highly distressed children are less likely to participate in survey research (Weinberger, Tublin, Ford, & Feldman, 1990), our sample may be biased towards a less distressed and more positive and optimistic outlook. Our approach to instrument development, adapting items from adult measures, has limitations from a developmental perspective. Future studies using focus groups or other qualitative methods, might expand the relevant item pool and uncover illness-related benefits that are unique to children.

As previously noted, the cross-sectional design does not allow for an appreciation of changes in benefit finding over time, or how early benefit finding might be predictive of later adjustment outcomes. The absence of longitudinal data also precluded assessment of test-retest reliability or stability of the measure over time. Another issue is that the design of the instrument, which included only positive benefits, may have induced a socially desirable response set. Although participants completed other measures addressing negative consequences of the cancer experience within this study (e.g., post-traumatic stress), it may be that including positive and negative effects of illness within the same instrument will provide a more valid measure of the benefit finding construct (Tomich & Helgeson, 2004). Finally, the study relied solely on self-report measures, and there were no observational or proxy report measures obtained. Despite these limitations, the BFSC shows promise as a measure of benefit finding in children, which we hope may stimulate further research on this construct.

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