Chapter 6

Children's Hope Scale

(CHS-PTPB)

Background

Purpose

The CHS-PTPB is a revision of the Children's Hope Scale[5] (CHS; Snyder et al., 1997) and is a measure of youth hopefulness that has youth to report on their ability to generate paths toward goals and persevere toward those goals. Youth hopefulness is conceptually an important factor in the successful treatment of emotional and behavioral disorders, constituting an outcome that may be affected by the treatment process.

Theory

Historically, theories about hope developed out of the motivational literature, with hope conceptualized as a cognitive motivational process (Snyder, 2002). Although there is some controversy in the literature as to whether hope is predominantly a cognitive or emotional construct, most authors agree that both cognitions and emotions are involved in the experience of hope. For example, Shorey and colleagues (Shorey, Snyder, Rand, Hockemeyer, & Feldman, 2002) describe hope as a process in which emotions follow cognitive appraisals and then interact with future appraisals. This suggests that both thoughts and feelings are important to the ongoing experience of hope.

As with the general psychological literature, the majority of empirical work on hope has been conducted with adult samples, although hope has long been considered an important experience throughout childhood and adolescence. In our review of the literature, we identified two issues of importance in selecting a measure of hope appropriate for youth. The first corresponds to whether one measures hopefulness or hopelessness. The Hopelessness Scale for Children (HSC; Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983) was derived from the Beck Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974), an adult measure. The HSC consists of 17 true-false items describing negative expectations about oneself and the future. While such negative expectations may be important aspects of a youth's experience, lacking negative expectations does not necessarily indicate having positive expectations (Snyder et al., 1997).

The second issue in selecting a youth hope measure concerns the definition of hope used in constructing the measure. In broad terms, hope is a way of thinking about goals. As such, hope

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[5] The Childrens' Hope Scale is in the public domain (http://www.psych.ku.edu/faculty/rsnyder/child.htm).

refers to a wish or desire for something accompanied by the expectation of obtaining it. Snyder, Michael and Cheavens (1999) define hope as the perceived ability to produce pathways to attain goals (pathway thinking) and move on the path toward those goals (agency thinking). Given that hope is a motivational process that can affect behavior and subsequent thoughts and feelings, it represents a clinically meaningful outcome of treatment.

The Hopefulness Scale for Adolescents (HAS; Hinds et al., 1999) is a 24-item self-report visual analogue scale developed to measure the positive future orientation felt by adolescents at the time of measurement (Hinds et al., 1999). The HAS was developed to capture hope, defined as "the degree to which an adolescent experiences a comforting or life-sustaining reality-based belief that a positive future exists for self and others" (Hinds, 1988, p.85). The aforementioned definition is less concrete and more goal-oriented. General beliefs or expectations may not adequately capture the pathway and agency thinking asserted to be critical components of hopefulness.

Snyder and colleagues (Snyder et al., 1997) developed a six-item CHS to adequately capture both the pathway and agency thinking components of hope in a brief, developmentally appropriate measure. Given the importance of capturing hopefulness rather than hopelessness, items focus on the positive or hopeful cognitions that youth may possess. This is also consistent with a strengths-based approach. The measure was originally designed for use with youth ages 8 – 16 but subsequent validation studies suggest that it is appropriate for adolescents up to age 19 (Valle, Huebner, & Suldo, 2004).

History of Development

Development of the CHS began by generating a pool of items reflecting agency and pathway thinking in children. A consensus was attained among Snyder's research group on twelve items (six agency and six pathway items) reflecting youths' hopeful thinking. The initial scale was administered to a pilot sample, with psychometric analyses suggesting the need to eliminate six items. The resulting scale contained six total items- three agency and three pathway items. Subsequent analyses were conducted on this scale and found evidence for a cohesive two-factor scale (Snyder et al., 1997). The reliability and validity of the CHS has been repeatedly supported across samples (Snyder et al., 1997; Valle et al., 2004).

The CHS scale evaluated as part of the 2007 psychometric study contained six items and supported a one-factor structure. The current psychometric study (described in Chapter 2) aimed at reducing the length of the CHS while maintaining strong psychometric qualities and measure reliability. In deciding which items to delete, six main criteria were used: (a) general psychometric quality of an item, (b) the similarity of an item in its difficulty measurement score to another item (indicates redundancy), (c) the similarity of an item in its wording to another item (an important factor in respondent compliance), (d) the relationship of the item to the general factor structure, and (e) the theoretical properties of each item. The psychometric properties and the validity of the 4-item CHS-PTPB version are described below.

Structure

The CHS-PTPB measures goal-oriented thinking using four youth-appropriate items. Two items were removed from the previous six item version to shorten the scale and eliminate redundancy. Each item has response options rated on a six-point Likert-type scale ranging from one (None of the Time) to six (All of the Time). The <u>CHS-PTPB Total Score</u> represents the mean of the responses across all items if at least 85% of the items are completed. All items are positively worded, with a high CHS-PTPB Total Score indicating positive goal-oriented thinking. While the scale authors (Snyder et al., 1997) found a two-factor (pathway and agency thinking) structure, the evidence was weak given that they were intercorrelated factors based on a very small number of items. Valle et al. (2004) also found two factors but goodness of fit indices suggested a poor fit. Our psychometric analyses (presented later in this chapter) replicate previous findings from our independent 2007 sample that support a one-factor structure. Therefore, suggested scoring for the CHS is results in the CHS-PTPB Total Score only. The psychometrics described here are based on the complete sample of the psychometric study. See Chapter 2 for more detail on the psychometric sample and test development procedures.

Administration

The CHS-PTPB should be completed by the youth and may be administered during all phases of treatment, baseline through follow-up, as shown in Table 6.1. The suggested frequency of administration is once a month or at least every two months.

Table 6.1   Administration of CHS-PTPB by Phase

Baseline			Treatment			Discharge			Follow-Up		
Y	A	C	Y	A	C	Y	A	C	Y	A	C
■			■			■			■		

Y = Youth (age 11-18); A = Adult Caregiver; C = Clinician
Suggested frequency: Once a month or at least every two months

The suggested administration schedule of all the measures in the Peabody Treatment Progress Battery is presented in Appendix A. All PTPB measures with self-scoring tables can be found in Appendix B.

Description

Basic Descriptives

The CHS-PTPB Total Score had a non-normal distribution with 29% of youth endorsing all six-items with "Most of the Time" or "All of the Time". As Table 6.2 summarizes, the mean CHS-PTPB Total Score was 3.98, which is very near the median and the CHS-PTPB Total Score has a neutral skew with the distribution of responses a bit flattened (kurtosis = -0.8). At the high end

of youth scores, the distribution is somewhat constrained by "perfect" or "quasi perfect" scores of those endorsing "All of the Time" on every item. The comprehensive psychometric item analysis, presented in Table 6.6, shows the impact of the non-normal distribution of scores.

Table 6.2   Descriptive Statistics for CHS-PTPB Summary Scores

	N	**Mean**	**Std Dev**	**Skewness**	**Kurtosis**	**Min**	**Max**
CHS-PTPB Total Score	521	3.98	1.25	-0.13	-0.80	1	6

Quartiles

Table 6.3 shows quartiles for the CHS-PTPB Total Score for youth. Scores indicating high levels of hope are those in the top quarter, with low scores indicating low levels of hope in the bottom quarter as presented in Table 6.3. For the CHS-PTPB Total Score, a score greater than 5.00 is considered to be high, while a score less than 3.00 is considered low.

To aid interpretation, the quartiles were used to create low, medium, and high scores and percentile ranks based on comparison to the psychometric sample. This information is presented in the last section of this chapter.

Table 6.3   CHS-PTPB Quartiles

Quartile		Score
100%	**Max**	6.00
75%	**Q3**	5.00
50%	**Median**	4.00
25%	**Q1**	3.00
0%	**Min**	1.00

Evidence of Reliability

Reliability Coefficients

The Cronbach's alpha internal consistency reliability correlations are presented in Table 6.4. These alphas suggest a satisfactory degree of internal consistency for the total score.

Table 6.4   Cronbach's Alphas for the CHS-PTPB

Scale	Unstandardized Alpha	Standardized Alpha
CHS-PTPB Total Score	0.87	0.87

Comprehensive Item Psychometrics

Table 6.5 presents the comprehensive item psychometrics. Shaded cells indicate that a criterion was out of the range of sought values, as described previously in Table 2.2 in Chapter Two. Only items with two or more shaded cells are considered problematic. All items in the CHS-PTPB showed satisfactory scale characteristics.

Table 6.5   Comprehensive Item Analysis for the CHS-PTPB

Item	N	Mean	St Dev	Kurtosis	Item-Total	Std CFA Loadings	Measure	Infit	Outfit	Discrimination
Doing pretty well	521	4.15	1.35	-0.89	0.71	0.78	-0.26	0.92	0.95	1.03
Doing just as well as other kids	521	4.04	1.50	-1.01	0.73	0.81	-0.1	0.96	0.92	1.04
If want to quit, can solve problems	521	3.99	1.53	-1.05	0.68	0.74	-0.01	1.17	1.14	0.87
Can solve problems	521	3.75	1.54	-1.11	0.75	0.82	0.37	0.91	0.9	1.10

Note: Items listed in ascending order by item difficulty (Measure).

Standard Errors of Measurement

For the CHS-PTPB Total Score, the standard error of measurement (*SEM*) is 0.46 points. With 95% confidence, we can say that a youth's true score is between approximately ± 2 *SEM*s, or 0.92 points on a scale of 1 to 6.

Minimum Detectable Change

The minimum detectable change (MDC) threshold is 0.74 points with 75% confidence for the CHS-PTPB Total Score. This gives us 75% confidence that a difference of more than 0.74 points is not due to chance. If the change is in a positive direction (i.e., increase in score) it represents an improvement in perceived hopefulness, while a change in the negative direction (i.e., reduction in score) indicates that the level of perceived hopefulness is declining.

Test–Retest Reliability

Not available at this time.

Evidence of Validity

Scree Plot

A scree plot of eigenvalues (Figure 6.1) suggests that the CHS-PTPB is a one-factor scale, since the second eigenvalue is less than one. While the scree plot suggests that it is reasonable to view the CHS-PTPB as having a single factor, the final factor structure was tested using confirmatory factor analysis (CFA).
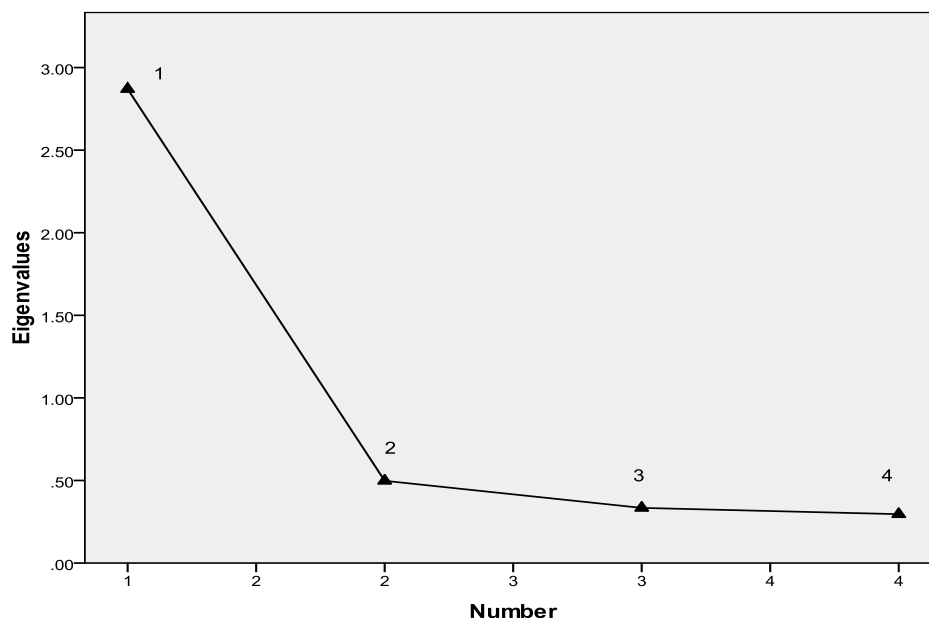

Figure 6.1 Scree Plots of Eigenvalues for CHS-PTPB

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was conducted with SAS CALIS. Results suggested that a one-factor model had good fit with the CFI, GFI and SRMR all demonstrating satisfactory values. Standardized factor loadings ranged from 0.82 to 0.86.

Table 6.6   Evaluation of the CHS-PTPB Factor Structure

Scale	Bentler CFI	Joreskog GFI	SRMR
CHS-PTPB One-Factor Model	0.97	0.97	0.03

For the CFI and GFI, values greater than 0.90 indicate good fit between a model and the data (Browne & Cudeck, 1993). For the SRMR, a value of below 0.08 shows a good fit (Hu & Bentler, 1999).

Scoring the CHS-PTPB

Scoring

Use Table 6.7 to calculate the CHS-PTPB Total Score. Enter the value for the answer choices in fields A-D and calculate fields E and F as instructed. There are no reverse coded items in the CHS-PTPB. The self-scoring form is also available in Appendix B: Measures and Self-Scoring Forms.

Use the scoring form in the case where measures are fully completed (100% response rate). In cases with missing data, the CHS-PTPB Total Score should be determined by computing the mean of completed items. Determining when too much missing data occurs to compute a CHS-PTPB Total Score is at the discretion of the user. The analyses presented in this chapter required 85% of the items to have valid answers.

Table 6.7   CHS-PTPB Self-Scoring Form

Item	Values for Responses						Enter value for selected responses here and calculate scores as instructed		
	None of the time	A little of the time	Some of the time	A lot of the time	Most of the time	All of the time			
1	1	2	3	4	5	6	A		
2	1	2	3	4	5	6	B		
3	1	2	3	4	5	6	C		
4	1	2	3	4	5	6	D		
						Sum of *A-D:*	E		
							E / 4:	F	

CHS-PTPB Total Score = F

Interpretation

The literature on hopefulness suggests that it is a dynamic process and as such, it can fluctuate significantly over time (e.g., Hinds et al., 1999). Thus, it is important to monitor scores to determine whether changes represent clinically significant change and also the cause of such changes. Administering the CHS-PTPB throughout treatment will help reliably assess the variations in hopefulness a youth is experiencing. Overall, a positive trend indicates that the youth increasingly believes that he or she can generate paths towards goals and persevere toward those goals.

The scores on the CHS-PTPB can range from 1.0 to 6.0, where a 6.0 represents high hopefulness while a 1.0 indicates low hopefulness. The tables presented below (6.8-6.9) help to judge whether a score should be considered relatively low, medium, or high. Youth who rate their hopefulness as high believe that they have strategies for achieving their targeted goals, and they can institute and continue using those strategies.

When a youth reports low hopefulness, it does not necessarily mean that the treatment has no effect. Rather, it shows that youth do not believe there are ways to meet goals and/or do not perceive they have the ability to pursue their goals. If youth do not perceive themselves to have the capacity to pursue their goals, they may become less motivated to be in, or even be resistant to treatment. They may also be less likely to make changes in their behavior or in the way they think and feel about themselves.

Low, Medium, High Scores

Based on the psychometric sample, a youth CHS-PTPB Total Score greater than 5.0 is considered high, and indicates that the youth reports a strong positive perception of self-capacity to achieve goals. If the CHS-PTPB Total Score is less than 3.0, it is considered low and indicates that the youth's perception of hope is lower than the hopefulness experienced by participants in the psychometric study. These criteria are presented in Table 6.8.

Table 6.8   CHS-PTPB Low, Medium, and High Scores

Scale	Low	Medium	High
CHS-PTPB Total Score	< 3.0	3.0 – 5.0	> 5.0

Percentile Ranks

Table 6.9 shows the percentile ranks of total scores in the psychometric study sample. For example, a total score of 4.00 is in the 55th percentile. This means that for the psychometric sample, 55 % scored 4.00 or lower and 45 % scored higher.

Table 6.9   CHS-PTPB Percentile Ranks

Score	Percentile	Score	Percentile
1.00	1	3.75	47
1.25	2	4.00	55
1.50	3	4.25	60
1.75	4	4.50	66
2.00	7	4.75	71
2.25	10	5.00	79
2.50	16	5.25	84
2.75	21	5.50	88
3.00	29	5.75	92
3.25	34	6.00	100
3.50	40		

References

Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessismism: The Hopelessness Scale. *Journal of Consulting and Clinical Psychology, 42(6),* 861-865. doi:10.1037/h0037562

Bentler, P. M. & Wu, E. J. C. (1995). *EQS for Windows user's guide*. Encino, CA: Multivariate Software, Inc.

Browne, M. W. & Cudeck, R. (1993). Alternative ways of accessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park: Sage.

Cantrell, M. A. & Lupinacci, P. (2004). A predictive model of hopefulness for adolescents. *Journal of Adolescent Health*, 35(6), 478-485. doi:10.1016/S1054-139X(04)00088-6

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159. doi:10.1037/0033-2909.112.1.155

Hinds, P. S. (1988). Adolescent hopefulness in illness and health. Advances in Nursing Science, 10(3), 79-88.

Hinds, P. S., Quargnenti, A., Fairclough, D., Bush, A. J., Betcher, D., Rissmiller, G. et al.. (1999). Hopefulness and its characteristics in adolescents with cancer. *Western Journal of Nursing Research*, 21 (5), 600-620. doi:10.1177/019394599902100503

Hu, L.T., Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling A Multidisciplinary Journal*, 6(1), 1-55. doi:10.1080/10705519909540118

Kazdin, A. E., French, N. H., Unis, A. S., Esveldt-Dawson, K., & Sherick, R. B. (1983). Hopelessness, depression, and suicidal intent among psychiatrically disturbed children. *Journal of Consulting and Clinical Psychology, 51(4),* 504-510. doi:10.1037/0022-006X.51.4.504

Shorey, H. S., Snyder, C. R., Rand, K.L., Hockemeyer, J. R., & Feldman, D. B. (2002). Somewhere over the rainbow: Hope theory weathers its first decade. *Psychological Inquiry*, 13(4), 322-331. doi:10.1207/S15327965PLI1304_03

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13(4), 249-275. doi:10.1207/S15327965PLI1304_01

Snyder, C. R., Hoza, B., Pelham, W. E., Rapoff, M., Ware, L., Danovsky, M., et al. (1997). The development and validation of the Children's Hope Scale. *Journal of Pediatric Psychology, 22(3)*, 399-421. doi:10.1093/jpepsy/22.3.399

Snyder, C. R., Michael, S. T., & Cheavens, J. S. (1999). Hope as a psychotherapeutic foundation of common factors, placebos, and expectancies. In M.A. Hubble, B.L. Duncan & S.D. Miller (Eds.), *The heart and soul of change: What works in therapy* (pp. 179-200). Washington DC: American Psychological Association.

Valle, M. F., Huebner, E. S., Suldo, S. M. (2004). Further evaluation of the Children's Hope Scale. *Journal of Psychoeducational Assessment, 22(4),* 320 – 337. doi:10.1177/073428290402200403